

Metropolitan Sanitation Management Investment Project TRTA-8666-INO – INDONESIA Capacity Development Technical Assistance

SCOPE AND OUTPUTS

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Background

- **The Metropolitan Sanitation Management Investment Project (MSMIP) supports the Government of Indonesia to improve urban wastewater services in the cities of Jambi, Makassar, Pekanbaru and Palembang. An ADB loan of \$120 million supports new sewerage systems in each city, except for Palembang where sewerage construction is funded by the Australian Department of Foreign Affairs and Trade (DFAT) through a \$48.83 million grant.**
- **Attached to the project was a Technical Assistance to support the government in implementing the project, TRTA-8666-INO – INDONESIA Capacity Development Technical Assistance.**



Australian Government

Department of Foreign Affairs and Trade



Background

MSMIP SERVICE COVERAGE						
City	Domestic Connections	Commercial Connections	Total sewer connections	Households served (desludging)	Total households served	Total people served
Jambi	8,900	1,400	10,300	42,432	52,732	263,660
Makassar	6,900	4,100	11,000	36,312	45,312	226,560
Palembang	10,600	1,400	12,000	50,000	62,000	310,000
Pekanbaru	9,900	1,100	11,000	42,987	53,987	269,335
Total	36,300	8,000	44,300	171,731	214,031	1,069,555

OUTPUTS OF THE CDTA

- OUTPUT 1: Establish the Relevant Agencies and Wastewater Management Institutions**
- OUTPUT 2: Operational Framework for Sanitation Services**
- OUTPUT 3: Training**
- OUTPUT 4: Septage Management Plan for the City of Jambi**



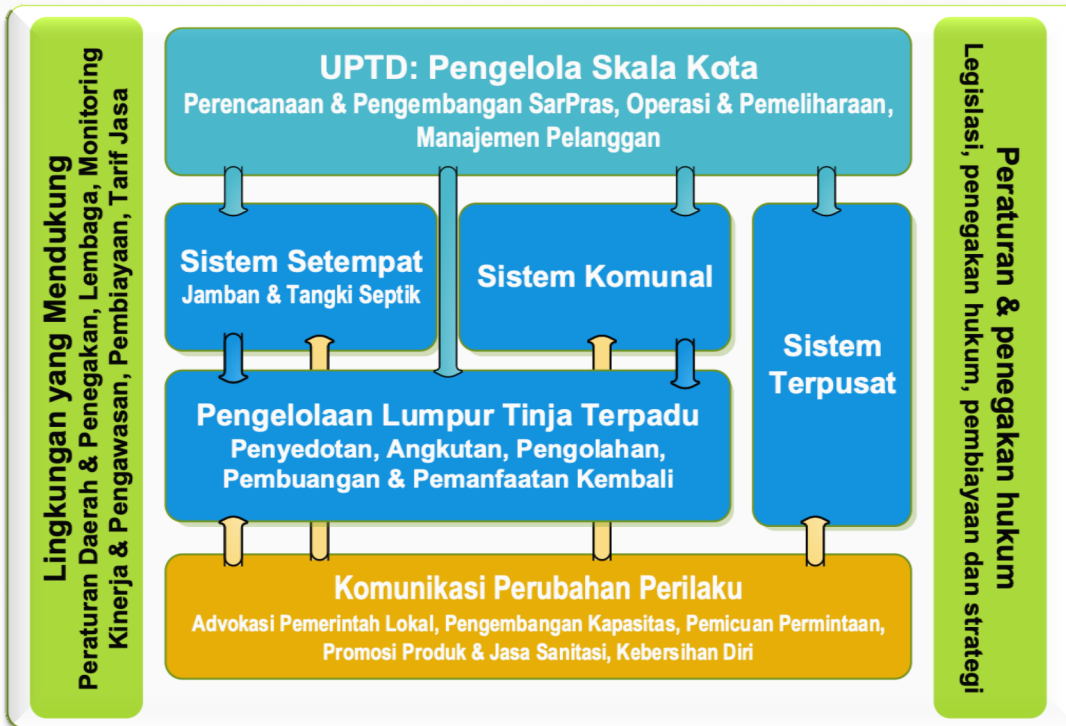
Australian Government

Department of Foreign Affairs and Trade



Output 1: Wastewater Management Institutions

Assistance to Pekanbaru and Jambi LGs for reestablishment of Technical Implementation Units (UPTD)




Source: IUWASH



Output 2: Operational Framework for Sanitation Services



- Template for Wastewater Ordinances
- Tariff Models



**CONTOH PERATURAN DAERAH TENTANG
PENGELOLAAN AIR LIMBAH**

Februari 2016

TA-8666-INO – INDONESIA
Capacity Development Technical Assistance
Metropolitan Sanitation Management Investment Project

WASTEWATER SERVICE - ESTIMATION OF OPERATIONAL SUBSIDIES AND INVESTMENTS NEEDS KOTA JAMBI

v9 May 2019


Choose two values:

1. Coverage target (offsite+onsite)	40%	of households
2. Timeframe for SMP	5	years
3. Average tariff for off-site House Hold	25,000	Rp/month/Conn
4. Average tariff for off-site Commercial	40,000	Rp/month/Conn
5. Desludging tariff	250,000	Rp/ sekali sedot


Income, Expenditure and Subsidy	2022	2023	2024	2025	2026	TOTAL
Total income	3,095	3,692	6,410	7,007	9,707	29,911
Total OpEx (inc. Depreciation)	3,187	5,829	7,327	8,476	9,957	34,777
Subsidy	92	2,137	917	1,469	250	4,866

Investment Needs	2022	2023	2024	2025	2026	TOTAL
Property connections & vehicles	20,200	14,724	14,724	14,724	14,227	78,600
Vacuum trucks	-	-	800	-	1,600	2,400

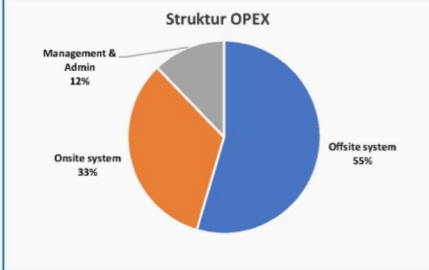
Pendapatan, Pengeluaran dan Subsidi



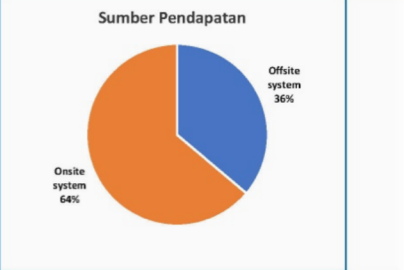
Kebutuhan Investasi



Struktur OPEX



Sumber Pendapatan



Output 3: Training

Study tour program to Malaysia for high and medium level local government officials



PT. KOGAS DIRIYAP KONSULTAN
committed to better life

IndahWater

INTERNATIONAL VISIT ON BASIC OPERATION AND MAINTENANCE OF SEWERAGE TREATMENT PLANT FOR METROPOLITAN SANITATION MANAGEMENT INVESTMENT PROJECT

DATE:
23TH – 24TH MAY 2019

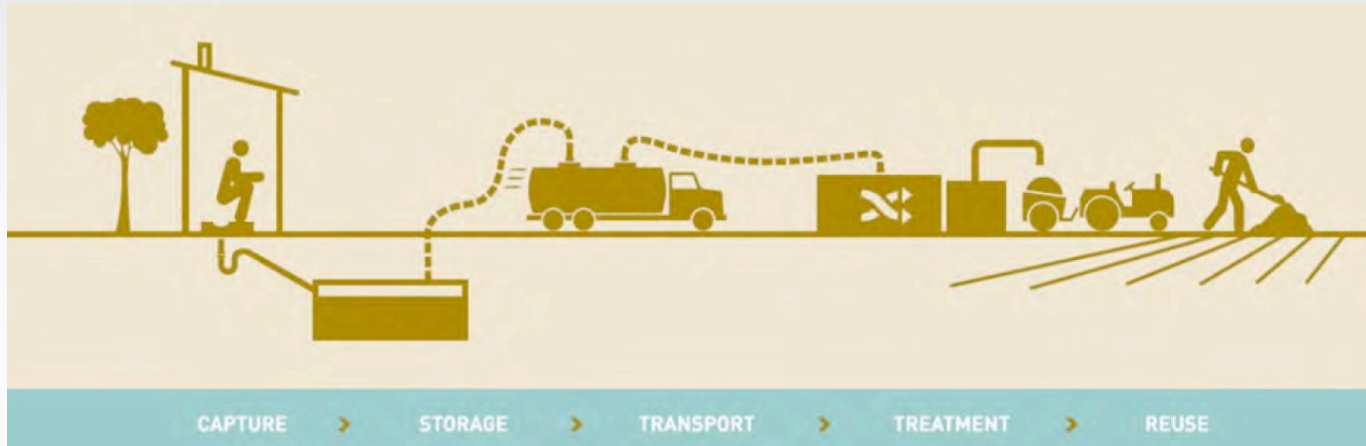
VENUE:
INDAH WATER KONSORTIUM SDN. BHD.
KUALA LUMPUR, MALAYSIA



Australian Government
Department of Foreign Affairs and Trade



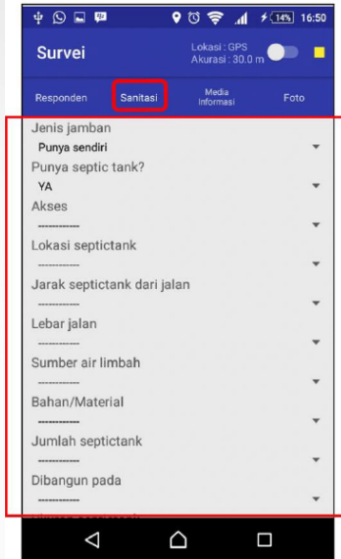
Output 4: Jambi Septage Management Plan



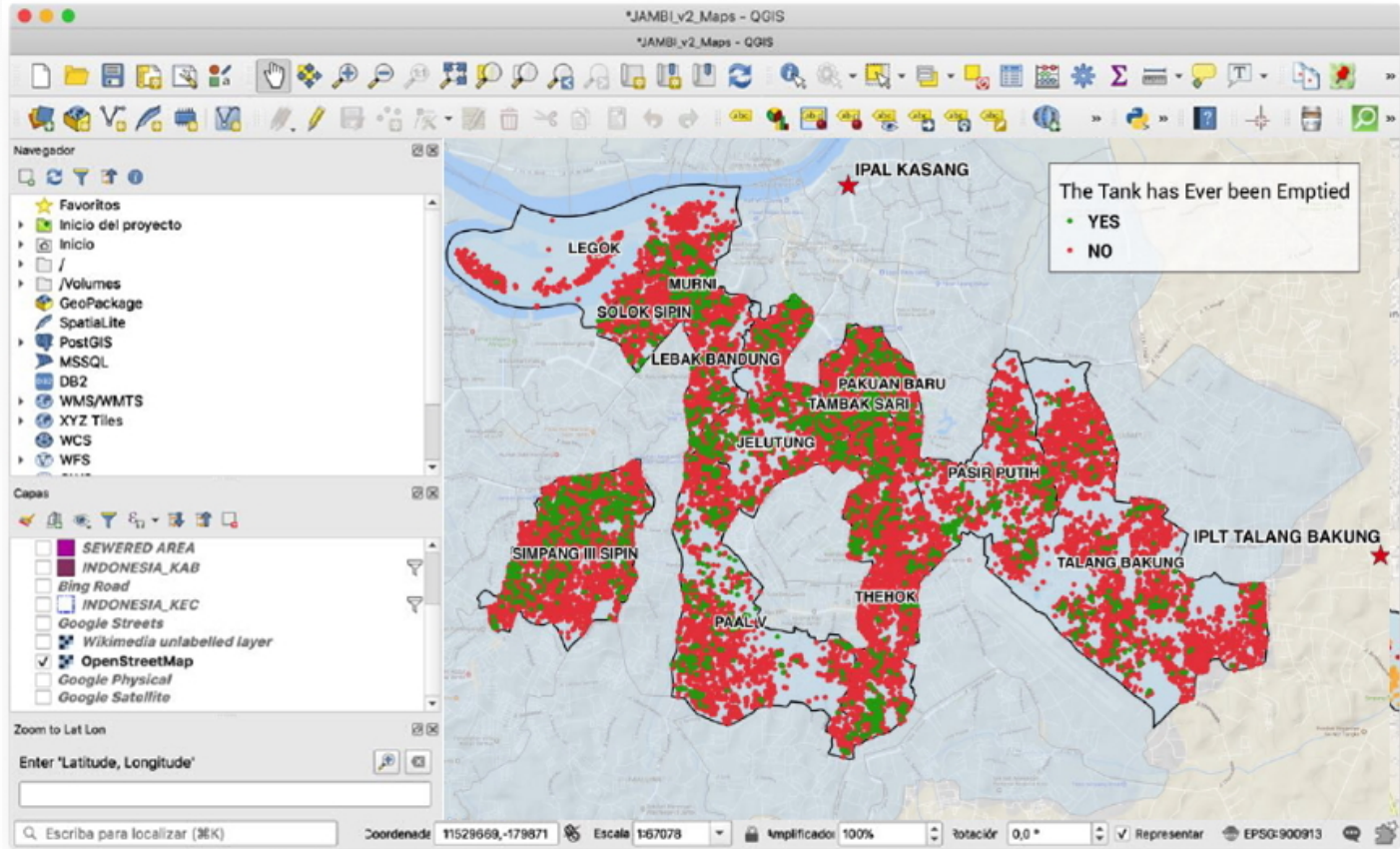
- **Survey of 40,000 on-site facilities and creation of a GIS Database**
- **Management information system for septic tank desludging services**
- **Local Government regulations for wastewater management**
- **Design and construction and/or refurbishment of on-site wastewater treatment and disposal facilities**
- **Implementation of (scheduled) desludging of on-site facilities**
- **Septage treatment and disposal**
- **Economic and financial model**
- **Private sector participation in septic tank desludging**
- **Social marketing plan**



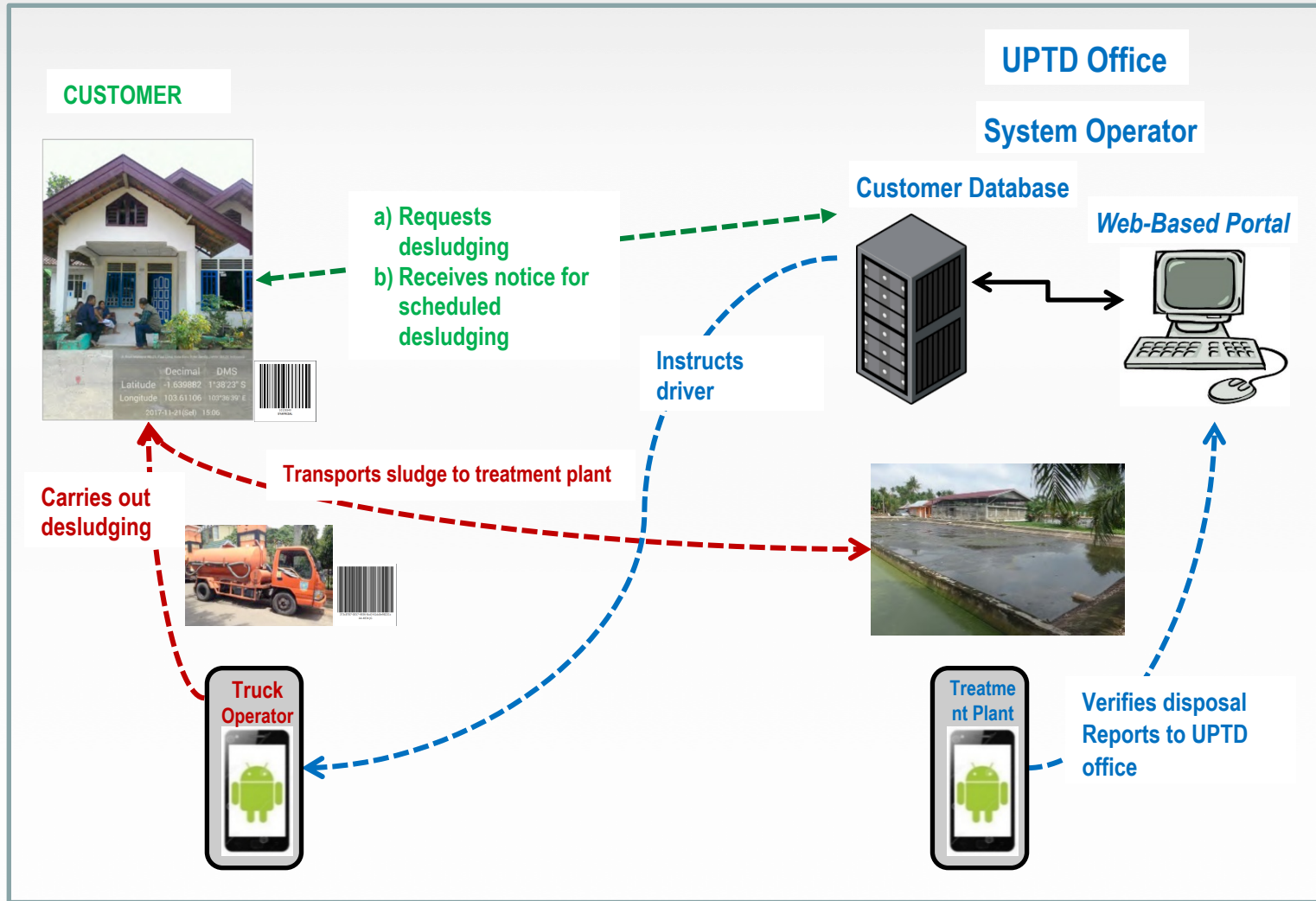
Jambi SMP: Survey of 40,000 Properties and creation of a GIS Database



- 1 City Coordinator
- 20 Kelurahan Coordinators
- 400 RW Enumerators
- Home Office Support Staff

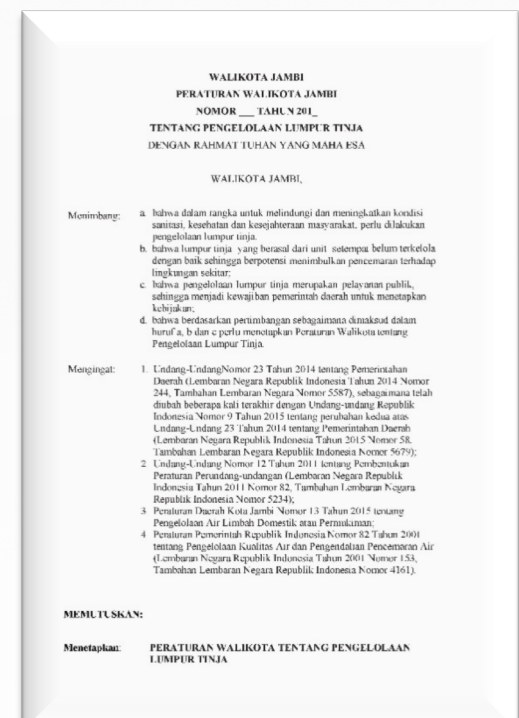
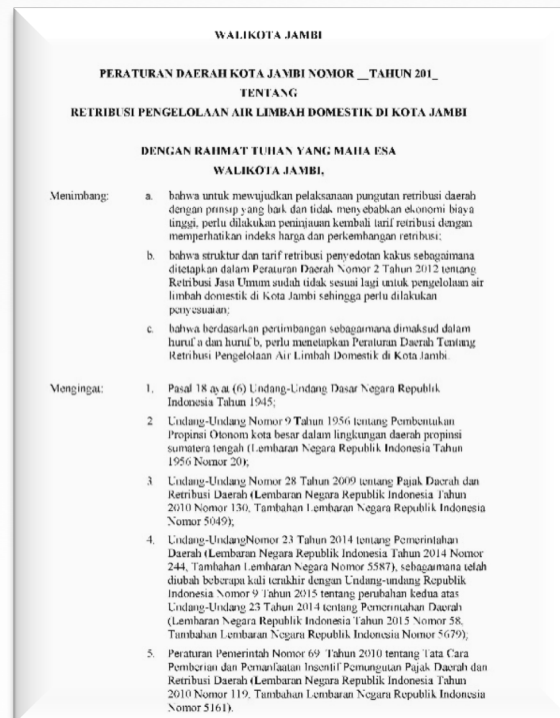
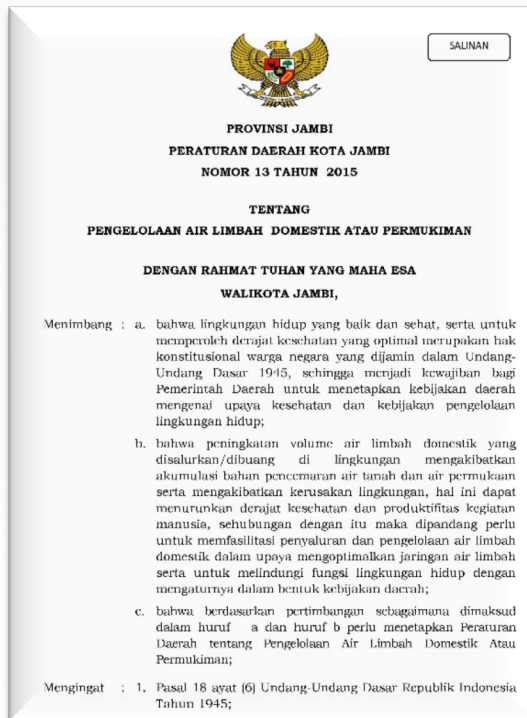


Jambi SMP: Management information system for desludging services

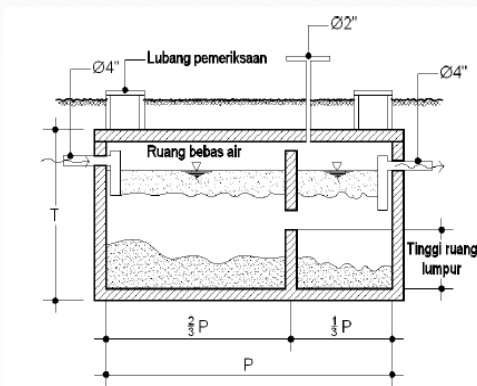
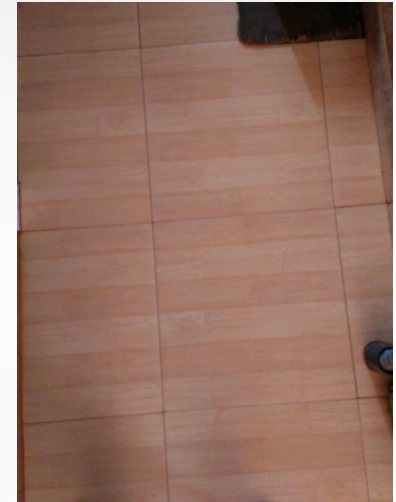


Jambi SMP: Regulatory Framework

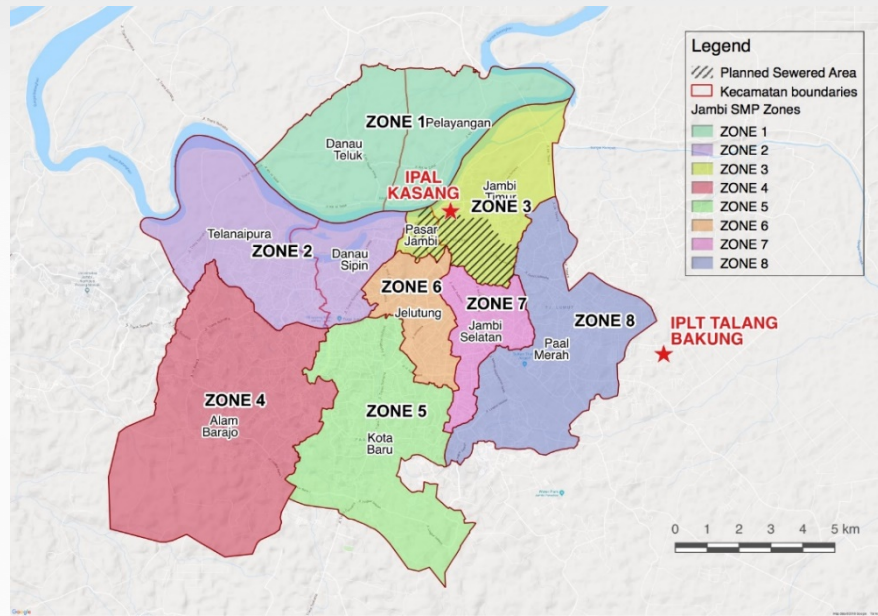
- Revision of Wastewater Ordinance (PERDA)
- Revision of Public Services Levies Regulation (PERDA)
- Mayor's Decree about Septage Management (PERWALI)



Jambi SMP: Construction and/or refurbishment of on-site wastewater treatment and disposal facilities



Jambi SMP: Implementation of desludging of on-site facilities



Proposed Septage Management Operational Zones



Vacutug-Type Desludging Vehicles

No	Kegiatan	PELAKSANA				MUTU BAKU		Output
		Pelanggan	Pelayanan Pelanggan	Tata Usaha	Tim Penyedot Tinja	Petugas Penyedotan dan Angkutan Lumpur Tinja	Kelengkapan	
1	Pelanggan mengajukan permohonan Pelayanan Sedot Tinja	MULAI						
2	Pelayanan Pelanggan menerima dan mencatat permohonan pelayanan penyedotan tinja serta menyiapkan Surat Perintah Penyedotan Tinja untuk di tanda tangani KaSubbag TU		2					1. Surat Permohonan Sedot Tinja 2. Surat Perintah Penyedotan Tinja
3	KaSubbag TU memvalidasi dan memaraf Permohonan Pelayanan Sedot Tinja dari Pelanggan			3				
4	Petugas Operasional Teknik memerintahkan pelayanan Penyedotan Tinja dengan meranda tangani Surat Perintah Penyedotan Tinja kepada Petugas Penyedotan dan Angkutan Lumpur Tinja				4			1. Surat Permohonan Sedot Tinja dianda tangani Pelanggan 2. Surat Perintah Penyedotan Tinja dianda tangani
5	Tim Penyedot Tinja melaksanakan Tata Kerja Individu Penyedotan Tinja sesuai Surat Perintah Penyedotan Tinja							1. Surat Permohonan Sedot Tinja 2. Surat Perintah Penyedotan Tinja
6	Tim Sedot Tinja menagihkan biaya pelayanan penyedotan tinja							
7	Pelanggan membayar Biaya Pelayanan dan menerima Bukti Pembayaran		7					
8	Tim Penyedot Tinja menjalankan Tata Kerja Individu Pengangkutan & Pembuangan Lumpur Tinja							
9	Tim Penyedot Tinja melaporkan pelaksanaan Penyedotan Tinja dengan mengisi Form Pelaksanaan Penyedotan Tinja dan mengerjakannya kepada Petugas Operasi IPLT & Penyedotan dan Angkutan Lumpur Tinja							1. Form Pelaksanaan Penyedotan Tinja
10	Petugas Operasi IPLT & Penyedotan dan Angkutan Lumpur Tinja memvalidasi Laporan Hasil Pelayanan dengan meranda tangani Form Pelaksanaan Penyedotan Tinja							
11	KaSubbag TU menerima laporan pelaksanaan penyedotan berupa Form Pelaksanaan Penyedotan Tinja							
12	Pelayanan Pelanggan menerima salinan Laporan Pelaksanaan Penyedotan Tinja dan mencatat/mengarsipkannya							
13	Proses Pelayanan Selesai	SELESA						

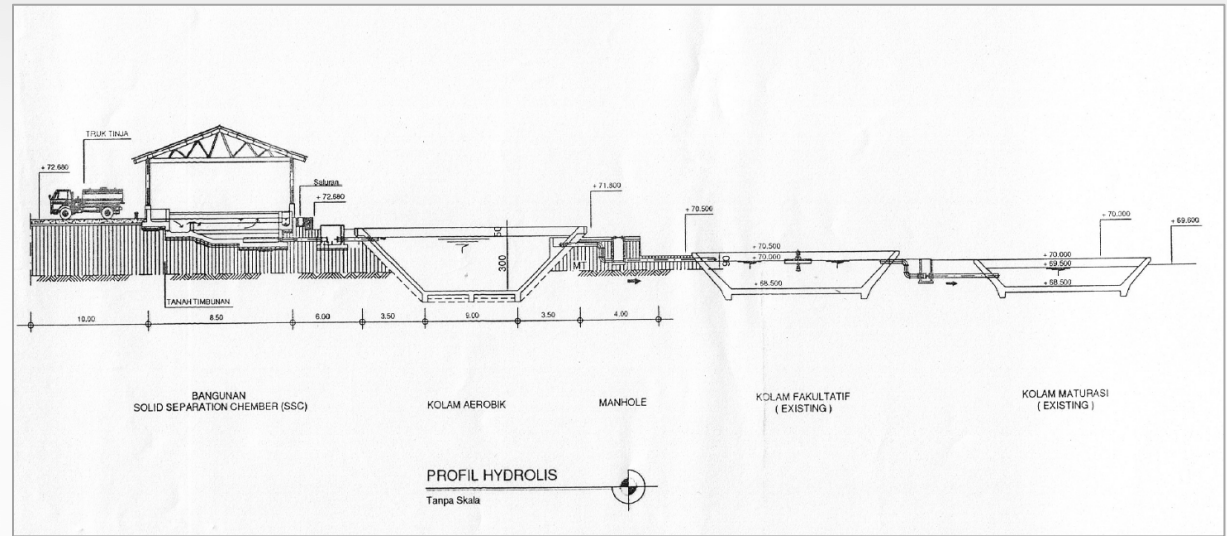
Standard Operational Procedure



Modular Transfer Station



Jambi SMP: Septage treatment and disposal



Hydraulic Profile of the IPLT



Solids Separation Chamber



Sludge Drying Bed



Maturation Pond and Outlet Area



Jambi SMP: Economic and financial model

In the long term, septage management can be profitable and cross-subsidize OPEX of the Centralized System

		2020	2021	2022	2023	2024
INCOME						
Dumping fee and other commercial	Rp million	-	-	-	-	-
User fees	Rp million	2,000	2,000	4,000	4,000	6,000
Total Income	Rp million	2,000	2,000	4,000	4,000	6,000
OPERATING EXPENDITURE						
Onsite system	Rp million	1,295	1,295	2,125	2,125	2,882
Management & Administration	Rp million	2,366	2,366	2,802	2,802	2,802
Total OpEx	Rp million	3,661	3,661	4,927	4,927	5,684
Expenditure inc. Depreciation Provision	Rp million	3,936	3,936	5,322	5,322	6,199
CAPITAL EXPENDITURE						
Septic tank upgrade	Rp million	-	-	-	-	-
New Trucks	Rp million	-	-	1,200	-	1,200
Total CapEx	Rp million	-	-	1,200	-	1,200
FINANCIAL RESULT						
EBITDA	Rp million	- 1,661	- 1,661	- 927	- 927	316
EBIT (including depreciation)	Rp million	- 1,936	- 1,936	- 1,322	- 1,322	- 199

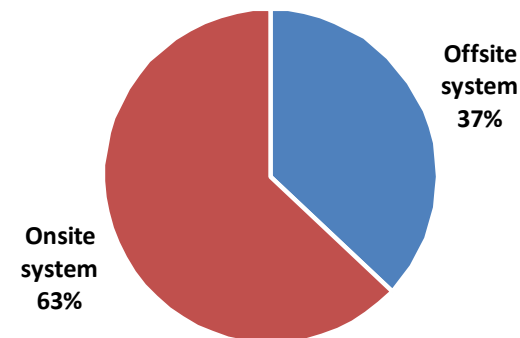
OPERATIONAL FUNDING NEEDS - 6,715 Rp million

TOTAL CAPITAL INVESTMENT - 2,400 Rp million



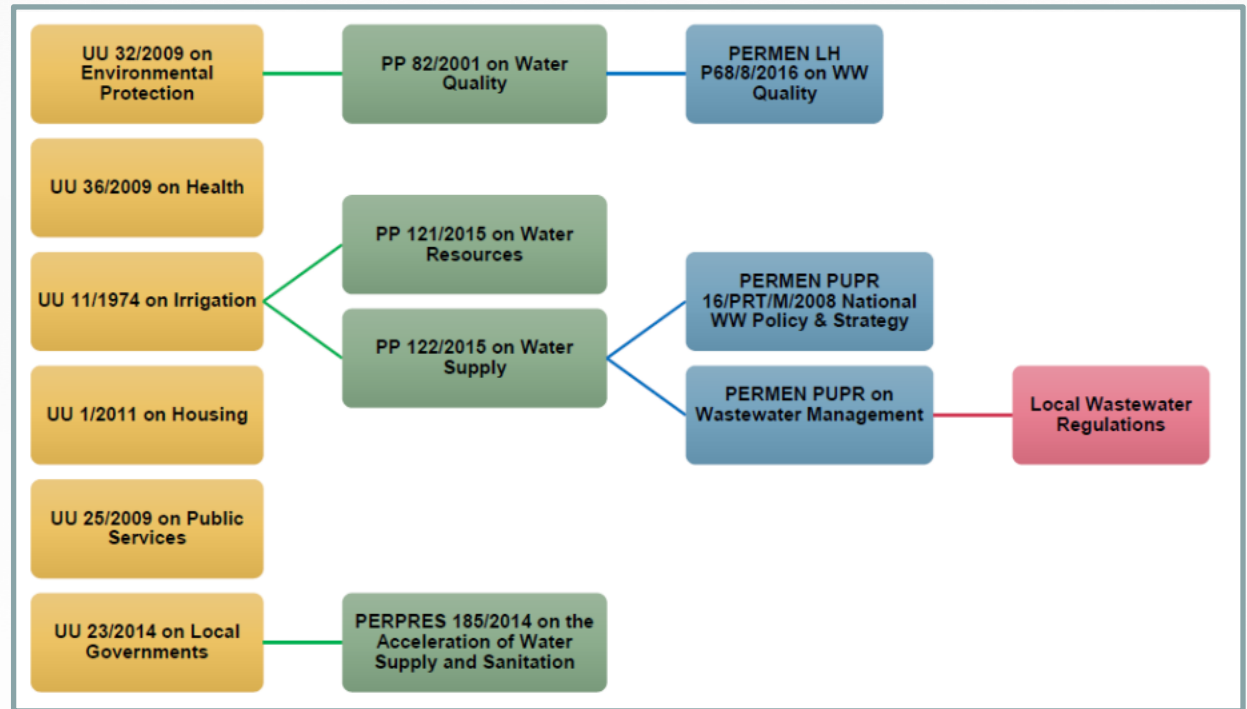
MODEL INPUTS	Value	Unit
Start year	2020	
Households in Jambi	126,845	houses
Timeframe	5	year
Onsite Coverage target	40,000	units
Emptying cycle	2	year
Average desludging tariff	250,000	Rp/service
Average ST volume	1.5	m3
Trips/day	3.5	trips/day
Average truck volume	4	m3
No. working days	282	days/year
Trips/year per truck	2,632	trips
Cost of purchasing 1 truck	400	Rp million
Number of trucks existing	3	trucks
Cost of 1 ST	3.5	Rp million
Staff overhead ratio	30%	% over wage value
Vehicle maintenance cost	15%	of initial cost, annually
Vehicle useful life	10	years

Sumber Pendapatan



Jambi SMP: Private sector participation

Private operators compete with Dinas PUPR and often do not deliver septage to the IPLT



Legal Framework for participation



Jambi SMP: Social Marketing Plan

CHALLENGES

- So far, most people think that a good septic tank is one that is never full and does not need to be desludged.
- People are familiar with desludging services on call when needed, with payment when the work has been carried out.
- Marketing and promotion methods will be needed based on behavioral change communication with promotion efforts that may integrate many techniques and media.

The socialization and marketing of the program should be carried out in the following stages:

- Establishment of a Social Marketing Team
- Determination of Budget
- Determination of Marketing Areas
- Determination of Marketing Targets
- Target Market Analysis
- Preparation of adequate Marketing Media



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