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Developing City Sanitation Strategies in Indonesia

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The Government of Indonesia has long regarded sanitation as a private matter, and public investments in sanitation infrastructure and services have been negligible. Barely 1% of the population has access to sewerage and while most households have a toilet, many of these discharge into open drains, canals, rivers and ponds.

The government has adopted national sanitation goals in line with the Millennium Development Goals but has not, so far, developed a strategy for meeting them in urban areas. Municipalities are under little pressure to improve sanitation services and have difficulty accessing funds should they decide to do so. Where improvements are undertaken, they tend to be piecemeal and unconnected to a strategic plan for the city as a whole.

The Indonesia Sanitation Sector Development Program (ISSDP) is a Netherlands funded program implemented by Government of Indonesia and the World Bank's Water and Sanitation Program - East Asia and the Pacific (WSP-EAP) with consulting support of DHV B.V. The program is an innovative response to an evolving urban sanitation crisis; instead of funding new sanitation investments directly, it fosters an enabling environment for progress, with special attention to planning, capacity building and institutional arrangements at city and provincial level; policy and strategy at national level; plus advocacy and awareness-raising at all levels.

At the end of the first, two year phase, government ownership of the program is strong and a distinct shift is evident in the sector. Each of the six municipalities involved ie Phase 1 of ISSDP has produced a City-wide Sanitation Strategy and urban sanitation is starting to gain the profile it deserves on the national development agenda.

This paper examines the city level planning and capacity building process which is at the heart of ISSDP and is helping to signal the way forward for sector policy and strategy. Central to the process are collaboration between the various government organisations involved in sanitation at municipal level, and the identification of prioritised, affordable actions that will enable the cities to move steadily towards effective services, city-wide.

Introduction

Sanitary conditions in Indonesian cities

While at least half of Indonesia's 220 million population lives in urban areas, only 1% of the population is served by sewerage, and less than ten cities have a substantial sewerage network. This level of coverage is amongst the lowest in Asia. In the absence of public investments, most of the infrastructure and services in place have been provided by households and small operators. Roughly three quarters of urban households have a toilet, but few dispose of wastewater safely. Many toilets are connected to soak pits or 'septic tanks' that are poorly constructed and allow wastewater to seep into ground water (which is high in many locations) or into open drains. Other households have toilets that discharge directly into water bodies.



Figure 1: Typical dense urban area
Source: Environment Dept. West Java



Figure 2: Discharge of septic sludge to river. Source: WSP

Septic tank emptying businesses are common, but many of them dump sludge directly into rivers without treatment, even when a sludge treatment facility is available. (Most of these facilities operate below capacity or not at all). Drainage networks, too, are inadequate and in some towns there is regular flooding. The presence of sewage and uncollected garbage in drains exacerbates the problem.

Informal collection of household solid waste on payment is well established but at least one third of urban households do not receive this service, and even where waste is collected, large amounts of it are burnt, disposed of randomly or dumped at unofficial sites that are not serviced by the municipality. Formal secondary collection points are too few, as are final disposal sites, and while sanitary landfill is known and recently became mandatory, it is not normally practised.

Inadequate sanitation in both rural and urban areas has had severe consequences for health. The incidence of typhoid is the highest in the region, infant mortality is 121 per 1000 - much higher than in similar countries. It is estimated that Indonesia loses \$9 million annually due to poor sanitation, roughly 2.3% of GDP (WSP, 2007).

Urban water supplies

Water resources are plentiful in most parts of Indonesia, but only 42% of households have access to a public water supply network and barely one third of urban residents have access to a house connection from the public water utility. Most tariffs are well below cost recovery levels and thus many utilities operate at a loss, with considerable debts. Such conditions inevitably impact on maintenance and make network expansion virtually impossible.

Where an adequate public supply is not available, households use private tubewells and small local distribution networks, or buy water from informal suppliers. In smaller cities, as much as half of the population accesses water via these alternative routes.

Sanitation policy and institutional arrangements

For many years, infrastructure planning and development in Indonesia was highly centralised, while operation and maintenance was assigned to local governments. This stark separation of responsibilities did not foster ownership, accountability and capacity development at local level and, as a result, the sector experienced declining technical and financial performance despite increased capital expenditure from the late 1990s onwards.

In 2001, the government embarked on a rapid and far-reaching decentralisation process. This formalised local government responsibility for the delivery of municipal sanitation services but did not establish an operational framework for service delivery or introduce measures to develop municipal capacity. What exactly municipalities should do; how they would be held accountable; and how services should be funded, were not spelled out. An added complication was a failure to define the role of provincial governments in municipal sanitation, despite allocating them an increased share of national infrastructure budgets.

The allocation of specific responsibilities for urban sanitation varies from one municipality to another: typically, six to nine offices are involved though as many as 16 play a role in some cities. The solid waste management agency (*Dinas Kebersihan*) or the environmental services agency (*Dinas Lingkungan Hidup*) may take the lead, though no agency has specific responsibility across the country to promote improved household toilets and wastewater disposal.

Policy development in the sector has so far addressed community-based services (effectively rural and peri-urban sanitation) although the former has been more accepted by stakeholders than the later. Similarly, the government has adopted national sanitation goals, but is still lacking a clear strategy to meet them in urban areas. Targets include 75% access to improved sanitation by 2015 (in line with the Millennium Development Goals) and the achievement of open defecation-free districts and towns by the end of 2009.

Legislation and standards relating to sanitation are also under-developed. Environmental laws exist to control water pollution, but enforcement is weak and polluters see little point in reducing their impact when the receiving bodies are polluted anyway, sometimes from distant sources. The Solid Waste Law has recently been enacted, but operational Guidelines are yet to be completed. The government is now taking steps to strengthen the regulatory environment by introducing new standards for wastewater, drainage and solid waste disposal.

Urban sanitation finance

Public expenditure on sanitation has been minimal for years and currently stands at just 0.04% of total public spending, reflecting the predominant view that responsibility for sanitation investments lies mostly with households. Municipalities are expected to finance sanitation improvements primarily from their regular resources, most of which come from central government on an annual basis. This means that expenditure has to be projectised annually, with little provision for longer term planning, though multi-year budgeting is now being discussed. Capital funds are potentially available from provincial governments, but accessing them is difficult as there is no sector financing strategy and associated regulations.

Turning to service users, the high level of toilet use shows that households are willing to pay for the privacy and convenience of a household facility, but it is not clear that they are necessarily willing to pay more for improved excreta disposal, for example by upgrading their existing installation or connecting to a sewer.

Summary of challenges

The challenges in urban sanitation in Indonesia can be summarised as follows:

At national level

- A long standing lack of political will to improve sanitation, at all levels of government. Sanitation needs to be higher on the political agenda and can no longer be regarded as a private matter in urban areas.
- The urgent need for a national urban sanitation policy or strategy that sets priorities; defines institutional and community roles and responsibilities; establishes a legal and regulatory framework; and facilitates the adoption of comprehensive city-wide sanitation strategies.
- The need for financing strategy and investment framework, both to increase the total funding available in the sector and to enable those funds to be deployed effectively.
- The need for advocacy to make the sanitation crisis an issue of national concern.

At provincial level

- The need to clarify the role of the provincial government in the funding of urban infrastructure investments and the planning and delivery of sanitation services.

At city level

- A lack of mechanisms for inter-agency collaboration on planning and service delivery, bearing in mind the range of organisations that have a stake in sanitation.
- A lack of incentives and accountability for the achievement of national sanitation goals. At present, not all municipalities would accept that there is a big problem with excreta disposal.
- Limited municipal capacity for planning, infrastructure development, service delivery and sanitation promotion.
- Complicated and poorly understood mechanisms for accessing and allocating capital funds.
- An under-developed (and unregulated) role for the private sector in service delivery and maintenance (for example in the safe removal, treatment and disposal of septic tank effluent).

At community and household level

- Limited appreciation of the need for safe disposal of waste water, though toilet use is widely practised.
- Many people occupy land in densely populated areas which are hard to service, and where on-site solutions are not feasible. This is especially problematic where this involves illegal settlements as the municipal governments are legally constrained from including them in their projects and planning processes.

Indonesia Sanitation Sector Development Program (ISSDP)

ISSDP began in 2006 and is supporting progress at both implementation and policy level, with a strong emphasis on collaboration between agencies within and beyond the municipality. The program purpose (paraphrased) is: 'to establish a framework for sustainable pro-poor sanitation services in Indonesia through effective and coordinated policy-making, institutional reform, strategic planning and awareness building.' In Phase I, which ended in March 2008, there were four components:

- *Sanitation Enabling Framework.* Assessments and studies were used to inform, and build commitment for, policy and institutional change.
- *Sector Co-ordinating Framework.* The program supports government and donors in developing a more coordinated framework for activity and investment in the sector.
- *Public Awareness Campaigns.* Focused promotional campaigns were developed both nationally and in selected cities, informed by sanitation market research on demand, supply and issues in behaviour change.
- *Local level Capacity Building* and development of city-wide, poor-inclusive sanitation strategies and action plans in six cities. The approaches and lessons from the city sanitation strategy development are informing national sanitation strategy.

The four components ran concurrently and were mutually supportive. National co-ordination was, and continues to be, overseen by a Steering Committee at the most senior level of government, under which is a Technical Team for Sanitation Development (*Tim Teknis*). This is the operational vehicle for sector co-ordination and includes both government and supporting agency representatives, among them ISSDP staff.

Methodology for city sanitation planning

The city level component is at the heart of ISSDP and in Phase 1 focused on capacity development through the formulation of City-wide Sanitation Strategies in six cities with populations ranging from roughly 100,000 to 600,000. Key features of the process developed include the following:

1. Establishment of a multi-departmental working group (*'Pokja'*) at the city level, to develop situation analysis and city sanitation strategy.
2. Avoiding 'blueprint' approaches to infrastructure development and instead, starting from an analysis of what already exists, then considering how this could be improved in incremental steps as funds municipal capacity grow.
3. Paying attention to the institutional and financial aspects of service delivery and to the need for effective communication with service users if established behaviours - especially unsafe excreta disposal - are to be challenged and modified.
4. Breaking down a complex planning process into discrete, manageable tasks, emphasising the importance of sound information for decision making. At the same time, finding a practical way forward where existing data is inadequate, for example by conducting sample surveys in representative parts of town.
5. Recognising the need both for strategic, city-wide decision making by local government and for active support and engagement at community level. ISSDP optimises both aspects in a 'top-down meets bottom-up' approach to planning.

The development of city-wide strategy begins with an assessment of existing infrastructure and services in each sub-district (*kelurahan*) of the city. This involves three discrete steps:

Step One: Secondary data analysis

This entails an examination of available data for each *kelurahan*, while recognising that it may not be complete or reliable. Three broad types of information are examined:

1. The number of households formally designated as poor, since poverty affects access to sanitation facilities, bearing in mind that most services are self-provided.
2. Population density. This can have a strong influence on the severity of sanitation problems and consequently the health risk.
3. Technical data on the coverage of water and sanitation services, and the level of service provided (shared or household taps, on-site sanitation or sewerage, etc.)

A weighting factor is assigned to each of these parameters.

Part Two: Primary data collection

A participatory survey termed Environmental Health Risk Assessment (EHRA) is conducted in sample *kelurahan* that have a relatively high proportion of low-income households. The survey and observations involve groups of women from these locations, who make a health risk assessment, with assistance from municipal and program staff, considering both physical conditions and hygiene behaviour in the community. The findings enable more accurate targeting of priority areas and provide insights into both the impact of poor sanitation at household level and potential improvement strategies.

Part Three: Professional assessment

Members of the *Pokja* add their own perception of public health risk areas based on their knowledge of the town and professional expertise.

All of the above are brought together to make a final assessment in which the city is divided into zones based on four levels of public health risk. Priority locations are not always obvious, partly because poorer residents are not always found in large clusters; most neighbourhoods contain a range of income groups. For this reason, ISSDP does not target the poor as a separate group, but adopts a ‘poor-inclusive’ approach to planning.

The findings of the assessment, along with maps detailing existing infrastructure and services, are compiled in a document which has become known as the ‘White Book (due to the way it was first presented). This provides the basis for formulation of a City-wide Sanitation Strategy (CSS) to tackle the problems identified; see Table 1.

Table 1: Structure of a City-wide Sanitation Strategy	
Sub-sector Strategy	Excreta Disposal and Wastewater Management Solid Waste Management Neighbourhood Drainage
Enabling and Sustaining Strategies	Awareness Raising, Hygiene Promotion and Community Participation Institutional Strengthening and Capacity Building for Sanitation Management Private Sector and NGO Participation in Sanitation Development Financial Management of the Sanitation Sector and Resources Mobilization
Sanitation Action Plan	Annual and Medium term Sanitation Action Plan
Monitoring and Evaluation	Strategy for Monitoring and Evaluation

Each CSS aims to be a comprehensive document that addresses sanitation in its broadest sense, including excreta disposal, drainage, solid waste management and hygiene behaviour. In addition to prioritised plans for infrastructure development and rehabilitation, it addresses how sanitation services will be operated and sustained, both physically and financially. The strategies pay particular attention to the needs of the poor and emphasise the importance of user demand and preferences in service design.

Facilitating the planning process

The program approach to technical assistance was to support and facilitate the planning process but not to undertake it directly. It took approximately eighteen months to produce the first six CSSs, but with a defined process now in place, this could probably be reduced for other cities.

The city sanitation *Pokja* includes representatives from the full range of government agencies and non-government partners that have an interest in urban sanitation. While working with the *Pokjas*, the program has sought to integrate sanitation planning with established government planning and budgeting cycles so that it is not seen as a parallel and purely project-related activity, but part of the routine business of local government. There is also an emphasis on making best use of the resources currently available, rather than making ‘wish lists’ that would require a massive injection of additional funds.

To support the planning process, ISSDP deployed a full-time City Facilitator, with administrative support, in each of the six cities for a period of roughly fifteen months. In addition, roaming technical experts provided guidance and support in specialist areas such as engineering, project management, data collection and assessment, community-based approaches, capacity development and finance. All of this was supplemented by a number of training events.

To illustrate the content of a typical CSS, the outcome of the planning process in Banjarmasin (one of the six program cities) is outlined in Box 1.

Box 1: Summary of The Banjarmasin City-wide Sanitation Strategy

Banjarmasin is the capital of the province of South Kalimantan and has a population of just over 600,000. It is known as the 'city of a thousand rivers' because of the many waterways passing through it. This water is tidal and the average level of the town is slightly below sea level, consequently parts of the town flood regularly. Almost 40% of the town has a high population density (over 175 persons per hectare) and 24% of the residents are formally designated as poor. Most poor residents live in simple, lightweight houses along the riverbanks, and use the rivers for bathing, laundry, cleaning teeth and defecation.

Roughly 60% of households have a toilet, while 30% use the rivers and 10% use other options such as public toilets. Household toilets generally have soak pits or septic tanks, many of which malfunction and are affected by flooding. Just 1% of the population has access to sewerage. In contrast to this, the public water supply network covers 90% of the city, with 84% of the population served via house connections or public taps. Average monthly consumption is about 17 m³ per household - a generous amount.

Some two thirds of the daily production of solid waste is collected and there is an established system of door-to-door collection by community-based organizations using handcarts. Some of this waste is later dumped indiscriminately, but the bulk of it is transported to a final disposal site, though vehicular access is difficult.

The situation analysis conducted by the Pokja found that these conditions arise from a combination of long-established personal behaviours, limited demand for better sanitation and inadequate service provision by the municipality.

In its CSS, the Banjarmasin Pokja has identified modest - but realistic - targets for the 2008-2010 period in the areas of domestic wastewater disposal (on and off-site); solid waste management; and local drainage. Principal strategies include:

- encouraging roles for non-government service providers;
- increasing demand for sanitation infrastructure and services through marketing;
- strengthening service delivery capacity;
- expanding infrastructure coverage; and
- expanding the range of technology options available in response to local circumstances and user preferences.

These strategies are the foundation of a medium-term action plan for the period 2008-2010. Highlights of the action plan are provided in Annex One.

Of the various components of sanitation, wastewater disposal has the highest profile in the plan. This is due partly to the very active role played by the Banjarmasin Waste Water Management Company (PD PAL) in the planning process, but also reflects the difficulties faced by the municipality in recent years in identifying improved solid waste management technologies and systems. Further research and possibly piloting may be needed to develop viable options that the municipality feels confident in adopting at scale.

By October 2008, several of the planned activities were underway including, for example, preparation of a wastewater master plan, promotion of sewer connections and rehabilitation of drainage channels near the city waste disposal site. Other activities were being tendered, but the Pokja was also reviewing and revising the action plan to make a better fit with the resources available.

Analysis and discussion



Figure 3: ISSDP advocacy brochure
Source: WSP

With Phase I of the program completed in April 2008, all six cities now have a City-wide Sanitation Strategy accepted and signed by the Head of the City Planning Department (*Bappeda*). Progress beyond that varies from city to city but in every case the *Pokja* is promoting the CSS to both the political leadership and operational departments as a key reference point for city planning and budgeting.

While the CSS provides a framework for action, a lot of practical details still need to be worked out (for example, how to increase the number of household connections to sewers, where these are available). This is understandable, however, given that the *Pokjas* are dealing with long term neglect and getting to grips with urban sanitation for the first time. They have come a long way in two years from a very low baseline position in which municipal engagement in urban sanitation issues was minimal.

The cities now have a framework for action and resource deployment, a better understanding of current sanitation problems and are better placed to deal with them. The true value of the planning process will only be realised, however, when the cities take their strategies to implementation and use them in the formulation of budgets and funding proposals.

City-based agencies concerned with sanitation are now working together more effectively, their work is more integrated and the level of motivation within the *Pokjas* is impressive. Moreover, this has been achieved without an injection of capital funds; staff are realising the need to take action now, even if the resources available do not enable 'ideal' solutions. The program has successfully challenged the notion that all the problems in urban sanitation lie with the community.

Similarly, it has become clear to both local and national managers that the problem in urban sanitation is not only a lack of investment; it is also the lack of a plan. City-wide Sanitation Strategies are important as they prioritise investment needs, enabling municipalities to direct incoming funds (whether from the centre, province or donors) to where they are most needed. At national level, government is convinced of the value of the strategies and Bappenas is already planning to extend the process to a substantial number of cities beyond those directly supported by ISSDP.

One of the strengths of program approach is its explicit linkage with municipal resource allocation processes, though it proved difficult to meet government deadlines so that sanitation action plans were included in the 2008 budget. The profile of sanitation in municipal plans has, however, gone up substantially since 2006, and there is much better participation by communities in general and women in particular.

One City Facilitator described ISSDP as a wake-up call for municipalities, and this is borne out by the steadily increasing commitment to action. One senior official noted that ISSDP is addressing the failure of previous infrastructure programmes, which have tended to be either huge and hardware-focused, with poorly targeted investments; or community-based and holistic but on too small a scale to make a significant impact.

All of this is encouraging, but creating local ownership of the planning process has been slow and difficult. It took time for government officials at all levels to understand the purpose of ISSDP, and why the program was talking about sanitation planning rather than funding investments. At first, municipal staff saw little reason to go through the planning process, bearing in mind that sanitation was seen as a

household responsibility. The concept of planning as a flexible, ongoing process that is responsive to local circumstances, was also a departure from established practice and unfamiliar to officials.

The frequent turnover of municipal officers was an additional challenge to the process since it affected continuity. The absence of overall city development plans was a further complication, since the bigger picture into which City-wide Sanitation Strategies would fit was itself poorly defined.

Securing the active support of the Mayors was an important breakthrough, and was triggered by their participation in two City Summits at which sanitary conditions in the six cities were compared, and progress reviewed. The summits attracted a lot of media attention and it became clear that pride and inter-city competition were powerful motivating factors. One city was reported in the press as the dirtiest in Indonesia and this prompted the mayor to ensure that his town did not languish at the bottom of the league table. During the second summit, in Blitar, the mayors of the six cities signed a declaration committing themselves to action on sanitation. This was followed some time later by a similar declaration at national level.

As the process unfolded, it became clear that provincial government should also play a significant role in urban sanitation, though that role needed to be clarified and developed. Addressing this will be one of the principal tasks for Phase II of the program.



Figure 4: Blitar Declaration

Conclusions

Intensive engagement at city level is providing lessons on how exactly the ‘enabling environment’ for urban sanitation should be improved at the national level. Some of the emerging issues are outlined below.

Capacity building and scaling up

- ISSDP is helping to clarify what municipalities can do with the human and financial resources currently available. As cities begin implementing action plans in Phase II, it will become evident what support they need in order to make appropriate and cost-effective technology choices, run effective promotional campaigns and develop more financially viable services. This information can be used to inform the development of appropriate resources for training and technical support country-wide. This said, ISSDP has already demonstrated that an effective way for municipalities to develop capacity is to start taking action on sanitation and learn from their own experience, though they need guidance and support in taking the first steps.

Sector finance

- Government needs to rationalise and publicise existing funding mechanisms for urban sanitation. An important lesson from Phase I is that funding for urban sanitation improvements is potentially available from existing government sources, but municipalities do not know how to access it, while provincial governments have funds but do not know how to disburse them. Better communication between the tiers of government is essential, as is access to multi-year funding for large investment programmes.
- The sanitation sector needs common government / donor approaches based on a mutually agreed sector financing strategy and investment framework to achieve national targets.

Institutional arrangements

- Indonesia needs a national strategy to achieve urban sanitation goals, with defined objectives and institutional roles from national to local level, to provide a framework and guidelines for action at municipal level and to bolster local political will.
- Urban sanitation planning needs to be more than a voluntary activity if it is to be undertaken nationwide. Government needs to develop both incentives and obligations for municipalities to adopt

comprehensive strategies, by linking funding to the adoption of city-wide plans. There are now indications that central government will introduce this link.

- There is consensus on the potential for provincial governments to facilitate increased action on sanitation, but this role needs to be clarified and nurtured.
- As with funding mechanisms, legislation, standards and other technical information on urban sanitation exist at central government level but are largely unknown at city level. This again highlights the need for improved communication within government.

Way forward

For its final year (the program ends in December 2009), the focus of ISSDP support will be on four areas:

1. Consolidating activity in the first six cities and helping them move from planning to implementation.
2. Developing the role of provincial government and expanding the program to an additional two to three cities per program province.
3. Developing a national urban sanitation policy and strategy.
4. Adopting a sector financing strategy and investment framework.

For the cities, the critical test will be whether the program leads to more, and better targeted, investments in urban sanitation, and improved service delivery. It is encouraging, therefore, that the new Mayors in ISSDP cities have responded positively to the strategies and indicated a willingness to adopt them even though they were developed under a previous administration. However, there nevertheless remains a risk of ad hoc activity by municipal officials or elected representatives anxious to see rapid visible progress after the long planning stage.

The lack of capital funding from ISSDP remains a concern for some officials, but it is encouraging that some of the cities have already secured some short term funds, enabling them to begin implementation. Enabling cities to access existing government resources is a critical task for Phase II, though limited pilot funds, for relatively small scale works, will also be available from the Netherlands-funded World Bank Trust Fund (WASAP) which financed ISSDP

A further challenge is to institutionalise sanitation planning and co-ordination. While *Pokjas* have played a central role in Phase I, they are committees, not institutions, and there is a risk that the parent organisations (which control staff and budgets) will adopt a 'business as usual' stance irrespective of the new strategies. How this is resolved may vary from city to city, but one option is to ensure that the coordinating role of the *Pokja* is formalised and that *Pokja* members are sufficiently senior to take strategic decisions. Some municipalities may also appoint their own consultants to take on some of the roles played by ISSDP teams during Phase I.

Looking beyond the six cities, an important question is how city-wide sanitation planning can be adopted more widely, bearing in mind that there is no obligation to do it at present. There are encouraging signs here, as the Ministry of Public Works has indicated its intention to use the CSS as the basis for making funding allocations to the six Phase I cities; this could provide a powerful incentive for other cities to develop their own strategies. The extent to which the CSS process is replicable will also need to be determined, however. City Facilitators have played a pivotal role in guiding the planning process but finding staff with the requisite skills has not been easy, and in the short term could limit the scope for scaling up the planning process. The need to allocate sufficient time for facilitator training and capacity building in Phase II is a key lesson learned.

Now that the planning process has been refined and a planning manual can be produced, strategy development might be completed faster in the next batch of towns, nevertheless there will probably be a need for hands-on support, and possibly some simplification of the planning process. ISSDP is already making a start by developing training of trainers programs for City Facilitators, and trying to identify one or more institutions that could serve as a long term training resource for the sector.

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Annex One: Action Plan 2008-2010, Banjarmasin

ACTIVITY	2008	2009	2010
Cross-cutting Issues			
Sanitation marketing	Sanitation awareness building		
	Media gathering		
	Campaign to promote cleanliness and a healthy life style	Campaign to promote cleanliness and a healthy life style	Campaign to promote cleanliness and a healthy life style
	Advocacy targeting local government institutions	Advocacy targeting the local legislative body	Advocacy targeting the private sector
Enhancement of the role of the private sector and communities		Sanitation competition for neighbourhoods, schools and institutions	Sanitation competition for neighbourhoods, schools and institutions
Institutional strengthening		Review of building permit regulation. Establishment of operational guidelines for environmental and urban planning, commercial districts, and street vendors.	
	Establishment and capacity building of community self-help groups	Establishment and capacity building of community self-help groups	Establishment and capacity building of community self-help groups
	Strengthening the Pokja's operational mechanisms and development of its coordination capacity	Establishment of a municipal center for sanitation information	
Monitoring and evaluation		Monev for planning and implementation of sanitation development	Monev for planning, implementation, and impact assesment of sanitation development
Domestic Wastewater			
Sanitation marketing	Dissemination of domestic wastewater regulations and tariff. Promotion of service connections	Dissemination of communal wastewater regulations re. small scale (home) industries	
Enhancement of the role of the private sector and communities	Increase the capacity of construction workers. Enabling market access for compost produced by NGOs and community self-help groups		Dissemination and capacity building on domestic wastewater treatment
Installation of infrastructure	Preparation of a master plan for wastewater and a detailed engineering design for a sludge treatment plant	Preparation of detailed engineering design	Preparation of detailed engineering design
	Procurement and installation of collection sewer pipes. Installation of service connections. Construction of communal	Procurement and installation of primary sewer pipes. Installation of service connections. Construction of communal	Installation of service connections. Construction of communal waste water treatment plant

ACTIVITY	2008	2009	2010
	waste water treatment plant	waste water treatment plant	
		Development of a domestic waste water data base	
Strengthening of regulation	Effectuating a policy of free house connections	Effectuating a policy of free house connections	75% subsidy on house connections
Solid Waste			
Strengthening of policies	Preparation of a policy to stimulate cooperation in solid waste management		
	Socialization of a solid waste management policy		
Implementation of technical solutions	Development of appropriate solid waste management technologies		
Local Drainage			
Implementation of technical solutions	River normalisation	River normalisation	River normalisation
	Rehabilitation of drainage channels	Rehabilitation of drainage channels	Rehabilitation of drainage channels
Institutional strengthening		Review of the work load and capacity of the municipal settlements and infrastructure unit	
		Assignment of the task to clean tertiary drainage channels to the municipal settlements and infrastructure unit	
Monitoring and evaluation		Reorganization and integration of drainage monitoring and evaluation data ever collected by the municipal settlements and infrastructure unit	