

INDONESIA NATIONAL POLICY AND STRATEGY FOR DOMESTIC WASTEWATER TREATMENT MANAGEMENT

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**MINISTRY OF ENVIRONMENT AND FORESTRY OF INDONESIA
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CURRENT SITUATION AND CHALLENGES

POLLUTION SOURCES CAUSING WATER QUALITY DEGRADATION



Livestocks have been discharging their waste into river



Settlements located in the river bank have been discharging their waste directly into river



Urban settlements have been discharging their waste into drainages that are connected into river



Industries have been discharging their waste into river without proper treatment

ISSUES AND CHALLENGES



Waste water from housing and commercial areas discharged directly into river bodies



Defecate in the river



Bathing and washing in the river



Poor latrines quality



Illegal sludge disposal



- approximately 74 million (45%) of indonesia's population live in urban areas and will be 60% in 2025
- approximately 18.567 million m³ per day of domestic wastewater is discharged by urban residents
- Domestic wastewater is discharged directly into water body without any treatment.
- Effluent domestic waste water treatment systems are not met with domestic effluent standard.
- Polluted water sources
- Low effluent quality from on-site system
- Non-functional existing sanitation facility

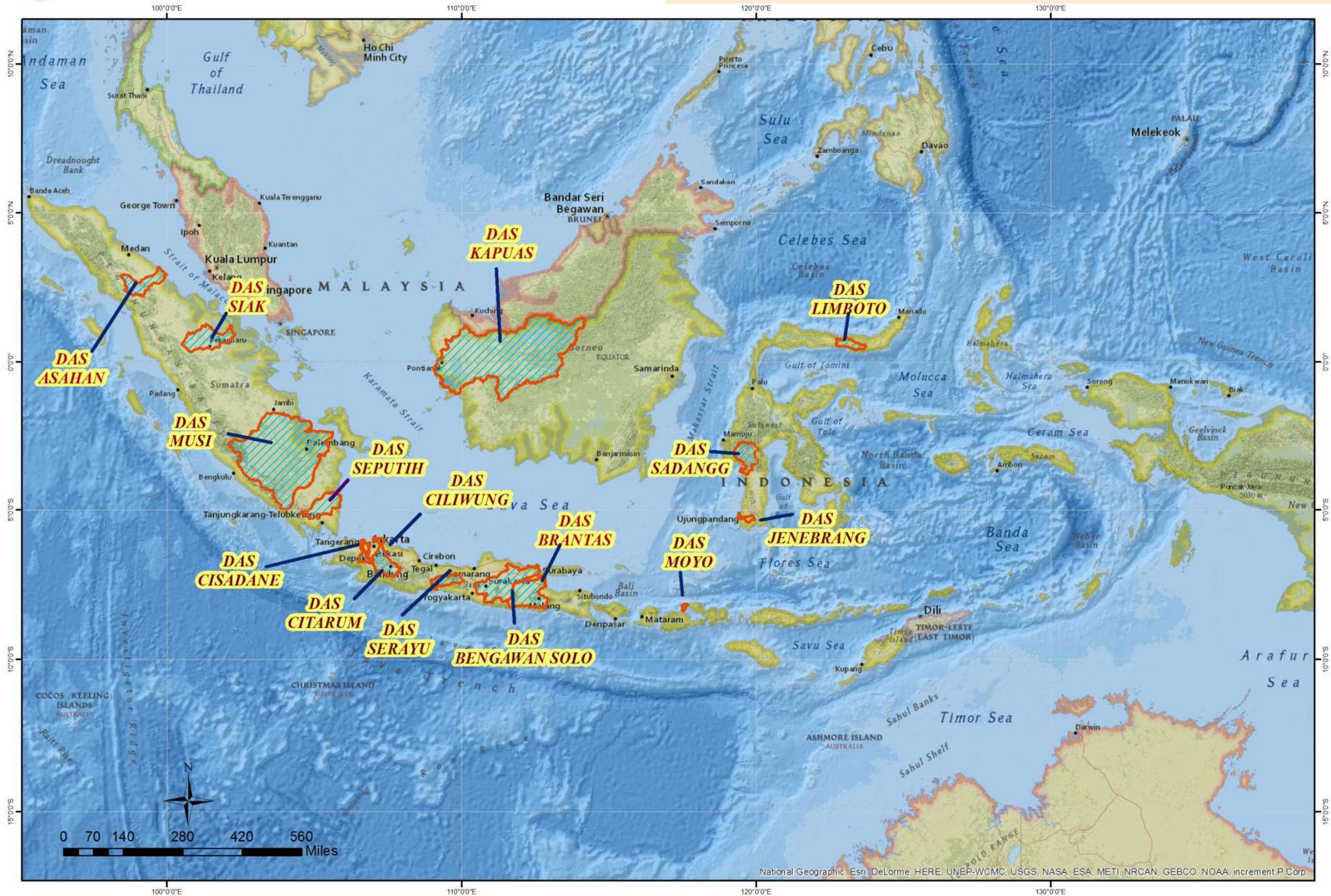
NATIONAL POLICY AND LEGAL FRAMEWORK

REGULATION BACKGROUND



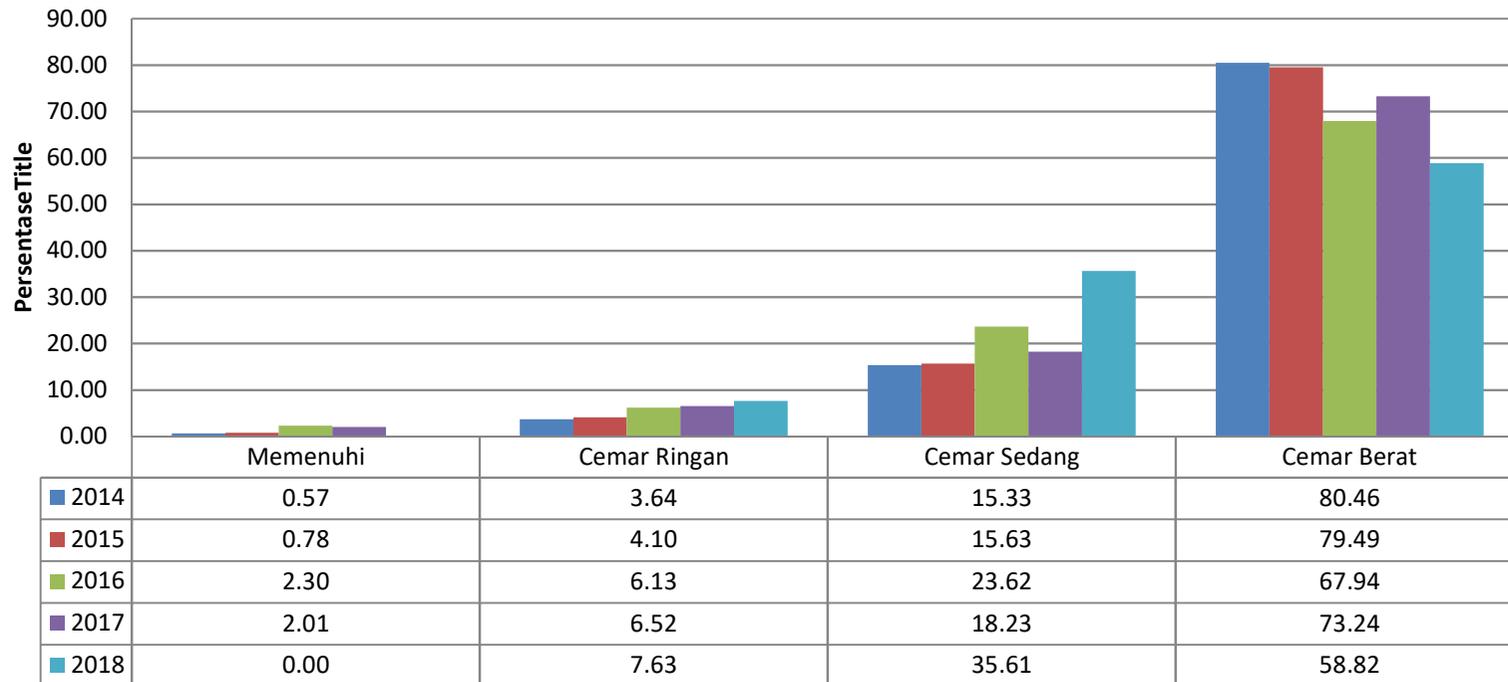


Map 15 Priority River in Indonesia



TRENDS OF WATER RIVER QUALITY 2014-2018

Trend Status Mutu Air Sungai Dibandingkan dengan Kelas II PP 82/2001

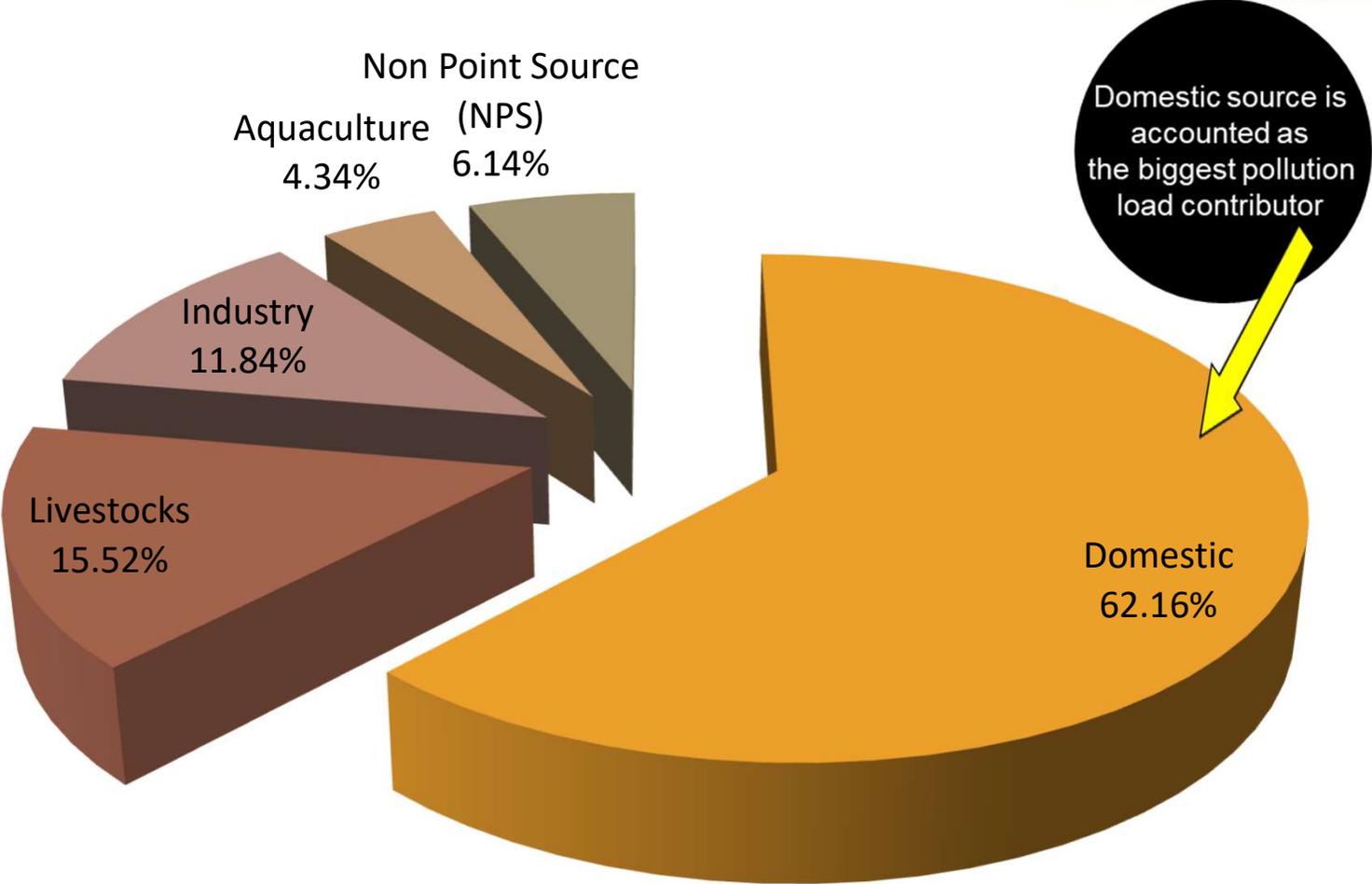


Tahun	2013	2014	2015	2016	2017	2018
Jumlah Titik Pantau	522	512	652	598	649	629
Jumlah Sungai	83	77	89	83	90	74

Condition Water Quality of 15 Priority Rivers in Indonesia

NO	River	PROVINCE	Status	Dominant Pollutant Source
1	SUNGAI CITARUM	JAWA BARAT	Heavily Polluted	Domestic, Industry, Livestocks, Agriculture
2	SUNGAI CILIWUNG	JAWA BARAT-DKI JAKARTA	Heavily Polluted	Domestic, Industry, Livestocks, Agriculture
3	SUNGAI SERAYU	JAWA TENGAH	Medium Polluted	
4	SUNGAI BENGAWAN SOLO	JAWA TENGAH - JAWA TIMUR	Heavily Polluted	Domestic, Industry, Livestocks, Agriculture
5	SUNGAI BRANTAS	JAWA TIMUR	Heavily Polluted	Domestic, Industry, Livestocks, Agriculture
6	SUNGAI CISADANE	JAWA BARAT-BANTEN	Heavily Polluted	Domestic, Industry, Livestocks, Agriculture
7	SUNGAI KAPUAS	KALIMANTAN BARAT	Heavily Polluted	Domestic, Industry, Livestocks
8	SUNGAI SIAK	RIAU	Heavily Polluted	Domestic, Industry, Livestocks, Agriculture
9	SUNGAI MUSI	BENGKULU-SUMATERA SELATAN	Lightly Polluted--Medium-Heavily Polluted	Domestic, Industry, Livestocks, Agriculture
10	SUNGAI ASAHAN TOBA	SUMATERA UTARA		
11	SUNGAI JENEBERANG	SULAWESI SELATAN	Medium Polluted- Heavily Polluted	
12	SUNGAI SADANG	SULAWESI SELATAN-SELAWESI BARAT	Medium Polluted- Heavily Polluted	
13	SUNGAI MOYO	NTB		
14	SUNGAI SEKAMPUNG	LAMPUNG		
15	SUNGAISEPUTIH	LAMPUNG		

Contribution of Pollution Sources in Citarum Watershed



Contribution of Pollution Sources in Citarum Watershed

Contribution of Pollution Sources in Citarum Watershed for each Regency

Regency	Domestic (kg BOD /day)	Livestock (kg BOD/day)	Industry (kg BOD/day)	Aquaculture (kg BOD/day)	Non Point Source (NPS) (kg BOD/day)	Total ((kg BOD/day)
Kab Bandung	70.275,89	7.865,25	17.957,87	142,93	5.319,83	101.561,78
Kab Sumedang	4.705,60	341,11	2.756,04	0,00	267,61	8.070,36
Kota Bandung	82.559,76	763,90	3.932,24	0,00	424,91	87.680,80
Kota Cimahi	18.992,35	362,39	1.806,14	1,15	106,83	21.268,87
Kab Bandung Barat	25.562,27	10.145,16	1.622,34	1.787,67	4.553,03	43.670,48
Kab Cianjur	25.167,82	7.796,88	553,43	12.038,62	4.939,25	50.496,01
Kab Purwakarta	12.011,80	14.875,14	5.972,27	6.907,01	2.141,90	41.908,11
Kab Bogor	6.735,24	459,68	178,45	110,19	2.247,00	9.730,57
Kab Karawang	30.956,71	30.806,80	8.865,46	53,61	3.883,14	74.565,74
Kab Bekasi	24.100,95	1.759,15	13.722,18	0,00	5.843,68	45.425,97
Total	301.068,40	75.175,46	57.366,43	21.041,18	29.727,20	484.378,67
Percentage	62,16%	15,52%	11,84%	4,34%	6,14%	

Citarum watershed

Domestic WWTP Target On site - Off site, (projection in 2016)

No	Regency	Population /2016	Population in Watershed (person)/ 2016	Tingkat Cakupan Limbah Domestik dalam WatershedCitarum					
				Populatio n wtithout WWTP Accses	Prose ntage (%)	Number HH(1 HH= 5 person) wtithout WWTP Accses	Target of pollutio n load reducti onfrom domest ic source	Num ber of WWTP P (Cap acita y of 50 HH)	Budget (WWTP=IDR 320 million)
1	Kab. Bandung	4,699,422	3,454,566	1,561,464	45.2	312,293	100%	6,246	1,998,673 (jt)
2	Kota Bandung	2,605,814	2,605,814	620,184	23.8	124,037	100%	2,481	793,835 (jt)
3	Kota Cimahi	645,848	645,848	329,382	51.0	65,876	100%	1,318	421,609 (jt)
4	Kab. Bandung Barat	1,713,315	1,713,315	806,971	47.1	161,394	100%	3,228	1,032,923 (jt)
5	Kab. Sumedang	1,387,687	474,305	193,516	40.8	38,703	100%	774	247,700 (jt)
6	Kab. Bogor	5,387,976	609,607	304,194	49.9	60,839	100%	1,217	389,367 (jt)
7	Kab. Cianjur	3,343,795	2,687,267	1,593,550	59.3	318,710	100%	6,374	2,039,7439 (jt)
8	Kab. Purwakarta	1,043,457	966,200	338,170	35.0	67,634	100%	1,353	432,857 (jt)
9	Kab. Karawang	2,342,278	1,703,537	993,162	58.3	198,632	100%	3,973	1,271,247 (jt)
10	Kab. Bekasi	2,957,107	1,340,599	882,114	65.8	176,423	100%	3,528	1,129,105 (jt)
Total		26,126,699	16,201,058	7,622,707	47.6	1,524,541		30,491	9,757,065 (jt)



DOMESTIK WASTE WATER EFFLUENT STANDARD

Parameter	Unit	Maximum Concentration *
pH	-	6 – 9
BOD	mg/L	30
COD	mg/L	100
TSS	mg/L	30
Oil & greese	mg/L	5
Ammonia	mg/L	10
Total Coli form	number/100 mL	3000

*= Apartement, losmen, dormitori, healthy clinic, educational institution, office and comercial building, departement store, market, housing, restorant, Municipal WWTP, harbour, airport, railway station, bus terminal, jail.

Minister of Env. And Forestry Decree No. P.68 Year 2016

Responsibility of Central and Local Government on Wastewater Sector

Law No 23/ 2014 about Local Government

Central Government

- Policy of National wastewater management development
- Wastewater management and development of across provincial and national strategic interests

Province Government

- Regional (across regency/city) Wastewater management and development

Regency/City Government

- Wastewater management and development in regency/ city

Central Government Support to Local Government

- Preparation of Domestic Wastewater Masterplan / Outlineplan
- Assistance to determine location and land preparation of WWTP or STP
- Preparation of DED for WWTP and STP, transfer knowledge
- Assistance of WWTP and STP Operational
- Assistance of regulation drafting and institution forming
- Assistance of regular desludging preparation and implementation
- Construction of WWTP (min 150 HC)
- Construction or rehabilitation of Septage Treatment Plant

Local Government must propose and prepare readiness criteria



Government Regulation No. 82/2001

Article 43

- Point 3.
“ Government and local government have to conduct domestic waste water management and to strengthen community awareness
- Point 4.
“ Local government could provide domestic waste water treatment plan for house hold as a part of domestic waste water management”

Minister of Env. Decree No. 01/2010

Article 35

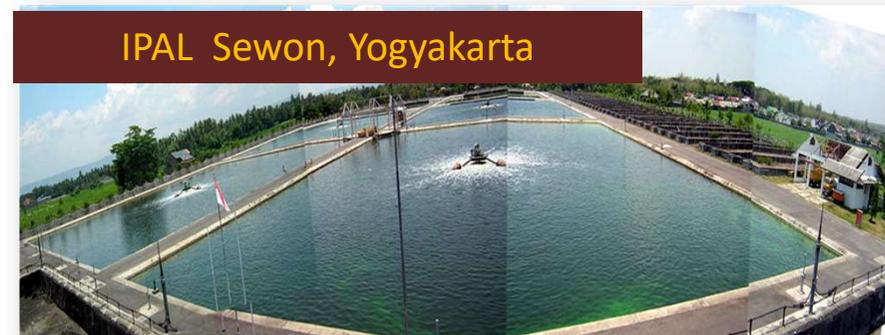
Minister and local government as their authority have to conduct capacity building related to household water pollution control through :

- a. Provision of domestic waste water treatment facilities
- b. Encourage the community to use septictank that meet the technical standard;
- c. Encourage the community to treat their household waste water ;
- d. Develop the community forum (kelompok swadaya masyarakat) and/or community leader to conduct the household waste water treatment;
- e. Develop pilot projects mechanism;
- f. To do information dissemination and/or household waste water treatment campaign; and/or
- g. To conduct the training, develop the community forum, and /or to provide the technical consultancy related to water pollution control that come from household waste water.

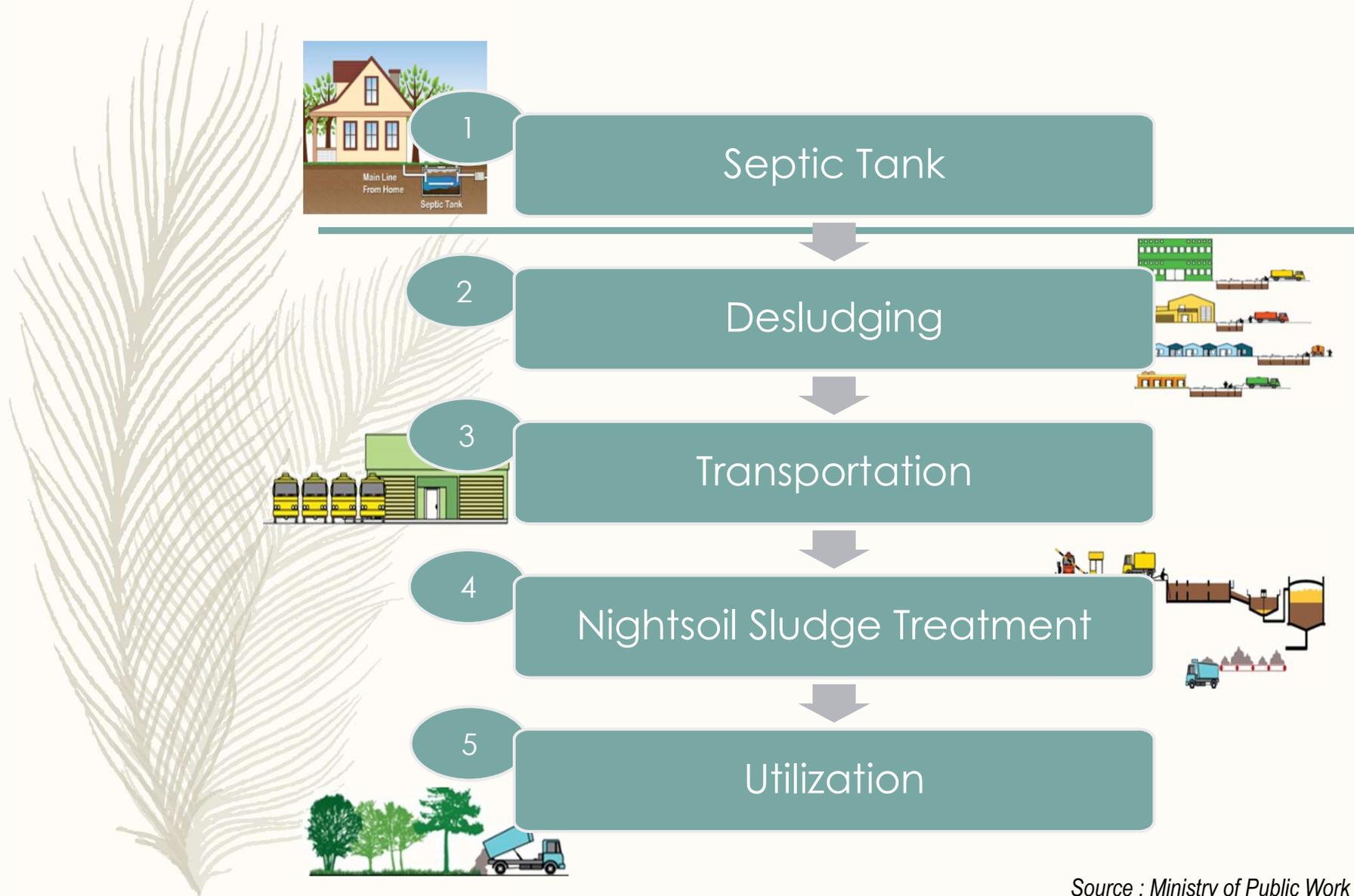
MUNICIPAL WWTP in 13 CITY

1. **Bandung:** IPAL Bojongsoang
2. **Cirebon:** IPAL Ade Irma, Kesenden, Perumnas, and Perumnas Utara
3. **Yogyakarta:** IPAL Sewon
4. **Surakarta:** IPAL Mojosongo and Semanggi
5. **Bali:** IPAL Suwung
6. **Medan:** IPAL Pulo Brayan
7. **Prapat:** IPAL Aji Bata
8. **Balikpapan:** IPAL Margasari
9. **Banjarmasin:** IPAL HKSJN, Lambung Mangkurat, Pekapuran Raya, Basiri
10. **Jakarta:** IPAL Setiabudi & Malaka Sari
11. **Tangerang:** IPAL Sukasari
12. **Batam:** IPAL Batam Center
13. **Manado:** IPAL Boulevard

Source : *Ministry of Public Work*



NIGHTSOIL SLUDGE MANAGEMENT CONCEPT



Source : Ministry of Public Work

WAY FORWARD

- The regulation of the river as a view of the building and restoration of land use in accordance spatial riverbanks (border).
- Implementation of the regulations on the management of domestic waste water
- Reduce and prohibit wastewater and fecal waste directly into the river before going through the treatment process.
- Legal Basis of Wastewater Management In National and Local Level

Policy

- Strengthening institutions managing domestic WWTP
- Community empowerment manager of small-scale communal WWTP
- Increasing the capacity and effectiveness of municipal WWTP scale that has been provided
- Monitoring effluent must be implemented
- Encourage the participation of the business / private sector in the implementation of development and settlement wastewater management

Institutional

- Households' awareness
- Behavioral campaign to protect the river environment & Promotion to stop Open Defecation in the river using a local cultural model
- willingness either Policy maker and community that domestic source is a biggest pollution contributor in the river

Promotion

ADIPURA

THE WAY TO ACHIEVE SUSTAINABLE CITIES IN INDONESIA

❖ PURPOSE

To build clean, healthy, beautiful, liveable and sustainable cities

❖ OBJECTIVE

- To improve performance of national and local governments in environmental management, particularly waste processing and waste water processing, social and economic aspect for sustainable cities
- To build effective commitment and cooperation among governments and communities and also with the private sectors.
- To improve awareness and disciplines of the community in environmental management, improvement of social and economic aspect



A hand is shown holding a small, glowing blue and white globe of the Earth. The background is a lush green field of leaves, with several bubbles floating in the air. The overall scene is bright and natural, symbolizing environmental care and gratitude.

THANK YOU

DIREKTORAT JENDERAL PENGENDALIAN PENCEMARAN DAN KERUSAKAN LINGKUNGAN
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