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# PURSE PROJECT

*Private Participation in Urban Services*

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## MONITORING AND EVALUATION INDICATORS

PURSE Report No. ID. 108.5/95/021

*Submitted by*  
Chemonics International  
Jakarta, Indonesia

*In association with*  
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BAPPENAS  
DEPARTEMEN DALAM NEGERI

DEPARTEMEN KEUANGAN  
DEP. PEKERJAAN UMUM

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PURSE Report No. ID. 108.5/95/021

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## SECTION I BACKGROUND AND INTRODUCTION

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### A. Background

#### A1. The Need for Data on the Privatization of Urban Services

Indicators of the development of private sector activity in the provision of urban services are needed both to measure the success of Government of Indonesia (GOI) policy in support of such activity and to measure the realization of PURSE Project goals and purposes. The latter are specified in the project's Logical Framework or LOGFRAME (see table 1) in the project paper for the PURSE Project, which was approved on September 30, 1991. The PURSE logframe was revised in December 1994 as part of USAID/Indonesia's Semi-Annual Project Implementation Review (SAPIR) process. The original LOGFRAME actually specified five indicators for the project's goals and purposes, as follows:

- Project contribution to availability of selected urban services.
- Public and private sector investment in selected urban services.
- Foreign private investment in selected urban services.
- The number of domestic private companies participating in selected urban services.
- "Public/private and private sector projects developed and expanded services delivery and financing options utilized."

In the period before the PURSE Project, the term Private Sector Participation (PSP) was used broadly to designate a variety of types of private activity in the provision of urban services. Accordingly, many indicators that were discussed during that period referred to "PSP" activity. Since the inception of the PURSE Project, a distinction began to be made between two kinds of private activity:

- Private-Public Partnership (PPP) for large, capital-intensive projects, for which the main GOI objective is to attract private capital, including foreign capital. PPP projects include both Build-Operate-Transfer (BOT) and Build-Own-Operate (BOO) projects.
- Private Sector Participation (PSP) for service contracts, which involve small investments, for which the main GOI objective is to privatize in the interest of promoting efficiency and quality of service. Examples include street sweeping and solid waste collection.

The terms PPP and PSP have become critical to the discussion of indicators, because information requirements differ for the two kinds of activity.

## A2. Previous Data Collection Efforts

In the context of preparations for the PURSE project, a team of two consultants from the Municipal Finance Project (MFP), William R. Kugler and John L. Taylor, travelled to Surabaya in August 1991. They surveyed the current extent of privatization of urban services there and provided preliminary recommendations for the format of a "Privatization Survey."

The proposed survey, managed by USAID and the PURSE Steering Committee, was contracted in 1992 under the Water and Sanitation for Health Project (WASH Project), including subcontractor P.T. Hasfarm Dian Konsultan. A scope of work for the implementation of the survey specified three tasks:

1. "Survey current significant areas and extent (e.g., annual gross value of services provided and/or total annual capital investment) of private participation in provision of urban infrastructures and services."
2. Survey opportunities and constraints for privatization.
3. "Define a set of simple and reliable indicators for monitoring the extent of private sector participation."

In its initial phase, the Hasfarm study began in October-November 1992 with a series of three-day visits by a technical team to each of eight cities (Bekasi, Surabaya, Semarang, Yogyakarta, Ujung Pandang, Medan and Pontianak). Each visit began with a half-day orientation meeting to which were invited local officials from about 10 different agencies. The agencies included: Bappeda, Dinas/PD Kebersihan, Dinas/PD Pasar, PDAM, Dinas Terminal, Dinas Peternakan/Slaughterhouse, Kadin, etc. The rest of the time in each city was used for "in-depth interviews" with the various agencies.

On the basis of the visits, the Hasfarm team prepared a draft report which was presented on January 27, 1993. During its review, USAID requested a follow-up study focusing more sharply on monitoring indicators, i.e., task 3. The plan for the follow-up study included the following objectives:

- A simple set of indicators
- Baseline data for four cities: Semarang, Yogyakarta, Medan, Bandung
- A method for collecting such data annually
- Deciding which agency should be responsible for preparing the indicator

Visits were conducted to four cities and a report was prepared that presented data for PSP contracts in a standard format. Data for the four cities revisited and Surabaya were summarized and aggregated in a single table. The data covered the three sectors supported by PURSE: water, wastewater, and solid waste.

A report on the followup study, prepared by Hasfarm in mid-1993, presented several recommendations for routine data collection by the GOI:

- That the central government "issue instructions (the equivalent of a Ministerial Letter of Decision)" on the mechanics and procedures of data collection.
- That the Ministry of Home Affairs train local officials in monitoring.
- That teams be created at the Kabupaten-level for collecting data on PSP contracts, to be coordinated by the local Bappeda.
- That questionnaires for each of the 3 sectors (water supply, wastewater treatment and solid waste management) be developed based on the questionnaires used by Hasfarm. Unfortunately, the verbatim questionnaires in Bahasa were not attached; instead, they were translated into a list of questions (not a questionnaire) in English. Although the report recommended several specific "improvements" to the questionnaires, the improvements were not incorporated into the questionnaire.

On the basis of the follow-up study, the entire WASH-Hasfarm study was revised and finalized as *Survey of Private-Sector Participation in Selected Cities in Indonesia*, WASH Field Report No. 387, October 1993. It recommended that a reporting system be established through the Ministry of Home Affairs, but did not present a detailed plan to be used for this purpose.

#### **B. Scope of Work**

The objective of this present consultancy is to 1) improve the definition of indicators based on analysis of available data compared to USAID reporting requirements; 2) collect available data to the extent possible, and 3) recommend next steps for installing data collection procedures. USAID reporting requirements include:

- The USAID Mission's Semi-Annual Portfolio Implementation Review (SAPIR).
- The Mission's Program Performance Information System for Strategic Management (PRISM).
- For USAID/Washington, the Housing Guarantee Program Performance Indicators of the Global Bureau, Office of the Environment and Urban Program (G/ENV/UP).

Section II reviews available data on the number of households and percentage of urban population served by water, wastewater, and solid waste services. Section III reviews alternatives for improving the definition of goal and purpose-level indicators so that project impact data can be collected. Section III further examines constraints and opportunities for collecting data on the value of BOO/BOT investments, and the value of services contracted to private providers.

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## SECTION II

### AVAILABLE DATA ON SELECTED URBAN SERVICES

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#### A. Indicators of Households Served by Piped Water

The most complete and recent data available for the number of households served directly by piped water is from the National Socio-Economic Survey (SUSENAS), conducted by the Central Bureau of Statistics (or Biro Pusat Statistik, BPS). In the latest such survey, for 1993, a nationally representative sample of 205,000 households was asked to identify their source of drinking water from a list of 9 possible sources, one of which was "piped water." The manual for the survey defines "piped water:"

- to include water that has been processed to eliminate bacteria and exclude "home-made" village water systems that carry water by pipe (whether made from bamboo, plastic, or metal) from a spring or creek to the village.
- to include households that buy bottled water or that buy piped water from a street peddler.

As is seen in Table 1, the Susenas data show that a total of 4.6 million urban households, or 34 percent of urban households, were served by piped water in 1993. This compares well with the 33 percent urban coverage reported in the 1990 Census, which was based on a sample of over 2 million households and provided data for each kabupaten. Readers may be tempted to compare the two surveys and draw the conclusions that the share of urban households covered between 1990 and 1993 has not increased substantially. The comparison appears plausible but risky, due to major procedural differences between Susenas and Census. For technical reasons, the 1993 Susenas appears to somewhat exaggerate urban population growth from 1990 to 1993; however, the exaggeration of growth is not believed to have led to substantial bias in the estimation of the percentage of households served by piped water.<sup>1</sup>

Perhaps the only surprising part of the Susenas data is the finding that one quarter of households served are in fact rural. Many such "rural" households may be located in suburban villages or in small kecamatan capitals. If, however, the Susenas finding does not appear plausible to Cipta Karya officials, a small-area study might be indicated. In such a study, investigators

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<sup>1</sup> On the basis of the comparison of Susenas and Census, it appears that the total number of urban households served by piped water increased during 1990-93 from 3,903,000 to 4,632,000, or 19 percent, and the urban population increased by 15 percent, from 11.7 to 13.5 million. The 15 percent increase in the urban population is startling, when compared with an increase of only 2 percent in rural areas. The finding reflects in large part a controversial statistical procedure for the 1993 Susenas that extrapolated the 1980-90 population growth rate for urban and rural areas, thereby reflecting the heavy influence of reclassification of "villages" (the ultimate administrative unit) from rural to urban at the time of the 1990 census. A finding that the number of urban households increased by 19 percent during 1990-93 may be compared with PDAM data to be discussed below, showing that the number of household connections increased about 4 percent per year during 1988-92. The 4 percent rate would imply a 3-year increase during 1990-93 of only 12, not 19 percent in PDAM connections.

Table 1. -- Source of drinking water by household  
Susenas 1993 & Census of Population 1990

Survey & Source of Drinking water	Number of households ('000)				
	Urban			Rural	Total Urb-rural
	Jakarta	Other cities	Total		
<b>Susenas 1993</b>					
Piped water	824	3808	4632	1548	6180
Water pump	853	1759	2612	1776	4388
Protected well	129	3573	3702	8405	12107
Unprotected well	32	1816	1848	8020	9868
Protected spring	2	197	199	2459	2658
Unprotected spring	1	134	135	2974	3109
River water	0	124	124	2166	2290
Rainwater	1	159	160	863	1023
Other	25	60	85	309	394
<b>TOTAL</b>	<b>1868</b>	<b>11631</b>	<b>13499</b>	<b>28517</b>	<b>42016</b>
<b>Census 1990</b>					
Piped water	801	3102	3903	1232	5135
Water pump	751	1634	2385	1846	4231
Well	159	4599	4758	15666	20424
Spring	1	273	274	5700	5974
River water	0	116	116	2572	2688
Rainwater	3	162	165	695	860
Other	25	66	91	292	383
<b>TOTAL</b>	<b>1740</b>	<b>9953</b>	<b>11693</b>	<b>28002</b>	<b>39695</b>

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would visit some small rural areas for which Susenas data show service by piped water, in order to check whether the data reflect PDAM connections or village water systems. Visits to 5-10 Susenas households in each of 4 villages in a single kabupaten would be sufficient to shed considerable light on the meaning of the Susenas data.

It needs to be emphasized that the above-mentioned uncertainty does not affect the Susenas data for urban areas, and raises only the concern that Susenas data may somewhat *overstate* the number of persons/households served by PDAM water in rural areas. No considerations have to come to light that might cause Susenas to *understate* the number of households served by PDAM.

A PDAM typically serves an entire kabupaten/kotamadya, although the province of Jakarta has only one water enterprise, referred to as Pam Jaya. Data for all PDAMs are surveyed and tabulated by three agencies: BPS, Cipta Karya and PUOD; details of each survey are arrayed in Table 2. As is usual in parallel efforts of this sort, results of the three surveys differ somewhat. However, the differences are mostly minor, not warranting investigation. BPS does not publish data by PDAM, only by province. The PUOD survey is still under development, so no data are yet available.

The BPS data conveniently show the number of connections by type; for example, the 1992 data shows that households accounted for 2,353,000, or 88 percent of the 2,666,107 connections reported.

Interest focuses on the Cipta Karya data, because it shows detail to the PDAM level and because it has been available for a number of years. Results have been reported in two formats:

- A short report published irregularly since before 1991 until the recent reorganization, titled "Data Kondisi Teknis PDAM/BPAM di Indonesia." The last available report is dated March 1994.
- An occasional *Directory of Water Supply*, which has been published twice. The data in Table 3, for the 15 largest cities in Indonesia, is 1992 data from the Directory.

Comparison of household and administrative (PDAM) data provides an opportunity to examine the consistency of the two as well as the assumed service factors used by Cipta Karya. The assumed factors used here are 7.35 persons per household connection, and 170 persons per public tap. The exercise suggests that the standard Cipta Karya service factors may understate the true number of households and persons served. A more realistic estimate of the number of persons served per household connection might be 8, rather than 7.35. However, such a conclusion cannot be considered definitive in the absence of research confirming that the all rural connections in Susenas are really PAM type connections.

The Cipta Karya estimate that 39.5 percent of the urban population is served by piped water appears implausible. The Susenas measure, 34 percent, provides a more reliable measure. The overstatement in the Cipta Karya estimate is due to an erroneous assumption that all served households are in urban areas.

Table 2. -- Surveys of PDAM data

Agency	Title of publication	Freq.	Since year	Up to year	Tabs by...	Data available for:												
						Production	Operation hrs	Water source	UFW	Connections	ConneC by type	Public Taps	Employees	Income	Profit	Assets	Debt	Investment
BPS, Division of Construction Mining & Energy Statistics	<i>Statistik Air Minum Water Supply Statistics</i>	Annual	1986?	1992	By province	X	X	X	X	X	X	X	X	X				X
Cipta Karya	"Data Kondisi Teknis PDAM/BPAM di Indonesia" "Data of Technical Performance for PDAM's and BPAM's"	Irregular, published often	pre-1991 (files in storage)	1993?	By PDAM	X	X	X	X	X		X						
	<i>Direktori Air Minum Seluruh Indonesia Directory of Water Supply in Indonesia</i>	Irregular, published twice	1990	1992	By PDAM	X	X	X	X	X		X						
PUOD	<i>Kinerja Keuangan PDAM* Financial Performance of PDAM*</i> (* -- intended, system still under development, data being collected)	Annual*	1994*		By PDAM	X		X	X	X	X	X	X	X	X	X	X	

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Table 3.--Water supply for 15 Major Cities, 1992-93

City	Population		Water supply, 1992				
	1993	1998	Prod Lt/sec	UAW	Deliv Lt/sec	Total Connec	Pub taps
Medan	1834	2158	2768	24	2104	121	120
Padang	646	818	740	27	540	24	372
Palembang	1271	1441	1500	44	840	65	336
Lampung	733	871	320	48	166	10	192
Jakarta	8974	10127	12385	40	7431	276	1500
Bandung	2269	2260	1400	34	924	73	1132
Bekasi	1142	1401	187	36	120	10	88
Tangerang	1597	2250	740	28	533	29	13
Semarang	1327	1390	1580	45	869	57	1490
Surakarta	515	525	546	38	339	25	648
Surabaya	2726	3037	4501	36	2881	141	3988
Malang	780	866	940	34	620	30	183
Denpasar	502	633	2432	30	1702	24	236
Banjarmasin	525	588	510	25	383	22	376
Ujung Pandang	1051	1150	1070	31	738	37	1069
Total, 15 cities	25892	29515	31619	36	20190	944	11743
Other PDAM	27206	33467	33814			1638	25193
All Indonesia	53098	62982	65433			2582	36936

All water supply data are taken from the Cipta Karya report "Direktori Air Minum Seleruh Indonesia," 2nd edition. The data cover all PDAM, comprising both urban and rural areas.

A more realistic indicator of urban coverage could be prepared in one of two ways.

- Simply use Susenas data. However, this method has several disadvantages. For one, it would yield data with a gap of several years, because Susenas does not collect data on drinking water every year. For another, it might be subject to small fluctuations reflecting variations in Susenas methods and procedures. For a third, it would not yield data for each kabupaten (or, at best, would yield such data only with relatively high rates of sampling and nonsampling error).
- Recalibrate the standard service factors based on 1993 Susenas, then apply these to annual data for the number of household connections and taps for each PAM. This method would assure consistency with Susenas in the base year (1993) and avoid the inconveniences mentioned above. However, this method would still require an adjustment similar to convert an estimate of persons served to a percent of urban population served.

Inasmuch as the main source of discrepancies in Cipta Karya estimates for coverage of the urban population appears to reflect uncertainty about whether all PDAM connections are in fact urban, or whether some are rural, a small post-enumeration survey may be warranted to check on rural Susenas households that report piped water. Even if some rural households with piped water connections in Susenas turn out to reflect village water systems, the estimated share of the urban population served would not be affected. However, the estimated PDAM service factors for areas outside Jakarta would have to be reduced somewhat.

## **B. Available Data for Solid Waste Production and Collection**

Cipta Karya recommends a standard solid waste accounting framework for use by all urban localities. The basic equation in cubic meters per day is as follows:

$$\text{Solid waste production} = \text{Collected solid waste} + \text{uncollected solid waste}$$

Data for solid waste production and collection in 1993 are shown nationwide and for 15 major cities in Table 4. Cipta Karya officials stress the limitations of their data, which was pulled together from a variety of sources (including project reports) and may not reflect consistent timing or collection procedures. The estimates of production per capita in table 10 are puzzlingly low for Padang, Bekasi and Tangerang. The Cipta Karya report did not in fact include Jakarta; Jakarta data was therefore obtained separately and introduced into Table 10. The data in Table 10 show that collection accounted for 78 percent of production in the 15 largest cities but for only 44 percent of production in smaller cities. This difference may reflect a greater reliance on traditional methods of disposing of solid waste in small towns: recycling, burning, or backyard burial.

*Collected solid waste* is the most reliable term in the equation, because it can be easily be measured at the landfill site or transfer station (referred to as TPA, tempat pembuangan akhir) by local government authorities. While collection by the local government is the dominant component in collected solid waste, collection by private contractors is also an element, as well

Table 4.--Solid waste collection for 15 Major Cities, 1992-93

Cities	Population		Solid waste, 1993				% collec	
	1993	1998	Solid waste (m3/day)			Produc per cap	'93	'98
			Prod	Collect	Uncol.			
Medan	1834	2158	3707	2406	1301	0.0020	65	80
Padang	646	818	550	476	74	0.0009	87	90
Palembang	1271	1441	2275	1501	774	0.0018	66	90
Lampung	733	871	1480	1156	324	0.0020	78	80
Jakarta*	8974	10127	21900	17958	3942	0.0024	82	90
Bandung	2269	2260	8460	6768	1692	0.0037	80	90
Bekasi	1142	1401	1085	434	651	0.0010	40	60
Tangerang	1597	2250	696	227	459	0.0004	33	60
Semarang	1327	1390	3125	2540	585	0.0024	81	90
Surakarta	515	525	1803	1550	253	0.0035	86	90
Surabaya	2726	3037	7358	6298	1060	0.0027	86	90
Malang	780	866	1941	1620	321	0.0025	83	85
Denpasar	502	633	741	540	201	0.0015	73	85
Banjarmasin	525	588	1205	583	622	0.0023	48	70
Ujung Pandang	1051	1150	2351	1566	795	0.0022	66	85
Total, 15 cities	25892	29515	58677	45623	13054	0.0023	77.8	
Other cities/PDAM	27206	33467	42329	18468	23861	0.0016	43.6	
All cities	53098	62982	101006	64091	36915	0.0019	63.5	

Note--All solid waste data from a Cipta Karya working paper submitted to Bappenas during preparations for the sixth Five-year plan. The data cover all cities in Indonesia (about 800). Except that, Jakarta data for production and collection was taken directly from Dinas Kebersihan DKI, in the absence of working paper data.

as direct deliveries to a landfill from industrial and commercial establishment, including hotels.

*Uncollected solid waste* is a residual, the reliability of which will be discussed in Section C2. *Solid waste production* is an estimate prepared by each local government, based on Cipta Karya guidelines. The guidelines stipulate various average rates of solid waste production per inhabitant, per square meter of market area etc, but are advisory in nature, allowing local governments to conduct research on solid waste production in their locality. For example, recent Cipta Karya data indicate that each inhabitant produces 2.4 litres of solid waste daily.

The estimate of *solid waste production* is obviously subject to great uncertainty, and must be considered far less reliable than the estimate of *solid waste collection*. As the relatively small difference between two larger terms one of which is unreliable, the residual term, uncollected solid waste, must accordingly be considered of very low reliability.

During visits to Semarang, Kudus and Yogyakarta (see Annex A), local officials mentioned various hard-to-quantity factors that influence solid waste production. Officials in both Kudus and Yogyakarta mentioned a large daily influx of workers residing outside the jurisdiction (said to be equal to the resident population), who produced solid waste in unknown quantities. Kudus officials mentioned that local per capita incomes were relatively high, leading to larger than average solid waste production per capita.

As for *uncollected solid waste*, officials interpreted the term variously, in ways that appeared hard to document and less than fully consistent. In Semarang, the Dinas Kebersihan estimated that 31 percent of waste production was uncollected, and that about 70 percent of the latter was "processed by society" (*dikelola masyarakat*), meaning that it was either burned or buried in backyard pits<sup>2</sup>. In Yogyakarta, the Dinas Kebersihan and Pertanaman estimated that 37 percent of waste production was uncollected, all of which was said to be processed by society. The latter assertion was backed up by the statement that no accumulations for solid waste were observed anywhere outside landfill sites, and that rivers were observed to be relatively clean. In Kudus, the Dinas Pekerjaan Umum estimated that only 6 percent of waste production was collected. None of the latter was stated to be "processed by society" however, this omission may simple reflect the fact that the category "processed by society" was not mentioned in the draft of questionnaire brought by the PURSE team. Kudus officials also stressed that the job of street sweeping was relatively more difficult in a flat city like Kudus, than in a hill town such as Temanggung, because rain would tend to wash away far more solid waste in the latter location than in the former.

No measurable objective correlative for uncollected solid waste was mentioned in any of the interviews in Central Java. Accordingly, it would appear exceedingly difficult to verify the existing estimates of uncollected solid waste.

The existing solid waste accounting system can be considered as a kind of "quota system" in which sanitation departments large cities are urged to collect 80 or 90 percent of a stipulated quota of solid waste production, whereas departments in smaller cities are urged to collect smaller shares. As is implied by the data for the 15 major cities in Table 4, 78 percent of solid waste was

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<sup>2</sup> The data obtained by the PURSE team in Semarang show a lower collection rate (69 percent) than the rate in Table 8, 81 percent, which was taken from a Cipta Karya report.

estimated to have been collected in 1993, while Repelita VI targeted a collection rate of about 85 percent or more for 1998. While the existing accounting system is obviously better than nothing at all, technical staff at Cipta Karya may wish to explore the development of more objective indicators of the success of solid waste collection.

### C. Indicators of Centralized Sewerage Systems

At present there are only nine centralized wastewater systems within urban areas in Indonesia. Most wastewater is discharged into septic tanks, pits, or directly to drains which flow into canals or other waterways. The available data, summarized in Table 5, indicate that perhaps as many as 1.2 million persons are served by centralized systems, equivalent to 0.2 percent of Indonesia's urban population of 60 million persons. Even within the sewered areas of cities, a large amount of wastewater from kitchens, washing facilities, or other "gray water" is not discharged into the sewers. Partly this is because the plumbing systems in residential and other buildings were built to handle toilet discharges separately from the gray water discharges, and it requires a greater investment in re-plumbing the drain pipes to direct all of the wastewater to a discharge into a newly installed sewer.

At present, urban areas rely mostly on centralized sewerage systems, pit toilets and other communal facilities. The 1990 Population Census indicates that approximately 44 percent of urban households have on-site septic tank sewerage treatment. The septic systems consist basically of a tank, through which wastewater from toilets flows, allowing solid material to settle out. The "settled water" is then allowed to soak into the ground or, more likely, finds its way to storm drainage systems. Sludge collected in the septic tanks should be periodically removed and taken to a treatment facility designed and operated for treating sludge, or "septage". It is often discharged from the collection truck into the surface water drainage system in an urban area.

Some information for cities, such as Bandung, with newly-installed sewers indicate that all homes which could be served by a sewer will not connect to it in the near future, due largely to the costs of plumbing connections. When private residences are required to pay the cost of connection, but there is actually no requirement to hook up, homeowners will avoid the connection cost by continuing their present disposal practice.

#### **Jakarta:**

The present estimated population of the capital city is 9.0 million (1994) and the population is steadily increasing. Toilet wastes for the majority of the people are disposed of through septic tanks. Gray water (sullage, bathing water) is reported to be discharged to "road side drains", canals and rivers.

Collection System: Only one area of the City is presently served by a sewerage collection system, and this was constructed in recent years to serve the rapidly-developing business area of Jalan H.R. Rasuna Said and Jalan Jend. Sudirman, and the nearby residential areas. Sewers were installed and connected to the Setiabudi treatment facility (discussed below). A large number of people served are those within the office buildings and commercial development along the two major avenues, and are reported as "population equivalent", which recognizes that wastewater flow per actual person is much less when generated within offices and shops than in residential

homes. The estimated population equivalent served is 170,000 people.

Treatment Facility: The Setiabudi sewage collection system discharges to an aerated lagoon form of treatment, which was constructed in a flood-retention area. The reports on project completion and subsequent audit of the project noted that the treatment planned and constructed is not adequate due to short retention times. An engineer employed on the project verbally reported that the collection system also receives storm drainage flow from adjoining areas, thus increasing the volume to be treated. The aerators have been observed to operate only intermittantly, so the aeration basins effectively function as holding ponds. Based on available information it would be prudent to consider the treatment to be ineffective and the discharge into the canal, and thus to the harbor, to be essentially raw sewage.

#### **Tangerang:**

Tangerang borders Jakarta and is part of the metropolitan area. Its population is estimated at 1.6 million in 1994. Based on a planning project begun in 1980 sewers have reportedly been constructed in two districts, Sukasari and Babakan Ujung.

Collection System: In Sukasari sewers serve an estimated 1,800 housing units, or an estimated population of 12,000. It has been reported than an additional 3,000 can be served by the existing system, but no information is available on actually how many have been connected to the system.

Treatment Facility: A carousel-type of Activated Sludge Treatment Plant serves the sewerred area, and discharges treated effluent to a stream.

#### **Bandung:**

Bandung is the third largest city in Indonesia, and is located in West Java. It had a population of 2,269,000 in 1993, and includes a large number of students who attend universities in the city. Beginning in 1980 the planning and construction of sewers has been carried out under two Bandung Urban Development Projects. The second of the two was recently completed.

#### Collection System:

There is a recently constructed collection system, largely serving population in eastern Bandung, estimated at 460,000. The system also collects wastewater from an estimated 340,000 people in Western Bandung at the present time.

#### Treatment Facilities:

The treatment for the wastewater flow is provided in oxidation ponds.

#### **Medan:**

Medan is the capital of North Sumatra Province, on the island of Sumatra, and has an urban population of 1,834,000 in 1993. The Sewerage Master Plan was prepared in 1980 and has been

**Table 5.--Existing sewerage systems**

City	District	Population served	Treatment
Jakarta	Setiabudi	170000 <sup>1</sup>	Aeration ponds
Tangerang	Sukasari Babakan Ujung	15000	Activated sludge
Bandung <sup>4</sup>	Eastern Bandung Western Bandung	460000 340000	Aeration ponds
Cirebon	CUDP II & III	34000	Aeration ponds
Yogyakarta	City (built in '36-38)	32000 <sup>1</sup>	None
Semarang		<sup>2</sup>	
Solo		<sup>2</sup>	
Surabaya		<sup>2</sup>	
Medan	Phase 1 area <sup>3</sup> Phase 2 area	125000 <sup>3</sup>	Anaerobic
TOTAL		1176000	

Footnotes:

1. Population equivalent number, includes commercial buildings served.
2. Reportedly have small sewerage system, but population served is unknown.
3. Sewerage pipes are installed but houses not yet connected.
4. The Dutch Government constructed sewerage collecting network for East Bandung during the period 1920 - 1940 with minimal treatment.

the basis, reportedly, for two implementation phases.

Collection Systems:

Construction has been completed, reportedly, on Phase 1 designed to serve an estimated 45,200 people, in an area centered on the central business district of the city. The houses have not yet been connected to the sewers, so none are presently served, except for some possible illegal connections.

Phase 2, which generally has expanded the area covered by the initial phase, has included additional sewers, but the expected population to be served of 125,000 has not yet been connected.

Treatment: A treatment facility is under construction and, when completed, will treat wastewater collected by the sewers constructed in Phases 1 and 2. The basic treatment process is an "upflow anaerobic sludge blanket" unit, recently developed and implemented at two locations in developing countries. This unit will reportedly be followed by aerated and unaerated ponds for clarification.

**Cirebon:**

Cirebon, in the Province of West Java, has a population of 244,000 (1990) and has had a sewerage system since the 1920's. It reportedly is planning to rehabilitate and extend the system.

Collection System:

The existing collection system serves an estimated population of 34,000.

Treatment: At present there is no treatment provided to the wastewater collected within the city.

**Yogyakarta:**

Yogyakarta is a city in Central Java, but administered as a separate Special District. The population is estimated at 1,700,000 in 1994.

Collection System: The collection system was built during the mid-1930's and is designed with minimum slopes and, thus, requires periodic flushing. It serves an estimated population equivalent of 32,000.

Treatment: Other than a small experimental treatment unit, no treatment is presently provided to the collected wastewater prior to discharge.

REFERENCES:

1. Cipta Karya report entitled: *The Current Status and Future Prospect of Sewage Works in*

*Jakarta*, undated.

2. Reports of the World Bank on the construction of sewerage in Jakarta.
3. Telephone conversations with project managers in Medan and Bandung.

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### SECTION III

## REFINING INDICATORS FOR THE PURSE LOGFRAME

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#### A. Alternative PURSE Indicators

The goal of the PURSE Project is to "increase the stock of infrastructure essential for economic growth and improve access to efficiently delivered services that contribute to an improved urban environment." The LOGFRAME specifies two "objectively verifiable indicators" for measuring the achievement of this goal. Proposed revisions of the Objectively Verifiable Indicators (OVIs) of the PURSE Project Logframe are presented in Table 6. The same two indicators appear in the proposed revision, with only minor re-wording.

#### A1. Goal Indicators

*The first goal indicator*, "evident contribution to the availability of selected urban services," appears to refer to physical measures of improved service coverage, such as the number of households served by piped water or sewage lines, percent of trash collected. Such physical indicators, available to a varying extent for the selected sectors, will be discussed in the remainder of Section III.

*The second goal indicator* in Table 7, "An increase in the total level of investment (combined public and private) in selected urban services," obviously represents a sum of two components.

#### A2. Purpose Indicators

The purpose of the PURSE Project is to expand the participation of the private sector in the provision of selected urban services (waste, wastewater, and solid waste) on a sustainable basis through direct investment or contracted participation in supply, delivery, or other operational functions. The LOGFRAME specifies three "objectively verifiable indicators" for measuring the achievement of this goal. Three similar indicators appear in the proposed revision, with, however, major changes to each of them.

*The first proposed purpose indicator* incorporates increases in both the total amount of private investment (both foreign and domestic) in selected urban services and the number of PPP projects, in contrast with the original LOGFRAME indicator, which refers only to increased foreign private investment. The measurement of this indicator, which is central to the work of the PURSE Project, will be discussed in Section III. The ability of PPP projects specifically to attract foreign capital will be mentioned as part of the third purpose indicator, to be discussed below.

*The second proposed purpose level indicator* refers to the real per capital value of services delivered under private services contracts, in contrast with the original LOGFRAME indicator, which refers only to the number of private companies. The measurement of the numerator in this

Table 6. Proposed Revisions to LOGFRAME

NARRATIVE SUMMARY

OBJECTIVELY VERIFIABLE  
INDICATORS:  
*Existing*

OBJECTIVELY VERIFIABLE  
INDICATORS:  
*Proposed new*

*Project Goal*

1. Increase the stock of infrastructure essential for urban [economic] growth and improve access to efficiently delivered services that contribute to an improved urban environment.

*Measures of Goal Achievement*

- 1.1 Evident contribution to the availability of selected urban services in water supply, wastewater treatment, and solid waste management.  
1.2 An increase in the total levels of public and private sector investment in selected urban services.

*Measures of Goal Achievement*

- 1.1. Evident contribution to the availability of selected urban services in water supply, wastewater treatment, and solid waste management.  
1.2. An increase in the total level of investment (combined public and private) in selected urban services.

*Project Purpose*

2. Expand the participation of the private sector in the provision of selected urban services (water, wastewater, and solid waste) on a sustainable basis through direct investment or contracted participation in supply, delivery, or other operational functions.

*End of Project Status*

- 2.1. Increased foreign private investment in urban services provision in Indonesia.  
2.2. An increase in the number of domestic private companies participating in urban services.  
2.3. Public/private and private sector projects developed and expanded services delivery and financing options utilized.

*End of Project Status*

- 2.1. Increased private investment (both foreign and domestic) in selected urban services.  
2.2. An increase in the real value per capita of services delivered under private services contracts and an increase in the share of these contracts in the provision of selected urban services.  
2.3. The institutionalization of financial mechanisms that permit private financing of BOO/BOT projects using both foreign and domestic currency.

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Table 7.--Data sources for LOGFRAME goal and purpose indicators

LOGFRAME: "OBJECTIVELY VERIFIABLE INDICATOR"	Data source	Who produces the data?	Frequency	Target
1.1 Evident contribution to the availability of selected urban services in water supply, wastewater treatment & solid waste management.	a. For water supply, PAM measures of households served & cu. meters supplied.	BPS & Cipta Karya, Bintek	Annual	Repelita targets
	b. For solid waste, local government measures of collections as a share of solid waste produced	Cipta Karya, Bintek	Quinquennial	Repelita targets
	c. For wastewater treatment, Lin will report	Local offices & projects		?
1.2 An increase in the total level of investment (combined public & private) in sel. urban services.	a. For water supply, public investment	MFP tracks	Annual	Repelita targets
	b. For solidwaste & wastewater treatment, public investment	Cipta Karya, MFP tracks	Annual	Repelita targets
	c. For private investment, see below			
2.1 Increased private investment (both foreign & domestic) in selected urban services.	a. For all PPP projects, annual value of services.	Easy to collect.	Semi-annual	?
	b. For all bulk water projects, amount of water supplied.	Easy to collect.	Annual	?
2.2. An increase in the real value per capita of services delivered under private service contracts & in the share of these contracts in the provision of selected urban services.	a. For solid waste collection, rupiah value of services to be measured by an annual mail survey of Dinas Kebersihan in 15 largest cities.	Easy to collect but who will do it?	Annual	?
	b. The same survey to measure share of solid waste collected by pvt firms.	Easy to collect but who will do it?	Annual	?
2.3. The institutionalization of financial mechanisms that permit private financing of BOO/BOT projects using both foreign & domestic currency.	a. Confirm the existence of a scheme, whereby the GOI can partially guarantee debt for BOO/BOT projects.	PURSE		?
	b. Confirm the ability of private firms to borrow long-term in both foreign currency & rp. for BOO/BOT projects.	PURSE		?

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expression, the value of services delivered, requires a new data collection effort and will be discussed in Section IV. The elements of the denominator are already available.<sup>3</sup>

*The third proposed purpose indicator* is a qualitative one referring to the institutionalization of financial mechanisms that permit private financing of BOO/BOT projects using both foreign and domestic currency. It replaces a previous indicator which vaguely mentioned "financing options utilized." The elements that would be considered in preparing such an evaluation would include: (a) the availability of some form of partial guarantee from the GOI that would help to reassure investors considering BOO/BOT projects, and (b) the ability of investors in BOO/BOT projects to borrow long-term in both domestic and foreign currency. The measurement of this indicator will not be discussed further in this report.

In order to focus the discussion, it is proposed at the outset to review all the indicators that have been discussed in connection with privatization of urban services, and to identify a very limited number that would seem to be prime candidates for "key indicators."

Table 8 provides a matrix of alternative measures of highest interest: Intended investment, realized investment, realized capacity, value of services, and households served. Each of the six measures can, in principle, be considered for four possible "sectors:" Public agencies/enterprises, PPP projects, PSP contracts, or all such activities combined. In this way, 24 possible indicators can be considered. However, major interest obviously focuses on the 12 indicators for PPP projects and PSP contracts.

Inasmuch as the primary purpose of the PURSE Project is to leverage private capital, the most meaningful indicator of success would be *realized investment for PPP projects*, which is highlighted with dark shading in Table 8. If, however, the measure of realized investment proves to be unobtainable for PPP investment, consideration could be given to two "proxy" indicators that might be feasible to collect and reasonably well correlated with realized investment. The two proxies, physical capacity and value of services, are given light shading in Table 8.

As the purpose of PSP contracts is not so much to leverage private capital, but rather to utilize the managerial efficiencies of the private sector, the value of investment in PSP contracts would be a meaningless indicator. Instead, the most relevant indicator would appear to be the *value of services provided under PSP contracts*, which is given dark shading in figure 1. That indicator would be even more useful if it could be compared with the total value of publicly and privately provided services; the latter measure, is, however, not available. Data from the WASH-Hasfarm study indicate that the value of services indicator would be most significant for solid waste.

## **B. Investment Data**

Although the PURSE project has a mandate to facilitate *two kinds* of private sector

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<sup>3</sup> The elements of the denominator are two: (a) A general price deflator (either the quarterly GDP deflator or the monthly Consumer Price Index) is available from the Central Bureau of Statistics, and (b) estimates of the population in each city, based on extrapolations from the 1990 Census of Population, are available from Development Studies Project II, a USAID-sponsored project at Bappenas.

Table 8. -- Alternative PURSE indicators: Relevance, sources, feasibility

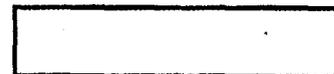
SECTOR INDICATOR	1. PUBLIC	2. PPP	3. PSP	4. PPP & PSP
	A. Investment: Intended	N.A.	Data easy to get but not very meaningful	N.A.
B. Investment: Realized	CK investment data	Partial realizations data available for BKPM projects ONLY; highly incomplete	N.A. Capital is generally small and hard to collect	N.A.
C. Realized capacity	BPS/Cipta Karya collect from PDAM for water supply	<i>Collectible for water</i> Easy to collect from PAM; a proxy for realized investment in bulk water	N.A.	N.A.
D. Value of services	BPS/PUOD PAM data for water supply only	<i>Collectible for water</i> Easy to collect from PAM, a proxy for capital stock	<i>Collectible</i> Appears feasible to collect using standard form for each agency. Needs testing	N.A.
E. Households served	Susenas, SP Data for water supply only	N.A.		Susenas, SP For water supply only

NA -- Not Available in the sense that such data do not exist and could not easily be collected.

Dark-shaded cells contain indicators that are most relevant to monitoring PURSE goals and purposes.



Light-shaded cells contain fallback indicators that may be needed if most-relevant indicators turn out to be infeasible.



involvement in infrastructure projects -- Public Private Partnership (PPP) projects and Private Service Participation (PSP) contracts -- PPP projects are likely to be the main focus of PURSE Project activities. They are likely to dominate in two ways:

- Potential financial magnitudes will be much larger with PPP projects than with PSP ones.
- PURSE projects outputs are largely geared to overcoming institutional obstacles to PPP projects.

Accordingly, the indicator of PPP development is the most critical indicator needed for measuring the realization of PURSE Project purposes. PPP projects will most often involve BOO or BOT type arrangements. Intended investment is probably the most readily available. Infrastructure projects normally require permits, all the more so in the case of BOO-BOT projects involving mutual commitments by public and private parties. However, intended investment by approved projects, by itself, has limitations for two reasons:

- Some projects are approved but never realized.
- Even when projects are realized, realized investment is often considerably less than approved investment.

A modified version of this indicator would be the value of intended investment for projects that have been completed. Projects that are approved but never realized would no longer disturb this indicator, but variability in the ratio of realized to intended ratio would disturb it.

In principle, realized investment by year is the most relevant and concise measure of PPP projects, inasmuch as the GOI goal is to tap private capital for infrastructure creation. However, realized investment is not an easy indicator to track, for several reasons.

No existing survey tracks investment realization for all PPP projects. In the absence of an existing survey, data users may be tempted to recommend a special-purpose survey of investment realization for infrastructure projects. Conducting such a survey would, however, be a formidable undertaking which may well not be worth the effort. because it would run into both the usual difficulties of conducting an establishment survey in Indonesia and certain special difficulties peculiar to the subject of investment realization.

The usual difficulties of surveying establishments in Indonesia involve: difficulties of maintaining an up-to-date directory, of entering establishments that use security guards to screen out unwanted visitors, of compelling or coaxing a response from uncooperative establishments, and of editing responses for plausibility. Such difficulties are formidable even for an experienced agency like the Biro Pusat Statistik (BPS), and all the more so for another agency less experienced in conducting establishment surveys.

The difficulties specific to surveying realized investment involve several factors that may inhibit establishments from answering specific questions about that topic:

- Actual realized investment may be considered confidential by the firm.
- Only rather high-level persons in a firm might be capable of understanding and responding

correctly to such a question. This contrasts with questions on employment, wages, inputs and outputs, for which a broader group of persons could respond.

- The concept of investment during a specific period (say a calendar year) or even of cumulative investment up to a specific date may not be clearly grasped by the respondent.

The formidable difficulties involved in collecting realizations data suggest that realizations may not be a very feasible indicator, even though it is perhaps the most relevant one.

Under Indonesian law, all investment projects using foreign financing *must* receive approval from the Badan Koordinasi Penanaman Modal (BKPM), or Investment Coordinating Board. Any other projects *may* seek approval. In actual fact, the only practical incentive for domestically financed projects to seek BKPM approval would be to take advantage of duty-free import facilities that BKPM has authority to grant. Hence, domestically financed projects with a low import content are unlikely to seek BKPM approval.

A common difficulty in comparing or combining data from various databases is the risk of *match error*. The difficulty arises from the variability of names or other identifying information, due in part to simple spelling or typographic variability, in part to the existence of multiple names for establishments and for projects.

The BKPM officials interviewed recognized two names from a list of known projects (see Table 9), Cibinong Chemical Waste Facility and Bintan water supply, and added two more: (a small sanitary landfill in Denpasar, the permits issued to PT Mansurawo Utama, and (the Lhok Seumawe water project in Aceh. The other 9 projects on our list (see Table 10 below) had no BKPM permits. We were surprised by the lack of a BKPM match for the Surabaya incinerator, considering that substantial imports of French equipment had taken place. However, upon checking with the incinerator offices by telephone, we found that the incinerator indeed had a permit from the Ministry of Home Affairs but not from BKPM. An official of the incinerator mentioned that his company had been able to make use of a non-BKPM duty free import facility. This case would appear to indicate that even projects with substantial capital imports may choose not to obtain a BKPM permit.

On a subsequent visit to BKPM, we requested permit data from the BKPM databank for all water supply and solid waste projects. The response included, in addition to the four above-mentioned projects, a fifth project in Malang, in the field of solid waste management, handled by PT Kliko Nusa Sejahtera, which was supposed to be built in 1989 (see Table 9). It is puzzling that the Malang project did not correspond to any landfill or solid waste treatment project of which the PURSE team was aware. Upon inquiry, BKPM officials were unable to provide any more specific description of the PT. Kliko project, or of whether it had been realized -- perhaps a telling illustration of the limitations of the BKPM database.<sup>4</sup>

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<sup>4</sup>Some details of the Malang project are puzzling. The project is supposed to dispose of 1,367,655 cubic meters of solid waste per year, or 3750 cubic meters per day, an enormous amount for a city the size of Malang, for which, according to BinteK data, daily collection amounts to only 1,600 cubic meters. Staff of the PLP subdirector in BinteK were skeptical that the project was actually located in Malang; they suspect Surabaya may be the true location. However, staff of BKPM, after checking the project's permit application form, were unable to specify whether it was

**Table 9.--Available BKPM data for approvals and realization  
Of 5 PPP projects**

Project name and investor				Available BKPM data			
Location	Name	Investor	Status	BKPM Permit			Realization survey: Cumulative invest- ment as of Dec. 31 '93
				No.	Date	Amt.	
<b>WATER PROJECTS</b>							
Bintan, Riau	Water supply for Singapore	PT Bintan Tirta	Constr	31//PMA/93	06/01/94	\$122M	NA
Lhokseumawe, Aceh	Bulk water	PT Tirta Peusangan	Plan'g	52//PMA/93	26/4/93	\$153M	NA
<b>WASTEWATER &amp; SOLID WASTE</b>							
Cibinong, Jabar	Cibinong Chemical Waste Facility	PT Prasadha Pamunah Limbah Industri (PPLI)	Constr	224//PMA/93	6/11/93	\$78M	NA
Denpasar, Bali	Sanitary Landfill	PT Mansurawo Utama	?	226//PMDN/93	20/7/93	\$2M	NA
Malang	Sanitary Landfill?	PT Kliko Nusa Sejahtera	?	96//PMDN/88	20/02/88	\$6M	NA

Note. -- "NA" means not available from the BKPM realizations survey. "Status" is based on impressions provided by BinteK officials and is subject to error, commonly on the side of overstating realization.

Table 10.--PPP projects without BKPM permits

Location	Name of project	Investor	Status
<b>Water projects</b>			
Serang, Jabar	Serang Barat Serang Timur	PT Pancapuri Indoperkasa PT Satyamitra Tirta Loka	Construction Construction
Bali, PDAM Badung	Nusa Dua fresh water	PT Tirtaatha Buanamulia	Operational
<b>Wastewater &amp; solid waste projects</b>			
DKI	Cakung Transfer Station	PT Wiragolfindo	Operational
Surabaya	Solid waste incinerator	PT Unicomindo Perdana	Operational
<b>Water projects bundled with real estate</b>			
DKI	Bintaro Jaya water supply	PT Pembangunan Jaya	Operational
Tangerang, Jabar	Bumi Serpong Damai (BOO real estate & offices)	PT Bumi Serpong Damai	Operational
Bogor, Jabar	Rancamaya real estate	?	Construction
Bekasi, Jabar	Kemang Pratama (BOO real estate & WTP)	PT Bangun Cipta Sarana	Operational

Note.-- "Status" is based on impressions provided by Bintek officials and is subject to error, commonly on the side of overstating realization.

In sum, BKPM permits cover some but not all PPP projects. Covered projects tend to include the larger ones and the ones with foreign investment. However, the process of matching BKPM permits with names or categories of projects known to exist requires special handling and carries a definite risk of error.

The next step was to try to obtain the hoped-for BKPM realizations data for the five projects for which we had permit numbers.

The PURSE team met subsequently briefly with the head of the BKPM Bureau of Monitoring and Evaluation, to request realizations data. He recounted some of the difficulties in conducting the BKPM survey of investment realization, the foremost of which is perhaps the simple lack of an up-to-date list of project addresses. For lack of an up-to-date project address list, BKPM sends survey forms every six months to the address of the original applicant for a BKPM permit. Perhaps not surprisingly, 60 percent of survey forms are returned to BKPM by the post office as undelivered mail. The major source of weakness in the BKPM address list (as was pointed out in a 1992 DSP report) is that the original permit application form includes the applicant's mailing address, but only shows the kabupaten in which the project is to be located. The applicant may be a lawyer or consultant who has since moved or severed his connection to the project.<sup>5</sup>

BKPM reported that the overall response rate for the realizations survey was 30 percent; in a subsequent meeting it was reported as 28 percent.

One result of this investigation is that the high hopes for using BKPM data to track PPP projects no longer appears so promising, once consideration is given to how BKPM data is actually collected.

In principle, a GOI agency such as PUOD or Cipta Karya or BPS could conduct an annual survey of all PPP projects using a different questionnaire for water supply projects, landfill projects, and so on. However, such a survey would most likely prove challenging and onerous, given the usual difficulties of conducting an establishment survey in Indonesia.

A less burdensome strategy would be for a GOI agency such as PUOD or Cipta Karya to conduct a regular, simple survey of local government agencies known to have agreements with specific PPP projects. The survey would collect data about physical capacity and value of services of the projects -- data which the counterpart agency could easily provide. The survey might as well inquire about realized investment; results could then be evaluated for plausibility. At present, however, the number of PPP projects in operation is far too small to warrant developing or testing

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a landfill only, or included other facilities.

<sup>5</sup>A senior BPS official mentioned that BPS once conducted a joint realizations survey together with BKPM in the late 1970's. That survey revealed that the BKPM directory was the weak point in the survey process. The official mentioned that not only was the applicant's address often out-of-date, but it was sometimes even a patently false address. The limitations of the BKPM address list were mentioned by Frank de Leeuw in *Report on Investment, Capital Stock, and Prompt Indicators*, DSP Statistical Paper #40, August 1992. De Leeuw recommended that BKPM modify its permit application form to include a more specific location, even if the location was only tentative.

such a survey form.

It may be of some use to compile a rough, "back-of-the-envelope" estimate of the cumulative investment to date in PPP projects, which can serve as a baseline measure for comparison with future data.

After consulting with reasonably well-informed persons, the author of this study came up with a list of three PPP projects that have already been realized: The Nusa Dua water supply project, the Cibinong landfill, and the Cakung transfer station. The best estimation for the cumulative amount of investment realized in the three projects is US \$26 million, of which the Cibinong landfill accounted for roughly \$20 million. These estimates are admittedly rough, but may provide a general indication of the current situation -- more specifically, of the very limited development of PPP projects in Indonesia as of the end of 1994.

It is useful to consider how the survey strategy proposed in subsection C below could apply to the three projects mentioned here. PDAM kabupaten Badung would be asked to report the physical capacity and annual value of services of the Nusa Dua Project, while the Dinas Kebersihan DKI Jakarta would be asked to report data for the Cakung transfer station. Data for the Cibinong landfill could not, however, readily be collected by means of such a strategy, because the Cibinong landfill serves industrial clients directly, rather than serving a local government counterpart agency.

In light of the above, an agency that conducted the PPP survey mentioned in subsection C would need to compile a separate list of "exceptional" PPP projects for which data could not be collected from counterpart agencies. If such "exceptional" projects were important enough, data might have to be collected directly from them.

#### **B1. Summary**

Although realized investment by year is in principle the most relevant and concise measure of PPP projects, it is a difficult measure to track. No existing survey effectively tracks realized investment for PPP projects -- not even for the subset of projects with BKPM permits. It would be a burdensome and challenging task for a GOI agency to undertake a survey of realized investment at PPP projects.

Two alternative indicators appear to provide a better balance between relevance and operational convenience. One would be a physical measure of realization: e.g., liters per second of bulk water supply. The other is a measure of the value of services provided per year. The choice between the two indicators may depend to a large extent of whether future PPP projects concentrate mainly on one sector -- water supply. If the projects do concentrate in one sector, a physical capacity measure would probably be most satisfactory, because it is a good proxy for realized investment. If the projects do not so concentrate, a value of services measure would appear more satisfactory because it would aggregate various kinds of projects. Neither measure is presently collected by any GOI agency, but such measures could easily be collected by a mail survey addressed to local public water companies and other relevant agencies that have contracts with private investors.

### C. Value of Services

An alternative indicator that deserves more consideration is the annual value of services contracted to private providers. It would be most convenient for our purposes if a GOI agency collected value from local government agencies such as sanitation departments for the value of solid waste services. Unfortunately, no such data set exists, either at Cipta Karya, at PUOD, or at the Ministry of Finance.<sup>6</sup> The only data that are systematically collected for local governments show total wage costs by locality (with no breakout by agency) and total nonwage costs by locality and agency (for example, total nonwage costs for the sanitation department).<sup>7</sup> The WASH baseline survey found that the total annual value of such services was only about \$900,000.

Perhaps the most significant finding is that solid waste management dominates the service agreement type contracts. Solid waste management accounted for 76 percent of the value of all PSP service contracts in 1992. Actually, the percentage is much greater, 97 percent, if it is considered that septic tank desludging does not involve a PSP contract; rather, it involves direct services by private companies to homeowners.

The annual value of PSP contracts for solid waste collection does not need to be collected by means of personal visits by consultants from a private consulting company, as in the WASH study. A GOI agency could collect it by mail, using a simple system described in this section and a questionnaire that appears in Annex A. The concepts used in the questionnaire are standard, basic ones, that are already in large part familiar to local sanitation offices. All that is needed is a GOI agency with the persistence to keep sending letters to respondents until they provide a satisfactory response.

In most cities, the respondent would be the local sanitation department, usually called the "Dinas Kebersihan". In a very few cities, a second respondent might be the "Dinas Pasar" or "PD Pasar" -- the agency that collects solid waste in the market areas -- but only if the agency delivers solid waste to the landfill and not if it only delivers solid waste to temporary collection points.

Even though the questionnaire is fairly self-explanatory, the number of respondents needs to be small during the first few years, in order to limit the burden on the agency conducting the survey, a burden which may at first appear trivial, but is in fact not trivial. The burden includes informally "training" respondents through one-on-one communication at opportune moments (such as meetings called for other purposes), editing questionnaires, inquiring about implausible data, and dunning responses from nonrespondents. Accordingly, the survey should be initially confined to "metropolitan" cities (those with population of over 1 million) and "large" cities (those with population of 500,000 to 1 million). The 15 cities in these two size groups are listed in Table 4. Once the survey has become well-established in such major cities, it could perhaps be

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<sup>6</sup> The assertion that no such dataset exists is based both on inquiries directed to PUOD and Cipta Karya, and on a discussion with the head of the planning office in the Jakarta Sanitation Department, who stated categorically that he never had been asked by any GOI agency to report the value of private contracts.

<sup>7</sup> The most likely reason for this state of affairs is that budget reporting formats, which were designed before the widespread availability of personal computers, do not support analytical uses of budget data.

extended to smaller ones.

The major difficulty in conducting the survey is merely to "market" the idea to an appropriate GOI agency. The most appropriate such agency is one that understands the data, communicates frequently with the concerned local officials, and has a clear need itself for the data.

- Understanding is critical, as it will enable the agency to evaluate the data sensibly and to handle inquiries from puzzled respondents.
- Frequent communication between the agency and concerned local government officials will facilitate paper flow and motivate local officials to respond to the government's inquiry.
- A clear need for the data will motivate the GOI agency to do a good job of collecting it.

Of the various candidates for the job, the most suitable agency would appear to be the PLP subdirectorate in Cipta Karya's Bintek, because its staff have long experience in monitoring solid waste management and communicate frequently with the local officials. Although PLP does not have an immediate need for data on the private role in solid waste management, it does need much of the other data that would be collected on the questionnaire, such as data for total collections.

Another candidate for conducting this surveys, the PSP subdirectorate in the Tata Kota directorate, has a clear, immediate need for data on private activity. However, in comparison with the PLP subdirectorate, the staff of the PSP subdirectorate have limited experience in solid waste management and in frequent communication with local sanitation officials.

Even though it has responsibility for overseeing all local government activities, PUOD is not a very suitable candidate for developing the survey because it has little interest in the technical issues or the data and very limited contact with the staff of local Dinas Kebersihan. Moreover, a survey of PSP contracts for solid waste management appears to be much too small and specialized an activity to attract PUOD's interest. If the agency that were to conduct the survey were to give it perfunctory attention only, respondents would surely respond in kind, with unfortunate consequences for data quality and completeness.

An efficient schedule for the survey was suggested by the head of the Evaluation Section in the Division of Planning and Program Development. In April, at the outset of the fiscal year, the implementing agency could mail a questionnaire to local sanitation offices requesting information for the previous fiscal year. The letter would go to the head of the local sanitation office, who would then pass it down to a subordinate. A filled-in questionnaire would then be sent back up to the head of the local sanitation office, who would write a cover letter and send it back to the implementing agency. It was estimated the whole process should take a month.

A common problem in conducting surveys everywhere is that respondents doubt whether the data they provide will be of use to anyone. To prevent such an impression, the implementing agency needs to take care to publicize its results. Publicity for the PSP contracts survey could take the form of a small set of tables on 1-2 pages.

It is of some use to compile a rough estimate of the extent of PSP service contracts for solid waste management in major cities. The available data, shown in Tables 11 and 12, cover Jakarta and the 8 cities of the WASH study, of which 6 were major cities. Thus, the available data cover 7 of the 15 major cities in Indonesia, including 5 of the top 6 -- Jakarta, Surabaya, Medan, Bandung and Semarang.

The available data cover 8 cities for 1992 and for 3 cities for 1993-94. When the 1993-94 data for 3 cities are supplemented with 1992 data for Surabaya, the total annual value of contracts is seen to be Rp 3.1 billion, or about \$1.4 million. In terms of cubic meters, private collection is seen to account for about 11 percent of total collections in the 9 cities, 5 of which had no private collection at all. If, in the absence of further information, one were to assume that no such private contracts existed in the other 8 major cities not studied, one would conclude that \$1.4 million was the total value of PSP contracts for collection of solid waste in all major Indonesian cities in 1993-94.

In sum, the proposed indicator of PSP contracts is a measure of the annual value of services delivered for solid waste management in 15 major cities. This indicator is not presently collected by any GOI agency but could easily be collected by a mailout survey based on the questionnaire in Annex A. The questions are very simple and would easily be understood by respondents, who would have the required data at hand. There would be no need for expensive interviewer visits or for the involvement of private consultants as in the WASH study. The burden on the implementing agency would be modest: Mailing out a few questionnaires, following up on nonrespondents, editing the questionnaires, and entering a modest amount of data. The only real difficulty is to convince an implementing agency to take an interest in this modest, low-profile task.

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## SECTION IV CONCLUSIONS AND RECOMMENDATIONS

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### A. Summary

Indicators required to monitor the goal and purpose of the PURSE project can be divided into two types: key indicators and contextual indicators. Key indicators measure progress toward the PURSE project's main objective of fostering private activity in the provision of urban services. Contextual indicators describe the urban services context in which the project operates, but do not measure private activity.

#### A1. Key Indicators

Two kinds of key indicators are discussed in this reports: those for PPP projects, and those for PSP projects. Among *key indicators for PPP projects*, the most relevant indicator would be a measure of realized investment per year, that is, investment that is actually made, not just planned. A "back-of-the-envelope" estimate shows that a total of \$26 million has been invested so far in 3 PPP projects, of which \$20 million is in a chemical wastes treatment project that is perhaps outside the scope of PURSE project activities, leaving only \$6 million for 2 projects within the PURSE scope. However, the measure was compiled informally, is not readily available from existing formal data sources, and might be rather difficult to collect in the future if the number of PPP projects increases.

The *key indicator for PSP contracts* is the annual value of services delivered for solid waste management in major cities. This indicator is not presently collected by any GOI agency but could easily be collected by a mailout survey based on the questionnaire in Annex A. Based on incomplete data, this indicator amounted to \$1.4 million for 1993.

#### A2. Contextual Indicators

Contextual indicators for the PURSE project measure the extent to which publicly-provided urban services meet the need for urban services.

The *contextual indicator for water supply* is the percent of urban population served by piped water. This measure is presently available from Cipta Karya and from the Susenas survey conducted by BPS. Although the Cipta Karya measure (39.5 percent) is the more widely quoted one, particularly for the Repelita, the BPS measure (34 percent) is believed to be more accurate because it is based on direct responses by households whereas the Cipta Karya measure is based on several major assumptions.

The *contextual indicator for solid waste management* is the percent of solid waste collected in major cities. This measure is available intermittently but has serious limitations, which are discussed in Section II-B.

The *contextual indicator for piped sewerage* is the percent of urban population served,

currently less than two percent.

## **B. Conclusions and Recommendations for the Government of Indonesia**

### **B1. For Measuring Water Supply**

There is a need to reconcile the various Cipta Karya measures of population served by piped water with each other and with the BPS measure, separately for urban and rural areas. The key to the reconciliation appears to be for Cipta Karya to re-evaluate its assumptions regarding the urban-rural location of users.

For *urban* areas, the BPS measure of population served is certainly the more reliable one. It is suggested that Cipta Karya recalibrate its estimated service factors and its methodology for splitting urban and rural service to bring its estimates for urban population served in line with the BPS measure.

For *rural* areas as well, the BPS measure is probably the more reliable one. However, there is some concern that the BPS measure may overstate rural use, perhaps by inadvertently including village water distribution systems. To clarify this point, a small field study is needed, in which several villages containing Susenas households reported to have piped water would be revisited in order to check whether the water service is indeed a PDAM service. Based on the results of this study, Cipta Karya may wish to recalibrate its estimated service factors and its methodology for splitting urban and rural service in order to bring its estimates for rural population served in line with the BPS measure.<sup>8</sup>

### **B2. For Measuring Solid Waste Collection**

An annual survey needs to be undertaken of PSP contracts in at least 15 major cities by a suitable agency of the GOI. The PLP subdirectorates in Cipta Karya is probably the most appropriate. The implementing agency would need only to prepare a small "respondent's manual" to accompany a questionnaire similar to the one in appendix E and to send the questionnaire and manual under a cover letter to the sanitation departments in each of the 15 major cities. Follow up letters may be needed for nonrespondents.

### **B3. For Monitoring of PPP Investment**

Bappenas should encourage BKPM to enter into cooperation with BPS to upgrade the BKPM investment realization survey, chiefly by means of creating a project directory with up-to-date addresses. Although this hope remains a distant prospect, it is still worth exploring because the potential benefit is so great for analysis of investment in all sectors, not just urban services. By cooperating with BPS, a statistical agency with extensive field staff, BKPM could hope to greatly improve its address register and to convert its realization survey into a much more effective instrument for tracking realization of all investment projects, including those in the field

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<sup>8</sup>If instead the study shows that many households reported by Susenas to have piped water do not truly receive PDAM water, BPS would need to re-evaluate the Susenas questionnaire and interviewer manual.

of urban services.

For the time being, the number of PPP projects in operation (3) is too small to warrant testing of a formal survey instrument.

### **C. Conclusions and Recommendations for the PURSE Project**

This report suggests a reasonable strategy for developing a system of indicators for the PURSE project, based on a realistic assessment of both the importance of indicators and of the strengths and limitations of available data at both the national and local levels. While useful, the proposed indicators are not all that important for the privatisation of urban services and cannot be allowed to become burdensome. Based on this principle, the PURSE Project needs to take several steps towards improving the availability of indicators for monitoring its goals and purposes.

- For PPP investment, the PURSE Project for the time being should keep an informal directory of projects that are either in operation or well along in construction, together with data on realized investment. Such data, however rough, will be very useful when the time comes to design a survey of PPP projects.
- For the proposed survey of PSP contracts, the PURSE Project should be prepared to offer further technical assistance as needed to any suitable agency that agrees to undertake the survey. Particularly important will be the need for technical assistance to help evaluate any data collected through the survey and to help develop software applications for managing the survey and entering data.
- The Project should offer technical assistance to the GOI as needed to improve the contextual indicators discussed here, particularly those for water supply and solid waste management, if these improvements are deemed important to the GOI. More specifically, the Project should present its findings to Cipta Karya and inquire at various levels about their response. If Cipta Karya is interested in investigating the problem, the option of a small pilot study to match Sakernas data with PDAM data in selected rural areas can be pursued.
- Once a minimal system of indicators is established with the support of the PURSE Project, the next step would be to focus on making good use of the data in policy analysis. In this way, the data will begin to "market" itself, and agencies may become more supportive of data-collection efforts. Not until this stage is reached would it be appropriate to consider "moving the goalposts" by attempting to collect a wider variety of data.

TABLE 11

Value of PSP Contracts : WASH Study  
(In Million of Rupiah)

SUMMARY OF 8 SURVEY CITIES

SECTORS	SURABAYA	SEMARANG	YOGYAKARTA	BANDUNG	MEDAN	PONTIANAK	JUNG PANDAN	BEKASI	TOTAL
<b>WATER</b>									
PDAM Bill Collection	20.0	0.0	0.0	2.1	22.5	0.0	0.0	NA	44.6
<b>SOLIDWASTE MANAGEMENT</b>									
<b>SOLID WASTE</b>									
COLLECTION/TRANSPORT									
Direct Transport LPA	242.0	27.4	0.0	0.0	0.0	0.0	0.0	0.0	269.4
LPS to LPA Transport	321.1	312.1	0.0	0.0	0.0	0.0	0.0	0.0	633.2
STREET SWEEPING	18.0	7.7	137.6	0.0	0.0	0.0	0.0	0.0	163.3
COMPOSTING	0.0	319.4	0.0	0.0	66.8	0.0	0.0	0.0	386.2
<b>WASTE WATER</b>									
SEPTIC TANK DESLUDGING	326.1	34.8	19.3	0.0	0.0	0.0	0.0	0.0	380.2
OTHERS NOT INCLUDE ABOVE	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>TOTAL VALUE OF SERVICES PROVIDED BY PSP</b>	<b>927.2</b>	<b>701.4</b>	<b>156.9</b>	<b>2.1</b>	<b>89.3</b>	<b>0.0</b>	<b>0.0</b>	<b>0.0</b>	<b>1,876.9</b>

**Table 12. --Annual cost of private contracts  
for solid waste collection and street sweeping  
in DKI Jakarta and 8 cities in WASH study**

City	Collection Meters <sup>3</sup> per day		Cost of private collection Million rupiah	
	Total	Private	1992	1993-94
DKI	21900	4240	NA	1446
Surabaya	7358	1327	581	(581)
Semarang	3125	285	348	972
Yogyakarta*	1400	0	137	169
Bandung	8460	0	0	
Medan	3707	0	0	
Pontianak	994	0	0	
Ujung Pandang	2351	0	0	
Bekasi	1085	0	0	
	50380	5852		3105

\* In Yogyakarta, contracts are let for street sweeping only  
 Note--Data for cubic meters are from the WASH study,  
 except that for Jakarta data are taken directly from the  
 Dinas Kebersihan. Rupiah data for 1992 are from the  
 WASH study; rupiah data for 1993-94 are from the various  
 Dinas Kebersihan.

**ANNEXES**

ANNEX A

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QUESTIONNAIRE FOR SURVEY OF PSP SERVICE CONTRACTS

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**ANNEX A**  
**FIELD VISITS TO TEST PSP QUESTIONNAIRE**

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Visits were made in Jakarta to evaluate the availability of data on contracts for private solid waste collection and to Central Java and Yogyakarta to evaluate a questionnaire (final version shown in appendix E) for collecting such data.

**A. Visits in Jakarta**

Visits in Jakarta were made without a questionnaire. Ibu Muria of the PLP subdirectorate in Bintek in Cipta Karya accompanied me on both Jakarta visits. We were joined on the second visit by Ibu Dewi of the PSM subdirectorate in Tata Kota in Cipta Karya.

**A1. South Jakarta**

On October 18, we spoke with the head of the Dinas.Kebersihan of South Jakarta, Pak Nur Latif. He was able to provide us with a one page summary table (table D-1) showing the value of each solid waste collection contract in South Jakarta for fiscal year 1994-95; such data is reported monthly to the provincial Dinas Kebersihan. The value of each contract includes 10 percent taxes (PPN), and landfill fees of Rp 2000 per cubic meter. For septic tank desludging, Pak Nur Latif said his service has 9 trucks, which, collected 622 cubic meters of sludge in December 1993. He did not know how much desludging is carried out by private companies but has the impression that 2 companies operate in South Jakarta with a total of 4-5 trucks.

**A2. Dinas Kebersihan, DKI**

On October. 19 we visited the Dinas Kebersihan of DKI Jakarta to speak with Ibu Sri Mulyorini, head of the Evaluation Section in the Division of Planning and Program Development. Like Pak Nur, she provided us with a single sheet of data (table D-2) summarizing private contracts with 28 firms for solid waste collection. We thus learned that a survey of private contracts need not go through Jakarta's 5 mayoralities, inasmuch as the citywide Dinas Kebersihan would be able to provide data on activities in all the mayoralities. In addition to the Dinas Kebersihan, a survey form needs to be sent to PD Pasar Jaya, which is responsible for collecting solid waste in market areas and transporting it to the TPA. Bu Sri also mentioned a composting program called Usaha Daurulang dan Produksi Kompos (UDPK), in the hands of local cooperatives affiliated with the Lembaga Keamanan Masyarakat Desa (LKMD). The cooperatives take organic solid waste to make compost for sale. The program operates at 4 locations and plans to add 8 more this year.

Although Bu Sri was not shown the draft questionnaire, she understood its contents from our discussion. She said she would need about a week to fill out such a questionnaire. Although the actual amount of her time involved would be far less, she was unable to estimate the latter amount. In bureaucratic terms, the procedure for conducting such a survey would be as follows. A letter from Cipta Karya together with the questionnaire would go to the head of the Dinas Kebersihan, to be sent down the line to Bu Sri for filling out and to be returned to the head of the Dinas Kebersihan for sending back to Cipta Karya. The entire exchange should take about a

month. In the process of answering our questions, Bu Sri expressed a certain impatience with the burden of filling out forms, even ones as simple as we had in mind. At one point she suggested that she would prefer to just give us documents like table D-2 and let us fill out the forms for her.

## **B. Central Java and Yogyakarta**

On Wednesday-Thursday, November 23-24, I travelled to Central Java and Yogyakarta accompanied by three persons: Bu Dewi from PSM, Pak Dwito Aroko Soeranto (Koko) from PLP Bintek, and Pak Parling from PUOD. Pak Parling accompanied us only for the first meeting with the Dinas Kebersihan in Semarang. We carried a questionnaire for collecting data on the value of PSP contracts, which we were able to test at three Sanitation Departments. Although broadly similar to the one in appendix E, the questionnaire differed in several respects to be discussed in this appendix. In addition, I took the opportunity to visit two PDAM to enquire about their estimates for population served by piped water.

### **B1. Semarang Dinas Kebersihan**

We met with Pak Ibnu Hasan and Ir. Toto Suwanto of the Dinas Kebersihan in Semarang to request data for our questionnaire and discuss related technical issues. For presence of private sector activity, they answered "yes" only for item B-1, solid waste collection. They said private firms collected 285 cubic meters per day, at an annual cost of Rp. 973 million. The questionnaire stipulated that this amount be reported excluding the value added tax (PPN). As our respondents had a bit of difficulty making this adjustment, it was suggested that the respondent manual include a formula for removing PPN. The Dinas Kebersihan itself collected 1925 cubic meters of solid waste per day, while private establishments and hotels themselves daily delivered 90 cubic meters to the TPA. Daily solid waste production was estimated at 3350 cubic meters. Thus, 1050 cubic meters per day remained uncollected; of this, 725 cubic meters were estimated to be "processed by society" (*dikelola masyarakat*) while 325 cubic meters were estimated to be not yet handled by anyone. This 5-way breakdown of solid waste disposition made us aware that the 3 disposition categories allowed for in our draft questionnaire (collected by government, collected under private contract, and not collected) were too limited.

Following technical discussions we met with the director of the Dinas Kebersihan Drs. Bambang Susanto for general discussion with his staff. At this time Pak Parling of PUOD emphasized the importance of data collectors like us providing feedback to localities, not just collecting data from them. I took the opportunity to mention our emphasis on two points: a) minimizing respondent burden by designing and testing a user-friendly form, and 2) the importance of publishing survey data for circulation among Sanitation Departments. While the audience appreciated the lightness of the respondent burden entailed, they appeared a bit disappointed by the modest scope of our mission.

## **B2. Kudus PU**

In Kudus we met with the office head, Ir. Moch Tanzil, together with Pak Heri Soepardjo, the section head for Kebersihan dan Kebakaran, and Pak Heru Kuspriyadi, the section head for Lingkungan Hidup. They provided us with a brief worksheet (Table D-3) showing how they calculated daily solid waste production of 283 cubic meters, of which 268 cubic meters is collected. They treat the residual, 15 meters, as uncollected.

Kudus officials expressed concern about the reliability of the measure of solid waste produced, together with the uncollected amount. They mentioned a large daily influx of workers residing outside the jurisdiction (said to be equal to the resident population), who produced solid waste in unknown quantities. They further mentioned that local per capita incomes were relatively high, leading to larger than average solid waste production per capita.

Private contracts in Kudus are limited to street sweeping. In fact, all street sweeping (for approximately 30 km. of streets) in Kudus is contracted out to a private firm, which delivers the solid waste to temporary storage points. While filling out our form, Kudus officials asked whether the cost of Astek (workmen's compensation) contributions for sweepers needs to be included in the value of contracts. We answered that it is part of the cost of labor and therefore does need to be included, and perhaps as well to be mentioned in the respondent manual.

## **B3. Demak PDAM**

At PDAM Demak, I asked the director, Ir. Budiarto, about the estimated number of persons served. He answered that the estimate reflected assumptions of only 5 persons per household connection and 150 persons per public tap. These assumptions appear modest when compared with the service factors assumed in column 3 of table 7.

## **B4. Semarang PDAM**

At PDAM Semarang, I asked the director of the Research and Analysis Division, Ir. Yunus Slamet Riyadi, about the estimated number of persons served. He answered that the estimate reflected assumptions of 6 persons per household connection and 100 persons per public tap, as detailed in table A-4. Again these assumptions appear modest when compared with the service factors assumed in column 3 of table 7.

## **B5. Yogyakarta Dinas Kebersihan & Ketamanan**

In Yogyakarta, we tested the PSP questionnaire on Ir. Hadi Prabowo, the head of the planning office at the Dinas Kebersihan dan Pertanaman. Private companies there sweep the major streets (11 km) but do not deliver solid waste to the landfill, at an annual cost of Rp. 137,080,000. We discussed the estimates of solid waste production and uncollected solid waste at some length. They had done some research showing that average production was 2.4 liters per person per day, but they raised the estimate to 3.0 to adjust roughly for the large increase in the daytime population due to commuters. In this way they estimated daily production of 1520 cubic meters, of which 513 was uncollected. Ir. Hadi Prabowo expressed the view that all 513 cubic meters of this was "processed by society," inasmuch as he was not aware of any accumulations anywhere of uncollected solid waste. At the landfill he mentioned that solid waste is sprayed

twice a day to suppress flies and is then covered by 10 centimeters of soil once a week. We obtained from Ir. Hadi Prabowo the data for fly density in table A-5. He remarked that, in his experience, fly density was in fact very responsive to the effectiveness of solid waste disposal.

### **C. The Questionnaire**

As the proposed survey would be conducted by mail, it is important to prepare a simple questionnaire that can be easily understood by sanitation departments in any city. The proposed questionnaire, shown in appendix E, is divided into 8 blocks. Block A identifies the responding agency. Block B, a checklist of activities which may be contracted to private companies, serves to guide respondents through the remainder of the questionnaire.

#### **C1. Value of Solid Waste Collection and Street Sweeping Services**

All respondents must fill out block C, which shows total solid waste collections by both public and private collectors. Although the focus of the survey is on private activities, the inclusion of a question on total collections has two advantages:

- It provides a check on the plausibility of the data for private collections.
- It provides the PLP subdirector in Cipta Karya up-to-date data on solid waste production and collection from major cities.

Footnotes on the questionnaire (which need to be elaborated in an accompanying manual) provide guidance as to how to classify solid waste collection/disposition:

- Solid waste delivered directly to a landfill by the private establishment (such as a factory) that produces it is to be treated as solid waste "collected by other parties."
- Solid waste "processed by society" is to be grouped with "uncollected solid waste."

For collection by private firms under contract, respondents are asked to fill in the cost per cubic meter and the total cost.

Street sweeping (particularly of major streets) is a solid waste collection service commonly contracted to private agencies. In terms of questionnaire design, the difficulty is that some cities (such as Jakarta and Semarang) issue integrated contracts that combine street sweeping with trash collection while others (such as Surabaya, Kudus and Yogyakarta) issue separate contracts for street sweeping only.<sup>9</sup> To avoid double counting of street sweeping fees, question B-3a asks whether street sweeping contracts are bundled together with solid waste collection or are treated separately. If they are bundled together, respondents are directed to include the fees in block C; if separately, respondents are told to report the fees and the number of meters swept in block D.

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<sup>9</sup> The differences reflects whether the companies that sweep the streets have trucks or not.

## **C2. Other questions**

Blocks E, F, and H were inserted at the behest of PLP staff. In visits to the sanitation departments in Semarang, Kudus or Yogyakarta, these blocks were all bypassed as not applicable; accordingly, these blocks have never been subjected to field testing. However, their continued presence in the questionnaire may be harmless as long as they do not lead to misunderstandings that impede the survey process.

Block E concerns the use of private "transfer stations." To our knowledge, such a station has only ever operated in Jakarta.

Block F concerns the composting of organic solid waste by private parties. Typical composting arrangements do not involve cash payments to private entities; rather, they are given the organic trash and are free to dispose of it as they wish after composting. For this reason, the question confines itself to measuring how many cubic meters of solid waste are composted.

Block H is an open-ended, optional question concerning recycling of nonorganic solid waste. Respondents are asked to provide any quantitative data available on this matter. The question was deliberately left openended to avoid hanging up respondents on a question for which they lack data.

Block G is merely a recapitulation of blocks C, D, E, and F.

## **C3. Questionnaire Development and Field Testing**

An early draft of the questionnaire was prepared by the author in Bahasa Indonesia and was reviewed by staff of PLP and PSP, with PSP staff (especially Ibu Endang) taking the most active role in editing the draft and adding questions. It was then field tested in Central Java and Yogyakarta (see appendix A). During testing, no major problems were found; the questionnaire appeared to be fairly self-explanatory. Field experience convinced us that such a survey could probably be conducted by mail; interviewer visits would not be necessary. A few small refinements were made to the wording of some questions as a result of the field trip.

### **D. The Survey Process**

As previously mentioned, the respondent in each city would normally be the sanitation department. However, respondents may also include the agency responsible for solid waste management of markets, particularly if such an agency employs private contractors and/or delivers solid waste directly to a landfill. The implementing agency needs to make and update each year a list of all respondents, with special attention to agencies other than sanitation departments.

The survey will proceed more smoothly if a set of forms and data entry formats can be prepared using an integrated software package. The database (albeit small) should track document flow and signal when reminder letters need to be sent. If the GOI agreed to conduct the proposed survey, the PURSE project may want to consider having a consultant help prepare such a package.

It is not yet clear what kinds of editing problems, if any, may arise during survey implementation. In the first year or two of survey implementation, the implementing agency needs to evaluate each questionnaire very carefully for plausibility. If certain misunderstandings are found to recur, the implementing agency will need to reevaluate the questionnaire. A PURSE consultant may be able to help with these evaluations.

If implausible data is received, the implementing agency will probably need either to make a phone call or to write a letter requesting clarification. If the number of respondents remains small (say, 15), relying on the telephone would not be onerous. However, if the number of respondents increases sharply, the implementing agency would need to rely on letters for troubleshooting implausible data. Copies of such letters should be kept. In time, if certain patterns of error seem to recur, it may be useful to develop one or more standard form letters for responding to common errors.

## PSP Questionnaire

Survei mengenai peranserta swasta dalam bidang persampahan

Tahun anggaran 1993-94

(kondisi saat ini, tidak termasuk rencana)

Di kotamadya/kota \_\_\_\_\_:

### Blok A. Instansi pengelola kebersihan (tandaikan salah satu)

Dinas Kebersihan \_\_\_ PD Pasar \_\_\_ Lain \_\_:Sebutkan: \_\_\_\_\_  
 PD Kebersihan \_\_\_ Dinas PU \_\_\_  
 Dinas Pasar \_\_\_ Dispenda \_\_\_

### Blok B. Kegiatan yang dikontrakkan /dikelola oleh pihak swasta

Tugas	Jawaban	Dilaporkan di Blok mana?
1. Pengumpulan dan pengangkutan sampah ke TPA	Ja ___ Tidak ___	Jika 'ya' di Blok C
2. Pengangkutan sampah dari TPS ke TPA.	Ja ___ Tidak ___	Jika 'ya' di Blok C
3. Penyapuan jalan umum dan pengumpulan sampah sampai ke TPS saja.	Ja ___ Tidak ___	
3a. Jika 'ya,' apakah kontrak penyapuan dipisahkan/disatukan dengan kontrak pengangkutan sampah ke TPA?	Disatukan ___ Dipisahkan ___	Jika disatukan, di Blok C saja Jika dipisahkan, di blok D
4. Memakai jasa "transfer station" yg dikelola oleh swasta	Ja ___ Tidak ___	Jika 'ya' di Blok E
5. Pengelolaan sampah organik oleh pihak swasta/masyarakat untuk dibuat kompos	Ja ___ Tidak ___	Jika 'ya' di Blok F

### Blok C. Pengangkutan sampah sampai ke TPA oleh pihak dinas atau swasta. (supaya dijawab oleh semua responden)

	(a) Total produksi sampah	(b) Sampah yg diangkut sampai TPA oleh dinas	(c) Sampah yg diangkut sampai TPA oleh swasta melalui kontrak	(d) Sampah yg diangkut sampai TPA oleh pihak lain	(e) Sampah yang belum tertangani
1. Meter kubik per hari					
2. M. kubik per thn (butir (1) x 365)					
3. x harga dasar per m. kubik*					
4. = biaya total/th			.000,-		

\* Harga dasar tidak termasuk PPN/PPH & retribusi TPA

### Blok D. Penyapuan jalan umum dan pengangkutan ke TPS oleh swasta. (Dijawab hanya jika butir B-3a dijawab 'dipisahkan')

	(a) Total jalan umum	(b) Jalan umum yg ditangani dinas	(c) Jalan umum yg ditangani swasta	(d) Jalan umum yg belum tertangani
1. Meter yang disapu				
2. x harga dasar per m per bin*				
3. Biaya total/bulan			.000,-	
4. Biaya total/th (butir (3) x 12)			.000,-	

\*Harga dasar tidak termasuk PPN



ANNEX B

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**LIST OF CONTACTS**

## Appendix B.-- List of Contacts

Date	Name	Position	Topic
Oct 5	Tim Kerja	CKP -- Tim Kerja	Study goals
	Ibu Rina Augustina		
Oct 7	Pk Hari Sidharta	CKP -- Dirdit Bintek	Access to Bintek staff
	Tim Kerja		
Oct 10	Pak Bastari	Bapenas--Tim Kerja	Letter to BKPM
	Pk Bambang Purwono		
Oct 11	Pk Widia	CKP Bintek, staff Subdit Air Bersih	Data for water services, esp PPP & list of PPP projects
	Pk Eddy Kurniadi		
Oct 12	Pk Johnny Anwar	PUOD, Kasubdit Local Enterprises	Assets data for PDAM
	Pk Eddy Kurniadi		
Oct 17	Pk Ano Herwano	BPS, Kabid Environmental Statistics	Data for households served
	Pk Sujana Royat		
Oct 18	Bu Enen	PUOD, Kasubdit Local Enterprises	List of PPP projects
	Pk Widia		
Oct 19	Bu Endang	BPS, staff Johnny Anwar	Data for households served
	Mr Jim Woodcock (phone)		
Oct 24	Bu Muria	CKP Tata Kota Kasubdit PSM Staff PSM	Methodology for surveying PSP Value of Services
	Pak Nur Latif		
Oct 26	Mr. Bill Kugler	CKP-Bintek, Kasubdit PLP Staff PLP	Available data for trash
	Pk Sussongko		
Oct 27	Bu Sri Mulyorini	Ex short-term, Hasfarm survey	Efficient ways to collect data for PSP and PPP
	Bu Muria		
Oct 31	Bu Dewi	CKP -- Staff PLP-Bintek	Data for PSP contracts in Jaksel
	Mr. Bill Kugler		
Nov. 1	Pk Chairul (by telephone)	Dinas Kebersihan DKI	Data collection strategies
	Bu Dewi		
Nov. 7	Bu Endang	CKP -- Staff PLP-Bintek	Data for PSP trash contracts in DKI
	Bu Muria		
Nov. 17	Pk Dwityo Akuro Soeranto (Koko)	CKP -- Staff Tata Kota-PSM	Data collected by PERLASPI & data reported to the GOI by Dinas Kebersihan, DKI
	Dr. Daryanto		
Nov. 25	Dr. Yuliot	Secretary general PERLASPI; head Subdinas perencanaan & bina program Dinas Kebersihan DKI	Review draft questionnaire for PSP survey
	Ir. Elkana Purba		
Dec. 2	James Woodcock	BKPM -- Head, Division for Evaluation of New Applications, Nonindustry Staff, same division	Request BKPM data for permits and realizations
	Pk Moh. Maulana		
Nov. 25	Ir. Soehari Boedihidayat	BKPM -- Head, Bureau for Monitoring and Evaluation	Request data from BKPM realizations survey
	Pk Sugiono		
Nov. 25	Pak Samso	Consultants on WASH study, 1992-93	Review WASH study
	Ibu Cut		
Nov. 25	Anthony Torrens (phone)	PUOD--Head, Bureau of Finance	Discuss data for 58 projects
	Ir. Soehari Boedihidayat		
Nov. 25	Pk Kusno (by phone)	PUOD--Subdirectorate for ...	-do-
	Risyana Sukarma		
Nov. 25	Former PURSE Project consultant	Former PURSE Project consultant	-do-
	Pk Kusno (by phone)		
Nov. 25	Staff of Pk Chairul, Subdinas perencanaan & bina program Dinas Kebersihan DKI	Request data from BKPM realizations survey	Request data from BKPM realizations survey
	Pk Kusno (by phone)		
Nov. 25	Obtain data on production & collection of solid waste, DKI Jakarta	Request data from BKPM realizations survey	Obtain data on production & collection of solid waste, DKI Jakarta
	Pk Kusno (by phone)		
Nov. 25	Consistency of water data	Request data from BKPM realizations survey	Consistency of water data
	Pk Kusno (by phone)		
Nov. 25	Consistency of water data	Request data from BKPM realizations survey	Consistency of water data
	Pk Kusno (by phone)		

ANNEX C

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COMPLETED SAPIR FORMS

## SEMI-ANNUAL PORTFOLIO IMPLEMENTATION REVIEW (SAPIR)

Project Name and Number : PRIVATE PARTICIPATION IN URBAN SERVICES (PURSE)

Date : November 17, 1994

Page 1

**Project Purpose :** To expand the participation of the private sector in the provision of selected urban services (water supply, waste water treatment, and solid waste) on a sustainable basis through direct investment or service/management contracts in supply, delivery, or other operational functions. The project strategy is to assist the GOI in attaining their objectives in strengthening and expanding the role of private sector in financing and delivering urban services. The project will offer strategic assistance to the GOI and the private sector in designing, testing, and implementing a program to enhance private participation in the selected services.

PROJECT IMPLEMENTATION PERFORMANCE	SELECTED INDICATOR	INITIAL BASELINE	FINAL TARGET	CURRENT STATUS
<i>Purpose-Level Target (EOPS)</i>				
1. Expand the amount of participation by the private sector in the provision of selected urban services (water supply, waste water treatment and solid waste management) on a sustainable basis through direct investment and/or contracted participation in supply, delivery, or other operational functions	1.1 Increased value of private capital infrastructure investment (both local & foreign) in PURSE-supported demonstration projects in Indonesia.	\$0 (1993)	\$225 million in PURSE BOO/BOT Projects by 9/98	Financial viability of four potential demonstration projects is being assessed using financial modelling. Input data is being collected for a \$50 million water project in Medan, a \$30 million dam in Balikpapan, as well as a water project in Tangerang, the cost of which are yet to be determined. A second round of project identification to begin in Jan.95
	1.2 Increased value of service/management agreements in the selected services provided by the private sector.	\$0 (1993)	\$120 million in service agreements by 9/98.	The financial viability of a solid waste management service contract in Mataram is being examined. Value of services not yet determined.

*Continued on Page 2*

## SEMI-ANNUAL PORTFOLIO IMPLEMENTATION REVIEW (SAPIR)

Project Name and Number : PRIVATE PARTICIPATION IN URBAN SERVICES (PURSE)

Date : November 17, 1994

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PROJECT IMPLEMENTATION PERFORMANCE	SELECTED INDICATOR	INITIAL BASELINE	INTERIM PROGRESS		FINAL TARGET	CURRENT STATUS
			EXPECTED	ACTUAL		
<i>Outputs-Level Targets</i>						
1. Establishment of a legal and regulatory framework enabling and encouraging private sector participation in the financing of the selected urban services	1.1 Regulations, procedures or guidelines that clarify legal authority for local government to enter private investment and service contracts.	Authority broadly delegated to local gov't such as a PDAM but detailed implementation regulations and guidelines not	Draft of recommended regulations and guidelines (8/95)	SSEK first deliverable due (1/95)	Regulations and guidelines for local governments	a) GOI policy review completed. GOI currently strongly by endorsing private participation. b) Legal framework study being conducted by attorneys (SSEK) in 3 parts: 1) description of existing law & regs, 2) analysis of omissions & deficiencies, & 3) recommend new laws & regs. Financial models software developed for project viability, water tariff, and PDAM financial modules. Refinements underway for PDAM asset depreciation & debt modelling.
	1.2 Guidelines issued on procedures for local government & enterprises to determine the financial viability of potential private investment projects using financial modelling.	No capability for Financial Analysis in Local Governments & Enterprises.	Financial Analysis Model (3/95).	Draft financial models completed.	Financial analysis capability via methodology and models.	
	1.3 Guidance issued on investment project risk management, including use of financial performance guarantees and other risk mitigation measures.	No Capability for Risk Management Assessment.	Risk Management System (12/95).	Analysis of risk issue completed. Project development cycle manual initiated.	Local Gov't/ Enterprise knowledge & capability in Risk Assessment & Mitigation	
	1.4 Regulation and guidelines issued on model contracting procedures and tender documents.	Existing regulations for traditional public sector project implementation.	Draft standard contract management procedures and documents for BOO/BOT/service	Standard bidding process study initiated.	Final tested & proven set of Contract Management Procedures, Guidelines & Documents	
						<i>Continued on Page 3</i>

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## SEMI-ANNUAL PORTFOLIO IMPLEMENTATION REVIEW (SAPIR)

Project Name and Number : PRIVATE PARTICIPATION IN URBAN SERVICES (PURSE)

Date : November 17, 1994  
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PROJECT IMPLEMENTATION PERFORMANCE	SELECTED INDICATOR	INITIAL BASELINE	INTERIM PROGRESS		FINAL TARGET	CURRENT STATUS
			EXPECTED	ACTUAL		
2. Guidance issued to set pricing policy for urban services and encourage greater degree of self-financing for water, waste water and solid waste projects.	2.1 Guidance on models and procedures for water enterprises to assess financial viability and for establishing cost recovery in water tariff systems.	water rate setting based on operational costs only	Water project tariff setting mechanisms (3/95).	Basic tariff module completed. Refinements underway.	Improved financial accountability and methods to set rates based on total cost recovery principles.	Water tariff study completed. Currently examining PDAM's accounting/reporting procedures and financial conditions. Financial analysis model being developed.
	2.2 Guidance on models and procedures for municipalities to privatize solid waste disposal and collection systems	No existing guidance.	1996 Work Plan		Complete set of regulations, guidelines, & procedures to follow for implementing solidwaste projects	
3. GOI environmental regulations and guidelines issued that control indiscriminate access to, and impact on, water resources and land use.	3.1 Implementation regulations, guidelines and operating procedures for solid waste collection, transfer and disposal	Unclear & inadequate guidelines and regulations.	Draft Solid Waste Guidelines (3/95) & Regulations (12/95)		Final accepted and official regulations & guidelines.	Regulations and guidelines drafted and submitted. Under discussion and review with PUOD, Cipta Karya, and Bappedal
	3.2 Guidelines for strengthening waste water treatment regulations and effluent criteria.	Water usage standards in place. Industrial effluent & stream	1996 Work Plan		Final accepted and official regulations & guidelines.	Status quo.
	3.3 Guidelines relating to proper use and management of water resources, watershed management, inter ministerial cooperation, permits, licensing and related water quality control	Existing inadequate, inconsistent and unenforced guidelines.	1996 Work Plan		Guidelines for water system implementation and management	Analysis of regulations commenced

*Continued on Page 4*

## SEMI-ANNUAL PORTFOLIO IMPLEMENTATION REVIEW (SAPIR)

Project Name and Number : PRIVATE PARTICIPATION IN URBAN SERVICES (PURSE)

Date : November 17, 1994

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PROJECT IMPLEMENTATION PERFORMANCE	SELECTED INDICATOR	INITIAL BASELINE	INTERIM PROGRESS		FINAL TARGET	CURRENT STATUS
			EXPECTED	ACTUAL		
4. Pilot demonstration projects implemented utilize PURSE Project methods for urban service delivery creating models for institutional, contractual, and financial arrangements for sustainable PPP/PSP	4.1 Urban services demonstration projects are initiated involving 5 BOOT/BOT schemes for capital infrastructure investment contracts.	One BOO in water, Nusa Dua, developed for resort hotels. None in waste water. Several BOT and service type contracts for solid waste.	4.1&2 Project pre-feasibility analyses completed for 8 cities (3/95)		5 BOO/BOT negotiated.	3 BOO/BOT projects identified and being pursued.
	4.2 Urban services demonstration projects are initiated involving 6 service or management type contracts.	Numerous service type agreements mostly water billing collection.	See above		6 services Agreements executed.	One service agreement type project identified and being pursued.
5. Training and communications program implemented that expands government and private sector awareness in Indonesia of the concepts behind PPP/PSP	5.1 Promotional program to include annual public/private forums, investor marketing database, and information dissemination to help facilitate private investment projects.	No existing program.	2 national conferences, 5 public private forums			Invitational seminars held : Financial Issues (2/94); US Exim Bank, 10/94). Contributed time & materials to following: MAKSI conference, Solo, 7/95; Cipta Karya PPP Training, Cisarua, 10/95); MFP Training, 10/95).

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## SEMI-ANNUAL PORTFOLIO IMPLEMENTATION REVIEW (SAPIR)

Project Name and Number : PRIVATE PARTICIPATION IN URBAN SERVICES (PURSE)

Date : November 17, 1994

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PROJECT IMPLEMENTATION PERFORMANCE	SELECTED INDICATOR	INITIAL BASELINE	INTERIM PROGRESS		FINAL TARGET	CURRENT STATUS
			EXPECTED	ACTUAL		
	5.2 In country training program for central and local Government officials for transfer of knowledge, concepts and procedures.	None	450 recipients of training	Approx. 190	Approx. 1,130 trainees to be trained in-country under existing contract	Materials developed for orientation training & financial modelling. Recruiting for training manager. Training sessions conducted for Cipta Karya, PUOD, and MOF officials.
	5.3 Overseas, training program inventory study tours, U.S-based short courses, and long-term degree training	None	Six (6) recipients of Masters's degree. Sixty-three (63) officials for short course training.	Six underway, one completed, Sixty-two (62) received short course training.	Six (6) GOI officials long-term (MS degree) training. 100 public and private sector on short term training.	

## PROJECT PERFORMANCE NARRATIVE

- a. **Relationship to Mission strategy:** The PURSE Project directly contributes to the Mission's Strategic Objective #1 "development of a more competitive and participatory economy" by pilot testing of improved methods for providing access to markets and services (Program Outcome #1.3) as well as Strategic Objective 3# "reduced environment degradation" by promoting wider adoption of new policies in urban environmental management (Program Outcome #3.1). The project contributes to economic growth objectives by assisting GOI in opening opportunities for investment in the areas of selected urban services and by alleviating infrastructure shortages that constrain economic expansion. The project contributes to urban environment improvement by expanding coverage and improving the provision of water, waste water and solid waste services.
- b. **Gender Concerns:** Reduction in water borne disease benefit woman and children by diminishing family care burden, loss of work opportunities, labor productivity, and increase life expectancy. Approximately 50.1% of urban residents are female and can be expected to benefit from the expansion of the coverage and improvement of the delivery of water, waste water and solid waste.
- c. **P.E.S. Recommendations of Most Recent Evaluation and/or Audit:** Not applicable (Midterm evaluation scheduled for first quarter FY 1996).
- d. **Achievement of Significant Milestones and Successes Since the Last Review:**
- The most significant achievement was the selection and field survey of ten potential demonstration project sites, and the subsequent determination that there are four potential projects which are most appropriate to pursue for further analysis. Three of the projects are in water supply: 1) \$50 million PDAM Medan bulk water supply, 2) \$30 million PDAM Balikpapan dam project, and 3) PDAM Tangerang Kabupaten water supply. One of the projects is in solid waste: a service contract for solid waste collection and transfer in Mataram, Lombok.
  - The financial viability of the four potential demonstration projects is being assessed using financial modelling. The financial model software has been developed for three modules: 1) project viability, 2) PDAM financial analysis, and 3) water tariff system analysis. Financial data has been inputted to the project viability module for the Balikpapan water project. Financial data for the Medan water project has been collected and is currently being inputted. Refinements are underway for the PDAM financial analysis module for PDAM asset depreciation and debt amortization.
  - Short term technical assistance accelerated during the past six months. The following short term assignments were undertaken:
    - Evaluation of Water Tariff Policy (Eric Leuze)
    - Development of BOO/BOT Case Studies (Anton Deiters)
    - Project Development Cycle (John Smith)
    - Standardized Bidding Procedures (Donald Manning)
    - Solid Waste Regulation & Guidelines (James Dohrman)
    - Financial Analysis Model (Eric Leuze) (David Reed)
    - Monitoring and Evaluation Indicators (Alex Korns)
  - The Second Work Plan (October 1994 - December 1995) was developed and approved.
  - The project sponsored a presentation on infrastructure project finance by Dianne S. Rudo, Vice President and Co-head of the U.S. Export-Import Bank Project Finance Division.
  - Participant training was sponsored for the following U.S.-based courses: Negotiation Skills (Harvard), Investment Appraisal and Management (Harvard), and Private Participation in Municipal Services (CFED).

- A new Chief of Party, William Parente, and a new Municipal Services Advisor, Lindley Hall were recruited and fielded. Indonesian professional positions of Municipal Services Specialist and Project Development/Finance Specialist were filled by the recruitment of Syarif Puradimadja and Robert Rorimassie.

e. Plan for the Next 6 Months:

Policy, Legal and Regulatory Component priority tasks are: 1) analysis of BOT project financial instruments and guarantees (domestic and international capital sources, options for credit support and financial guarantees, and corporate bond financing mechanisms); 2) development of contract management procedures and guidelines (guidance on the project development cycle, contract bidding process, model contract documents, and RFP packages); and 3) legal and environmental regulatory framework (continuation of the SSEK legal baseline and GOI review of solid waste guidelines).

Demonstration Project Component priorities are: 1) financial model development and application (refinement of the PDAM model and input of Medan and Mataram data into the project viability model), 2) initiation of a second phase of project identification (prepare preliminary list of potential projects, utilize selection criteria to develop a short list of priority projects, notify local officials, travel to review potential projects, conduct preliminary feasibility analysis, and select projects for further analysis and marketing), and 3) develop a database for marketing potential projects (delineate data parameters for each category of contacts: media, government agencies, professional and trade groups, individual firms; collect data, and utilize the database through periodic mailings with information on conferences, seminars, project opportunities and tender notices).

Training and Communication priority activities include: 1) recruitment of a training manager and update of the training plan; 2) implementation of a study tour (visit to the BOT center in Manila and possibly to Kuala Lumpur and Pulau Langkawi, pilot locations of the Malaysian privately-financed national wastewater treatment system), and 3) materials development and implementation of two in-country training courses (orientation and financial models).

f. Host Country/Counterpart Contributions (HC/CC):

Total HC/CC for LOP	Reported Contributions			Current HC/CC FY		Answer "YES" or "NO". If "NO" Briefly Discuss Below			
	Total Cumulative Amount	Date as of	% of LOP	Budgeted	Actual	Has the Annual Notification Been Sent to the GOI?	Are Reports Received on a Timely Basis and Certified by the Authorized GOI Official?	Has the Project Officer Provided a Written Assurance to FIN?	Has the Reported Amount Been Tested or Verified? (by FIN, Auditor, etc)
5,400,000 (1)	576,800 (2)	09/01/94	10%	500,000	287,453 (2)	Yes	Yes (3)	Yes	No

Comments:

(1) The Project Paper calls for \$3.4 million in GOI contribution and \$2.0 million in private sector contribution, the latter mostly as a result of feasibility studies for demonstration projects.

(2) Only GOI contribution.

(3) HCC reports are due within two months of the GOI fiscal year, or by June 1st. The GOI FY'92/93 report was received in June 1993 and the FY'93/94 report was received in September 1994.

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g. Key Issues:

(1) A continuing difficulty is inadequate numbers of positions for Indonesian professionals and support staff given GOI demands on project resources. Recommended Solution: During the next quarter, the team will recruit a full time Indonesian Training Manager, and enter into subcontracts with two Indonesian consulting firms to provide short-term technical assistance on an "as-needed" basis.

(2) Coordination and consultation with counterparts remains an issue due to the lack of personnel in BAPPENAS, the reorganization of Cipta Karya, the absence of the Ministry of Finance as an official member of the Steering Committee, and inconsistent responsiveness by the Ministry of Home Affairs. Recommended Solution: Among the steps taken to address these issues, the project has provided an additional secretary in BAPPENAS, expedited the designation of the Ministry of Finance as a member of the project steering committee, participated at a staff retreat for the newly established subdirectorate in Cipta Karya for public-private partnerships, and is conducting a series of briefings for key counterparts on the Second Work Plan and the status of demonstration project activity, in addition to weekly Working Group meetings.

(3) GOI has not met its HCC requirement. While it has exceeded the cash contribution estimated in the PP, reported in-kind contribution has been lower. This is primarily due to: a) a change in project strategy involving the establishment of an independent project office rather than the secondment of advisors to separate ministries; and b) the GOI has not included all eligible expenditures in its calculation of in-kind contribution. Recommended Solution: a) Assist the GOI track time spent by counterparts that are not members of the steering committee, technical team, and working group; b) facilitate formal inclusion of the Ministry of Finance to the steering committee; and c) increase involvement of GOI officials outside of the steering committee, technical team and working group by emphasizing in-country rather than U.S.-based training.

h. Project Category (A, B, or C): Category: B. The project is proceeding more or less as planned, but it can not be cited yet as a real success story until the policy studies and demonstration projects advance to the point where agreement can be reached on financing and risk management arrangements.

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ANNEX D

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ADVISOR'S SCOPE OF WORK

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**ANNEX D**  
**SCOPE OF WORK**  
**DEVELOPMENT OF MONITORING AND EVALUATION INDICATORS**

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**Background**

All USAID grant-funded projects are required to track progress and impact through the use of monitoring indicators that provide data for reporting to the Mission, the appropriate AID/W Regional Bureau, and if applicable, the AID/W Global Bureau. Agency-wide requirements have been established in USAID Handbook 3, Chapters 3 and 11 on how to establish output indicators, baselines, and achievement targets. The PURSE Project is required to generate monitoring indicator data for the following management systems:

- The Mission's Semi-Annual Portfolio Implementation Review (SAPIR), which tracks output and purpose-level performance indicators derived from the PURSE project's logical framework.
- The Mission's Program Performance Information System for Strategic Management (PRISM), which tracks goal and purpose-level indicators selected to measure progress toward broad strategic objectives and program outputs of USAID/Indonesia's entire country program, and
- The Global Bureau, Office of the Environment and Urban Program's (G/ENV/UP-formerly the Private Enterprise Bureau/Office of Housing and Urban Programs-PRE/H) Housing Guaranty Program Performance Indicators, which track indicators of urban sector-wide performance, such as households served by piped water, centralized sewerage, and solid waste management services.
- The PURSE project's monitoring and evaluation system, to meet agency requirements for progress and impact monitoring. Agency-wide guidance also urges that consideration be given to monitoring the involvement and impact on women of all project activities using gender disaggregated impact indicators.

Mission Order No. 2100.5 "Portfolio Implementation Review System" dated March 17, 1994, established a new SAPIR reporting format that requires information to be generated with respect to indicators, baseline data, targets and actual progress to date. In completing the SAPIR report for the PURSE project in April 1992, it became evident that for SAPIR reporting purposes, PURSE indicators are not sufficiently quantitative, baseline data has not been systematically collected, and time-based quantitative targets have not been set.

Several output indicators concern the issuance of decrees that authorize public-private partnerships in urban services and provide guidance on model contract documents and procedures for competitive tenders. A potential source of assistance in determining how to quantify such indicators, collect baseline data, and set targets is the Indonesian

law firm Soewito, Suhardiman, Eddymurthy and Kardono (SSEK), currently under subcontract to the PURSE Project to carry out a baseline review of existing laws and regulations, an analysis of deficiencies, and recommendations for new or modified laws and regulations. SSEK could assist in setting targets, for example, by providing guidance on the steps that Government of Indonesia (GOI) laws, decrees, and regulations must follow to become officially adopted. This could assist in redefining indicators perhaps by establishing a typology of actions and constitute these outputs and a basis for setting a timeframe for the actions to be undertaken.

A set of draft indicators has been compiled based on a review of PRISM and G/ENV/UP reporting requirements. PRISM and G/ENV/UP indicators require data that is only partially available through existing Government of Indonesia data sources. The actual extent of available data and possible proxy indicator data has not yet been conclusively determined, nor have inquiries been made on possible augmentation of current GOI data collection practices to include additional information of mutual benefit to the GOI and the PURSE Project.

Potential sources of primary data include the Ministry of Home Affairs (PUOD, Subdirectorate for Asset Valuation and Local Enterprise), the Investment Board (BKPM), the Ministry of Public Works (Dirjen Cipta Karya), and the Bureau for Central Statistics (BPS). Potential secondary sources of baseline data include the following World Bank and Asia Development Bank documents: Indonesia: Growth, Infrastructure and Human Resources (IBRD Confidential Report dated May 26, 1992), Indonesia Urban Public Infrastructure Services (IBRD Confidential Report dated June 30, 1993), Indonesia Infrastructure, Environment and Impact Assessment (World Bank Resident Staff draft report dated April 5, 1991) and Water Supply and Sanitation Study (Coffey and Partners dated January 1990).

### Objective

The objective of this assignment is to: 1) improve the definition of indicators so that baseline data can be collected and time-based quantified targets can be set; 2) collect baseline data required for the SAPIR, PRISM and G/ENV/UP management systems; and 3) develop targets for goal, purpose and output-level indicators in consultation with the PURSE team and SSEK.

### Task

1. Determine the extent of available data currently being collected by the GOI for reporting data for goal, purpose-level and G/ENV/UP indicators, through consultations with GOI officials, including but not limited to, the Ministry of Home Affairs (PUOD, Subdirectorate for Asset Valuation and Local Enterprise), the Investment Board (BKPM), the Ministry of Public Works (Dirjen Cipta Karya), and the Bureau for Central Statistics (BPS). Identify ways to modify the definition of goal and purpose-level indicators so that baseline data can be collected that is representative of nation-wide conditions. Identify sources of data for reporting G/ENV/UP Housing Guaranty Program Performance Indicators.

2. Identify modifications to output-level indicators so that quantifiable baseline data can be collected, and time-based targets can be set in consultation with the PURSE team and SSEK.
3. Consider how the impact on women of project activities might be monitored and develop proposal for gender disaggregated impact indicators.
4. Once modifications to goal, purpose and output indicators have been agreed upon by the PURSE team and USAID, compile a complete set of needed baseline data drawing upon primary and secondary data sources identified above. Baseline data required for the Mission's SAPIR system will be presented in the SAPIR reporting format. Annual data required for the G/ENV/UP Housing Guaranty Program Performance Indicators will be presented in the G/ENV/UP reporting format. Since a reporting format has not yet been developed for PRISM indicators, present PRISM baseline data in an appropriate manner based on discussions with USAID PPS and PED staff.
5. In consultation with the PURSE team, Tim Kerja (GOI counterpart officials on the PURSE Working Group), SSEK and USAID personnel, develop targets for goal, output and purpose-level indicators as required by agency-wide guidance and the SAPIR management system. Prepare a completed SAPIR report that shows entries for narrative statements, selected indicators, baseline data, target status and actual status to date.

#### **Deliverables**

Draft of all deliverables are due by November 1st, 1994. Final reports incorporating Mission comments are due by November 15th, 1994. An original and four copies of each deliverable is required as well as and a compilation of submitted reports on a word-perfect 5.1 three-inch diskette.

1. Prepare a completed SAPIR report that shows entries for narrative statements, selected indicators, baseline data, target status, and actual status to date.
2. Prepare an update of PURSE-related annual data for the G/ENV/UP Housing Guaranty Program Performance Indicators completing entries for tabular and narrative summaries. Augment the one-paragraph narrative summary of the status of centralized sewerage systems with a three to five page briefing paper on the status of centralized sewerage systems in Indonesia.
3. Present PRISM baseline data in an appropriate manner based on discussions with USAID PPS and PED staff.
4. Draft a briefing paper on issues and recommended actions for the PURSE project's monitoring and evaluation system, including: 1) issues for a "gender analysis" and next steps to develop indicators for tracking the involvement and impact on woman of project activities, 2) an assessment of information of potential mutual benefit to the GOI and the PURSE project that the GOI might agree to collect as a part of on-going data collection efforts, and 3) issues to be investigated in the mid-term evaluation planned for 1st quarter U.S. FY 1996.

### **Level of Effort**

Approximately three person months of assistance are required (six weeks of expatriate assistance and six weeks of local expertise). A six day work week is authorized.

### **Timing**

September 1 to November 15, 1994.

### **Qualifications**

#### **1. Expatriate Consultant**

Must possess at least five years experience working in urban, environmental, or demographic research in developing countries (previous experience in Indonesia would be most advantageous), familiarity with USAID monitoring and evaluation requirements, and demonstrated capability to lead a team of consultants and produce the required analysis/reports on time. Must have strong interpersonal skills.

#### **2. Indonesian Consultant**

Must possess skills in social science research, familiarity with Government of Indonesia ministries and agencies (previous experience with urban sector agencies would be most advantageous), some knowledge of donor funding and reporting requirements, and fluency in English and Bahasa.

Since this assignment involves synchronizing the field work with the Mission's SAPIR review planned for early December, both consultants must be available during the September to November time period to provide the level of effort required.