

IRC International Water  
and Sanitation Centre  
Tel.: +31 70 30 689 80  
Fax: +31 70 26 899 64

**ASIAN DEVELOPMENT BANK**

**TAR: INO 29309**

**TECHNICAL ASSISTANCE**

**TO THE**

**REPUBLIC OF INDONESIA**

**FOR**

**STRENGTHENING OF URBAN WASTE MANAGEMENT**

**POLICIES AND STRATEGIES**

**June 1997**

**CURRENCY EQUIVALENTS**  
(as of 15 March 1997)

Currency Unit	-	Rupiah (Rp)
Rp 1.00	-	\$0.000417
\$1.00	-	Rp2,398

- (i) The exchange rate of the rupiah is determined by Bank Indonesia under a managed float system.
- (ii) In this Report, a rate of \$1.00 = Rp2,370 has been used.

**ABBREVIATIONS**

BAPEDAL	-	National Environmental Agency
BAPPENAS	-	National Development Planning Agency
DGBANGDA	-	Directorate General of Regional Development
DGPUOD	-	Directorate General of Public Administration and Regional Autonomy
MOF	-	Ministry of Finance
MOH	-	Ministry of Health
MOHA	-	Ministry of Home Affairs
MPW	-	Ministry of Public Works
REPELITA	-	Five-Year Development Plan
RWSG-EAP	-	Regional Water and Sanitation Group-East Asia and Pacific
TA	-	Technical Assistance
UNDP	-	United Nations Development Programme

**NOTES**

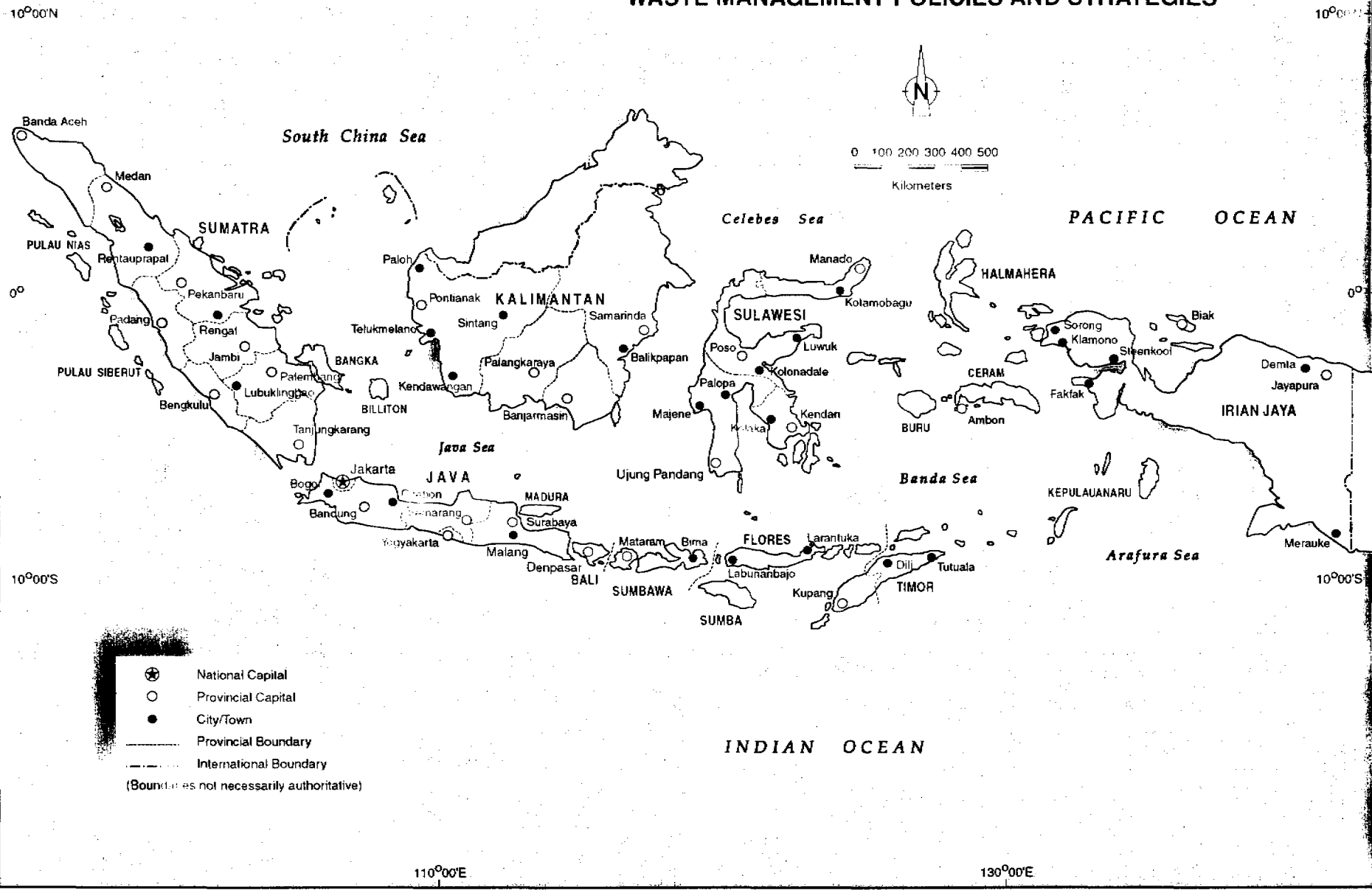
- (i) The fiscal Year (FY) of the Government ends on 31 March.
- (ii) In this Report, "\$" refer to US dollars.

LIBRARY IRC  
PO Box 93190, 2509 AD THE HAGUE  
Tel.: +31 70 30 689 80  
Fax: +31 70 35 899 64

BARCODE: 15175  
LO: 822 1098

# INDONESIA

## STRENGTHENING OF URBAN WASTE MANAGEMENT POLICIES AND STRATEGIES



\* National Capital  
 ○ Provincial Capital  
 ● City/Town  
 — Provincial Boundary  
 - - - International Boundary  
 (Boundaries not necessarily authoritative)

## I. INTRODUCTION

1. The Government of the Republic of Indonesia has requested the Bank to provide technical assistance (TA)<sup>1</sup> to assist the Government with updating its policies, strategies, and investment programs in the urban waste management sector for the upcoming seventh five year plan (REPELITA VII).<sup>2</sup> A Fact-finding Mission visited Indonesia in December 1996 and agreement was reached with the Government on the objectives, scope, cost estimates and financing plan, implementation arrangements, and the consultants' terms of reference for the TA.

## II. BACKGROUND AND RATIONALE

2. Indonesia has a total population of about 195 million, of which the urban population is about 36 percent or 70 million. Economic development is resulting in a 5 percent growth in the urban population, three times the national average. The projected urban population by year 2000 is 90 million. This rapid urbanization is causing infrastructure deficiencies in most of the more than 400 cities and towns, and particularly in the strategic cities that have been designated as development centers by the Government. Urban development was accorded a high level of emphasis and priority during REPELITAs V and VI and, as a result, the servicing levels for water supply are approaching the targets. However, the investments in urban waste management, defined as drainage, wastewater, and solid wastes, had lower priority and have now fallen well behind both the Government's servicing targets and demand.<sup>3</sup>

3. The Government has recognized that continued economic growth will increase the demand for more water resources and require more investment in pollution control, both to protect the shrinking fresh water resources and the public health of urban residents. Furthermore, in line with its decentralization policies, the Government is devolving responsibility for delivery of urban waste management services to local governments. There is also recognition that the required funding for the related infrastructure is beyond the capability of local governments, and that there is a need for continued support from the Government or from the private sector. Therefore, the Government's national development objectives for the urban waste management subsector, as contained in the REPELITA VI Guidelines for State Policy include to (i) continue economic development through industrialization and the related rapid growth of urban areas, (ii) expand urban infrastructure through integrated national policies and strategies to address the increasing stress on the environment, (iii) make local governments fully responsible for delivery of urban services, and (iv) develop the policy and regulatory framework necessary to encourage and facilitate private sector investment in the urban infrastructure sector. The major challenge facing the Government is the financing of urban infrastructure and cost recovery of the investments.

4. The Government's planned expenditure in the urban infrastructure sector under REPELITA VI was Rp5,050 billion (\$2.3 billion).<sup>4</sup> Present indications are that even these modest levels of expenditures and physical servicing targets for the urban waste management subsectors will not be achieved during REPELITA VI. The Directorate General of Human Settlements has estimated that by the year 2000 the public health of more than 30 million urban

---

<sup>1</sup> The TA first appeared in *ADB Business Opportunities* in May 1996.

<sup>2</sup> REPELITA VII will commence in fiscal year 1999/2000, 1 April 1999, and run through to 31 March 2004.

<sup>3</sup> The REPELITA VI targets for increasing coverage of urban services included (i) piped water supply from 40 to 59 percent; (ii) wastewater/septage/nightsoil (environmental sanitation) from 44 to 51 percent; and (iii) solid waste management from 40 to 46 percent.

<sup>4</sup> Includes Rp2,815 billion for water supply (56 percent); Rp415 billion for drainage (8 percent); Rp470 billion for environmental sanitation (wastewater, septage, and nightsoil disposal) (9 percent), Rp370 billion for solid waste management (7 percent); Rp260 million for kampung and market improvement (5 percent); and Rp720 billion (15 percent) for related capacity building and miscellaneous components.

dwellers will be at risk because of inadequate urban waste management. The deficiencies are manifested as (i) regular flooding of households in low lying areas, every rainy season, caused in part by lack of physical infrastructure and by blockage caused by improper disposal of solid wastes into drains; (ii) contamination of shallow wells<sup>1</sup> by the improper discharge of wastewater; and (iii) insanitary dumping and illegal disposal to drains and private property because only about 40 percent of urban households are serviced by solid waste collection and disposal services. Each of these manifestations have serious implications for public health and the quality of life, especially in the kampungs (densely populated, low-income communities) and slum areas.

5. The Bank has actively supported the Government's initiatives<sup>2</sup> in the urban infrastructure sector since the 1970s, mainly through a sector lending modality to successive integrated urban infrastructure development projects, but also through a number of project loans to the larger cities, mostly in West and Central Java and Sumatra. The most recent loans were for the Sumatra and West Java Urban Development (Sector) projects<sup>3</sup> and the Metropolitan Bogor, Tangerang, and Bekasi Urban Development (Sector) Project.<sup>4</sup> These integrated urban development projects did include drainage and urban waste management components, more or less in the same proportion as indicated in footnote 4 on the previous page. The Bank is continuing support to the urban sector and the urban waste management subsectors through ongoing or planned projects in Bandung, Medan, and Bandar Lampung. The World Bank is also supporting the urban waste management subsectors through the proposed West Java and Jakarta Environmental Management Project, which is specifically aimed at solid waste collection and disposal in Jakarta, Bogor, Tangerang, Bekasi, Bandung, and the Serang industrial zone. In addition, the United Nations Development Programme (UNDP) supports urban waste management programs through its collaboration with the World Bank<sup>5</sup> on the Regional Water and Sanitation Group-East Asia and the Pacific (RWSG-EAP). RWSG-EAP's program in Indonesia is supporting environmental sanitation programs at neighborhood levels from its headquarters in Jakarta. However, even with these investments, the planned expenditures, in these subsectors are not expected to be achieved under REPELITA VI.

6. The reasons for this underutilization of the planned investments in the urban waste management subsectors include (i) a need to strengthen the Government's policies, strategies, and programs to address the growing deficiencies in urban waste management; (ii) a need to strengthen the technical capability of the human resources at all three levels of government, especially locally where the level of responsibility is increasing ; (iii) a need to improve the Government's grant and loan programs to encourage local governments to invest in urban waste management projects; (iv) a need to make the urban waste management subsectors more attractive to the private sector, initially for contract operations and eventually for investment; (v) the inability to fully recover costs, thus requiring subsidization; (vi) a lack of understanding of the

---

<sup>1</sup> Approximately 60 percent of urban households continue to depend on groundwater, mostly from shallow wells, for their water supply.

<sup>2</sup> The Bank's operational strategy for Indonesia promotes efficient economic growth through (i) improvements in the level of basic services in a regionally balanced manner with special attention to the poor; (ii) improved urban productivity and quality of life through capacity building of urban governments to enhance their ability to plan, utilize resources, implement, and generate urban infrastructure in a suitable manner; (iii) increasing involvement of the private sector; and (iv) greater community participation.

<sup>3</sup> Loan Nos. 1383 and 1384-INO, for \$130 million and \$70 million, respectively, both approved on 26 September 1995.

<sup>4</sup> Loan No. 1511-INO for \$80 million, approved on 19 December 1996.

<sup>5</sup> The UNDP/World Bank Water and Sanitation Program.

importance of improving environmental sanitation in terms of public health; and (vii) the low priority assigned by most local governments.

7. To address the weaknesses, the Government has requested the Bank to assist them with strengthening of the existing urban waste management policies, strategies, and programs, with a view to incorporating these in REPELITA VII. The Government is also planning to conduct pilot studies at the neighborhood level to develop better approaches, based on appropriate technology, for urban waste management projects with strong emphasis on public/community participation and awareness. The lessons learned from these pilot projects, combined with the strengthened policies and strategies, would be used to formulate investment projects suitable for Bank financing in the urban areas identified as having the most urgent demand. The current integrated urban infrastructure modality could be used with greater weighting/investments for the urban waste management components, or projects could be developed specifically aimed at solid waste and wastewater management.

### **III. THE TECHNICAL ASSISTANCE**

#### **A. Objective**

8. The overall objective of the TA is to assist the Government to strengthen and improve its existing policies and strategies for urban waste management. The resulting policies and strategies will help increase the service levels to meet the targets set for REPELITA VII. Specific objectives include the development of better urban waste management project planning and design by (i) establishing a clear line of responsibility and coordination between local, provincial, and central governments; (ii) involving all stakeholders in the planning, design, and financing of urban waste management services through sustained public participation and awareness campaigns; (iii) strengthening local governments' ability to plan, finance, and operate physical facilities on a sustainable basis (tariffs, user fees, taxes); (iv) strengthening the regulatory framework to encourage usage of urban waste management services and willingness-to-pay; and (v) facilitating public-private partnerships in financing and operating physical facilities. The TA would finance international and domestic consultants who would provide the practical experience and technical expertise to develop workable and sustainable urban waste management policies, strategies, and investment programs.

#### **B. Scope**

9. The TA will help strengthen the Government's policies and strategies for urban waste management to (i) achieve environmental, managerial, and financial sustainability of major infrastructure investments; (ii) involve the consumers/polluters/general public, formal service providers, informal service providers, and other stakeholders in the planning, design, and financing of urban waste management services to ensure the desired levels of service, willingness-to-pay, and ability to pay are incorporated; (iii) identify the responsible organizations to facilitate implementation and optimize the involvement of public-private sector partnerships; (iv) establish the institutional framework to enable demand responsiveness, financing, technical solutions, and proper operational and management policies to ensure sustainability; and (v) establish the regulatory framework to implement and manage a fair and implementable reward and sanctions system to reform the current improper disposal practices, while encouraging compliance with environmental protection measures and standards, for private citizens, corporate entities, and industry and local governments.

10. The scope of the TA is all-encompassing in its review of issues, policies, and strategies related to improvement of the urban waste management programs in Indonesia.

However, the actual work under the TA will be limited to those areas that are determined to require strengthening, changes, or improvements.<sup>1</sup> It is envisaged that the scope will require constant adjustment to reflect the issues already being addressed by other ongoing programs and projects. The scope will include (i) identification of the key issues and obstacles causing underutilization of existing programs and constraints to delivery of urban waste management services, including institutional responsibility and coordination between the various agencies at the three levels of governments financing and cost recovery; (ii) recommending the least costs options with appropriate technology; (iii) fostering private sector participation through public-private partnerships;<sup>2</sup> (iv) identifying sustainable financing and cost recovery mechanisms including grants/subsidy, user fees, general taxation, and private sector investment; (v) developing strategies and programs to greatly improve public participation and expand the public's knowledge and understanding of the need for urban waste management through public awareness programs, including preliminary design of four neighborhood level pilot scale projects;<sup>3</sup> and (vi) strengthening existing policies governing urban waste management, with a view to developing a clearcut strategy for the delivery of integrated and sustainable environmental sanitation and solid waste management programs, in line with the Government's objectives and goals under REPELITA VII.

11. Concurrently, the TA will identify the most urgently required investments in urban waste management and a related investment project suitable for financing by international donors will be proposed. The actual formulation of such a follow-on investment project would incorporate the lessons learned from the pilot studies and the TA.

12. The linkages between the objectives, scope, inputs, and outputs are summarized in the Logical Framework in Appendix 1.

### C. Cost Estimates and Financing Plan

13. The total cost of the TA is estimated at \$810,000 equivalent, consisting of \$465,000 in foreign exchange and \$345,000 equivalent in local currency cost. The Bank will provide \$600,000 equivalent, on a grant basis, to cover \$375,000 of the foreign exchange cost and \$225,000 equivalent of the local currency cost. The UNDP/World Bank Water and Sanitation Program's RWSG-EAP will cofinance \$90,000 equivalent of technical inputs by their Indonesia-based staff. The Government will finance the remaining \$120,000 equivalent, in kind. The cost estimates and financing plan is detailed in Appendix 2.

### D. Implementation Arrangements

14. The National Development Planning Agency (BAPPENAS) will be the Executing Agency and suitably qualified senior staff have been appointed to oversee implementation of the TA. BAPPENAS will establish a working group consisting of staff from the other involved government agencies. A high-level Steering Committee, consisting of the appropriate director generals from the ministries of Finance, Public Works, Home Affairs, Environment, and Health has been established. The TA will be implemented in close cooperation with the World Bank's

<sup>1</sup> Most of the basic data required to conduct the scope of work is available from various government agencies, institutions, or from previous projects completed by the Bank, the World Bank, and bilateral agencies active in Indonesia.

<sup>2</sup> This would follow the examples already developed through TA No. 2016-INO: *Private Sector Participation in Urban Development* (Bandung and Semarang) and in the proposed follow-on TA-INO: *Capacity Building for Private Sector Participation in Urban Development*.

<sup>3</sup> Financing of these pilot projects was discussed with RWSG-EAP, which will seek grant funds from one of its bilateral donors.

West Java and Jakarta Environmental Management Project<sup>1</sup> to ensure that the lessons learned during the processing of that project are incorporated into the TA, and that the project will benefit from the strengthened policies and strategies developed by the Bank's TA. The strengthened policies developed through the TA and the outcome of the proposed pilot projects will be shared with the World Bank and the RWSG-EAP to ensure that the lessons learned are incorporated into their projects.

15. The TA will finance a team of international and domestic consultants who will work under the direction of the BAPPENAS TA manager. The RWSG-EAP will provide a well qualified *senior sanitary engineer stationed in Jakarta to liaise with the World Bank project; to provide day-to-day management input for the Bank's TA; and to facilitate the technical input by various RWSG-EAP specialists, who have extensive expertise and Indonesian experience with urban waste management.*<sup>2</sup> It is estimated that the RWSG-EAP staff will provide 6 person-months of consulting time to the TA. The TA consultants will provide a further 12 person-months of international expertise in urban waste management, environmental sanitation, cost recovery/financial analysis, socioeconomics, and public-private sector partnerships; and about 30 person-months of domestic expertise in the institutional, regulatory, legal, environmental, public participation, capacity building, cost recovery, financial, socioeconomics, drainage, and sanitary engineering fields. The consultants will be engaged by the Bank in accordance with the Bank's *Guidelines on the Use of Consultants* and other arrangements satisfactory to the Bank on the engagement of domestic consultants. The outline terms of reference are in Appendix 3. The TA is expected to commence by 1 August 1997 and be completed by the end of 1998.

16. The consultants will submit an inception report about two months after commencement, once the initial review has been completed.<sup>3</sup> It will incorporate a revised work plan based on actual findings and the progress on other ongoing efforts in the sector. An interim report, summarizing the recommended improvements in policies and strategies will be submitted within six months of commencement, in time to be used by BAPPENAS in preparation of the initial REPELITA VII documentation. A draft final report will be submitted within 12 months of commencement to be reviewed<sup>4</sup> and approved by the Government and the Bank. The final report will be completed within one month of receipt of the review comments. Meetings, as necessary, will be held with BAPPENAS, the other involved government agencies, the World Bank, RWSG-EAP, and the consultants.

#### IV. THE PRESIDENT'S DECISION

17. The President, acting under the authority delegated by the Board, has approved the provision of technical assistance, on a grant basis, to the Government of the Republic of Indonesia, in an amount not exceeding the equivalent of \$600,000 for the purpose of the Urban Waste Management Policies and Strategies Project, and hereby reports such action to the Board.

---

<sup>1</sup> The Steering Committee, and BAPPENAS staff, for the TA will be the same as those for the World Bank Project.

<sup>2</sup> The activities under the TA would be closely coordinated with the ongoing integrated urban infrastructure development projects, the proposed Capacity Building in Urban Infrastructure Management loan project and the proposed National Urban Development Strategy Study, financed by the Government.

<sup>3</sup> During the initial two months a workshop will be held with representatives from typical stakeholders in an urban waste management project to obtain practical comments, concerns, and input.

<sup>4</sup> A second workshop will be held as part of this review to disperse the findings and to obtain input for the final document.



## PROJECT FRAMEWORK

Design Summary	Targets	Project Monitoring Mechanisms	Risks/ Assumptions
<p>1. <u>Sector/Area Goals</u></p> <p>1.1 Increase the level of urban waste management services.</p> <p>1.2 Increase the responsibility of local governments in delivery of urban waste management services.</p> <p>1.3 Facilitate on increasing role for the private sector.</p> <p>1.4 Increase public participation awareness and acceptance.</p>	<ul style="list-style-type: none"> <li>- 60 percent of urban households by the end of REPELITA VII*</li> <li>- All urban waste management projects to be planned and implemented by local governments</li> <li>- Central government to set policy and strategy</li> <li>- Contract operations for wastewater; autonomous utility or build, operate and transfer for solid waste</li> <li>- Urban residents, neighborhood groups, womens' groups, nongovernment organizations, local government, scavengers, i.e. all stakeholders</li> </ul>	<ul style="list-style-type: none"> <li>- Local urban waste management entities and public health offices</li> <li>- Directorate General of Regional Development (DGBANGDA)</li> <li>- Directorate General of Public Administration and Regional Autonomy of Ministry of Home Affairs (DGPUOD)</li> <li>- Local governments</li> <li>- Local governments</li> </ul>	<ul style="list-style-type: none"> <li>- Willingness to pay and affordability</li> <li>- Political and financial capability of local governments</li> <li>- Policy and regulatory frameworks must help encourage involvement</li> <li>- Need a sustained long-term program; should be added to school curriculum</li> </ul>
<p>2. <u>Objectives</u></p> <p>2.1 Recommend strengthening of government's policies, strategies and programs in urban waste management.</p> <p>2.2 Develop strategies for increasing public private sector partnerships.</p> <p>2.3 Develop financing and cost recovery options.</p> <p>2.4 Identify most urgently needed investment program.</p>	<ul style="list-style-type: none"> <li>- Practical and implementable urban waste management policies, strategies and programs for REPELITA VII.</li> <li>- Improved regulatory framework and cost recovery.</li> <li>- Local governments and urban waste management operators.</li> <li>- Cities in Java and Sumatra, other than metropolitan areas.</li> </ul>	<ul style="list-style-type: none"> <li>- National Planning Agency (BAPPENAS), Ministry of Home Affairs (MOHA), Ministry of Public Works (MPW), Ministry of Finance (MOF), The Environmental Impact Management (BAPEDAL), Ministry of Health (MOH) and their agencies.</li> <li>- BAPPENAS</li> <li>- BAPPENAS</li> <li>- Local Governments.</li> </ul>	<ul style="list-style-type: none"> <li>- Completion of draft recommendation by November 1997</li> <li>- Lack of commitment and capacity by local governments</li> <li>- Public apathy and lack of understanding; sanitation and public health linkages</li> <li>- Affordability issues related to centralized systems</li> </ul>

\* To be determined by Government, but 60 percent is felt to be achievable.

Design Summary	Targets	Project Monitoring Mechanisms	Risks/ Assumptions
<p><u>3. TA Components/Outputs</u></p>			
<p>3.1 Update the government's urban waste management policies, strategies and programs.</p>	<ul style="list-style-type: none"> <li>- Central, provincial and local governments.</li> </ul>	<ul style="list-style-type: none"> <li>- DGHS TA Report.</li> </ul>	<ul style="list-style-type: none"> <li>- Lack of government commitment to waste management; public apathy</li> </ul>
<p>3.2 Develop a clear determination of responsibility between the three levels of government.</p>	<ul style="list-style-type: none"> <li>- All Stakeholders.</li> </ul>	<ul style="list-style-type: none"> <li>- Local governments BAPPEDAL</li> </ul>	<ul style="list-style-type: none"> <li>- Lack of guaranteed returns/cost recovery, low tariffs and fees</li> </ul>
<p>3.3 Clarify the role/responsibilities of beneficiaries/pollutors.</p>	<ul style="list-style-type: none"> <li>- Wastewater: on-site disposal, centralized collection and treatment. Septage and nightsoil collection and treatment. Solid waste: collection, disposal, recycling.</li> </ul>	<ul style="list-style-type: none"> <li>- MOF BAPPENAS</li> </ul>	<ul style="list-style-type: none"> <li>- Willingness to pay, affordability</li> <li>- Lack of interest by local governments</li> </ul>
<p>3.4 Develop technical criteria for various types of collection and disposal systems.</p>	<ul style="list-style-type: none"> <li>- Local neighborhood and community groups. Public health centers and NGOs. Local governments and service providers.</li> </ul>	<ul style="list-style-type: none"> <li>- BAPPENAS, MOF, Local Governments.</li> </ul>	<ul style="list-style-type: none"> <li>- Lack of public understanding and apathy, will take a continuous long-term effort</li> </ul>
<p>3.5 Develop public participation and awareness programs.</p>	<ul style="list-style-type: none"> <li>- Central, provincial and local governments.</li> </ul>	<ul style="list-style-type: none"> <li>- Directorate General of Human Settlements (DGHS), Training Institutes, Local Governments.</li> </ul>	<ul style="list-style-type: none"> <li>- Willingness to pay and affordability by end users/pollutors; level of support by service governments; local commitment</li> </ul>
<p>3.6 Develop financing schemes including a mix of central and provincial government grants and loans, local equity and private sector funding.</p>	<ul style="list-style-type: none"> <li>- Local governments and service providers. Follow same format as for water tariffs.</li> </ul>	<ul style="list-style-type: none"> <li>- Provinces, Four Cities DGHS</li> </ul>	<ul style="list-style-type: none"> <li>- Affordability, willingness-to-pay, local financing availability/priority</li> </ul>
<p>3.7 Develop cost recovery formulae.</p>	<ul style="list-style-type: none"> <li>- Three levels of government and service providers.</li> </ul>	<ul style="list-style-type: none"> <li>- United Nations Development Programme/ World Bank's Regional Water and Sanitation Group-East Asia and Pacific</li> </ul>	<ul style="list-style-type: none"> <li>- Urban waste management has low priority/status difficult to attract qualified professionals</li> </ul>
<p>3.8 Recommend capacity building requirements.</p>	<ul style="list-style-type: none"> <li>- Four typical neighborhood areas.</li> </ul>		
<p>3.9 Preliminary preparation of four pilot projects.</p>	<ul style="list-style-type: none"> <li>- BAPPENAS, MPW, World Bank, UNDP, bilateral and local reports.</li> </ul>	<ul style="list-style-type: none"> <li>- BAPPENAS</li> </ul>	<ul style="list-style-type: none"> <li>- Should demonstrate practical solutions</li> </ul>
<p>3.10 Summarize the local and regional environmental impact caused by weak pollution control.</p>	<ul style="list-style-type: none"> <li>- Java and Sumatra cities who show interest, commitment and financial capability.</li> </ul>		<ul style="list-style-type: none"> <li>- Industrial areas, coastal zones/reef, river basins, local streams and water bodies</li> </ul>
<p>3.11 Preliminary identification of an investment project.</p>			<ul style="list-style-type: none"> <li>- Possible ADB financing; priority, local financing and cost recovery</li> </ul>

Design Summary	Targets	Project Monitoring Mechanisms	Risks/ Assumptions
4.0 <u>Activities</u>			
4.1 Review existing policies and recommend clear delineation/mandate of responsibility between three levels of government.	<ul style="list-style-type: none"> <li>- 6 p-m of consulting services -               <ul style="list-style-type: none"> <li>• institutional</li> <li>• legal</li> <li>• environmental</li> <li>• urban planning</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- TA progress reports</li> <li>- inception report</li> <li>- interim report</li> <li>- draft and final report</li> <li>- review Missions</li> </ul>	<ul style="list-style-type: none"> <li>- Policy framework and legal aspects in place at central government level</li> </ul>
4.2 Strengthen enabling legislation at local government level.	<ul style="list-style-type: none"> <li>-4 p-m of consulting services -               <ul style="list-style-type: none"> <li>• institutional</li> <li>• legal</li> <li>• environmental</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- as above</li> </ul>	<ul style="list-style-type: none"> <li>- Commitment by local governments</li> </ul>
4.3 Develop policies for controlling land developers and for cost sharing formula.	<ul style="list-style-type: none"> <li>- 1 p-m of consulting services -               <ul style="list-style-type: none"> <li>• institutional</li> <li>• legal</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- as above</li> </ul>	<ul style="list-style-type: none"> <li>- Commitment to controlling large land development interests</li> </ul>
4.4 Strengthen policy and regulating framework to encourage private sector involvement.	<ul style="list-style-type: none"> <li>- 3 p-m of consulting services -               <ul style="list-style-type: none"> <li>• private sector</li> <li>• institutional</li> <li>• financial</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- as above</li> </ul>	<ul style="list-style-type: none"> <li>- Recognition of rate of return for private sector and security of investment</li> </ul>
4.5 Develop public participation and awareness campaign.	<ul style="list-style-type: none"> <li>- 3 p-m of consulting services -               <ul style="list-style-type: none"> <li>• socioeconomics</li> <li>• public relations</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- as above</li> </ul>	<ul style="list-style-type: none"> <li>- Long-term commitment by local governments</li> </ul>
4.6 Update technical criteria, standards of physical plants and servicing targets in REPELITA VII.	<ul style="list-style-type: none"> <li>- 4 p-m of consulting services -               <ul style="list-style-type: none"> <li>• sanitary engineering</li> <li>• urban planning</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- as above</li> </ul>	<ul style="list-style-type: none"> <li>- Acceptance by MPW/DGHS that waste disposal is public responsibility, not only household</li> </ul>
4.7 Develop financing mechanism.	<ul style="list-style-type: none"> <li>- 3 p-m of consulting services -               <ul style="list-style-type: none"> <li>• financial analysis</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- as above</li> </ul>	<ul style="list-style-type: none"> <li>- Commitment by government to invest in sector</li> </ul>
4.8 Develop cost recovery options and formulas.	<ul style="list-style-type: none"> <li>- 3 p-m of consulting services -               <ul style="list-style-type: none"> <li>• financial analysis</li> <li>• socioeconomics</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- as above</li> </ul>	<ul style="list-style-type: none"> <li>- Commitment to user pay policy. Willingness to pay, affordability</li> </ul>
4.9 Recommend capacity building.	<ul style="list-style-type: none"> <li>- 3 p-m of consulting services -               <ul style="list-style-type: none"> <li>• urban planning</li> <li>• human resource development</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- as above</li> </ul>	<ul style="list-style-type: none"> <li>- Government and public perception; re: status of urban waste management workers</li> </ul>
4.10 Prepare preliminary design of four pilot projects.	<ul style="list-style-type: none"> <li>- 5 p-m of consulting services -               <ul style="list-style-type: none"> <li>• urban planning</li> <li>• sanitary engineering</li> <li>• socioeconomics</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- as above</li> </ul>	<ul style="list-style-type: none"> <li>- Commitment by four cities to support program</li> </ul>
4.11 Summarize the impact on local and regional environment resulting from poor waste management practices, and recommend priority/most urgently required intervention.	<ul style="list-style-type: none"> <li>- 5 p-m of consulting services -               <ul style="list-style-type: none"> <li>• sanitary engineering</li> <li>• environmental engineering</li> <li>• economics</li> <li>• financial analysis</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- as above</li> </ul>	<ul style="list-style-type: none"> <li>- Data available from various government agencies and reports</li> </ul>
4.12 Update investments required under REPELITA VII to meet the Government servicing targets.	<ul style="list-style-type: none"> <li>- 4 p-m of consulting services -               <ul style="list-style-type: none"> <li>• financial analysis</li> <li>• sanitary engineering</li> <li>• urban planning</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- as above</li> </ul>	<ul style="list-style-type: none"> <li>- Commitment of BAPPENAS and other agencies to update REPELITA VII documents</li> </ul>
4.13 Identify an investment project suitable for international financing.	<ul style="list-style-type: none"> <li>- 4 p-m of consulting services -               <ul style="list-style-type: none"> <li>• urban planning</li> <li>• sanitary engineering</li> <li>• environmental engineering</li> <li>• financial analysis</li> <li>• economics</li> </ul> </li> </ul>	<ul style="list-style-type: none"> <li>- as above</li> </ul>	<ul style="list-style-type: none"> <li>- Commitment by local governments, availability of local financing, and support in the form of grants and loans from government</li> </ul>

**COST ESTIMATES AND FINANCING PLAN**  
(\$'000)

Item	Foreign Exchange	Local Currency	Total Cost
<b>A. Bank Financing</b>			
1. Consultants			
a. Remuneration			
(i) international consultants	220.0	—	220.0
(ii) domestic consultants	—	115.0	115.0
b. Per Diem			
(i) international	54.0	—	54.0
(ii) domestic	—	10.0	10.0
c. Travel			
(i) international	30.0	—	30.0
(ii) local	—	10.0	10.0
d. Reports and Communications	15.0	—	15.0
2. Workshops/Training	5.0	45.0	50.0
3. Miscellaneous Support Services		10.0	10.0
4. Representation for Contract Negotiations	5.0	—	5.0
5. Contingencies	46.0	35.0	81.0
<b>Subtotal (A)</b>	<b>375.0</b>	<b>225.0</b>	<b>600.0</b>
<b>B. RWSG-EAP Financing (Equivalent)</b>			
1. Management and Supporting Staff (3 m)	40.0	—	40.0
2. Technical Advisory Staff (3 m)	50.0	—	50.0
<b>Subtotal (B)</b>	<b>90.0</b>	<b>—</b>	<b>90.0</b>
<b>C. Government Financing</b>			
1. Office Accommodation and Transport	—	20.0	20.0
2. Remuneration and Per Diem of BAPPENAS Staff	—	40.0	40.0
3. Administrative Support	—	30.0	30.0
4. Remuneration and Costs of the Government Support		30.0	30.0
<b>Subtotal (C)</b>	<b>—</b>	<b>120.0</b>	<b>120.0</b>
<b>Total</b>	<b>465.0</b>	<b>345.0</b>	<b>810.0</b>

Source: Staff estimate  
—= magnitude zero

(Reference in text: page 4, para. 13)

## **OUTLINE TERMS OF REFERENCE**

### **A. Data Collection and Analyses**

1. Review data collection and analysis with Directorate General of Human Settlement and other responsible agencies and generate a list of data and information sources.
2. Review and analyze previous studies, reports, data, project information, and related information including lessons learned from the Bank's past projects.
3. Review the existing administrative framework and structure of human waste disposal, identify restrictions and bottlenecks, and recommend improvements and changes.
4. Review the socioeconomic framework, collect basic data on environmental sanitation, analyze the information, determine the impact of the present levels of service, and recommend the required service levels for various urban conditions including low and high density residential areas, commercial and institutional areas, and industrial zones. Evaluate the impact of factory wastewater and solid waste discharges on local communities and how this affects local conditions, quality of life, and public health.
5. Review development and planning aspects and recommend changes and improvements taking into consideration land use and zoning, development trends, and city or town development plans.
6. Determine the existing service levels of water supply, consumption trends, and increased service levels, and the cost recovery mechanisms used and how adequate they are for meeting operation and maintenance expenditures and depreciation or financing charges.
7. Evaluate current household sanitation practices, determine their adequacy in terms of hygienic practices, and recommend minimum sanitation levels and disposal methods, whether to septic tanks, sullage pit, drains, or sewers.
8. In a sample of cities, review existing wastewater flows, sources, volumes, strength in terms of pollutants, and their impact on the surrounding urban environment and downstream users. Project the overall flows, organic and chemical loading of domestic, commercial, institutional, and industrial wastewater from the larger urban areas. Estimate the impact on urban environments in general and the level of treatment likely to be required. Establish a typical wastewater monitoring program that can be implemented in any city or town to develop a database for future investment projects.
9. Develop a summary of existing and planned wastewater treatment facilities indicating the current and proposed levels of treatment from on-site treatment, and from municipal and industrial wastewater treatment and disposal systems. This will include septic tanks, nightsoil and sludge pumpout, and disposal of sludge from central treatment plants.
10. Review existing and projected levels of liquid hazardous waste generation by the industrial sector. Review existing and proposed disposal practices and determine what changes are required to meet reasonable environmental sanitation levels that will protect public health and urban and rural environments.

11. Review and determine the existing environmental conditions including surface water quality, shallow and deep groundwater quality, land and soil conditions, physical environmental, and general impact on quality of life in urban areas.

**B. Strengthening of Regulatory Framework,  
Cost Recovery and Public Participation Programs**

**1. General**

12. Review the legal framework of the environmental sanitation program, the pollution control legislation, and related regulatory framework of central, provincial, and local governments. Recommend changes and improvements with an emphasis on strengthening the capacity to implement programs at the local level.

13. Review the existing institutional arrangements and recommend strengthening of legislation and agencies to provide more capability and responsibility at the local level.

14. Recommend specific divisions of responsibility, control, and financing arrangements to place more responsibility on local governments for regulatory control, funding of rehabilitation programs and new works, provision of operations and maintenance, cost recovery mechanisms, conduct of public participation campaign, and urban planning.

15. Review existing environmental standards as they apply to sanitation including water quality standards, effluent discharge standards, solid waste disposal methods, hazardous waste treatment and disposal requirements, standards, and methods.

**2. Regulatory Framework**

16. Review existing municipal and industrial effluent regulations including effluent standards, institutional responsibilities for monitoring and enforcement, and penalties and other disincentive systems.

17. Evaluate past performance of industry and Government in complying with regulations and recommend necessary improvements including step-by-step measures to be undertaken and legal modifications to existing regulations.

18. Review and evaluate effluent and surface water monitoring programs and recommend detailed corrective measure which would strengthen effectiveness of monitoring in terms of compliance with effluent regulations.

19. Recommend an institutional capacity building program necessary for strengthening monitoring and enforcement of effluent regulations.

**3. Cost Recovery Mechanism**

**a. Tariffs and Collection System**

20. Review the existing and past tariff structure and tariff user fee levels for solid waste and septic tank desludging services, and the system for billing being used. Conduct social surveys to determine willingness-to-pay and affordability aspects.

21. Review the current social and financial objectives employed in the determination of water tariffs. Specifically, determine levels of cross-subsidization between customer groups.
22. Evaluate the extent to which the strategies and guidelines identified in may para. 21 be applied for the wastewater and solid waste sectors.
23. Assess, through discussions with relevant Government officials, the extent to which the billing systems and financial management capabilities of cities may be utilized for cost recovery.
24. Develop social and financial objectives for the agencies/enterprises responsible for collection and disposal of liquid and solid wastes.
25. Based upon para. 24 above, develop a methodology for the determination of wastewater and solid waste tariffs/user fees.
26. Determine how the recommended policies and guidelines are consistent with maintaining or developing an adequate level of service, customer acceptability and affordability, financial and institutional capabilities, and economic development strategies.
27. Determine any required modifications in the proposed tariff structures. Obtain general agreement from responsible agencies on new policies. Ensure consistency with social and financial objectives by projecting financial performance and assessing customers affordability and willingness to pay, particularly for lower income groups.
28. Recommend any necessary training to responsible staff so that they will be in a position to implement and employ the methodology in the future.
29. Evaluate options for revenue collection systems, including combining all city utility tariffs on one monthly invoice (water, electricity, gas, etc.)

**b. Accounting**

30. Review and evaluate existing billing and accounting systems being used by the Water Supply Enterprises and city agencies responsible for liquid and solid waste cleaning services.
31. Recommend improvements of billing, accounting, and management reporting systems, including specifications of information and data to be reported, function levels to be responsible for the preparation of this information and data, types and periodicity of the reports, and function levels to receive those reports; establishment of computerized management information systems, preparation of corresponding manuals, and pro forma for operations, annual budgeting, budgetary control and external reporting requirements; and preparation of an appropriate chart of accounts and design of a computerized accounting system covering revenue billing, debtors, general ledger, accounts payable, and inventory.
32. Identify appropriate software packages and hardware for the billing and accounting system.

#### **4. Public Participation**

33. Hold meetings with a number of large, medium, and small cities and their agencies responsible for urban waste management, and ensure that their views and concerns are fully incorporated into the study.
34. Evaluate and recommend improvements to existing public consultation and health campaigns covering the following areas: (a) health education campaigns to promote the health and environmental benefits of solid waste and wastewater collection, treatment, and disposal systems; (b) informing landowners and households about the legislative requirements and the obligation to install hygienic toilets and to dispose of solid waste properly, and to connect to the sewer system wherever available; and (c) educating the community at large and the connected households, in particular, about the correct use of the improved wastewater system, which is beneficial for public health.
35. Estimate operational budgets required to include a provision to finance future public participation and health education programs. Based on these costs, project the tariffs necessary and analyze the willingness-to-pay and affordability data collected.
36. Identify suitable nongovernment organizations or encourage the establishment of new local, environmentally oriented nongovernment organizations to be directly involved in the public participation program of the Project.
37. Recommend and provide examples of a public health education program, targeting interventions at the poorer and most disadvantaged sections of the population, and work in close collaboration with local health departments.
38. Prepare a program to approach women and vulnerable groups, in line with the Bank's enhanced focus on women in development and vulnerable groups to generate maximum equity impact.
39. Conduct workshops in conjunction with the review of the interim and draft final reports to help disseminate the findings of the TA to the local and provincial governments, as well as other interested and involved agencies or entities.

#### **C. Define a National Environmental Sanitation Program**

40. Based on the targets of Repelita VI and the findings in A and B above, prepare an overall strategy to address current problems of human and industrial waste disposal and to meet the challenges and environmental pressures resulting from increased urbanization and economic growth. The strategy will identify key issues, concepts, formulation, community participation, identification of project areas, constraints, implementation aspects, and a benefits and monitoring process.
41. Update the current water quality and urban environmental sanitation standards and issues including water quality objectives and standards, beneficial uses and water allocation, and wastewater discharge standards.
42. Update pollution control/wastewater collection and treatment requirements with an emphasis on on-site, low cost, and appropriate technology following established design criteria. This activity will include (i) estimate the demand for septage collection and existing services provided by the private sector; (ii) evaluate performance of existing septage treatment facilities in typical urban areas; (iii) identify the typical areas where septic tanks can be used where



discharge to drains can be used and where piped sewers are necessary; make comparative assessments of small bore, pressurized, and conventional sewage collection systems; evaluate the designs and performance of existing sewerage systems in terms of percentage of house connections in typical low, medium, and high density urban areas, and adequacy of the operation and maintenance of the collection and treatment systems; (iv) evaluate feasibility of on-site treatment options including septic tanks, sullage pits, anaerobic filters, and small scale package treatment plants for residential apartment blocks and commercial, institutional, and industrial entities; and (v) evaluate the need to adapt or change design criteria for sewerage systems in Indonesia.

43. Update the technical criteria and requirements for wastewater management.

44. Evaluate financial aspects including capital costs, financing plans, and sources, determine a target level for local contributions to project costs, develop typical operations and maintenance costs, determine the cost recovery required, review current tariffs and user fees for adequacy and recommend reform to better reflect a "user pay" approach, and develop a typical financial plan for wastewater management. In addition, review the policies and practices related to the subsidization of environmental sanitation, and financial performance of the operating entity, and evaluate methods of increasing the revenues including innovative user fees, property taxes, environmental fees, tax on certain products to finance a recycle program, and the possibility of combined charges for sewerage with water, electricity, gas, telephone, etc. for better overall efficiency for collection of all utility bills and to encourage payment of tariffs for environmental sanitation.

45. Review and update the target levels of service for wastewater management.

46. Determine the potential for private sector participation in septic tank cleaning services and recommend how such private sector involvement could be encouraged.

47. Recommend the appropriate division of responsibility for wastewater disposal among the central, provincial, and local governments.

48. Identify and recommend the capacity building required to properly address the requirements of the National Environmental Sanitation Program.

49. Summarize the foregoing into a practical document that will be useful at all three levels of government over a reasonable time frame, say ten years, with a title such as "Development Strategies (or Framework) for Environmental Sanitation Sector - 1996-2006". The document would recommend a specific action plan for REPELITA VI, until the end of 1999 including a sector project to address the worst problems.

#### **D. Identify a Preliminary Investment Project**

50. Based on the foregoing, recommend four initial subprojects as the basis of a sector investment project that would address the most serious concerns identified in the study. The project should be generally formulated in terms of local affordability, capability to implement and operate, and ability to achieve cost recovery. The project would consist of two components: capacity building and infrastructure investment. The project should fit within the Government's urban sector investment plan.

51. Prepare draft terms of reference for consultancy services for the follow-on Project Preparatory Technical Assistance.

**E. Outputs**

52. The specific outputs from the TA will include recommendations for the following:

- (i) updated policies, strategies, and programs for urban waste management;
- (ii) a clear delineation of responsibilities by each level of government in implementing the REPELITA VII urban waste management programs;
- (iii) an update of the responsibilities of private households, commercial, and industrial polluters/users of urban waste management facilities, including the responsibility of private land developers;
- (iv) technical criteria for various types of collection and disposal systems;
- (v) an indication of the damage caused by the current lack of urban waste management;
- (vi) public participation and awareness programs to greatly improve the general public's knowledge of the need for urban waste management;
- (vii) funding schemes including the mix of local equity, loans, and/or grants from the Government and possibilities for private sector investment;
- (viii) cost recovery mechanisms, similar to the Government's regulations for water supply;
- (ix) capacity building requirements;
- (x) four pilot/demonstration schemes, partly to confirm technical and cost aspects but also to assist with public awareness and to address the issue of scavengers; and,
- (xi) identification of the most urgently required investments focusing on the larger cities, not already covered by various Bank and World Bank projects.

**F. Reporting Requirements**

- (i) An inception report outlining the consultants' work program within two months of the commencement of the technical assistance.
- (ii) Progress reports once every three months following the inception report.
- (iii) A draft final report within 22 months of the commencement of the technical assistance.
- (iv) A final report within one month of receipt of comments on the draft final report from the Government and the Bank.