

**Aceh Nias Sea Defence, Flood Protection, Escapes
and Early Warning Project**

*Resource document
for the
Banda Aceh's Citywide Sanitation Strategy*

Needs and Opportunities for Sanitation Governance in Banda Aceh

Projecting the vision - Impact through effective coordination

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EXECUTIVE SUMMARY

Context and scope

This report contains the findings of a four-week mission (17 November - 12 December 2008) to identify issues pertaining to sanitation governance in Banda Aceh and to determine possible goals for institutional development for the development of the city's sanitation development strategy. The mission was implemented in the context of the Sea Defence Consultancy (SDC) project, which between others assists the city government of Banda Aceh by the development of an approach to integrated sanitation development planning and the preparation of a citywide sanitation strategy (CSS).

This report discusses the potential for developing sanitation¹ infrastructure in Banda Aceh from an institutional perspective. Connected with the management of urban drainage infrastructure. The discussion revolves around the thrust with which the city is able to present a vision for sanitation development; the city's fiscal capacity to develop physical infrastructure; and the ability to organize sustainable management of sanitation in the long run.

Projecting the vision - Impact through effective coordination

Achieving the millennium goals for sanitation will require the provision of basic (and adequate) sanitation facilities and services. This should be achieved through improving the hydraulic performance of the drainage system to ensure rapid runoff of (excess) water and provision of effective wastewater management to keep untreated wastewater out of the drains, to prevent pollution of groundwater sources and to provide a health living environment for the population.

Where septic tanks are used, the city must ensure that they meet appropriate design standards and that they are correctly installed, for the central business districts and areas with high population densities the city must start the process of a gradual implementation of off-site de-central wastewater collection and treatment systems. As well, the city must control point wastewater discharge (commercial and public) through licensing, inspection, and enforcement. To make these efforts effective and give them momentum, the city must communicate the importance of sanitation to the wider public and stimulate and support community participation in developing local solutions.

All this not only requires considerable public investment, but also professional sanitation management (O&M of the physical infrastructure, control of private discharge into the system, communication, etc.). The investment priorities will find a place in the city's medium term development plan (RPJM), which is also the starting point for the annual development budget. The Citywide Sanitation Strategy being introduced by SDC provides an important focus in aligning the RPJM with the strategic plans (Renstras) of individual executive agencies where sanitation is concerned. To bring this about, the CSS should be formalized by mayoral decree as framework for annual development planning in the domain of sanitation.

No single agency is responsible for all aspects of sanitation today. Recognizing this, the province has established the Tim Koordinasi AMPL and the city have set up the Tim Sanitasi. One of the major difficulties for this type of coordinative bodies is that nobody really can control that the agencies act as their representatives speak in the coordination meetings. At city level, the fact that the Tim Sanitasi has been tasked to formulate a CSS can provide more discipline in this regard. This "leading" character of the CSS would gain strength if the Tim should also develop a specific action plan to achieve the strategy, specifying concrete outputs, how these are interlinked, who is responsible for delivering them, and when this is to be done. Coupled with the very public involvement of the agencies' senior management with the Tim, this should project peer pressure from within the Tim to the agencies themselves to deliver.

At provincial level, the Tim Koordinasi AMPL is charged to formulate a Solid Waste, Water Supply, and a Drainage Infrastructure Development Program and a Health, Hygiene, and Sanitation Program (here in combination referred to as the Provincial Sanitation Development Program or PSDP). Because the province does not itself provide sanitation services, the purpose of this PSDP should be

¹ In line with the national sanitation policy recommended by TTPS "sanitation infrastructure" relates to the sub-sectors wastewater, solid waste and neighbourhood drainage

to structure provincial (financial) support for local government sanitation efforts. A main priority for the city should be to get the Province to include conditions and criteria in the PSDP that Banda Aceh can fulfil to obtain provincial support.

Without a clear purpose and management of the process, “coordination” can easily become a quagmire. The present report recommends several steps that the city may consider to avoid this.

- First, recognize that the city’s Tim Sanitasi operates in a frame of reference that differs from that of the provincial Tim Koordinasi AMPL. Whereas the latter exists to support execution of the national community-based water supply and environmental sanitation program, the city’s Tim Sanitasi has a broader focus, which also includes institutionally driven sanitation.
- Second, charge the two Bappedas with municipal-provincial coordination, within the boundaries of the CSS and the PSDP. The gubernatorial and mayoral decrees establishing the respective Tims do not yet specify a means of vertical coordination. Without a clear structure and process, direct coordination between the two Tims will very likely be ineffective. Fortunately, a practical framework for coordination already exists in the annual budget preparation process, in which the Bappedas of the two levels are responsible for coordination.
- Third, put Bappeda at city level in charge of a strong, permanent secretariat for the Tim Sanitasi to achieve effective coordination. Currently, the representative from KLH (the environmental office) is designated secretary of the Tim Pelaksana, but the secretariat’s office is in DKKK (cleaning and beatification department). Apart from the disadvantages of this separation, neither KLH nor DKKK is the most likely candidate to run the secretariat, because their roles are mainly technical/operational rather than oriented to city-wide environmental policy and plan formulation. Moreover, KLH has recently been demoted from the status of Badan to Kantor and may thus lack the necessary clout to exert strong coordination. These substantive and formal barriers would not obtain in Bappeda, which has the relevant authority and cross-sectoral perspective needed to develop the requisite organizational capacity. An added benefit of placing the permanent secretariat in Bappeda is that the more central its role in the Tim Sanitasi, the more effective Bappeda would become in coordinating with the province on the basis of the CSS.
- Fourth, use the reorganization of the administrative structure that took effect in January 2009 as a good opportunity to review the membership of the Tim Sanitasi and differentiate between member and observer status. Inclusiveness is valuable in coordination, but the present membership of the Tim is very broad. It comprises not only agencies with a direct or indirect responsibility for sanitation development and management, but also agencies with a more general stake in sanitation and even some whose relationship to sanitation is at best tangential. Moreover, at times it seems that representatives from the less involved agencies attend more Tim meetings than those from agencies that are more directly responsible, and this could have serious consequences for the eventual acceptance of the Tim’s recommendations.
- Fifth, ensure that the Tim Sanitasi truly understands its key task. At least some members appear to believe this to be coordinating communication. Indeed, the decree by which the Tim was established mentions the need for a broad and on-going effort to inform the community as a basic motivation. But the decree specifies the key task of the Tim as contributing to improving water supply and sanitation infrastructure. It is imperative that the Tim position itself as central coordinator of planning for infrastructure development and comprehensive sanitation management.

Fiscal potential - the need for revenue mobilization

Whether Banda Aceh is able to realize its ambitions depends in part on its ability to shoulder the burden of development. Analysis of the city’s budgets for the years since the tsunami shows that two factors have constrained the city’s fiscal capacity:

- the damage to economic production capacity has limited the potential for earning revenues from shared taxes (the city’s share in provincial and national taxes that are collected within its territory);
- the city receives a relatively small share in the additional financial resources that have become available to Aceh province since obtaining special autonomy status in 2001 (the city does not score well on the criteria for distributing these funds).

These circumstances make it difficult for the city to take the lead in developing sanitation infrastructure. In fact, it has only limited ability to fund management and use of the infrastructure currently available. Only 2.7% of total city income derives from service fees, of which sanitation

fees (mainly for solid waste collection) represent approx. 12%. This paucity of funds is directly reflected in sanitation outlays, which have been hovering at just around 1.3% of the total expenditure budget.

The general fiscal development over the past few years is even more troubling. While total income has just barely been able to keep up with inflation, the combined overhead for general administration and service delivery has grown from 65% to 75%. Meanwhile, total expenditure growth remained well behind inflation. In combination, this has squeezed the growth in O&M and investment to a rate that is 2.5 times slower than inflation.

The sustainability of investments in infrastructure depends in large part on the ability to fund operation and maintenance in the long run. Hence, the city should only entertain visions of expanding the drainage and sewerage network if it is willing to tap additional local revenue sources. Specifically, this report argues the institution of a general wastewater management fee. Such a fee should cover at least O&M, and possibly also the economic cost of investment in sewerage and drainage infrastructure. Possible political sensitivities aside, there seems to be ample potential for instituting such a fee, for the current monthly burden of all sanitation fees is only Rp. 2,808 (US\$ 0.22) per household. There are however, two inhibiting factors:

- Popular suspicion that the government will not deliver on its promises. To address this suspicion, it will be necessary to invest and deliver before fees are charged, and to ensure transparency in financial management of the service. This may necessitate allowing the service organization to use its own income for its expenditures.
- An apparent disincentive to generating local resources in Law 33/2004, which reduces the general allocation of balancing funds (DAU) as fiscal capacity (PAD) goes up. It is beyond the city's ability to change this. If this disincentive really exists, it can only be addressed at the national level, perhaps by the Sanitation Technical Team (TTPS) at national level.

Organizing sanitation management - a long range perspective

Given the recent reorganization of the city's administrative structure, this report does not argue for a major realignment of responsibilities. Notwithstanding, the Tim Sanitasi has expressed a desire to come to one dedicated organization for sanitation in the future.

It is unlikely that the budgetary implications of proactive drainage O&M will create such imbalances in DKKK and Dinas PU that this by itself would necessitate separating the drainage activities out into a new organization. Management of the activities involved would require only a relatively small increase in agency staff, while the physical O&M activities would be contracted out. However, this could change once the city begins to provide sewerage services.

Another, more important reason to contemplate setting up a dedicated organization is that especially sewerage requires large infrastructure investment, which funding organizations are unlikely to finance without dependable cost recovery to sustain long-term operation of the system. This necessitates the introduction of a comprehensive wastewater management fee, the structure of which should comprise a uniform base charge and specific charges for the services actually being provided (drainage, sewerage, septic sludge removal, and treatment). To guarantee long-term financial sustainability, the revenue from this fee should be earmarked to sanitation. Making the agency / agencies in charge responsible for balancing the income and expenditure streams would serve financial transparency, and the best way to achieve this would be in a single, operation-oriented organization separate from the regular government administrative structure.

Transparency in financial management is not the only reason to establish a dedicated organization. Administrative mandate and span of control may also contribute to gains in effectiveness and efficiency, as would the combination of tasks the organization would execute. From a substantive perspective, different options for combining the cleaning and servicing tasks center mainly on whether there is advantage in having one organization responsible for all cleaning of sewers, covered drains, and septic tanks, which at some level are similar activities. From an administrative perspective, the most important issue is the organization's level in the hierarchy. There are two options for this in the executive agencies:

- Bidang dinas - the primary subdivision of an agency, with regular administrative responsibility. This option leaves the regulator and operator functions in one hand.
- Unit Pelaksana Teknis Dinas (UPTD) - a functional technical unit under control of a bidang. This separates the operator function (UPTD) from the regulator (bidang) within the agency.

A UPTD has a smaller potential span of administrative control than a bidang, and it may therefore not be possible to put all the drainage and sewerage tasks in one UPTD. This points to an important difference between the two options, namely that the UPTD operates at a lower eselon in the hierarchy, which could become a constraint in external coordination with other departments with sanitation tasks. A more powerful alternative would be the establishment of a:

- Badan Layanan Umum (BLU) - a service organization with the same eselon as a dinas (i.e. higher still than a bidang), the wide span of administrative control that goes with that, its own organizational budget, and the authority to retain its revenues to fund its activities.

However, setting up BLUs is explicitly geared to furthering flexible yet dependable financial management in the public sector. While the BLU may receive supplementary financing in case of shortfalls, the point of its creation does not seem to be to have it fully subsidized. In other words, the BLU option does not appear to be open until the city has instituted a wastewater management fee to fund (most) of the drainage and sewerage cost.

This report therefore argues to start professionalizing drainage and sewerage management with the UPTD as an embryonic form of the BLU. This would involve setting up:

- In Dinas PU - a UPTD for O&M of network infrastructure (repair, renovation, upgrading) and unclogging of covered drains and sewer pipes;
- In DKKK - a UPTD for cleaning of open drains, servicing septic tanks and house connections of the sewer system;
- In KLH - a UPTD for setting discharge norms and supervising compliance for both residential and industrial / commercial wastewater installations.
- In Bappeda - a permanent secretariat for the Tim Sanitasi

As professionalization of urban drainage management and enlargement of the sewerage system increase the amount and complexity of work taken on, it may become necessary to integrate the above UPTDs into one organization. Such an integrated unit must probably be independent from all three “mother” agencies, since each of them only holds part of the distributed responsibility for sanitation. This independent unit may become a BLU once a dependable source of revenue has been established. As this process of integration continues, the need for external coordination will diminish and the Tim Sanitasi may eventually be faded out. At that point, the planning and monitoring and evaluation functions of the Tim’s permanent secretariat in Bappeda may also be transferred to the BLU.

SUMMARY OF RECOMMENDATIONS

Starting points for the development of the Citywide Sanitation Strategy

This report contains a number of recommendations to address various obstacles and shortcomings that need to be addressed before Banda Aceh is able to institute effective sanitation management. Several recommendations relate to improving the process of coordinated decision-making, while others focus on institutions, finance, and regulation.

It is strongly recommended that these recommendations will be thoroughly assessed and considered by Tim Sanitasi as an input for the preparation of the Citywide Sanitation Strategy. It is recommended that Tim Sanitasi and particularly the task force for institutional development (Pokja Kelembagan) will i) determine if they share the analysis and where necessary implement further study and analyses, and ii) discuss specific action which should than be reflected in the CSS and subsequent sanitation action plans.

For ease of reference, the recommendations are summarized below.

Process

- Clarify and agree on the key task of the Tim Sanitasi. The Tim must recognize “communication” as a means to an end (improved sanitation infrastructure) and not lose sight of the need to deal with integrated planning.
- Make the vision for development more concrete than just achieving the millennium development goals and becoming an Islamic tourist destination. Describe the type and service level of “sanitation” in the future and set concrete (“smart”) goals.
- Conduct a full institutional mapping exercise to reveal how the different agencies relate to this task. To reveal how the participating agencies see their respective roles in sanitation, the exercise should be repeated with all Tim members (the mapping exercise reported on here was conducted by only four members of the Tim Pelaksana).
- Review the membership of the Tim Sanitasi with a view to creating more focused coordination; create observer status for organizations with a more distant relationship to sanitation. Ensure active participation by members from the agencies directly involved to avoid a skewed perspective on the Tim’s key task.
- Use goal oriented planning to develop a strategic action plan for sanitation; this will become the basis for the CSS.
- Create peer pressure promoting elements in the Tim Sanitasi by making the CSS the primary formal output and formulating a specific action plan stipulating who will do what and when to complete it. This requires further development of the outputs of the goal-oriented planning workshop that was conducted in October 2008, to separate main goals and subordinate objectives and set related targets in terms of “SMART” indicators.
- Once completed, formalize the CSS in a mayoral decree as instruction for planning income from and expenditures for sanitation in the annual budget preparation process. This will help improve correlation between short term development initiatives (following from the agency Renstras) and the RPJM.
- The Tim Sanitasi and the provincial Tim Koordinasi AMPL should limit themselves to horizontal coordination at their respective levels, with a view to formulating agreed and fact-based CSS (city) and PSDP (province) documents.
- The Bappedas of the city and the province should engage with one another for municipal-provincial coordination based on the CSS and the PSDP.
- Analyze differences between the mandates of the Tim Koordinasi AMPL (province) and Tim Sanitasi (city). If the Tim Koordinasi AMPL is only focused on community-based sanitation, make sure to also establish contact with provincial authorities dealing with urban/institutional sanitation.

- Investigate the objective and purpose of the constituting elements of the PSDP (the Solid waste, water supply, and drainage infrastructure development program and the Health, hygiene and sanitation program that the Tim Koordinasi AMPL must put together).
- Engage with the province to include in its PSDP criteria and conditions for support to local government that Banda Aceh can fulfil, to create a potential for increasing the impact of city expenditures for sanitation infrastructure through coordination with complementary investment by provincial and/or central government.
- Make the Tim Sanitasi strong through combined leadership of DKP (budgetary commitment) and Bappeda (long-term continuity in planning and monitoring and evaluation).

Institutions

- Elevate the public profile of the Tim Sanitasi as the prime platform for public support and accountability. This will expose the personal and institutional commitment of the agency leaders participating in the Tim to public scrutiny, and thus create pressure for their agencies to feed the Tim with accurate and up to date information.
- For guidance to the agencies and adequate processing of this information, establish a permanent secretariat for Tim Sanitasi preferably in Bappeda, reporting to the head of the infrastructure planning sector. At the same time, the head of Bappeda would become secretary to the Tim Pengarah. This permanent secretariat as an integral part of the city's institutional structure should be funded from the city's internal budget (APBD). Technical assistance from a donor or the services from a consultant may be required in order to strengthen the secretariat (capacity development) for the short term.
- Consider the pros and cons of alternative ways to put related tasks together within Dinas PU and/or DKKK. In order to increase transparency the tasks could be assigned as follows:
 - o "building and operation of infrastructure to be assigned to dinas PU and all cleaning activities (sewers, open and covered drains, septic tanks) to be assigned to DKKK", or
 - o "all wastewater related tasks (operation and cleaning of sewers, covered drains, and septic tanks) assigned to dinas PU and all solid waste removal (garbage and sediment from open drains) assigned to DKKK", or
 - o "O&M of closed network infrastructure (repair, renovation, upgrading, and unclogging of sewer pipes and covered drains) assigned to Dinas PU and cleaning of open drains and septic tanks assigned to DKKK".
- Concentrate the sanitation tasks of Dinas PU and DKKK in UPTDs to enable a focus on effectiveness, efficiency, and the development of professionalism.
- Establish a UPTD in KLH for; i) licensing residential, commercial and social discharges of waste- and drainage water, ii) inspection of compliance, and iii) monitoring of the impact of legal and illegal discharges on the living environment and water quality (the latter based on discharge and treatment stipulations in building permits).
- Consider the pros and cons of having a single, dedicated, financially independent organization for drainage and sewerage (including the form it should take, the requirements to establish it, and the time frame within which it can be done). This could lead to the establishment of a wastewater management organization (BLU-DAL, drainase dan air limbah), as a dedicated, self financing organization, the BLU would between others provide greater financial transparency. The establishment of a BLU is subject to the institution of a comprehensive wastewater management fee (without this, a BLU is one bridge too far) and earmarking of the related and possibly additional revenues for sanitation.
- Remedy the possible impression that the importance of environmental management has been diminished by the demotion of Bappedalda to KLH, by publicly emphasizing KLH's role in monitoring compliance with residential wastewater discharge standards. KLH should report violations against location and building permits to Dinas PU for action.
- Obtain support from the local Financial and Asset Management Department (Dinas PKAD) to press for planned maintenance to extend effectiveness and the economic life span of sanitation infrastructure.

Finance

- Increase financial expenditures for sanitation development to improve the city's socio-economic infrastructure. This will also increase the potential for earning revenues from shared taxes on economic activity.
- Determine which cost elements should / could be recovered for sewerage, drainage, septic sludge removal, and treatment. Possible considerations are:
 - o Consider drainage a public good (flood prevention and flood management) and fund it from general revenues. Alternatively, consider levying some charge for drainage as an individual benefit (protection of homes and businesses).
 - o Consider all sewerage and treatment a billable service and charge the customer for all economic cost. Alternatively, consider billing only for direct operating cost, subsidizing depreciation and interest from general revenues.
 - o Consider collection (house connections) and treatment of sewage billable (either direct operating or full economic cost), but fund transportation (piped infrastructure and pumps, etc.) from general revenues.
- Establish a comprehensive wastewater management fee structure with a base fee for management and drainage and a supplementary fee for specific sanitation services provided (sewerage, septic sludge removal, etc.). For sewerage, the specific fee could be based on inhabitant equivalent, but the billing basis for septic sludge removal could be either volume or inhabitant equivalent.
- Earmark revenues from the wastewater management fee for operation, maintenance and development of sanitation facilities.

Regulations

- Amend local regulations to enable licensing, inspection, and enforcement of pollution standards set out in national legislation.
- Amend local regulations for location and building permits to enable prescription of on-site treatment facilities with application of relevant technical standards, and allow monitoring of compliance by KLH.
- Amend local regulations to bring them up to date with the latest legislation on sanitation. Particularly focus on removing obstacles to integrated sanitation management.
- Create a legal basis in local regulations for cost sharing between the public and the private sector.

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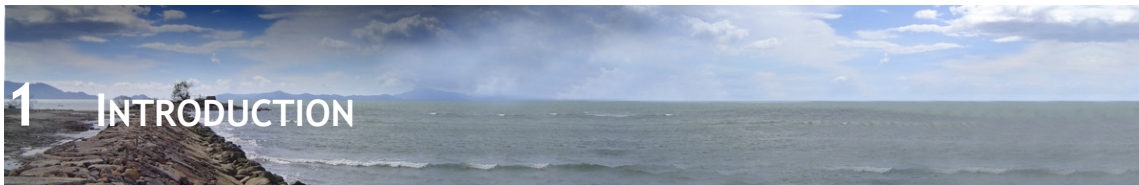
AMPL	Air Minum dan Penyehatan Lingkungan - Water Supply and Environmental Sanitation
APBA	Anggaran Pendapatan dan Belanja Aceh - Aceh Provincial Budget
APBN	Anggaran Pendapatan dan Belanja Nasional - Central Government Budget
Bappeda	Badan Perencanaan Pembangunan Daerah - Local Development Planning Board
Bappedalda	Badan Pengendalian Dampak Lingkungan Daerah - City Pollution Control Board
BLUD	Badan Layanan Umum Daerah - Local General Service Organization
BRR	Rehabilitation and Reconstruction Agency
CSS	Citywide Sanitation Strategy
DAK	Dana Alokasi Khusus - Specific Allocation from Central Government
Dana otsus	Dana Otonomi Khusus - Special Autonomy Fund
DAU	Dana Alokasi Umum - General Allocation from Central Government
DKP (DKKK)	City Sanitation and Parks Agency
DKPRK	Dewan Perwakilan Rakyat Kota - City Council
EIA / EA	Environmental Impact Assessment
GOI	Government of Indonesia
IPLT	Instalasi Pengolahan Lumpur Tinja - Sludge Treatment Plant
ISSDP	Indonesian Sanitation Sector Development Program
JICS	Japan International Cooperation System
LG	Local Government
LH	Lingkungan Hidup - Environment
Musrenbang	Musyawah Rencana Pembangunan - Consultative Development Planning Meeting
NAD	Nanggroe Aceh Darussalam - Aceh Autonomous Province
NGO	Non-Governmental Organisation
O&M	Operation and Maintenance
PAD	Pendapatan Asli Daerah - Local Sovereign Revenue (Own Taxes And Fees)
PDAM	Perusahaan Daerah Air Minum - Local Water Supply Enterprise
PJSDA	Prasarana Jalan dan Sumber Daya Air - City Roads and Water Resources Agency
PKAD	Pengelolaan Keuangan dan Aset Daerah - Financial and Asset Management Agency
Pokja	Kelompok Kerja - Working Group
PPP / P3K	City Fisheries, Animal Husbandry and Agriculture Agency
PU	Pekerjaan Umum - Public Works
Renstra	Rencana Strategis - Strategic Plan
RKPD	Rencana Kerja Perangkat Daerah - Local Government Activity Plan
RPJM	Rencana Pembangunan Jangka Menengah - Medium Term Development Plan
RPP	Rancangan Peraturan Pemerintah - Draft Central Government Regulation
RTRW	Rencana Tata Ruang Wilaya - Spatial Plan
RUU	Rancangan Undang Undang - Draft Law
SANKRI	Sistem Administrasi Negara Republik Indonesia - Indonesian Government System
SDC	Sea Defence Consultants
SKPD	Satuan Kerja Perangkat Daerah - Local Government Organization Unit
STP	Sewage Treatment Plant
TKP	Tata Kota dan Permukiman - City Agency for Spatial Planning Control and Housing
Tupoksi	Tugas Pokok dan Fungsi Utama - Mission and Tasks
UNDP	United Nations Development Program
UPT Badan	Unit Pelaksana Teknis Badan - Technical Operational Unit of Specific Agency
UPTD	Unit Pelaksana Teknis Dinas - Technical Operational Unit of a Department (Dinas)
VNG	Vereniging van Nederlandse Gemeenten - Association of Dutch Municipalities
WASPOLA	Water and Sanitation Policy Formulation and Action Planning Project
WSES	Water Supply and Environmental Sanitation
<i>Exchange rate</i>	<i>US\$ 1.00 = Rp. 12,500</i>

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Context

This report contains the findings of a four-week mission (17 November - 12 December 2008) to identify issues pertaining to sanitation governance in Banda Aceh and to determine possible goals for institutional development for the development of the city's sanitation development strategy. The mission was implemented in the context of the Sea Defence Consultancy (SDC) project, which between others assists the city government of Banda Aceh by the development of an approach to integrated sanitation development planning and the preparation of a Citywide Sanitation Strategy.

In line with the national sanitation policy as currently under preparation by the TTPS (Tim teknis Pembanunaan Sanitasi - Technical team sanitation development) and the specific mission of SDC, SDC addresses "sanitation" from the perspective of flood protection and flood management. It therefore concentrates on three aspects: surface area drainage; efficient and effective removal and treatment of wastewater; and keeping solid waste and sediment from blocking the water system. Banda Aceh and the provincial government use a broader concept of sanitation, which also comprises water supply. This fourth aspect is explicitly not in the ToR of the SDC.

Scope of the report

After a general review of current institutional arrangements (chapter 2), the discussion in this report centers on the following institutional conditions for good sanitation management: the city's effective and efficient coordination between the various agencies involved (chapter 3); financial ability to sustain the necessary infrastructure (chapter 4), and the long-term potential for strengthening organizational and managerial performance (chapter 5).

Coordination - Apart from the building and management of public infrastructure, sanitation management must control the construction and use of private facilities, communicate good "sanitation behaviour" to the general public, and engage the community in developing local solutions. This makes sanitation development a matter not only for the public works agency, but for a number of other agencies with direct or indirect interests in good sanitation, general urban development, social services, etc. However, most executive agencies have only a limited understanding of sanitation and their role in it. Moreover, until now they lack a good framework for coordination and cooperation.

Funding - There is an abundant supply of funds to help the city overcome the devastating effects of the tsunami of 2004. This means that, unlike in many other cities in Indonesia, funding does not have to be a constraint for developing sanitation infrastructure related to flood prevention and flood management. Nevertheless, while drainage is a natural component of developing land for building in flood prone areas, for sewerage it is not enough to argue the benefits to public and environmental health. Because sewerage and treatment is generally considered a billable service, funding organizations will likely require evidence of cost recovery. This not only involves mobilization of local financial resources but also an integrated approach to sanitation management.

Organization and management of sanitation - An important part of good sanitation management is creating transparency in the respective responsibilities, not only between the government and the public, but also who in city government is responsible for what. While all aspects of sanitation management have some "home" in the administrative structure of the city, it is possible - even likely - that the distribution of tasks can be made more effective and efficient. Powerful sanitation management not only depends on (re)distribution of the relevant tasks, but also on where it is placed in the administrative hierarchy.

In line with these considerations, the following chapters describe the constraints and opportunities posed by the organizations involved, the financial-economic setting; and how to make coordination between them more effective; and the distribution of tasks with a view to creating a powerful organization for sanitation management. The report contains a number of recommendations to address various obstacles and shortcomings that need to be addressed before Banda Aceh is able to institute effective sanitation management. Several recommendations relate to improving the process of coordinated decision-making, while others focus on institutions, finance, and regulation.



2.1 SANITATION

As discussed in chapter 1, in line with the national sanitation policy SDC addresses “sanitation” from the perspective of flood protection and flood management. It therefore concentrates on three aspects: surface area drainage; efficient and effective removal and treatment of wastewater; and keeping solid waste and sediment from blocking the water system.

2.1.1 Description of the principal agencies involved in sanitation

Taking into account the overall reorganization of the city’s administrative structure that has taken effect in 2009, the following organizations should be considered the principal ones involved in sanitation.

- **Dinas Kebersihan dan Keindahan Kota (DKKK)** - Cleaning and beautification department, responsible for solid waste removal, street cleaning including sediment removal from gutters and drains, emptying of septic tanks and transportation of sludge to the septic tank sludge treatment installation (IPLT), management of the city dump (where the IPLT is also located), management and upkeep of parks and cemeteries.
- **Dinas Pekerjaan Umum (PU)** - Public works department, responsible for roads; water resources (flood protection, drainage, and flood control); built up infrastructure (management of surface and groundwater, neighbourhood sanitation including improvement of water supply); urban planning and control of land use; and issuance and enforcement of building permits. The Dinas PU comprises the former:
 - *Dinas Prasarana Jalan dan Sumber Daya Air* - Roads and water resources department, responsible for planning and development of physical infrastructure. Formally responsible for removal of sediment from the drains, but this task has in practice been taken over by DKP. This agency has become the core of the dinas PU, established in the Bidang Bina Marga (roads) and the Bidang Sumber Daya Air (water resources).
 - *Dinas Tata Kota dan Permukiman* - Spatial planning and housing department, responsible for urban planning; issuance and enforcement of location and building permits; improvement, supervision, and control of residential environmental sanitation including water supply, wastewater, drainage, flood control, and solid waste. The tasks of this agency have been distributed in dinas PU to Bidang Cypta Karya (housing, sanitation), Bidang Tata Ruang (spatial planning), and Bidang Tata Bangunan (construction permits)
- **Kantor Lingkungan Hidup (KLH)** - Environmental office. Responsible for environmental impact analysis; issuance and enforcement of discharge permits. The Kantor is derived from:
 - *Badan Pengendalian Dampak Lingkungan Daerah (Bappedalda)* - Environmental pollution control board, responsible for environmental impact analysis; issuance and enforcement of discharge permits; and pollution control in collaboration with other agencies.
It is unclear whether the kantor will retain the responsibility for pollution control in collaboration with other agencies. Due to the lower administrative level, it could become more difficult for the office to play a leading role in this than was possible with the former board status.
- **Badan Pemberdayaan Masyarakat (BPM)** - Community empowerment board. Responsible for development of institutions and infrastructure at community level (villages and neighbourhoods); developing community resilience through motivation and participation; and economic empowerment through appropriate technology, poverty alleviation and income generation. The BPM is derived in reduced scope from:
 - *Badan Pemberdayaan Masyarakat dan Kesejahteraan Social (BPMKS)* - Community empowerment and social welfare board. Responsible for village and neighbourhood development; socio-cultural development including inter alia communal work projects (gotong royong) and empowerment of women; micro economic development including

micro credit and support to family business; social welfare including child and family health, poverty alleviation; and rehabilitation of ex prisoners and drug addicts.

- **Dinas Kesehatan (DinKes)** - Health department. Responsible for environmental health and community-level health services, including improvement of cleanliness of public spaces; prevention and elimination of communicable diseases; and family and mother and child health.
- **Badan Perencanaan Pembangunan Daerah (Bappeda)** - Development planning board. Responsible for coordinating the formulation of long and medium term development plans; coordination between the city agencies and municipal enterprises in the annual development planning process; preparation of the draft annual budget in collaboration with the municipal finance unit; monitoring and evaluation of city development plan implementation; organization of public hearings on development planning (musrenbang), facilitation of inter-departmental meetings for coordinating departmental annual work plans (Forum SKPD); etc.
- **Dinas Pengelolaan Keuangan dan Aset Daerah (DPKAD)** - Financial and asset management department. This department combines the former revenue department (Dinas pendapatan daerah) and the finance division of the municipal secretariat (bagian keuangan). As such, it should present great potential for improved financial management and asset management that is if “asset management” also pertains to physical infrastructure. With a view to proper asset management, it may become possible to develop an understanding for the balance between infrastructure and maintenance, which could hopefully plant the seed for planned maintenance in an organization culture that generally treats “maintenance” as “repair what is most urgent to be fixed”. In addition, the new dinas status will provide clout to financial management that the bagian keuangan did not have due to its lower eselon (level in the administrative hierarchy, see Appendix A.)

2.2 FLOOD PROTECTION AND URBAN DRAINAGE

2.2.1 Terminology

Different agencies use different terminology for identifying elements of the river and drainage system. The central government public works department (PU) distinguishes major and minor urban drains, while dinas PJSDA (now dinas PU) in Banda Aceh considers the entire urban drainage system “micro”. Combining these two nomenclatures would result in some confusion, as PU’s “major” drains would be subordinate to dinas PJSDA’s “micro” subsystem. Nevertheless, there are advantages in a further distinction within urban drainage.

Sea Defence Consultants (SDC) uses within the “urban micro system” the terminology primary, secondary, and tertiary.

Table 2-1 Terminology used in designating scale of drainage system

Water body	Terminology			
	PJSDA	PU Guideline	SDC	Description
River	Macro	n.a.	Macro	Receiving natural water body (“ <i>Badan air penerima</i> ”)
Tributary	Sub macro	n.a.	Macro	Receiving natural water body (“ <i>Badan air penerima</i> ”)
Urban drainage system	Micro	Major	Primary	Discharges into <i>Badan Air Penerima</i>
			Secondary	Discharges into primary drain
		Minor	Tertiary	Drains the neighbourhood Discharges into primary or secondary drain

2.2.2 Task distribution between levels of government

The essentially man-made nature of the system and the relatively small drainage units within the urban area make it technically possible to contain responsibilities for urban drainage entirely within the respective administrative boundaries. This is not true for rivers and tributaries, where it is not practicable to ignore natural hydrological boundaries, and where integration of water resources management almost automatically points to the province as the appropriate competent authority. In these circumstances, the distribution of drainage tasks between levels of government is clear: within city limits the provincial government (dinas pengairan) is responsible for rivers and tributaries, and the city (dinas PU) is responsible for the urban drainage system. Across the city boundary to the south, urban drainage is the responsibility of Kabupaten Aceh Besar.

Because (urban) drainage is a constituting element of water resources management, provincial and local government responsibilities cannot exist in isolation. Given that the main objective of urban drainage is to safely and quickly remove excess water in urban areas to ensure both dry feet and good environmental and public health conditions, it must be possible at all times to discharge into the natural river system. Conversely, excess flow in the river system must not lead to flooding in the urban areas (except in specific areas designated for temporary retention). However, the natural river system is unable to handle even five-year flood levels - its limited capacity within the city limits of Banda Aceh regularly leads to flooding both there and upstream in Kabupaten Aceh Besar. It is therefore in the interest of both the city and the neighbouring kabupaten to improve the capacity of the system, but it is the provincial government that has the authority to act on this.

2.2.3 Overall task distribution within city government

Drainage

Management of the urban drainage system comprises control of discharge into the system, technical operation, and cleaning. This involves a number of agencies.

- Control of discharge into the system is divided over two agencies. Kantor Lingkungan Hidup controls environmental pollution through discharge permits for different commercial and social activities, while dinas PU executes spatial plan control over development (through its Bidang Tata Ruang), and issues both location permits to control what activities take place where (and, hence, potentially what type of discharge is accepted where) and building permits to control the presence and quality of septic tanks, etc (through Bidang Tata Bangunan).
- Technical operations (e.g. running the pumping stations, operating the gates, structural repairs, etc.) are the responsibility of the dinas PU (through the Bidang Sumber Daya Air).
- Cleaning has always been a shared responsibility of dinas PJSDA and the DKKK. Until recently, the distribution of tasks was based on the material to be removed (dinas PJSDA for sediment and DKKK for solid waste), but the agencies have decided that the structure of the drain (covered or open) is a better basis for distinction. From 2009 onwards, DKKK will be solely responsible for removal of both sediment and solid waste from open drains, while dinas PU, which has absorbed the former PJSDA, will be responsible for cleaning the covered drains².

This task distribution shows that so far Banda Aceh perceives only commercial wastewater as an environmental issue that requires a specific approach. Residential wastewater is only being addressed (if at all) under the general building permit. A matter of concern is the demotion of Bappedalda to the status of Kantor LH. This may create a public perception that its regulatory function has become less important now that it operates at a lower eselon. Although perhaps incorrect, such perception is not helpful in an “infant” policy domain such as environment.

Sewerage and treatment

Collection and treatment of residential wastewater in Banda Aceh takes place almost entirely on site, i.e. in septic tanks (cincin's) and cess pits. Responsibility for the septic tanks (purchase, installation, maintenance) rests entirely with the owners of the property they serve. The only wastewater service that the city provides is desludging of the septic tanks (cincin's) and transporting the sludge to the IPLT for final treatment and composting. However, the city is not the only one providing this service; there are also private operators providing this service.

² Keeping the rivers clean will still be based on the nature of the material - DKKK will only remove solid waste while dinas PU will collaborate with the provincial dinas Pengairan on dredging.

2.3 INSTITUTIONAL MAPPING

The potential success of coordination among agencies with different interests depends in part on how deep their individual involvement actually is, i.e. beyond their nominal representation in the coordination bodies. Some members of the Tim Sanitasi's working group (Tim Pelaksana) have in December 2008 participated in an institutional mapping exercise to identify what the different agencies actually do.

2.3.1 Aspects of sanitation management

Implementing a sanitation strategy, in an environment where sanitation is poorly understood, will involve more than just the mainly technical organizations that are today involved in drainage and desludging of septic tanks. While Dinas PU and DKKK may have the largest budgets at stake in sanitation management, there will be a lot of work in sensitizing the community, promoting sanitation options, and monitoring and evaluation of strategy implementation, to name but a few. Relevant issues to be dealt with are:

Planning

- o Link with spatial plan (RTRW)

Water

- o Linkage with the adequate provision of clean (drinking) water
- o Linkage of wastewater management to overall water resources management in the province
- o Linkage to drainage and sewerage infrastructure
- o Efficient run off from hard-surface areas

Systems

- o Definition: "sanitation" in SDC comprises wastewater, drainage, and solid waste
- o Fit with income and density
- o Minimum service (performance) standards

Public health

- o Water-borne and water-related diseases
- o Vermin and other disease vectors in solid waste

Environment

- o Pollution of surface and groundwater bodies through untreated discharge

Regulation

- o Compliance with zoning laws (identification of systems that are appropriate to local circumstances)
- o Compliance with building code (technical construction standards)
- o Acceptable behaviour (pollution of the environment, building licences)

Promotion

- o Relationship between hygiene, wastewater, and disease
- o Moral standards for behaviour of residents in relation to the up keep and use of the system

Economic sustainability

- o Recovery of depreciation and interest and cost of O&M
- o Revenue generation

These issues are within the responsibilities of different organizations within local, provincial, and central government. Both the provincial and city governments have recognized this in assigning agency representatives to their respective fora for coordination, the Tim Koordinasi AMPL / NAD, which involves representatives from 12 different provincial organizations, and the Tim Sanitasi / Banda Aceh, where 14 city government agencies are represented. At the national level there is the Sanitation Development Technical Team (TTPS), which brings together representatives of 7 ministries.

2.3.2 Main tasks in developing and managing sanitation

Establishing and managing effective and efficient sanitation infrastructure involves a number of main tasks:

- *Policy and strategy formulation* - determining the purpose of the system and the level of aspiration. This will include not only determining the relative priority of public health, environment, and flood control, etc., but also addresses the main solutions and service levels to be made available depending on income level and density, the overall outline for funding development and operation of the service, etc.
- *Planning* - determining the functional requirements and principles of design and operation of the different system elements. Also includes formulating sub sector plans (municipal drainage plan, municipal wastewater treatment plan, and municipal solid waste plan). The planning function also includes monitoring and evaluation of development and operation and related updating of the plans if required.
- *Inspection* - compilation of a complete asset inventory, inspection of the condition and functional performance level of the different assets.
- *Development* - civil works and procurement of equipment for new or rehabilitation of sanitation infrastructure. This includes physical infrastructure such as pipes and pumps, as well as system infrastructure such as a fleet of vacuum trucks and garbage trucks.
- *Operation and maintenance* - activities to guarantee the functional operation of the system, including repairs and replacement of system elements.
- *Supporting activities* - activities to develop interest in and stimulate demand for sanitation, and to control the quality of service delivery by other providers. Includes promotion, public relations, regulation, licensing, etc.
- *Finance / Budgeting* - financial planning for investment in or rehabilitation of infrastructure, preparation of a sustainable budget for planned operation and maintenance, tariff setting, collection of user charges, financial supervision of program implementation, etc.

Not all organizations need to be involved in these main tasks in all phases of development and operation. Conversely, many tasks see the involvement of more than one organization. The institutional mapping intends to identify:

- potential overlaps where different organizations play the same role with respect to individual tasks.
- gaps where individual organizations could make a contribution to tasks where they are not involved now;
- possibilities for improving coordination between the tasks and between the organizations.

2.3.3 Different roles for different agencies

The involvement of more than one organization in a certain task does not automatically imply an overlap. First, because there may be a clear distribution of responsibilities between several organizations within one task area. Second, because not all organizations may be playing the same role in relation to the system and to one another. In order to show this, the institutional mapping characterizes four different roles:

1. **Leader** - the organization is the principal in charge of planning and implementation of (part of) the task. This can involve setting priorities within the activity for which it is responsible.
2. **Coordinator** - the organization has the power to ensure that the activities of other organizations mutually support the achievement of the common goal. This can involve setting priorities between different activities.
3. **Adviser** - the organization contributes information that helps the responsible organization perform its task. An organization can be an adviser because it is a stakeholder in the outcome (such organizations help define the outcome before other organizations act), or because it is responsible for a domain that may be affected by the way in which the responsible organization works towards the outcome (such organizations may want to control the way in which the responsible organization works). At the least, advisory organizations have a right to be consulted, but in some cases the implementing organizations must have the obligation to consult them.

4. **Supporter** - the organization has no direct responsibilities but can perform activities in its domain that contribute to creating a receptive environment for the desired sanitation outcome. For example, Bappedalda can issue guidelines for certification of septic tanks and Tata Kota can restrict building permits for plans that include certified septic tanks and supervise compliance with the permit conditions during construction (note, however, that the draft law (RUU) and regulation (RPP) on spatial planning presently being developed by central government do not specifically address sanitation).

2.3.4 Observations from institutional mapping

The result of the institutional mapping exercise is presented in Appendix B. The framework for the exercise was a matrix listing the key tasks against the agencies in the Tim Sanitasi and similar agencies at provincial level. It is important to note that the exercise as it was done only involved representatives from BPM(KS) (Community empowerment and social welfare department), Bappedalda -KLH (Environmental pollution control department), dinas PPPK (Fisheries, animal husbandry and agriculture department), and PDAM (municipal water supply company). This means that none of the agencies with primary responsibility for sanitation infrastructure participated. Moreover, with participants only from the Tim Pelaksana, the result reflected probably more their impression than that it was a solid recording of the respective agencies' formal responsibilities. In any event, the participants did not consult official documents (such as the Tupoksi) during the exercise. The institutional mapping exercise gives rise to two key observations:

1. clearly, not all agencies represented in the Tim Sanitasi are perceived to play an active role in sanitation;
2. the Tim members who participated in the institutional mapping seemed to perceive an unrealistically great influence for the environmental and health agencies in determining the objectives and performance criteria of the sanitation system.

These observations point to a need for Tim Sanitasi to reflect on its key task area: does it mainly exist to improve public health through promotion and community outreach, or is the actual priority to keep the city from flooding by evaluating alternatives for quick and safe disposal of excess and waste water. The Mayoral Decree by which the Tim was created expressed the "need for a broad and on-going effort to inform the community" as its motivation, but stipulated "contribute to improving water supply and sanitation infrastructure" as the key task for the Tim. The added value of the Tim Pelaksana lies in marrying these two perspectives, but it seems that some of the members believe their main job is to coordinate the non-technical activities. The large number of agencies without a direct stake in sanitation that are member of the Tim Sanitasi may exacerbate this belief.

The institutional mapping exercise shows some inconsistencies in the perceptions of the participants that should be discussed with Tim Sanitasi. The following list is but a first indication; further discussion in Tim Sanitasi would doubtless result in more or different questions being raised.

- For drainage and sewerage infrastructure the participants clearly saw a leading role for Dinas PJSDA in almost all phases of the development and operation process. However, they perceived the leading responsibility for treatment to be with DKKK. This may be due to the fact that the only treatment available in Banda Aceh at the moment involves emptying septic tanks and taking the sludge to a septic sludge processing installation (IPLT) at the city dump. This is now indeed the responsibility of DKKK, but it remains to be seen whether this organization should also be in charge of dedicated sewerage and off-site treatment should Banda Aceh ever build a piped sewer network.
- The participants presumed that the Dinas Kesehatan (city health department) has the lead in determining policy and strategy for drainage and sewerage, and thus in determining system objectives. As indicated above this may be due to their limited understanding of the infrastructure involved and its operation and maintenance, but it appears unlikely that the lead would not be with the dinas PJSDA (now PU) as it is with most other phases in the process. The role for the city health department would more appropriately be that of Adviser (albeit with the right to expect to be consulted on the public health aspects).
- Bappededa is presumed to have a leading role in budgeting for investment planning and O&M for sanitation infrastructure. However, here again one would expect the lead to lie with Dinas PJSDA (see above). The true role of Bappededa is coordination.

- The participants have identified almost no role for the organizations of higher level government, such as the provincial Dinas pengairan (water resources department) or the central Department Pekerjaan Umum (public works department). This is remarkable, for most infrastructure investment in Banda Aceh has come about through higher level intervention. The city's best hope for gaining access to additional funds for sanitation development lies in networking with the provincial government, either for additional provincial financial support or for support in submitting project proposals to the central government.
- Regarding treatment, the participants ascribed a leading role for Bappedalda in policy and strategy, functional requirements for sewage treatment plants, performance evaluation in asset management and controlling environmental pollution. In fact, Bappedalda's main role lies in controlling environmental pollution. For the other activities it is at best adviser.
- For solid waste, the participants expect Bappededa to have the lead in asset inspection and Bappedalda in asset performance evaluation. The assets involved here are temporary and final dump sites, garbage trucks, and the IPLT. All of these belong to the DKKK and it is therefore likely that this organization should have the lead in its own asset management activities.



3.1 COORDINATION AT CITY LEVEL

Mayoral Decree 3004/2008 established³ a Tim Sanitasi Banda Aceh (Sanitation Team) comprising a Tim Pengarah (Steering Committee) and a Tim Pelaksana (Working Group). The basic motivation for creating the Tim Sanitasi was to support the vision of Banda Aceh as premier Indonesian Islamic tourist destination and to achieve the millennium development goals for water supply and sanitation, with the understanding that such a team can contribute to improving water supply and sanitation infrastructure through a broad and on-going effort to inform the community that good sanitation is in their interest and needs their active involvement. Under coordination and direction of the steering committee, the Tim Pelaksana's main tasks are inter alia to:

- formulate a sanitation strategy and programs to implement it in line with the city's vision and mission for development;
- organize meetings with city organizations involved in sanitation;
- coordinate with the provincial coordination team for water supply and environmental sanitation, referred to in the decree as the Pokja AMPL.

For the role of Tim Sanitasi in developing a city sanitation strategy, it is important to note that the support from the Sea Defence Consultants only involves the liquid and solid waste components of sanitation⁴. This deviates from the definition of sanitation generally accepted in Banda Aceh, which also includes water supply, and which is also reflected in the city's vision and mission. For this reason, the PDAM (water supply department) is included in the Tim Sanitasi. Because they interpret their assignment based on the decree, it is confusing to the members of the Tim Sanitasi that the support from SDC does not include water supply.

Operationally, there may also be a complication in the fact that the Pokja AMPL referred to in the Mayoral Decree is not known under that name at province level, where a Gubernurial Decree instead speaks of a Tim Koordinasi AMPL (see section 3.2 for further details). In other words, it may not be entirely clear whom the Tim Sanitasi should address in its efforts to coordinate with the provincial government. In any event, vertical coordination between the two levels of government is not easy to accomplish without a clear structure. Ad hoc meetings with full participation of the two Tims are unlikely to produce the desired result. A separate committee of representatives from the two Tims, meeting with some regularity based on a structured agenda, could constitute such a structure, but the decrees do not provide for this.

Coordination with higher levels of government does not appear to be obvious to the Tim Sanitasi. In any event, the members of the Tim's Working Group (Tim Pelaksana) who participated⁵ in the organizational mapping (see section 2.3) did not identify a role for any higher-level institution. Hence, it is probably best that the Tim Sanitasi concentrates on its main task, i.e. bringing together the city's own organizations involved in sanitation, and leave coordination with the province to Bappeda. As the city's statutory development planning coordinator, Bappeda has a clear counterpart in the provincial Bappeda and a "natural" coordination framework in mid-term development planning and the annual budget preparation process.

The decree stipulates that any expenses following from the activities of the team will be funded through national (APBN), provincial (APBA), and municipal (APBK) budget allocations. Presumably, this also includes implementation of the activities to be formulated by the Tim Sanitasi. Because the city does not have direct authority to decide on allocations in the national and provincial budgets, this immediately points to a need to coordinate with the higher levels of government for

³ See Appendix C for an unofficial translation of the decree

⁴ This is because the city sanitation strategy is a concept developed in the Indonesian Sanitation Sector Development Program (ISSDP), which was established to work out the waste components of the policies proposed by the WASPOLA project, while WASPOLA itself continues to address water supply.

⁵ BPM(KS), Bappedalda, PPPK, and PDAM

activities that the city cannot afford to implement. Moreover, it confirms that the mid-term planning and annual budget preparation processes constitute a good framework for this. For both national and provincial financial support this will involve appealing to the governor to either make provincial funds available or to submit relevant proposals to the center on the city's behalf. Figure 3.1 below shows the relevant synergy between levels of government in planning and budgeting.

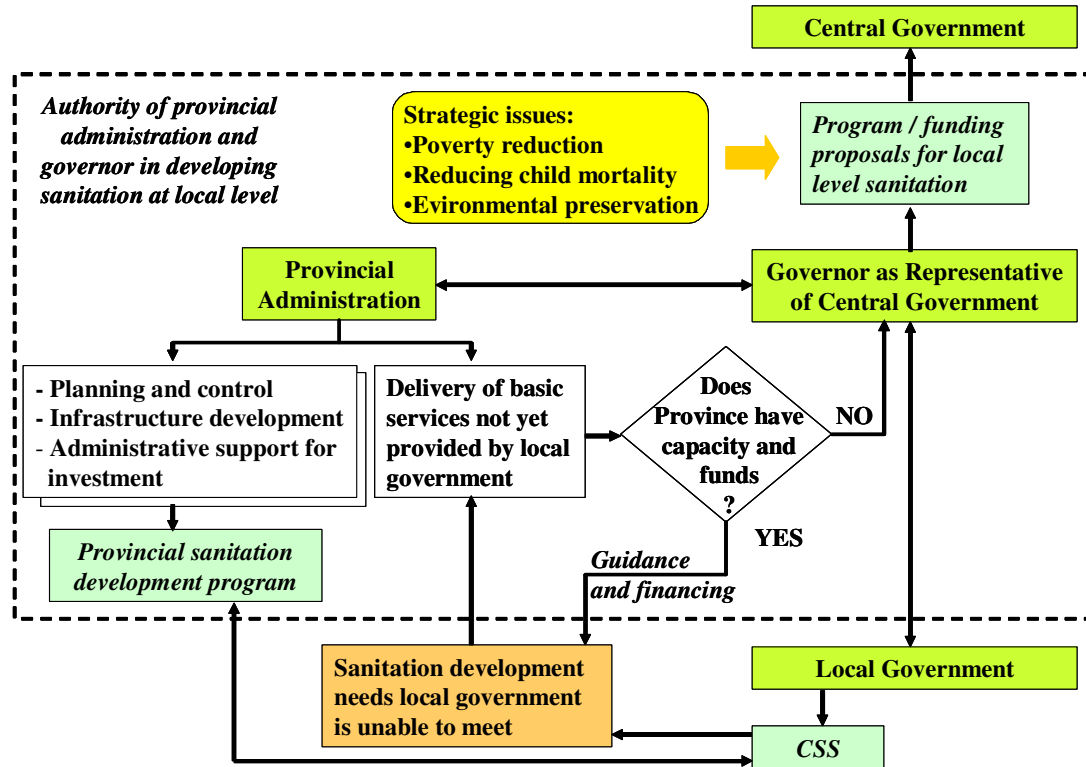


Figure 3-1 Synergy between levels of government in urban sanitation development

3.2 COORDINATION AT PROVINCIAL LEVEL

As mentioned above, there also is a committee charged with coordinating sanitation activities at the provincial level, i.e. the Tim Koordinasi AMPL. It is important to note that the motivation for creating this team differs somewhat from that of the city's Tim Sanitasi, as does the focus of its task description.

Because it is a committee with relevance to the entire Aceh province, Gubernatorial Decree 690/66/2008⁶ does not link establishment of the Tim Koordinasi AMPL to developing Banda Aceh into Indonesia's premier Islamic tourist destination. Considering instead only that the millennium development goals deserve high commitment to and a sense of responsibility for executing the water supply and environmental sanitation program, the decree expresses the need for direction and coordination of the roles of the various sectors involved.

A further distinction that is important to note is that the gubernatorial decree explicitly establishes the coordination team to support execution of the national community-based water supply and environmental sanitation program. The reference to this program probably pertains to the policy for community-based water supply and environmental sanitation (WSES) adopted by the GOI in June 2003 on recommendation of the WASPOLA project. If the provincial institutions involved understand the actual scope of this policy and act accordingly, this may limit the relevance of the

⁶ See Appendix C for an unofficial translation of the decree

Tim Koordinasi AMPL for development of Banda Aceh's city sanitation strategy, because the latter involves more than just community-based activities.

Unlike the Tim Sanitasi Banda Aceh, which is mainly focused on formulating and implementing work plans (Note: the fact they must also formulate a city sanitation strategy appears to be of a different order in this context), the provincial Tim Koordinasi AMPL must focus on policy formulation and a number of programs to implement them. Of particular importance in this regard is that the decree tasks the Tim Koordinasi AMPL inter alia with the formulation of a Solid waste, water supply, and drainage infrastructure development program and a health, hygiene, and sanitation program. If the Tim Koordinasi AMPL should take a wider view of its scope than strictly mentioned in the decree (i.e. including institutionally-based sanitation as well as community-based water supply and environmental sanitation), the combination of these programs could represent just the Provincial Sanitation Development Program mentioned in Figure 3.1 above. A Provincial Sanitation Development Program is an important condition for structuring support for local government sanitation efforts, such as could be proposed in Banda Aceh's city sanitation strategy. Such a program would:

- Identify conditions and criteria for supporting local government proposals. This could involve:
 - supporting city proposals for central government project funding (APBN);
 - extra provincial financial support (APBA) to the city budget APBK, explicitly linked to sanitation development.
- Identify ways and means to be employed for financial assistance to local government. This could involve:
 - adjustment of criteria for distribution of the new “dana otsus” (which is intended for inter alia development and maintenance of infrastructure, community empowerment, and health);
 - adjustment of criteria for distribution of the “additional revenue sharing oil and gas” (which provides greater discretionary spending power for local government).

The Gubernatorial Decree stipulates that any expenses following from the activities of the team will be funded only through the provincial budget (APBA, which includes the dana otsus and additional revenue sharing oil and gas mentioned above). It thus provides more focus on the financial responsibility than the Mayoral Decree on the Tim Sanitasi Banda Aceh, which does not only refer to the municipal budget (APBK), but also to funding from national (APBN) and provincial (APBA) budget allocations. The narrower financial focus appears to support the above recommendation that any Provincial Sanitation Development Program should identify the possibilities for either additional provincial financial support or assistance in obtaining central government funding, and should refer to criteria for distribution of the new dana otsus and additional revenue sharing oil and gas.

3.3 COMPOSITION OF THE “TIM SANITASI BANDA ACEH”

Because the particular focus of the city's Tim Sanitasi is on implementation and motivation, the Municipal Secretary has given high priority to participation by the implementing agencies. Membership criteria for the working group (Tim Pelaksana) are demonstrated commitment to the subject and a good relationship with the head of the department, board, or office that the member represents. In the spirit of “*organizing what works*”, the DKKK chairs the Tim Sanitasi, while BPM(KS) is vice chair and the secretary is from Bappedalda. The Municipal Secretary himself chairs the steering group (Tim Pengarah), in which all the other member organizations of the Tim Pelaksana are regular members (there is no vice chair or secretariat).

The setup described here clearly demonstrates a high level of commitment by the Municipal Secretary. As long as the secretary is not disappointed in his belief to have selected the right persons for the job, this works well for integrated decision making in planning and implementation. However, day-to-day work in coordination is being done at the Tim Pelaksana level. Experience in other cities has shown that it is risky to ignore the customary hierarchical relationships in coordination. Of course, in Banda Aceh, a strong unifying lead stems from the fact that head of the Subdinass for programming at DKKK chairs the Tim Pelaksana. With his personal commitment, the SDC has been able to prepare good drainage projects for short-term implementation. However, senior officers frequently rotate to other agencies. Therefore, from an institutional perspective

one has to recognize that, although DKKK has responsibility for both solid waste and cleaning the drainage system, it does not have a strong link with wider development issues beyond solid waste.

Another matter of concern is that the institutional mapping has shown that there are a number of city organizations represented in the team that seem to have no clear role to play. This could become a serious distraction. After all, for effective horizontal coordination between the city's own agencies it is imperative that the organizations involved feel a sense of commitment to and responsibility for sanitation. The fact that only a few agencies presently attend the meetings of the city's Tim Pelaksana indicates that a number of agencies do not share this characteristic. This pertains in particular to the dinas pariwisata, dinas P3K, dinas P&P, and dinas SyarIKS. The reorganization of the city's administrative departments, which involves a reshuffling of tasks between the different organizations, makes it necessary to update the membership of the Tim Sanitasi. This presents a good opportunity to critically review the real need of the various organizations to participate in the Tim.

3.4 SUSTAINABILITY OF “TIM SANITASI BANDA ACEH”

Basically, then, there are two challenges: i) to sustain the role of the Tim Sanitasi and ii) to establish strong monitoring and evaluation based on integrated planning and decision making.

ISSDP has found that it is necessary to address these challenges at the same time. The way forward is developing Tim Sanitasi into a platform of public support and accountability, and ensuring that its secretariat carry out monitoring and evaluation as a logical extension of planning coordination to create proactive feed forward. To this end, the secretariat must become a permanent body, which should be established in one of the structural organizations participating in Tim Sanitasi as that institution's contribution to integrated sanitation development and management.

Regarding development of a public support and accountability platform, the Tim approach (at least a Tim constituted in line with the SANKRI⁷) suffers chiefly from a lack of community involvement and inability to extend coordination to the implementation phase. ISSDP has identified four models for developing support and accountability platforms, each with different characteristics, see Table 3.1 on the next page. The models have been described in accordance with the nomenclature of SANKRI.

One of the main weaknesses of a Tim is that it is usually funded on an annual basis only and generally tied to a specific project. However, this weakness has been addressed in Banda Aceh through a memorandum of understanding between the city, GTZ, and SDC to continue the Tim Sanitasi at least through 2012. So funding is not a problem for the medium term. Still, what the Tim Sanitasi does lack is a clear public profile, which would help create a degree of public accountability and thus hopefully more commitment of the individual members to ensure that the institutions they represent will actually implement the decisions reached in the Tim. To make accountability possible, the Tim should publicly report on the findings of monitoring and evaluation. To further improve public support, the city should consider including non-government members in the Tim Sanitasi, selected on the basis of relevant substantive qualifications.

Good preparation for the platform's activities under the bright light of public scrutiny demands a strong permanent secretariat with access to all information relevant to planning, monitoring, and evaluation. The obvious candidate for this function should be Bappeda, which has all the necessary authority to act as “spider in the web”. However, in the Tim Sanitasi there is no secretariat at the Steering Committee (Tim Pengarah) level and at the Tim Pelaksana level the secretariat function is diffuse: the representative from Bappedalda - KLH is Tim secretary while a dedicated body of staff has been established in DKKK. Since Bappedalda has no general policy coordination function, Bappeda should take over the secretarial function, and establish its own permanent body of staff⁸. This would also serve to emphasize that the key task of the Tim Pelaksana is at least as much one of planning infrastructure development and operation as it is one of communication. Conducting a broad and on-going effort to inform the community (the basic motivation for setting up the Tim Sanitasi expressed in the Mayoral Decree) is not sufficient to contribute to improving water supply

⁷ Sistem Administrasi Negara Kesatuan Republik Indonesia, pub.: Lembaga Administrasi Negara

⁸ If the body of staff established in DKKK is retained to support the Director, Subdinas Planning, in his responsibilities as chairman of the Tim Pelaksana, it will be necessary to delineate the respective responsibilities of this unit and the proposed secretariat in Bappeda.

and sanitation infrastructure (the Tim's key task, according to the decree). The Tim Sanitasi must focus on the fact that environmental and public health are inseparably linked to the development of an effective and efficient sewerage and drainage system to quickly convey wastewater, together with (excess) surface water, out of residential areas to places where it can do no harm.

Table 3-1 Models for support and accountability platforms

Type	Definition	Main task	Membership	Funding
<i>Dewan</i> (Council)	Official body to determine policy and strategy in a certain domain, including phasing and prioritization of implementation, together with related monitoring and evaluation and awareness raising	<ul style="list-style-type: none"> • Coordinate • Advise • Formulate • Determine • Monitoring & evaluation • Socialization & • Advocacy 	Relatively high profile; permanent membership (<i>qualitate qua</i> or appointed); may include non-government members	Direct specific allocation in local budget or part of Bappeda budget
<i>Forum</i> (Forum)	Body for exchange of thoughts and aspirations of various stakeholders to support policy development in a certain domain, or for formulation of a joint decree	<ul style="list-style-type: none"> • Coordinate • Advise • Formulate • Determine • Socialization & • Advocacy 	Vague profile; ad-hoc membership; may include non-government members	Direct specific allocation in local budget, or supported through budget of Bappeda
<i>Komite</i> (Committee)	Group of officers to advise and give inputs for policy development in a certain domain and allocate tasks to individual participating organization units	<ul style="list-style-type: none"> • Coordinate • Advise • Formulate • Determine • Monitoring & • Evaluation 	Permanent membership, limited to civil servants	Supported through budget of relevant institution(s)
<i>Tim</i> (Team)	Group of officers to streamline policy formulation and improve coordination	<ul style="list-style-type: none"> • Advise • Coordinate 	Ad-hoc membership, limited to civil servants (usually lower-level officers)	Supported through budget of relevant institution(s)

Elevation of the secretariat function from a personal appointment to a permanent work unit, and shifting the responsibility from Bappedalda-KLH to Bappeda, will put Tim Sanitasi in a better position to ensure that information developed through monitoring and evaluation of development implementation activities will be taken into full and proper consideration, and is not brushed aside by heads of the line departments. Especially the Tim Pelaksana, which must do the groundwork for decisions to be taken by the Tim Pengarah, could benefit from additional momentum provided by the combination of an effective substantive lead from DKKK (backed by a significant operational budget) and a strong permanent secretariat in Bappeda. There are three alternatives to put this into effect in Bappeda:

1. Establish a small extra structural work unit reporting to the head of Bappeda's infrastructure planning sector (Bidang Perencanaan Sarana dan Prasarana);
2. Establish a UPT Badan (a structural work unit with more permanent status)
3. Contract out the daily operations of the secretariat to a local consultant.

The first two alternatives only apply if Bappeda has sufficient human resources capacity to take on the job. If this is not the case, Bappeda should elect the third alternative, at least for the short or medium term. The decision between the first and second alternative depends in part on the estimated workload involved, but even more important is how other Tim participants would perceive the implicit message in the appointment - because the head of infrastructure planning is an eselon IIIb official, while the head of a UPT Badan only holds an eselon IVa position,

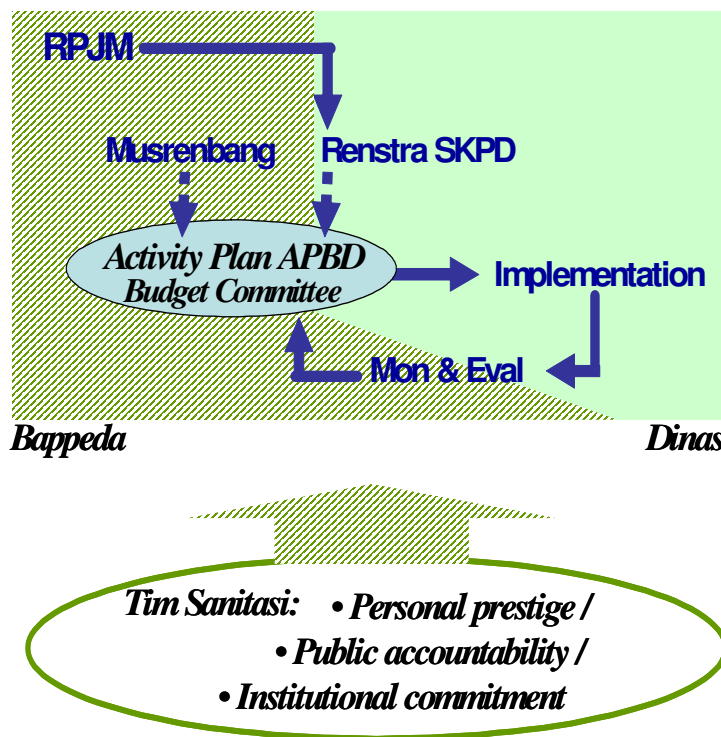
appointment of one or the other will be seen as reflecting Bappeda’s commitment to coordination. (See Appendix A for the various eselon in the administrative structure of Banda Aceh.)

The issue of perception is even more important in the case of outsourcing the secretariat function to a local consultant, which could reflect a lack of personal commitment in Bappeda. This is exacerbated by the fact that, unless outsourcing would involve a long-term contract, it would continually be hostage to budget prioritization. To offset these potential negatives, the head of Bappeda’s infrastructure planning sector (Bidang Perencanaan Sarana dan Prasarana) should take up the formal secretariat position in Tim Pelaksana, while leaving the daily work to the outside consultant. A further expression of commitment (in all three alternatives) would be the Head of Bappeda becoming secretary to the Tim Pengarah.

For the short term, it is likely that even Bappeda lacks the necessary capacity to set up a permanent secretariat for the Tim Sanitasi. A good approach would therefore be to use the options mentioned above to begin a phased development process in which Bappeda would initially perform the secretariat function with the help of a consultant. One of the consultant’s explicit tasks would be to gradually build capacity among Bappeda’s own staff in order that they may take its place at the end of the contract. This route would also postpone the need to decide between options 1 and 2 as the desired end situation. Ultimately, this should lead to a better informed decision between the two alternatives as Bappeda would gain progressive understanding of the relevant pros and cons. In this connection the need for continued capacity building, engineering, and implementation supervision support through the following activities emerges⁹:

- Strengthening the capacity of the municipal government in planning, design, and implementation of public and community-based drainage, wastewater and solid waste management facilities;
- Consolidation of integrated city-wide sanitation planning, monitoring, and evaluation;
- Documentation and dissemination of lessons learned and best practices at regional and national level;
- Improving sanitation service levels in specific pilot areas.

Figure 3-2 Empowerment of Bappeda



Bappeda’s taking on the secretariat of the Tim Sanitasi would not only be beneficial for the team but also to Bappeda itself. Throughout Indonesia, Bappeda is formally responsible for coordinating development planning and budgeting, but in many cases this is more a logistical service during the budget preparation process (organizing Musrenbang, facilitating Forum SKPD, etc.), than that Bappeda puts its own stamp on the direction of development and the selection of alternatives on the basis of effectiveness and efficiency. One of the main reasons for this is poor monitoring and evaluation at the city plan level, which instead is segmented and remains largely confined to the operational level in the dinas. As shown if Figure 3.2, its

⁹ The municipal government of Banda Aceh is currently discussing the need and scope for continued technical assistance and will request the Central Government to assist them by obtaining continued support for the period up to December 2012.

association with the Tim Sanitasi would make it possible for Bappeda to take charge of monitoring and evaluation.

Occupying the permanent secretariat, it would be responsible for ensuring that the personal and institutional commitment of the city's main government leaders in the Tim stands up to public accountability. Their public exposure should push Tim Sanitasi members to demand better information on actual progress. Bappeda could use this pressure to create and meet outside demand for monitoring and evaluation reports on the outcomes of development interventions by the individual dinases, which would be a dramatic shift from the input-oriented monitoring and evaluation that is taking place today. In other words, its role in Tim Sanitasi would empower Bappeda in one of its most important existing functions.

3.5 INSTRUMENTS FOR “TIM SANITASI BANDA ACEH” TO EFFECT COORDINATION

The first order of business for the Tim Sanitasi, with the help of Bappeda as its secretariat, would be to formulate (and in future years update) the CSS and its supporting White books, and recommend it for endorsement by Mayoral Decree. Bappeda would then ensure application of the CSS as a guideline for planning in the annual budget preparation process, and the platform would publicly proclaim monitoring and evaluation as one of its primary areas of attention following the endorsement of the CSS. Thus working in tandem, Bappeda and the platform would collaborate in improving both the deliberations in the platform and the implementation of its decisions.

While the CSS would become a mostly externally oriented instrument to coordinate sanitation planning, development, and management, the Tim Sanitasi also needs to develop an internal framework for cooperation to bring this about. A good candidate for this would be a strategic action plan. The Tim has already begun a process of planning for improved performance. During a workshop in October 2008 it has used principles of goal-oriented planning to begin setting out the marching route towards better sanitation. Three working groups were established during the workshop:

- Working Group I on regulation and control;
- Working Group II on sanitation infrastructure development;
- Working Group III on awareness raising and behavioural change.

Starting from the overall goal of developing Banda Aceh into Indonesia's premier Islamic tourist destination, each working group identified: results to be produced; indicators by which progress could be measured; and which organization(s) should be responsible for achieving relevant targets. This represents a good start, but for this to become an effective action plan it should be further strengthened by more detail, most importantly on who (not just which organization) would be responsible for doing what and when. The result of this exercise should be a phased action plan for Tim Sanitasi, stating the main goals and subordinate objectives, and related targets framed in terms of indicators that are SMART (Specific, Measurable, Attributable, Relevant, and Time-bound). A brief review of and general comments on the results of above mentioned October 2008 workshop are presented in Appendix D.



4.1 GENERAL FISCAL DEVELOPMENT OF ACEH (NAD) PROVINCE

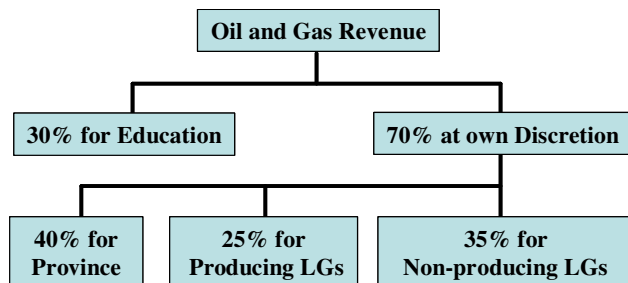
The World Bank-funded “Aceh Public Expenditure Analysis, Spending For Reconstruction And Poverty Reduction” of 2006 reports that in terms of regional budget (APBA), Aceh is among the richest provinces in Indonesia, and even more so in per capita terms. With only 4.1 million people, Aceh received Rp. 8.4 trillion in revenues in 2004. In contrast, East Java, with more than 37 million people, received Rp. 18 trillion. Moreover, increased transfers from the central government and higher revenues from oil and gas¹⁰ increased total regional revenues by more than five times from 1999 to 2006.

As in other parts in Indonesia, the Acehnese local governments’ revenue increased significantly after the 1999 decentralization legislation. In 2001 Aceh received additional increases to regional revenue when it was granted Special Autonomy status - Law 18/2001 established a special autonomy fund (dana otsus) that provides additional revenue sharing from oil and gas (55% and 40%, respectively) to Aceh on top of nationwide sharing (15% and 30%, respectively). The new Aceh Government Law 11/2006, which replaced Law 18/2001, continues this arrangement, and also provides an additional allocation equalling 2% of the General Allocation (DAU) of Fiscal Balancing Funds distributed by the center to local governments throughout the country. The extra DAU allocation will remain in effect for 20 years (at 2% of DAU from 2008 until 2023 and subsequently at 1% until 2028). According to the new law, the definition of the dana otsus now comprises only the 2% additional DAU allocation. The revenue sources that made up the dana otsus as per Law 18/2001 are now just called “additional revenue-sharing oil and gas”.

Although the income from natural resources is likely to fall due to the decline in oil and gas production, the new dana otsus will somewhat compensate for this. Together, the DAU and revenue-sharing are Aceh’s most important sources of revenue, on average accounting for 44% and 41% of the total revenue, respectively, since 2001. Management of the new dana otsus is the responsibility of the provincial government. The dana otsus is intended for the development and maintenance of infrastructure; empowerment of the people; poverty alleviation; and financing the education, health, and social sectors.

“Additional revenue sharing oil and gas” provides wider allocation and spending flexibility to local governments (LGs), although 30% must be spent on education. The remaining 70% goes to development programs at the provincial and local levels: 40% for the province, 25% for oil producing LGs, and 35% for non-oil-producing LGs. Half of the transfer to non-producing LGs is distributed equally, while the rest is allocated based on a formula.

Figure 4-1 Additional revenue sharing oil and gas



The Aceh regional government has generated a substantial surplus since fiscal decentralization. In 2005 the provincial government surplus reached more than Rp. 1.5 trillion. Local governments also generated substantial surpluses until 2005, when they experienced a small deficit of approximately Rp. 0.3 trillion. Local governments used their budgets for post-

tsunami reconstruction, especially to finance the reconstruction of government buildings and infrastructure. By the end of 2005, provincial and local governments in Aceh had accumulated

¹⁰ After the implementation of special autonomy, the volume of natural resources revenue-sharing in Aceh increased from Rp. 26 billion in 1999 to Rp. 3.4 trillion in 2002, and more than Rp. 4 trillion in 2004, thus increasing overall by more than 100 times.

significant reserves of Rp. 2.7 trillion. A major reason for budget surpluses is delayed transfer of the oil and gas revenue-sharing funds by central government. These delays slow project implementation and disbursement. The amounts not disbursed appear as surplus in the provincial budget and are carried forward to the next fiscal year.

The general Law 33/2004 on decentralization has given local governments the opportunity to expand their sovereign revenue base (PAD) through local taxes, local levies, revenues from local state-owned enterprises, and other eligible local revenues. In Aceh, Law 18/2001 adds another component, zakat or alms, as one of the revenue sources. Local government PAD increased after decentralization, but declined in 2004 and 2005 as the result of conflict and the tsunami. Before decentralization, local taxes contributed more than 70 percent of total local government PAD. The role of local taxes decreased after decentralization as “other eligible PAD” gained importance. The small contribution of local taxes to PAD is potentially due to the low tariff rate¹¹. Another reason may be that Law 33/2004 designates PAD as a component of local government fiscal capacity, and since the allocation of the DAU depends on the gap between fiscal capacity and fiscal need as defined in this law, there is little incentive for local governments to mobilize additional PAD resources.

The Aceh Public Expenditure Analysis identifies two key issues concerning budget preparation and implementation for infrastructure spending:

1. lack of correlation between short-term and long-term development plans, regional development programs, and strategic plans;
2. lack of local needs-based prioritization of infrastructure spending.

The majority of spending is split between public works and transportation. The report recommends inter alia the preparation of a long-term plan for infrastructure development in the province reflecting greater coordination between provincial and local governments. With regard to financial management, the report emphasized the need to establish an optimal balance between routine and development expenses to guarantee maintenance of existing infrastructure assets and those under construction. Maintenance is of utmost priority to ensure sustainability and to avoid decay of existing and newly developed infrastructure.

The report points out, that capacities of local governments to efficiently manage public funds remain insufficient in the face of their larger income and increased authority to manage it. This judgment is based on the results of a Public Financial Management Survey presented in the report, which assessed local governments’ financial management capacity, regulatory framework, and accountability. The survey found:

- the weakest link in the planning and budgeting process is the connection between the budget and the medium term plan;
- a weak consistency among participatory bottom-up planning, local government planning, and the budget, indicating ad hoc use of funds rather than a coherent strategy;
- a weak capacity for accounting and reporting and for cash management.
- a perception among community leaders that line agencies develop their project plans before the public hearing in which agencies and community representatives meet to agree on the activity plan to be submitted to the budget committee, thus in effect making the process of eliciting inputs from the public a formality.

4.2 THE PLANNING AND BUDGETING PROCESS

The basis for the development planning and budgeting process is Law 25/2004, which explicitly aims to strengthen the relationship between the Medium Term Development Plan (RPJM), projects identified by the executive agencies, and proposals from the community. The Aceh Public Expenditure Analysis identifies the poor functioning of this interaction as one of the basic flaws inhibiting public financial management.

¹¹ This may in turn reflect that, although Aceh ranks as the fifth richest province, it also has the fourth highest poverty headcount rate in Indonesia.

In essence, the RPJM is a political document in that it represents the mayor's ambitions for development during his term. Each year, based on the RPJM, Bappeda formulates a first draft RKP (annual work plan) and sends it to the department heads. The executive agencies work out the RKP in their domain based on their own strategic plans (Renstra SKPD), which have also been agreed with the mayor (with reference to the RPJM). In the process, they participate in the Forum RKP, a public meeting at city level with the other executive agencies and representatives from the community, which is facilitated by Bappeda. The Forum RKP ultimately produces an amended draft RKP for agreement in the Musrenbang, a more formal public consultation meeting which is also organized by Bappeda. The Musrenbang formally decides on the final draft RKP, which is then submitted to the city's budget committee. The budget committee, which is chaired by the Municipal Secretary, checks that the proposal is within the budget ceiling and reflects the funding priorities set by the mayor, and then draws up the formal budget proposal. The mayor presents this proposal to the local assembly (DPRK) for approval.

One of the purposes of the Forum SKPD is to identify funding sources for the different proposals in the draft RKP. This may involve requests for specific provincial or central government assistance in major development, but it could also involve funding from the Dana Otsus as well as from the "additional revenue-sharing oil and gas".

The Forum SKPD is preceded by two Musrenbang meetings at lower levels, first at desa (village or

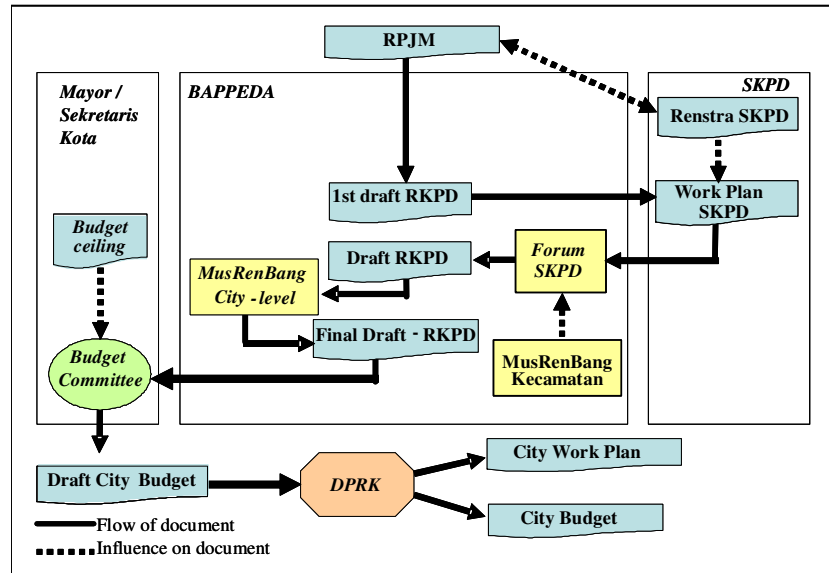


Figure 4-2 Responsibilities in the planning and budgeting process

neighbourhood) level, where each desa may suggest three priority projects, and then at kecamatan (sub-district) level. The kecamatan makes sure that desa proposals do not interfere with one another¹² and also adds its own proposals. The result goes to the Forum SKPD where department heads and community leaders discuss all the proposals in different working groups. This procedure intends to ensure that city development plans reflect community needs, but this is not always easy to bring about. First, because the desa proposals are really very small-scale. This makes them a bit remote from the main trend of development that is outlined in the RPJM and Renstras. Second, because when desas do come up with more substantial proposals, these are not very detailed and are considered by the executive agencies to be more like shopping lists than actual development needs. For now, probably the most important finding from the CSS perspective is that the Forum SKPD presents the opportunity to access the special autonomy funds for new sanitation development projects.

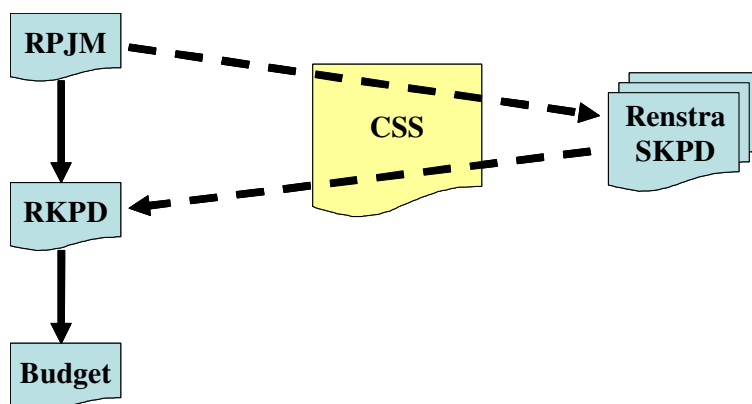
One aspect of concern is that the process is so detailed that it draws all attention to development planning and budget preparation. It focuses so much on giving all parties a piece of the pie that there is little attention to what was achieved with the previous budget, let alone to whether this contributed to the overall development goals sketched in the RPJM. This may be due to a tendency at lower levels to see the RPJM as predominantly the Mayor's document (i.e. not immediately relevant for formulating their own proposals). However, it is also true that monitoring and evaluation is poorly developed in local government, despite the fact that both Law 33/2004 on regional government and Law 25/2004 on the national planning system emphasize that "planning" represents the entire process from developing first ideas to implementation and control.

¹² For example, upgrading of local drainage channels by one desa should not lead to flooding in another.

Monitoring and Evaluation reports compiled by Bappeda identify how much of each budget item has been spent and what percentage of the work has been physically completed, but there is almost no qualitative assessment concerning deviations from plan and the reasons behind them, nor whether the activities were effective in achieving their stated objective. This is particularly concerning for the relationship between development and O&M, which the Aceh Public Expenditure Analysis generally found lacking in balance. O&M is actually non-existent in a planned form and is instead conducted on an ad hoc basis and generally with small budgets. This results in a system geared to repairing only the most urgent damage but not to proactive maintenance and parts replacements.

Law 25/2004 empowers the Mayor to issue further guidelines for implementation of the planning process. The Mayor could use this power to decree that the City Sanitation Strategy (CSS), which is presently being developed under the SDC, be used as a guideline in annual planning and budgeting.

Figure 4-3 Position of the CSS in the existing planning framework



The CSS will clarify decision criteria for identification of specific projects to pursue the overall goals of the city's RPJM and the related individual departments' Renstras. Moreover, the CSS will also stress the need for planned O&M in the context of so-called rational system management. The CSS could thus redress (at least for sanitation) the shortcomings of the development planning system as it is now being used.

4.3 ANALYSIS OF BANDA ACEH BUDGETARY CAPACITY

The general observations of the Aceh Public Expenditure Analysis concerning fiscal development and development planning and budgeting also hold for Banda Aceh. However, the analysis of Banda Aceh's financial development since the tsunami of 2004 shows that the city does not seem to have benefited much from the additional resources that the special autonomy status has brought to the province of which it is the capital. And although the influx of funds following the tsunami has brought about an impressive degree of reconstruction, it also seems to have been the main cause of double digit inflation in 2005 (41.5%, although this figure has since come down to the 10-11% range.)¹³ This is, however, still higher than the provincial average, which stood at some 8.5% by the end of 2007.

Table 4-1 Estimated development of economic indicators for Banda Aceh, 2005-2009

Indicator	2005	2006	2007	2008	2009 (est.)
Population *	200,000	209,000	213,000	220,000	230,000
Gross regional income Rp mln **	913,509		771,550	825,558	883,347
Minimum subsistence income (Rp) ***			870,000	957,000	1,052,700
Minimum wage (Rp) ***			850,000	892,500	937,125
Inflation ***	41.50%	8.54%	11.94%	11.00%	11.00%

sources: * Banda Aceh Mid-Term Development Plan
 ** Bappeda
 *** Internet, various sources

"Actual" data shown within interrupted lines

¹³ Data for the period immediately following the tsunami are a bit sketchy. Reportedly, the city had to begin 2005 with an incomplete budget, which was increased as needed as the year progressed.

The immediate impact of the tsunami brought the population down from over 263,000 to 192,230 people, after which many more left resulting in a total population of just 177,881 at the end of 2005. This must have had great impact on the city's economic capacity, but unfortunately neither Bappeda nor the Finance Division of the municipal secretariat has provided consistent data on regional gross domestic product, minimum subsistence income level, local minimum wage, and inflation. For the purpose of an indicative analysis, this report estimates the following figures (Table 4.1) for the period 2008-2009 based on what has been provided for 2007 and before.

There are a few important observations from the development of city income as budgeted for the period 2005-2009 (see Table 4.2). First, total sovereign regional income (PAD) has increased by 771%, a much stronger growth than is observed for the income from balancing funds (83%) and income from other sources (194%). Of course, the fact that PAD constitutes only a small part of total income limits the effect of its growth on the city's finances, but proportionally it still grew from 2% to 9% of total income during the period.

Regarding income from balancing funds, the specific allocation fund (DAK) shows the largest rise (430%). However, DAK is a relatively small source of income, not amounting to more than PAD. Moreover, unlike PAD it is not discretionary income, since it must be spent on the activities for which it has been specifically provided. It is also an unreliable source of income due to the fact that its specific purpose changes from year to year.

Table 4-2 Development of City Regional Income 2005-2009 (Rp. mln.)

No.	Description	Budget				Budget	Growth 2005-09
		2005	2006	2007	2008	2009	
1. Local Sovereign Income							
1.1	Taxes	3,343	4,986	13,920	23,303	23,312	598%
1.2	Service Fees	1,361	3,416	7,516	13,025	13,056	859%
1.3	Other income	464	663	10,889	8,672	8,632	1759%
Total local sovereign income		5,169	9,065	32,325	45,000	45,000	771%
2. Balancing funds							
2.1	Share in locally generated national revenues (Law 33/04)	42,247	45,041	30,465	54,963	55,328	31%
2.2	Additional revenue sharing oil and gas (Law 11/2006)						
2.2	Special Autonomy Allocation (Law 11/2006)						
2.3	General Allocation Fund (DAU)	160,363	266,705	308,839	307,002	313,126	95%
2.4	Specific Allocation Fund (DAK)	7,730	22,630	34,096	38,642	40,929	430%
2.5	Provincial financial support & share in provincial tax	13,206	17,606	14,144			-100%
Total income from balancing funds		223,546	351,982	387,544	400,608	409,383	83%
3. Other income							
3	Total income from other sources	13,108	8,081	68,143	24,133	38,554	194%
Total City Income		241,823	369,128	488,011	469,741	492,936	104%

The most reliable source of income is and remains the general allocation from the central government (DAU). Although this has risen by a "mere" 95%, it is such a major part of total income that it is responsible for most of the 104% growth in overall city income.

The shared income figures provided by the Finance Division include the special autonomy funds and additional oil and gas revenue. The Finance Division was unable to separate out this income, which is only available to Aceh, from the share of regular shared income, which is available to all municipalities in Indonesia. Remarkably, the total shared income is relatively small and has been declining since 2005, going down from 18% to 11% of total city income by 2009. At this level it is not much more significant than for many other cities in provinces that do not enjoy special autonomy, where shared income generally represents between 7% and 10% of total city income.

The fact that the special allocations could not be identified in the city budget could have been explained by a high level of financial support from the province. After all, according to Law 11/2006 it is the province that is entitled to the autonomy-related extra income and which is

responsible for distributing it to local governments within its territory. However, provincial financial support together with local share in provincial tax has been budgeted only for 2005-2007. There is no explanation why this item does not appear on the 2008-2009 budgets, but what is concerning in any event is that this source of income has been very small, amounting to just 5% of total city income in 2005 and 3% in 2007.

This analysis does not show very good income development for Banda Aceh. The city does not benefit much from the province's special autonomy revenues. Moreover, while total budgeted income has exhibited strong growth at 104% from 2005 to 2009, this has not been able to outpace the estimated inflation of some 112% during the period. The growth in the general allocation (DAU) represents only small consolation: while it has allowed the city's income to weather the ravages of high inflation, its main purpose is to pay for salaries and general overhead cost, which are largely fixed. The analysis of the expenditure budgets for 2005-2009 (see Table 4.3) shows what this has meant for the composition of the budget.

General overhead, as represented by indirect expenses, has grown on pace with the estimated inflation. This may seem encouraging, but the general administration component in direct expenditures (which involve the actual provision of services to the public) has grown three times as much. This allowed the combined burden of general and service overhead to grow from 65% to 74% of total expenditures, thus squeezing out expenditures for O&M and investment. The impact of this is exacerbated by the fact that total expenditure growth (95%) remained well behind estimated inflation, so that O&M and investment could only grow 44% and 38%, respectively, i.e. a factor 2.5 slower than inflation. Moreover, the figures reported here pertain to budgeted expenditures, not the expenditures that actually were realized during the period and which typically are lower. Since budgets for salary and general overhead generally are closer to the ultimate realization figures than those for investments and activities, the relative share of the latter categories may have been even lower than budgeted.

Table 4-3 Development of City Regional Expenditure 2005-2009 (Rp. mln)

No.	Description	Budget				Budget	Growth 2005-09
		2005	2006	2007	2008	2009	
1. Indirect expenditures							
	Indirect expenditures	160,641	172,945	246,002	279,484	340,397	112%
	Total indirect expenditures	160,641	172,945	246,002	279,484	340,397	112%
2. Direct expenditures							
	General administration	10,978	7,916	65,886	53,068	44,544	306%
	Operation and maintenance	55,210	95,917	65,749	62,371	79,614	44%
	Investments	38,760	87,640	154,409	105,117	53,639	38%
	Support/ grants to lower levels						
	Other expenditures						
	Total direct expenditures	104,948	191,473	286,045	220,556	177,796	69%
Total expenditures		265,589	364,419	532,047	500,041	518,194	95%

It is clear that Banda Aceh will only be able to increase the level of its activities in any domain if it can generate additional income. Of course, service delivery itself represents an excellent opportunity to generate such income, provided it is in line with the needs and expectations of the community. However, the city realizes only a tiny part of total city income from service fees, although this has grown from .6% in 2005 to 2.7% in 2009. Table 4.4 shows that sanitation fees represent a fairly steady part of the total fee income, generally ranging between 10% and 12%. However, the sanitation fees are very small. Though projected to rise from Rp 460 to Rp 2,808 per household per month, there obviously is room for further growth. Without such growth, it will be difficult to justify new investments in sanitation service infrastructure since the financial sustainability of planned operation and maintenance will remain seriously in doubt.

Table 4-4 Share of sanitation fees in total fee income 2005-2009

Fee income	Budget				Budget
	2005	2006	2007	2008	2009
Solid waste management (Rp mln)	167	200	550	1100	1300
Septic tank cleaning Rp mln)	54	150	200	250	250
Total sanitation fee income (Rp mln)	221	350	750	1,350	1,550
Income from all service fees (Rp mln)	1,361	3,416	7,516	13,025	13,056
Share of sanitation fees in all fee income	16.24%	10.26%	9.98%	10.37%	11.87%
Population	200,000	209,000	213,000	220,000	230,000
Sanitation fee per household/month (Rp)	460	699	1,467	2,557	2,808

The main source of the sanitation fee income is the solid waste fee. Table 4.4 shows that this has begun to basically offset the solid waste expenditures indicated in Table 4.5. (It is not clear why the solid waste expenditure budgeted for 2009 decreases so sharply from 2008, but budgeted cost recovery is more than 100% in both years.) In contrast, there is no fee income to support drainage and wastewater activities apart from septic tank cleaning. No specific wastewater activities have been budgeted for 2007-2009, which is not surprising in the absence of a sewer system with treatment plant. It is possible that expenditures for wastewater mainly involve construction of drains and are therefore included under drainage. For the moment, the most important observation is that sanitation expenditures are proportionally very small. Discounting for the relatively high percentage in 2005, when the budget situation was not very clear, the average proportion of sanitation expenses has been hovering at around 1.3% of total city expenditures.

Table 4-5 APBD Investment and O&M expenditure on sanitation 2005-2009 (Rp. mln.)

Year	Budgeted expenditures			Comparison		Sanitation % of Budget
	Wastewater	Solid Waste	Drainage	Sanitation	City budget	
2005	785.00	458.00	6,904.50	8,147.50	265,588.50	3.1%
2006	2,452.50	1,095.60	293.10	3,841.20	364,418.50	1.1%
2007	0.00	2,994.60	5,243.30	8,237.90	532,046.70	1.5%
2008	0.00	1,040.40	5,378.00	6,418.40	500,040.80	1.3%
2009	0.00	333.70	6,997.30	7,331.00	518,193.80	1.4%
Average	809.38	1,480.58	6,204.05	8,494.00	545,072.08	1.6%
% of sanitation	9.5%	17.4%	73.0%			
% of total budget	0.1%	0.3%	1.1%			

It will be difficult to significantly increase the small allocation for sanitation in the city budget without additional revenue. This is particularly true for operation and maintenance, since investments tend to be funded from outside project budgets. Most donors are unwilling to underwrite O&M, so without increasing the city's capacity in this regard it may even become difficult to retain access to outside funding as the donors may consider the investments to be financially/economically unsustainable.

Because Banda Aceh does not score well on the criteria used by the province for allocating dana otsus and additional revenue sharing oil and gas, it seems inevitable that the city must institute a general wastewater fee if it is to improve its services in this domain. Fortunately, there may be some consolation in the fact that there is substantial development being undertaken by the province in Banda Aceh as its capital. Moreover, the infrastructure developed following the tsunami is relatively new and should be capable of absorbing growth in the years to come.



5.1 EARLY IDEAS

During the planning workshop in October 2008 the Tim Sanitasi formulated as one of the primary goals that there should be a dedicated organization managing wastewater by 2011. Having a single organization in charge of all the different aspects of wastewater management would do away with much of the need for inter-organizational coordination. Because poor coordination is a major constraint, there is great appeal in this suggestion. However, central government has placed a limit on the number of individual agencies in local government. Hence, local governments will have to weigh very carefully the pros and cons of setting up a new agency, because very likely this will require the elimination or demotion of an existing one. Relevant questions that come into play are whether the new agency can perform more effectively and efficiently than is possible in the existing organization; the workload and complexity of tasks involved; the ability to foster team spirit and professionalization; etc.

One indicator of required institutional capacity is budgetary impact. If this is very large, then it may be better to separate the sanitation activities out of whatever agency is “hosting” them today, lest its management must devote too much attention to these activities at the expense of its other activities. This chapter therefore first assesses whether management of the new drainage and sewerage system (with e.g. O&M at a more advanced level than is presently the case) would significantly increase the budget of PU (PJSDA) and DKKK.

5.2 BUDGET AS A PROXY FOR INSTITUTIONAL CAPACITY

The territory of Banda Aceh measures 4,777 ha, of which 64% is “buildable”, i.e. can be used for housing and infrastructure. At present, only approx 50% of this area (or 32% of the total) is occupied, but the city is expected to increase the built up area to the full 64% in the medium term. With a rule of thumb of 500 m drains per hectare, the drainage system of Banda Aceh will ultimately comprise some 1,530 kilometres. Approx. 15% or 230 kilometers of this will involve primary and secondary drains, while the remaining 85% or 1300 km will involve tertiary drains. As designed by Sea Defence Consultants, JICS, Sogreah, and Muslim Aid, the primary and secondary system will include 153 gates and eight pumping stations.

Based upon recommendations from Tim Sanitasi SDC has worked out a concept for off-site wastewater collection and treatment with piped sewerage in the Peuniti pilot area. With gravity-based sewerage, three areas would have their own independent system with a local Sewage Treatment Plant (IPAL - STP¹⁴). SDC recommends using a step-by-step approach, beginning with a pilot system in one area. Once construction begins in the second and third areas, it becomes possible to reconsider the treatment options - either continue to provide each area with its own local STP, or pump sewage from the three systems to a common, larger STP at a remote location. (The STP in Peuniti could subsequently be removed.)

5.2.1 Rule of thumb projections compared to present O&M budgets

Using rule of thumb budget estimates it is possible to approximate the institutional capacity required for managing the drainage system and pilot sewerage. The details of this calculation are provided in Appendix E and summarized in Table 5.1. The table shows that proactive management of drainage in 100% of the buildable area, together with pilot sewerage, would require a budget of Rp 610,258 mln for investment and Rp 31,959 mln for O&M.

¹⁴ SDC is studying the potential of so-called condominal sewer systems to collect sewerage from a relatively large number of homes and transport it to the main sewer line. There should be ample opportunity for community involvement in planning and development of such systems.

The required amount for investment involves a one-off, multi-year effort, which will be funded largely through external funds. This cannot be compared to investments done in the recent past, nor will it be a measure for the near to medium future once the systems have been built¹⁵. The O&M requirement, however, is tied to this level of investment and will be an immediate and long-term recurrent obligation. It is therefore useful to compare the O&M part of this estimate to existing budgets of the relevant city organizations, the former PJSDA (for infrastructure and operational O&M, now incorporated in dinas PU) and DKKK (for cleaning).

Table 5-1 SDC Rule of thumb estimates for investment and O&M in drainage and sewerage

System	Rupiah (mln)		US Dollar	
	Investment	O&M/year	Investment	O&M/year
Drains, incl. gates (100% of buildable area)	516,600	12,915	41,328,000	1,033,200
Pumps, 500lit/sec (100% of buildable area)	51,660	774	4,132,800	61,992
Sewer system, incl. STP (1 pilot in Peuniti)	41,998	18,269	3,359,852	1,461,535
Total cost of full drainage and pilot sewerage	610,258	31,959	48,820,652	2,556,727

US\$1.00= IDR12,500

Focusing first on the drainage system, the rule of thumb estimate shows an annual O&M requirement of Rp. 13.7 bln / year (Table 5.1 - total of drains, gates, and pumps). This comprises personnel expenses as well as contract work. While the rule of thumb estimates are based on unit costs derived from international standards, SDC has also made separate “bottom-up” estimates for personnel and cleaning, based on estimated staffing pattern and cleaning workloads.

SDC’s bottom-up personnel estimate (see Appendix F for details) is summarized in Table 5.2. The table shows that O&M of the entire drainage system, excluding the pilot sewerage system for Peuniti, will require a total of 102 personnel, of which 38 office staff and 64 operational personnel. With civil service status for 52 of the 102 personnel, the total personnel budget would be Rp 1.7 bln.

Table 5-2 SDC Bottom-up personnel estimate for drainage O&M in Banda Aceh

Category	Number	Annual salary cost
Office personnel	38	Rp 722,800,000
Operational personnel	64	Rp 998,400,000
Total personnel requirement	102	Rp 1,721,200,000
US\$1.00= Rp12,500		\$ 137,696

Table 5.3 shows the SDC bottom-up estimate for cleaning. Assuming annual cleaning of the tertiary system and bi-annual cleaning of the primary/secondary system, the total annual cost of drain cleaning by contractors would be Rp 7.1 bln per year for 100% of the buildable area.

Table 5-3 SDC Bottom-up estimate of cleaning drains in Banda Aceh

	km	m3/m *	freq	RP/m3 **	Rp mln / year	rate US\$	US\$/year
prim/sec	229	0.40	1x /2 years	65,000	2,981	12,500	238,468
tertiary	1,300	0.08	1x /year	40,000	4,158	12,500	332,632
total	1,529				7,139	total / year	571,100

* Drain width Sludge level ** DKP estimates
 prim/sec 1.00 m 0.40 m
 tertiary 0.40 m 0.20 m

¹⁵ Of course, at the end of their lifetime the systems would have to be replaced, but this is decades away.

With a rule of thumb estimate of Rp. 13.7 bln for drainage O&M and a total bottom-up estimate for agency personnel and contractors of Rp. 8.8 bln, it seems safe to assume that the eventual budgetary impact of drainage O&M will be in the neighbourhood of Rp. 11.3 bln. This represents 29% of the average total Rp. 39.3 bln budgeted for O&M by PU (PJSDA) and DKKK together in the 2008 and 2009 budgets (Table 5.4 - average of “all O&M” 2008 and 2009).

Table 5-4 APBK Budgets DPJSDA and DKP 2008-2009 (Rp. Mln)

	2008	2009
1. Investments		
<i>Dinas K&P - all investments</i>	2,271	2,451
<i>Dinas PJSDA - all investments</i>	2,599	5,939
<i>DKP/PJSDA - all investments</i>	4,869	8,390
2. Operation and maintenance		
<i>Dinas K&P - all O&M</i>	15,337	16,572
<i>Dinas PJSDA - all O&M</i>	24,444	22,310
<i>DKP/PJSDA- all O&M</i>	39,781	38,882
3. Total expenditures		
<i>Dinas K&P all expenditures</i>	17,608	19,023
<i>Dinas PJSDA all expenditures</i>	27,043	28,250
<i>DKP/PJSDA - all exp</i>	44,650	47,273

There is no separate data on how much of the combined PU (PJSDA) and DKKK budget for O&M pertains to drainage, but it is clear that not all of the Rp. 11.3 bln calculated for total O&M in the future would be additional. In other words, the increase of the current O&M budget would be less than 29%; perhaps significantly less.

Could an increase of at the very most 29% of the present budget justify taking drainage O&M out of (PU) PJSDA and DKP and entrusting it to a dedicated agency? The actual additional workload for the responsible agency appears to be relatively small, since the personnel component of the Rp. 11.3 bln estimate is only Rp. 1.7 bln. Most of this work is now being done by DKKK, and Rp. 1.7 bln represents just 5% of its Rp. 16.0 bln O&M budget (Table 5.4 - average of “all O&M” 2008 and 2009). It is therefore probably safe to say that the current organization should be able to handle the additional workload.

This judgment may change when also taking into account the cost of O&M for sewerage, which is much more expensive than drainage. Just for one pilot system in Peuniti, the rule of thumb estimates in Table 5.1 show an annual O&M cost of Rp. 18.3 bln, i.e. 42% more than the cost of drainage O&M in the entire city. As more areas receive sewerage in the future, the annual O&M cost will soar. It is not clear how much of this budget will involve contracted work and how much will pertain to the responsible agency’s personnel budget. *However, the introduction of sewerage may well necessitate the establishment of a dedicated organization (for both sewerage and drainage).*

5.2.2 Organizational change to improve financial management

Another factor that may drive organizational change is that additional budget allocations for drainage and sewerage may only become available with a fairly radical change in funding. Sewerage is a billable service and experience all over the world shows that it is possible to recover the cost of O&M. It is therefore possible that donor agencies will not want to fund investment without a “*business plan*” showing a long-term stream of revenue supporting planned O&M. For the sake of transparency and effective management, it may then be necessary to earmark the revenues for sanitation. This in turn would necessitate taking sanitation out of the regular government bureaucracy and setting up a dedicated, with its own source of funding in the earmarked revenues.

Financing sanitation could then involve a special tax or levy for comprehensive wastewater services including drainage, sewerage, septic tank cleaning, etc. The basic principle would be that the responsible agency would use the revenue from this fee for overall drainage and wastewater

management and for provision of specific services appropriate to local conditions. Some citizens would have their house connected to a large-scale sewer system with off-site treatment; some would participate in condominium systems connected to trunk sewers; and some would have the drainage system convey the effluent from their own septic tank to a nearby sewer in locations where there is insufficient room for leaching fields. In principle, all citizens would pay a uniform fee to cover overall urban drainage management, and a specific service fee depending on the type and level of service being provided.

5.2.3 Room for professionalization due to organizational change

Creating a dedicated organization with authority over its own revenue could also provide a possibility to elevate the level of professionalism in drainage and sewerage management to international standards. The SDC bottom-up estimate for drainage personnel discussed above involves a level of thinking and working focused more on the technical logistics of contracting sand trucks than on policy formulation and integrated planning. The estimate does not pertain to sewerage (with which the city does not yet have experience) other than the pilot system proposed for Peuniti.

In Europe, governments apply norms to the tasks to be performed and the required education level for staff in the organizations responsible for drainage/sewerage. Appendix G shows, for cities with a population larger than 50,000 in the Netherlands, a distribution and level of tasks that is more developed than the SDC bottom-up personnel estimate discussed above. This is not surprising given that the sewerage systems in the Netherlands are much larger and more complex than what is being proposed for Banda Aceh in the medium to long term. The SDC personnel estimate should therefore be sufficient for the foreseeable future. Nevertheless, the description of activities in Appendix G is indicative of the longer-term need for human resources development for sanitation in Banda Aceh.

5.3 POTENTIAL BENEFITS OF REDISTRIBUTING TASKS

Another perspective on organizational restructuring is the distribution of concrete tasks. As noted, the current situation is that dinas PU has absorbed PJSDA's operation of the drainage system and cleaning of covered drains, while DKKK cleans all open drains. Introduction of planned O&M, together with the advent of piped sewerage, introduces the question whether the relevant tasks should continue to be distributed along the current pattern.

5.3.1 Substantive considerations

For the foreseeable future, piped sewerage will not be a huge activity in Banda Aceh. Where spatial density and groundwater conditions allow it, septic tanks will remain the core of wastewater management. In some parts of the city, sewerage, in combination with minor drainage, may only take the form of a so-called rudimentary system, i.e. relying on septic tanks for sedimentation and on the drains to transport effluent to the sewer. Hence, the drainage and sewerage systems will be interdependent for some time to come. The proposed piped sewerage in Peuniti would involve only a small system serving less than 10,000 population equivalents. The two other priority areas are not much bigger. Because, for a long time to come, development and O&M for drainage and sewerage in Banda Aceh will mainly involve drainage, the O&M of the small sewer system(s) could be handled by whichever organization is responsible for closed drains.

With some possibilities for alternative allocations (indicated by question marks), a useful separation of responsibilities between dinas PU and DKKK could be as indicated in Table 5.5 on the next page. This shows dinas PU as the network manager, responsible for the large scale sanitation infrastructure; and DKKK responsible for residential level aspects, more or less as a service provider. The table also shows the possibility of the city government retreating to development and maintenance of major infrastructure and assuming the role of regulator for the rest of the sanitation domain, i.e. leaving most of the direct service activities involving contact with individual citizens to the private sector.

The alternative possibilities for combining the cleaning and servicing tasks center mainly on whether there is advantage in having one organization responsible for all cleaning of sewers, covered drains, and septic tanks, which at some level are similar activities:

1. If DKKK could absorb the necessary technical expertise and equipment without creating imbalances in its organization, it could take on cleaning sewer pipes and covered drains in addition to cleaning septic tanks, house connection (HC) boxes, and open drains. The basic appeal of this would be concentration of all cleaning activities in an organization whose core business is cleaning, thus creating transparency towards the public.
2. If, on the other hand, these activities are very foreign to DKKK, cleaning of sewer pipes and covered drains should remain the responsibility of Dinas PU. The resultant sewage cleaning expertise should allow Dinas PU to take on the cleaning of septic tanks and HC boxes as well. Transfer of these latter tasks from DKKK to dinas PU would provide another basis for transparency, i.e. that “Wastewater is the business of Dinas PU, while DKKK handles solid waste”.
3. The third alternative, leaving micro-level operational activities to the private sector, would formalize current practice, in which government agencies use private contractors for much of the actual work being carried out. A clear separation between network O&M (government) and customer service (private sector) would provide greater transparency to the public. It might also make it easier to collect service fees, since everyone would understand that private operators do not serve unless paid, whereas people do not trust the government to provide the services which their wastewater levies are supposed to pay for. However, quality control may become more difficult if services are to be provided by a multitude of private operators.

Table 5-5 Possible allocation of responsibilities for drainage and sewerage

Activity	Responsibility		
	Dinas PU	Dinas K&P	Private Sector
Technical maintenance of pipes and channels	X		
Technical maintenance of pumping stations	X		
Operation of pumping stations	X		
O&M of treatment plant(s)	X		
Installation of house connection boxes	X		
Cleaning sewer pipes	X	?	?
Cleaning covered drains	X	?	?
Cleaning open drains		X	?
Cleaning septic tanks	?	X	?
Sludge disposal		X	?
Promotion of house connections		X	?
Servicing (cleaning) of HC boxes	?	X	?
Addressing customer complaints		X	?
Solid waste collection		X	?

5.3.2 Administrative considerations

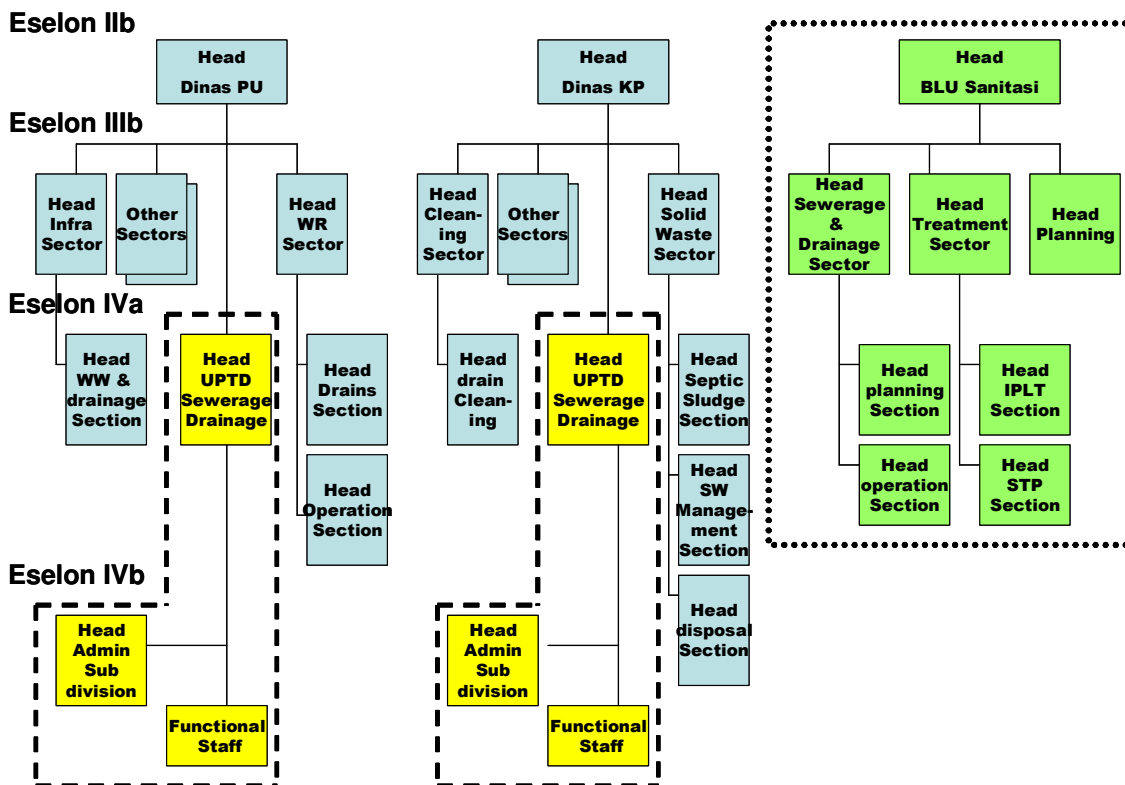
Whether distributed between, or concentrated within either DKKK or Dinas PU, the next issue is whether to leave the responsibility to regular administrative sectors (bidang dinas) of the organization (as seems to be the case in the new organization charts for 2009); or whether it would be beneficial to set up a functional-technical unit under its overall control (UPTD - Unit Pelaksana Teknis Dinas). The essential difference between these two options is that in a regular administrative division of a dinas, responsibility rests at a higher eselon than in a UPTD. Moreover, a regular division must necessarily occupy itself also with “regulator” and “policy” functions, whereas a UPTD could be set up to handle only the “operator” aspects (leaving the rest to the divisions). In a UPTD it is therefore easier to identify the actual cost of providing the service, which makes it possible to focus on efficiency and effectiveness.

It is possible to marry the advantages of these two alternatives in a regional public service organization (BLU - Badan Layanan Umum). The BLU is a new form of organization in Indonesian government, created in the context of improving public sector financial management. Essentially,

it involves a financially autonomous, not-for-profit service organization. The relevant Government regulation (PP25/2007) makes it clear that the BLU is under technical guidance by the “mother institution” (in this case Dinas PU) and financial guidance by the city’s finance department (Dinas Keuangan dan Pengelolaan Aset Daerah). This does not, however, reflect subordination, for unlike the UPTD the BLU exists outside the agency that provides technical “guidance”. A service agreement spells out the relationship between the BLU and the local government. The fact that the BLU bears the formal nomenclature “Badan” indicates that it would exist at the same eselon as a dinas, and its head would report to the mayor through the municipal secretary (as stipulated in PP41/2007 on the organization of local government¹⁶). To summarize, a BLU can be seen as an autonomous UPTD at the level of dinas.

The decision to establish responsibility for sewerage and drainage in relevant sections of a sector (bidang dinas), a UPTD, or a BLU rests in large part on the desired concentration of tasks and focus. Briefly, a UPTD provides focus for a narrow task set; sections operate at the same eselon as the UPTD, but may provide less focus because they are distributed over different sectors (which themselves are at a higher eselon than the UPTD); and the BLU could focus on integrated sanitation at the eselon of dinas. Figure 5.1 shows the responsibilities as they appear from the new organization charts of dinas PU and DKP taking effect in 2009, together with the option of moving responsibilities from sections into UPTDs within the respective dinases (within interrupted lines) and the option of creating a BLU Sanitasi in charge of all sanitation activities (within the dotted line). The positioning of the different responsibilities reflects the respective eselon.

Figure 5-1 Alternative options for organizing sanitation



¹⁶ In theory, it is also possible to create a Perusahaan daerah (PD - local-government owned enterprise), but this appears to be less suitable for sanitation since a PD is supposed to operate for profit. Unlike a BLU, a PD would not be financed through the local government budget.

5.4 ASSESSMENT OF ALTERNATIVES - PROPOSAL FOR ORGANIZATION

Ultimately, the decision how to organize sanitation will depend on the volume of work, the relative advantages of concentrating different sanitation activities in one organization, the potential to earmark funds for sanitation, the administrative clout required to put sanitation “on the map” in the political / administrative context of Banda Aceh, and the need for external coordination.

This analysis would seem to support the BLU option. However, it is important to note that the spirit of PP25/2007 appears to tie the BLU - for the purpose of flexible financial management - to the question whether there is a substantial source of revenue that the organization can use to finance its operations. Although the regulation stipulates that a BLU may apply for supplementary financing from the city budget (APBK) in case of a shortfall, there is no suggestion that it is the intention to have 100% of the BLU’s operations funded through the APBK. This makes the BLU option a bit less appealing if it is to have combined responsibility for drainage and sewerage (i.e. the full range of urban drainage), since only sewerage constitutes a billable service. Moreover, as argued above, sewerage will remain small and in any event there are presently no fees or taxes to provide the necessary income.

Table 5-6 Comparison of alternatives for organization

Option	Concentration	Earmarking	Clout	Capacity	Coordination
BLU equivalent to <i>dinas</i>	<ul style="list-style-type: none"> - Focus on sanitation - Integration of all relevant activities 	<ul style="list-style-type: none"> - Sanitation clearly demarcated in expenditure budget - BLU may use revenues for financing its own operations 	<ul style="list-style-type: none"> - Same <i>eselon</i> as <i>dinas</i> PU and DKP 	<ul style="list-style-type: none"> - Can handle large volume of work over broad spectrum of sanitation activities 	<ul style="list-style-type: none"> - Coordination internalized in the BLU
Sections of sectors in a <i>dinas</i>	<ul style="list-style-type: none"> - Related responsibilities are distributed over different sectors 	<ul style="list-style-type: none"> - Expenditure on related activities in different sections not easy to identify - Revenues go to general treasury 	<ul style="list-style-type: none"> - Low <i>eselon</i> for individual sections - Additional clout from <i>eselon</i> of parent sector 	<ul style="list-style-type: none"> - Activities of different sections combine to relatively large volume of work 	<ul style="list-style-type: none"> - Role of <i>Tim Sanitasi</i> may be limited to <i>Tim Pengarah</i> (general policy)
UPTD in a <i>dinas</i>	<ul style="list-style-type: none"> - Focus on individual sanitation activities 	<ul style="list-style-type: none"> - Expenditure budget may show “sanitation” more clearly - Revenues go to general treasury 	<ul style="list-style-type: none"> - Low <i>eselon</i> - No additional clout from sectors 	<ul style="list-style-type: none"> - Can handle large volume of work for individual activities 	<ul style="list-style-type: none"> - May require coordination from <i>Tim Pelaksana</i> (actual tasks)

The financial limitation would cease to exist if the city were to institute a comprehensive wastewater service fee involving a uniform base fee, charged to all citizens to cover the cost of general sanitation management, supplemented by a service fee tied to the specific service being provided. A fee structure such as this could generate substantial funds and as such lay the foundation for potential financial independence. However, introducing such a fee would only be possible once the city provides credible wastewater management and effective service options are available to most of the citizens.

The analysis, then, appears to favor establishing a UPTD as an organization format that would provide separate attention for the operational service delivery and which would thus allow a focus on effectiveness and efficiency. As such, it would be an embryonic form of a BLU. Of course, this would not do away with the concern about the relatively low *eselon* of the organization, but as long as the main service would involve operation and maintenance of the urban drainage system, with the possible addition of one or two small sewer systems, there is probably no reason to pursue a higher *eselon*. The main benefit of a higher *eselon* is in coordination and in capacity for managing a more complex organization, but it serves no purpose if the service does not require that.

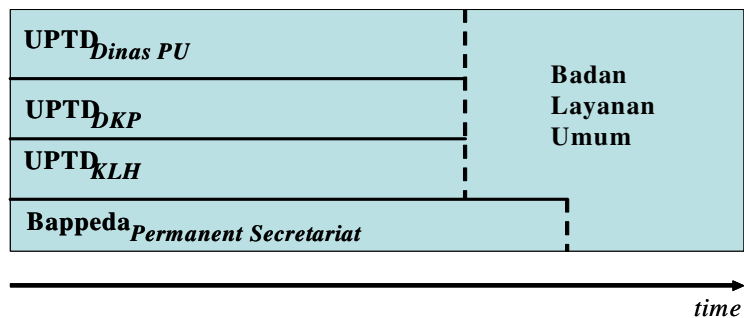
However, the UPTD format could be too small to include all sanitation-related services in one organization. Hence a decision for a UPTD would imply allocating different tasks to different organizations:

- Dinas PU - UPTD for O&M of network infrastructure (repair, renovation, upgrading) and unclogging covered drains, sewer pipes;
- DKP - UPTD for cleaning of open drains, servicing septic tanks and house connections of sewer system;
- KLH - UPTD for setting discharge norms and supervising compliance for both residential and industrial / commercial wastewater installations.
- Bappeda - permanent secretariat for the Tim Sanitasi

In the fullness of time, a combination of professionalization and enlargement of the sewerage system may result in an amount and complexity of work taken on that requires integration of two or all three of the above UPTDs in one organization. Since the “mother” agencies themselves only hold part of the distributed responsibility and authority for sanitation, such an integrated unit could probably not exist in one of them. If the city has by then also managed to establish sewerage as a billed service to customers and there is a reliable stream of income, that will be the time to elevate the UPTD to BLU.

Figure 5-2 Changing institutional framework over time

With the advent of the BLU, the need for external coordination would gradually diminish. However, because the BLU would have to focus on improving efficiency to achieve non-profit level, it would probably be necessary to continue policy planning in combination with outcome-oriented monitoring and evaluation in the Tim Sanitasi.



Hence, the Tim’s permanent secretariat in Bappeda should continue on the outside of the BLU initially, but after one or two years it could be incorporated in the BLU as well.

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Contributors	Jan Kraaij, Cees Keetelaar
Team leader	Bram van der Boon

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Appendix A ADMINISTRATIVE HIERARCHY

The hierarchy as shown in this table is in accordance with Government Regulation PP41/2007

Eselon	Sekretariat Daerah (Municipal Secretariat)	Dinas (Department)		Badan (Board)		Kantor (Office)			
IIa	Sekretaris daerah (Municipal Secretary)								
IIb	Asisten sekretaris daerah (Assistant Secretary)	Kepala Dinas (Department Head)		Kepala Badan (Board Chairman)					
IIIa	Kepala Bagian (Division Chief)	Sekretaris Dinas (Department Secretary)		Sekretaris Badan (Secretary of the Board)		Kepala Kantor (Office Head)			
IIIb		Kepala Bidang (Sector Chief)		Kepala Bidang (Sector Chief)					
IVa	Kepala Subbagian (Subdivision Head)	Kepala Subbagian (Subdivision Head)	Kepala Seksi (Section Chief)	Kepala Unit Pelaksana Teknis dinas (Head of departmental technical implementation unit)	Kepala Subbagian (Subdivision Head)	Kepala Subbidang (Subsector Head)	Kepala Unit Pelaksana Teknis Badan (Head of Board's technical implementation unit)	Kepala Subbagian (Subdivision Head)	Kepala Seksi (Section Chief)
IVb				Kepala subbagian (Subdivision Head)			Kepala subbagian (Subdivision Head)		

Appendix B INSTITUTIONAL ROLES FOR DIFFERENT TASKS IN SANITATION - INSTITUTIONAL MAPPING

A limited number of the members of the Tim Sanitasi's working group (Tim Pelaksana) participated in December 2008 in an institutional mapping exercise to identify what the different agencies actually do. The results of this exercise are presented in this appendix. It is important to note that the exercise as it was done only involved representatives from BPMKS (Community empowerment and social welfare department), Bappedalda (Environmental pollution control department), dinas PPPK (Fisheries, animal husbandry and agriculture department), and PDAM (municipal water supply company). This means that none of the agencies with primary responsibility for sanitation infrastructure participated. Moreover, with participants only from the Tim Pelaksana, the result reflected probably more their impression than that it was a solid recording of the respective agencies' formal responsibilities. As part of the White Book preparation process this exercise will be repeated

INSTITUTIONAL ROLES FOR DIFFERENT TASKS IN SANITATION (as compiled by the four participants in institutional mapping)		Dinas K&P	BPMKS	BAPEDALDA	BAPPEDA	Dinas PJSDA	Dinas Tata Kota	Dinas Kesehatan	Dinas Pasar	Dinas Pariwisata	Din Perik, Petern Pertanian & Kelautan	Din Perindustrian & Pedagang	Dinas Syarat Islam & Keluarga Sejahtera	Dinas Pendidikan	INFOKOM	PDAM	Dinas SDA Province	Dinas CK/BM Prov	Bappeda Province	Bappedalda Province	Departemen PU Pusat
DRAINAGE AND SEWERAGE																					
Legend: L = leading, K = Coordinator, C = Consulting, S = Support																					
Policy and Strategy	System objectives (health, envt, sustainability, etc)	K		K	C	K	K	L								C	C		C	C	
Planning	Functional system requirements	C		C	K	L	C	C								C			C		
	Municipal drainage & sewerage plan	C		C	K	L	C	C	C							C					
Asset management	System Inventory	C	C		K	L	C	C	C							C					
	Inspection of asset condition	K		C	C	L	S	C													
	Assessment of asset performance	C		K	C	L	C	C													
Development of infrastructure (incl. equipment)	Sewers	K		C	C	L	C														
	Makro/Sub-makro River bodies	C	C	K	C	L	C	C	C												
	Primary / Secondary drains (neighbourhood to river)	K	C	C	C	L	C	C	C												
	Tertiary drains (neighbourhood-level)	K	C	C	C	L	C	C	C												
	Pumps	K		C	C	L	C														

INSTITUTIONAL ROLES FOR DIFFERENT TASKS IN SANITATION (as compiled by the four participants in institutional mapping)		Dinas K&P	BPMKS	BAPEDALDA	BAPPEDA	Dinas PJSDA	Dinas Tata Kota	Dinas Kesehatan	Dinas Pasar	Dinas Pariwisata	Din Perik, Petern Pertanian & Kelautan	Din Perindustrian & Pedaggan	Dinas Syarat Islam & Keluarga Sejahtera	Dinas Pendidikan	INFOKOM	PDAM	Dinas SDA Province	Dinas CK/BM Prov	Bappeda Province	Bappedalda Province	Departemen PU Pusat
DRAINAGE AND SEWERAGE																					
Legend: L = leading, K = Coordinator, C = Consulting, S = Support																					
Operation & Maintenance	Sewers	C	C	K	C	L	C	C	C												
	Makro/Sub-makro River bodies	C	K	C	C	L	C	C													
	Primary / Secondary drains (neighbourhood to river)	K		C	C	L	C	C													
	Tertiary drains (neighbourhood-level)	K	C	C	C	L	C	C													
	Pumps	K		C	C	L	C	C													
Supporting activities	Promotion / public relations	C	K	C		L							C	C	C						
	Controlling environmental pollution	C	C	L	C		C	C	C												
Finance	Investment planning		C	C	L	K	C														
	O&M budget preparation and execution				L	K															
	Tariff setting	L	C	C			K		C	C	C	C									
	Tariff collection	L							K	C	C	C									

INSTITUTIONAL ROLES FOR DIFFERENT TASKS IN SANITATION (as compiled by the four participants in institutional mapping)		Dinas K&P	BPMKS	BAPEDALDA	BAPPEDA	Dinas PJSDA	Dinas Tata Kota	Dinas Kesehatan	Dinas Pasar	Dinas Pariwisata	Din Perik, Petern Pertanian & Kelautan	Din Perindustrian & Pedagan	Dinas Syarat Islam & Keluarga Sejahtera	Dinas Pendidikan	INFOKOM	PDAM	Dinas SDA Province	Dinas CK/BM Prov	Bappeda Province	Bappedalda Province	Departemen PU Pusat
WASTEWATER TREATMENT																					
Policy and strategy	System objectives (health, envt, sustainability, etc)	K		L	C	C	C	C	C	C	C	C									
Planning	Micro level functional requirements (septic tanks)	L		C	K	C	C	C													
	Macro level functional requirements (STPs)	K		L	C	C	C	C	C	C											
	Municipal treatment plan	L		C	C	C	K	C	C												
Asset management	System Inventory	L			C																
	Inspection of asset condition			C	K	C															
	Assessment of asset performance			L	K	C	C														
Development of infrastructure (incl. equipment)	Sewage Treatment Plants (STPs)																				
	Pumps	K		C	C	L															
	Community ST systems (sanimas)	L	C	C	C			K													
	Septic tank cleaning and sludge removal	L		C	C	K	C	C													
	Septic Sludge Treatment Facilities (IPLTs)	L		C	C	K	C	C													
	Leaching fields, etc.	L		K	C	C	C	C													
Operation & Maintenance	Sewage Treatment Plants (STPs)																				
	Pumps	K		C	C	L															
	Community ST systems (sanimas)	L	K				C						C	C	C						
	Septic tank cleaning and sludge removal	L		C		K		C													
	Septic Sludge Treatment Facilities (IPLTs)	L		K			C	C													
	Leaching fields, etc.	L		K				C													

INSTITUTIONAL ROLES FOR DIFFERENT TASKS IN SANITATION (as compiled by the four participants in institutional mapping)		Dinas K&P	BPMKS	BAPEDALDA	BAPPEDA	Dinas PJSDA	Dinas Tata Kota	Dinas Kesehatan	Dinas Pasar	Dinas Pariwisata	Din Perik, Petern Pertanian & Kelautan	Din Perindustrian & Pedagang	Dinas Syarat Islam & Keluarga Sejahtera	Dinas Pendidikan	INFOKOM	PDAM	Dinas SDA Province	Dinas CK/BM Prov	Bappeda Province	Bappedalda Province	Departemen PU Pusat
WASTEWATER TREATMENT																					
Supporting activities	Promotion / public relations	L	K										C		C						
	Controlling environmental pollution	K	C	L			C	C			C										
Finance	Investment planning	C			L	K															
	O&M budget preparation and execution	K	C	C	C																
	Tariff setting	L					K		C												
	Tariff collection	L				C	C		K												

INSTITUTIONAL ROLES FOR DIFFERENT TASKS IN SANITATION

(as compiled by the four participants in institutional mapping)

SOLID WASTE MANAGEMENT

		Dinas K&P	BPMKS	BAPEDALDA	BAPPEDA	Dinas PJSDA	Dinas Tata Kota	Dinas Kesehatan	Dinas Pasar	Dinas Pariwisata	Din Perik, Petern Pertanian & Kelautan	Din Perindustrian & Pedagang	Dinas Syarat Islam & Keluarga Sejahtera	Dinas Pendidikan	INFOKOM	PDAM	Dinas SDA Province	Dinas CK/BM Prov	Bappeda Province	Bappedalda Province	Departemen PU Pusat
Policy and strategy	System objectives (health, envt, sustainability, etc)	L		K	C		C	C	C		C	C									
Planning	Solid waste management plan	L		K	C			C	C		C	C									
Asset management	System Inventory	L			C	K	C														
	Inspection of asset condition	K			L	C															
	Assessment of asset performance	K		L			C	C													
Development of infrastructure (incl. equipment)	Final disposal site	L		K	C		C	C	C												
	Temporary disposal sites	L		C	C		K		C	C	C	C									
	Equipment (trucks, etc.)	L				K			C												
Operation & Maintenance	Final disposal site	L		K			C	C	C	C	C										
	Temporary disposal sites	L					K		C												
	Collection and transportation of garbage	L																			
	Street cleaning	L				K	C				C										
Supporting activities	Promotion / public relations	L	K							C			C	C	C						
	Controlling environmental pollution	K		L				C													
Finance	Investment planning	K		C	L																
	O&M budget preparation and execution	C		K	L																
	Tariff setting	L	C				K		C	C				C	C						
	Tariff collection	L							K												

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Mayoral and Gubernatorial Decrees on Sanitation Committees

Unofficial translations

Mayoral Decree Banda Aceh

Keputusan Walikota Banda Aceh Nomor 304 Tahun 2008

Considering that:

- a. Improvement of environmental conditions through water and sanitation management is necessary to support the vision of Banda Aceh as Indonesia's premier Islamic tourist destination and to achieve the millennium development goals for water supply and sanitation.
- b. To fully implement the program for water supply and improvement of sanitation infrastructure the need for broad and ongoing information of the community can be met through establishment of a Sanitation Team (Tim Sanitasi) comprising a steering committee (Tim Pengarah) and a working group (Tim Pelaksana).
- c. It is necessary to formalize this in a Decree

Decrees:

First:

To set up a steering committee (Tim Pengarah) and a working group (Tim Pelaksana) which shall henceforth be referred to as Sanitation Team (Tim Sanitasi) with membership of the persons listed in the appendix.

Second:

- A. The steering committee's task is to coordinate and direct the tasks of the Tim Pelaksana
- B. The Tim Pelaksana's tasks are to:
 1. Compile, regularly review, and update basic data on water and sanitation conditions
 2. Formulate its own annual work plan
 3. Formulate a city sanitation strategy and programs to implement it in line with the city's vision and mission and based on available basic data
 4. Carry out socialization of sanitation standards to fulfil environmental and community health criteria
 5. Organize meetings with work units dealing with sanitation at city level and coordinate with the provincial AMPL working group
 6. Coordinate with related institutions in the city and in its neighbouring kabupaten

Third:

In carrying out its tasks, the Sanitation Team will report to the mayor through the municipal secretary and will submit monthly activity progress reports

Fourth:

All expenses following from this decree will be funded from APBN, APBA, and APBK, together with other legitimate untied sources

Fifth:

The decree becomes effective immediately and ceases to be in force only when the implementation of the tasks has been completed, with the provision that if in future errors are found in this arrangement they must be corrected as required.

Gubernatorial Decree Aceh Province

Keputusan Gubernur Nanggroe Aceh Darussalam Nomor 690/66/2008

Considering that:

- a. There needs to be commitment to and responsibility for executing the water supply and environmental sanitation program to achieve the millennium development goals for water supply and sanitation.
- b. To execute this program well, the roles of various relevant sectors must be guided and coordinated.
- c. It is necessary to formalize this in a Decree

Decrees:

First:

To set up a Coordination team for executing the national community-based water supply and environmental sanitation program for NAD, henceforth referred to as the “AMPL coordination team” with membership of the persons listed in the appendix.

Second:

The task and function of the AMPL Coordination Team is to coordinate policy formulation and report at least two times per year to the governor as responsible authority.

Third:

The AMPL Coordination Team will be supported by a Technical Implementation Team (Tim Pelaksana Teknis) and a secretariat comprising elements of technical organizations related to the tasks involved in the respective program components.

Fourth:

The tasks of the AMPL Coordination Team, Technical Implementation Team, and Secretariat are:

1. Compile a program for community empowerment and institutional development
2. Compile a Health, Hygiene, and Sanitation Program
3. Compile a Solid Waste, Water Supply, and Drainage Infrastructure Development Program
4. Compile a Desa Productivity Development Program

Fifth:

To carry out its tasks, the Technical Implementation Team shall compile an annual work program for the individual program components, including activities as mentioned in the appendix to this decree, including planning, implementation, and reporting.

Sixth:

In carrying out its tasks, the AMPL Coordination Team is accountable to the Governor.

Seventh:

All expenses following from this decree will be funded from APBA and other legitimate untied sources.

Eighth:

The decree becomes effective immediately and ceases to be in force only when the implementation of the tasks has been completed, with the provision that if in future errors are found in this arrangement they must be corrected as required.



Appendix D BRIEF REVIEW OF THE INITIAL WORK PLAN

Tim Sanitasi has already begun a process of planning for improved sanitation. During a workshop in October 2008 it has used principles of goal-oriented planning to begin setting out the marching route towards better sanitation.

A brief review of the outputs from the three working groups yields the following observations which are meant to support the further planning process.

- The indicators identified by the working groups are not always SMART. An indicator is:
 - Specific if it captures the essence of the desired result by clearly and directly relating to the achievement of an objective, and only that objective.
 - Measurable if it is unambiguously specified and there are practical ways to measure the indicators and results.
 - Attributable if it unambiguously links the intervention being proposed to the result to be achieved.
 - Relevant if it is able to gauge levels of performance that can be achieved in a practical manner, and that reflect the expectations of stakeholders.
 - Time bound if it allows progress to be tracked in a cost-effective manner at a desired frequency for a set period.
- True indicators are measures by which a certain condition can be gauged. However, a number of the indicators formulated by the working groups do not meet this requirement. Rather, they often merely restate in more detail the desired condition expressed under the heading “result to be obtained”. For example, for the desired result “utilizing solid waste as a business opportunity” Working Group I mentioned as indicator “solid waste being processed into compost”. If this is the indicator to be used, it would be equally good if the production is 100 kg or 20 tons, regardless of whether it is being sold (what is a business opportunity if the product is not sold?). To clear up this kind of ambiguity, it is good practice to separate the indicator (the measure) from the goal (what is to be measured) and the target (how far the goal is to be achieved). Moreover, the target must really say something about the achievement compared to the goal. In the above example, a better indicator could be “amount of compost produced from solid waste and sold on the private market” with the related target phrased something like “by the end of 2010 there will be 10 tons of compost from solid waste sold on the private market”.
- Working Group II mentions a number of stakeholders related to different goals to be achieved in future years. Remarkably, the stated goal for 2011 “management of wastewater by a dedicated organization” is linked to the private sector as stakeholder. Since wastewater management is not a profitable activity, the private sector is not likely to step in. Moreover, it is not clear whether Working Group II really intends this to become a private sector responsibility, for in a later section of their output they say that a number of city government institutions should be responsible for the indicator “designated wastewater management organization in 2011”. Despite this apparent discrepancy, it is important to note that the Working Group apparently sees advantage in establishing a special organization for wastewater management.
- Working Group II also mentions a communal wastewater plant in Peuniti as a desired result, and connects this to the indicator “community-based sanitation pilot project set up in 2009”. It is encouraging that the working group identifies Peuniti as priority area for off-site wastewater treatment. Whether one community-based sanitation project will be a good indicator of success is, however, doubtful. This is because such systems, comprising a communal settling tank and filtration system known in Banda Aceh as Dewats, have only limited coverage. This implies that, although the indicator may be specific, it may also be less relevant.
- Another desired result mentioned by Working Group II is “new drainage channels and sediment removed from rivers and drains”. However, the Working Group is not very specific in proposing a related indicator. A good indicator should say something about the amount of progress made, for example “kilometers of drains cleaned”, which could be used to phrase as target “500 kilometers of drain cleaned”.

- Continuing on drainage, Working Group II also mentions “an effective and easy to clean drainage system” as a desired result. However, as indicator of achievement it only mentions “functional drainage system at the market by 2009”, which probably leaves most of Banda Aceh out of the equation. Moreover, the responsibility for achieving the goal is not addressed.
- One encouraging proposal comes from Working Group III, which sees “regulation in integrated sanitation management” as a desired result, for which it specifies that the regulation should cover integration of piped systems, wastewater management, water supply, environmental pollution, market management, legal sanctions, and a drainage system that is clean, rapidly transports water, and keeps areas free of floods. A comprehensive regulatory basis is indeed essential for good sanitation management. Moreover, this is the only instance that flood control is being mentioned as an objective for sanitation development, even though it is standing water in the drains and floods from overflows that present the real threat to environmental and public health. It would be good if the Tim Sanitasi were to give this aspect greater coverage.

A final, but by no means the least important observation is that the issue of cost and financing receives only limited treatment by the working groups. Only Working Group I states “consciousness about paying liquid and solid waste fees” as a desired result. While it also mentions constructive activities to achieve this (such as creative and persuasive approach to collection and improvement of service levels), there is no indication that this goes beyond the present services of solid waste collection and desludging of septic tanks. However, full wastewater management in densely populated urban areas cannot do without piped sewerage, and moving to this stage will only be possible with an additional source of funds. While drainage management may be considered a public responsibility to be funded from public means, this is not true for sewerage and treatment. Perhaps the sewer pipes could be considered a public facility (much like roads are for people to drive their private cars on), but not charging anything for treatment would ignore the “polluter pays principle” that underlies environmental management, also in Indonesia. Banda Aceh should therefore decide to provide treatment only as a fee-based service. As in other countries, residences within a certain distance from a sewer should be obliged to take a household connection. The cost of treatment could be charged on the basis of inhabitant equivalents according to the number of persons occupying the residence. Depending on congruency of coverage, the treatment bill could be added to the water supply bill sent by the PDAM, or otherwise it could be added on to a general existing tax such as the street lighting tax in streets with sewers.



Rule of Thumb Estimates for Investment and O&M in Drainage and Sewerage

Drains, incl. gates (100% of buildable area)			<i>Investment</i>	<i>O&M</i>
material cost \$/m	18	<i>total cost Rp</i>	516,600,000,000	12,915,000,000
material cost Rp/m	225,000	\$	41,328,000	1,033,200
addl. charges	43.5%			
total Rp cost/m	322,875			
O&M as part of cap cost	2.5%			
Pop	400,000			
household size	4			
meters/hh	16			
total meters	1,600,000.0			

Pumps, 500lit/sec (100% of buildable area)			<i>Investment</i>	<i>O&M</i>
material cost/pump	1,500,000,000	<i>total cost Rp</i>	51,660,000,000	774,900,000
addl. charges	43.5%	\$	4,132,800	61,992
total cost/pump	2,152,500,000			
O&M as part of cap cost	1.5%			
Stations	8			
Pumps/station	3			
total pumps	24			

Sewer system, incl. STP (1 pilot in Peuniti)			<i>Investment</i>	<i>O&M</i>
material cost / cap	4,181,000	<i>total cost Rp</i>	41,998,145,000	18,269,193,075
addl. charges	43.5%	\$	3,359,852	1,461,535
total cost / cap	5,999,735			
O&M as part of cap cost	1.5%			
Peuniti pop	7,000			

			<i>Investment</i>	<i>O&M</i>
Total cost of full drainage and pilot sewerage		Rp	610,258,145,000	31,959,093,075
US\$1.00= IDR	12,500	\$	48,820,652	2,556,727



SDC Personnel Estimates for O&M of Drainage System

Classification of Personnel	Status	Required	educ level	Salary/month	Total per year
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Staff and management

Coordinator Flood Control	civil servant	1	D1	Rp4,000,000	Rp52,000,000
Database management	civil servant	2	D2	Rp3,000,000	Rp78,000,000
inspection and planning	civil servant	2	D2	Rp3,000,000	Rp78,000,000
supervision	civil servant	8	D3	Rp1,200,000	Rp124,800,000
administrative staff	civil servant	25	SMA	Rp1,200,000	Rp390,000,000
total office personnel		38			Rp722,800,000

Pumping Stations (8 units)

Supervisor	civil servant	2	D3	Rp1,200,000	Rp31,200,000
Mechanical/Electrical	contract	12	SMK	Rp1,200,000	Rp187,200,000
Operator	civil servant	12	SMK	Rp1,200,000	Rp187,200,000
Security	contract	8	SMA	Rp1,200,000	Rp124,800,000
total pumping station personnel		34			Rp530,400,000

Gates (153 units) :

Gate Operator	contract	14	SMK	Rp1,200,000	Rp218,400,000
total gate operators		14			Rp218,400,000

Drivers :

Truck	contract	7	SMP	Rp1,200,000	Rp109,200,000
Heavy Equipment	contract	9	SMK	Rp1,200,000	Rp140,400,000
total equipment operators		16			Rp249,600,000

total office personnel	38	Rp722,800,000
total operational personnel	64	Rp998,400,000
total personnel requirement	102	Rp1,721,200,000
US\$1.00= Rp12,500		\$137,696



The case of the Netherlands

Activities and required education level for drainage / sewerage

Responsibility	Education level		Activities
	Mgt	Staff	

Planning

Management	Uni/Acad/ Polytech		
Municipal drainage / sewerage plan		Uni/Acad/ Polytech	Coordination within city, negotiating strategy and general allocation of resources to achieve desired situation
Annual maintenance plan		Uni/Acad/ Polytech	Assessment of inspection and measuring results; determination of actions; annual budget

Investigations

Management	Polytech		
Taking inventory of the system elements		Jr Tech School	On-going need for inventory (following on initial "stock take", from as built drawings or field observation)
Inspection of physical condition of the system elements		Jr/Sr Tech School	Planning, monitoring
Measuring performance of the system elements		Polytech	Data processing of field data or data from as built drawings
Calculating hydraulic performance and system discharge volumes		Polytech	Compare present with standard performance, and determining actions

Maintenance

Management	Polytech		
Cleaning, vacuuming of sewers and drains		Jr/Sr Tech School	Activity planning; drawing up work orders, supervising operational staff / contractors
Operation and Maintenance of pumping stations		Jr/Sr Tech School	Activity planning; drawing up work orders, supervising operational staff / contractors
Operation and Maintenance of treatment plant(s)		Jr/Sr Tech School	Activity planning; drawing up work orders, supervising operational staff / contractors

Measures

Management	Polytech		
Construction of new parts of the system		Jr/Sr Tech School	Design; work orders; execution supervision; communication with residents
Repairs of broken system elements		Jr/Sr Tech School	Design; work orders; execution supervision; communication with residents
Renovation / replacements of sections of the system		Jr/Sr Tech School	Design; work orders; execution supervision; communication with residents
Improvement – upgrading of service level		Jr/Sr Tech School	Design; work orders; execution supervision; communication with residents

Responsibility	Education level		Activities
	Mgt	Staff	
Facilitation / support			
Management	Polytech		
Processing of monitoring data		Jr/Sr Tech School	Collecting data from inspections and system calculations
Issuance and enforcement location and building permits		Jr/Sr Tech School	Determine appropriate systems for different locations; use permits and compliance monitoring to force adoption
Issuance and enforcement wastewater discharge permits		Jr/Sr Tech School	Determine appropriate systems / designs for different commercial activities; use permits and compliance monitoring to force adoption
Information and communication		Jr/Sr Tech School	Promotion of good sanitation practices to residents and business
Processing customer complaints		Jr/Sr Tech School	Provides info on performance of the system (elements); helps community understand need for good sanitation

Source: *Leidraad riolering Augustus 2007 – Personele aspecten van gemeentelijke watertaken D2000*