IMPLEMENTATION ROADMAP OF THE NATIONAL PROGRAM FOR IMPROVING SOLID WASTE MANAGEMENT

Addressing Underlying Sector Issues

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Outlines of Presentation

1. Current Status of SWM Sector

2. Proposed Program Structure & Activities

3. Implementation Arrangements

Section 1:

Current Status of Solid Waste Management Sector

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Government targets demand high sector performance

Waste Management Act (No. 18/2008)

- Requires the closure of all open dumping by 2013.
- Requires all three levels of government (national, provincial, kota/kabupaten) to contribute to financing the sector.

National Medium Term Development Plan 2015 - 2019

- "100-0-100" targets to have 100% urban solid waste management services (collection, treatment or disposal) by 2019.

MoEF Solid Waste Sector Roadmap to 2025 (*Jakstranas*)

- Waste is reduced 30% through methods such as recycling and composting.

Indonesian Intended Nationally Determined Contribution (INDC)

- Commit to utilization of "waste and garbage into energy production" for meeting international greenhouse gas reduction targets.

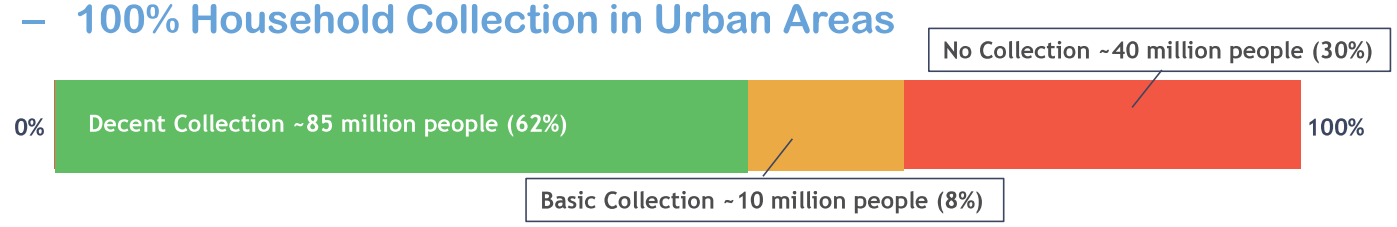
Conclusion: – IN SHORT AMOUNT OF TIME

Indonesia aims for 100% urban collection, 100% sanitary disposal for large urban areas, & international best practice rates of waste reduction (30%).

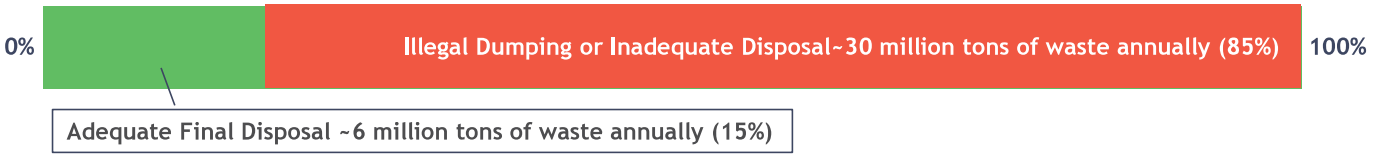
Despite total waste generation rapidly increasing from wealth(↑) and urbanization(↑)

Current performance does not come close to targets

– 100% Household Collection in Urban Areas

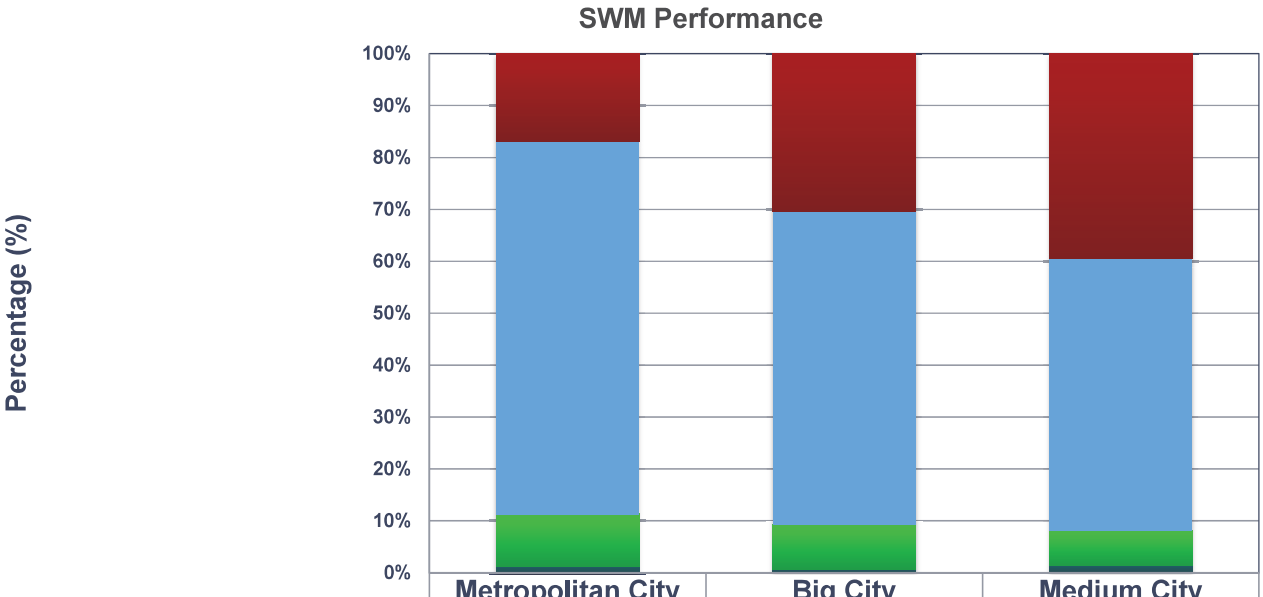


– 100% Sanitary Disposal (Large Urban Areas) & Controlled Dumping (Small and Medium Urban Areas)



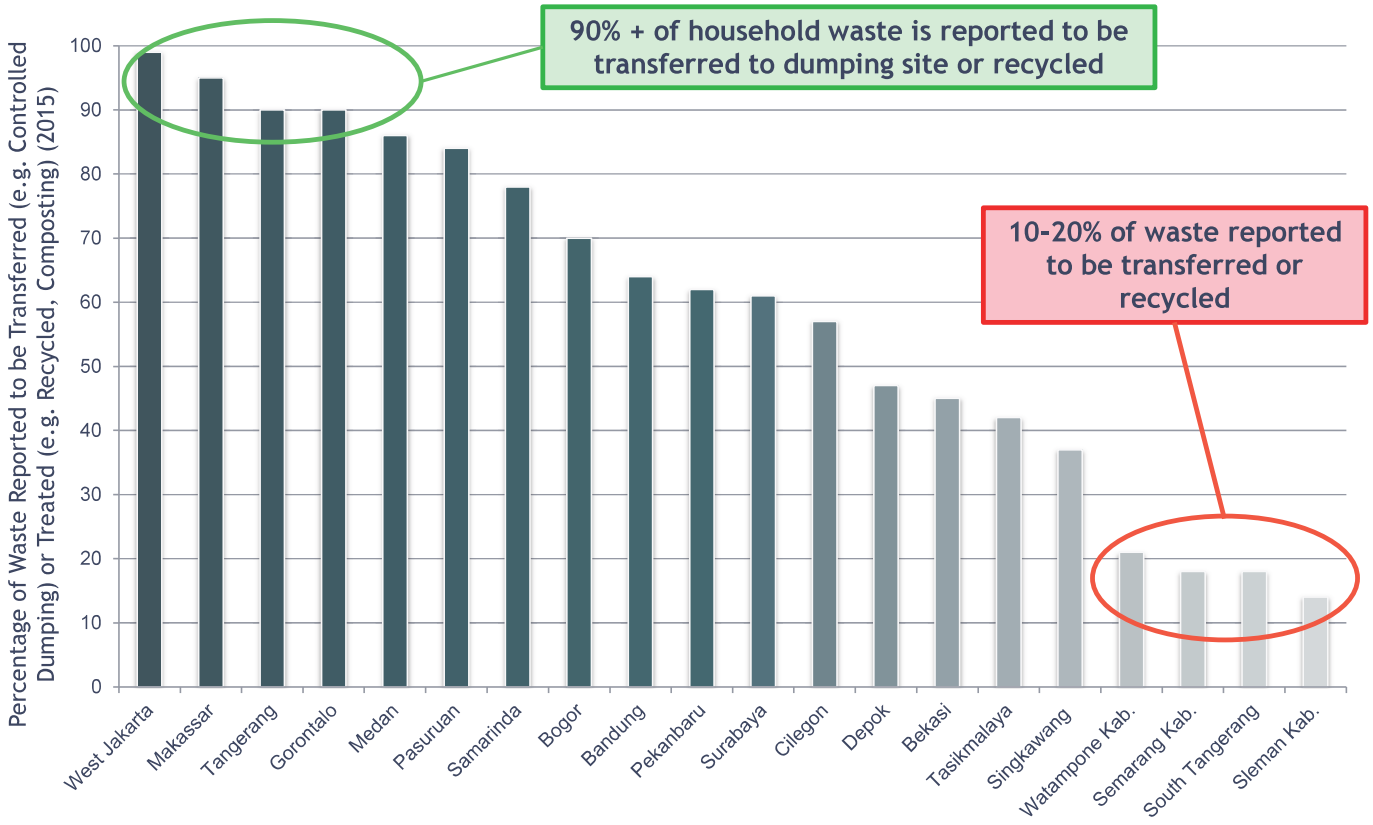
– 30% Waste Reduction

SWM performance is unacceptable in all types of cities



	Metropolitan City	Big City	Medium City
Loss Rate (%)	17	30	39
Disposal Rate (%)	71,84	60,43	52,68
Treatment Rate (%)	9,96	8,46	6,56
Reduction at Source Rate (%)	1,39	0,83	1,51

Not one size fits all: performance varies significantly between cities & urban districts.



Current sector policies for household-type waste

- **City and district governments are ultimately responsible** for solid waste management (Waste Management Act (No.18/2008).
- **Local government regulations often fail to uphold national government laws & policies.**
- Although local governments are responsible for implementation, the Law also stipulates **financing responsibilities at national, provincial, and local government levels**.
- At the national level, key technical ministries:
  - **Ministry of Environment and Forestry (MoEF)** has the responsibility for developing policies, formulating regulations, and coordinating efforts in pollution control (waste collection & recycling).
  - **Ministry of Public Works and Housing (MPWH)** is generally limited to providing technical advice, promoting pilot projects, and supervising large-scale off-site solid waste facilities (landfills).
- There is **limited monitoring** of local government performance (e.g. *Adipura* awards (MoEF), Green Cities Index (Bappenas), *Kota Hijau* (MPWH)). **Enforcement is absent**, both at community level and management of waste facilities.
- National priorities (waste-to-energy, climate change mitigation, marine waste) have not yet been translated into clear policies and integrated into the sector.

Current operational practices

- **Sector is strongly underfunded (both investments and operational).**
- Local government allocations are small **(average 2.6% of total APBD),** this translates into **$5-6 per capita/per annum** that compares poorly to international benchmarks ($10-15 per capita/per annum).
- Waste management systems are heavily subsidized from local budgets.
- **The lack of investment in the sector leads to severe inefficiencies and much higher operating costs**.
- Virtually **no enforcement** of solid waste laws and standards (from city-level violations to individual polluters).
- **Recycling is largely an informal sector activity** (15% of total waste) with formal recycling systems capturing less than 5% of waste generated.
- Lack of capacity at the local government **creates a lack of confidence and unreasonably high risks to the private sector** - preventing additional investment from credible businesses.

Identifying the key sector challenges

1. Insufficient Financing
2. Organizing Collection
3. Operational Capacity
4. Incentivizing City / District Performance
5. Land Shortages

Section 2:

Components and Activities of Proposed Program

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Clear need for a programmatic approach

- For Indonesia to reach SWM policy targets, **all cities require improved performance** – regardless of current capacity / local commitment.
- The current **city-by-city and investment only approach by the national government and donors is not going to achieve sector targets**.
- **A nation-wide, scalable platform for improving solid waste management performance is required** (including policy reform, government capacity building, investments, and overall monitoring), similar to existing programs for water supply & slum upgrading

Programmatic structure

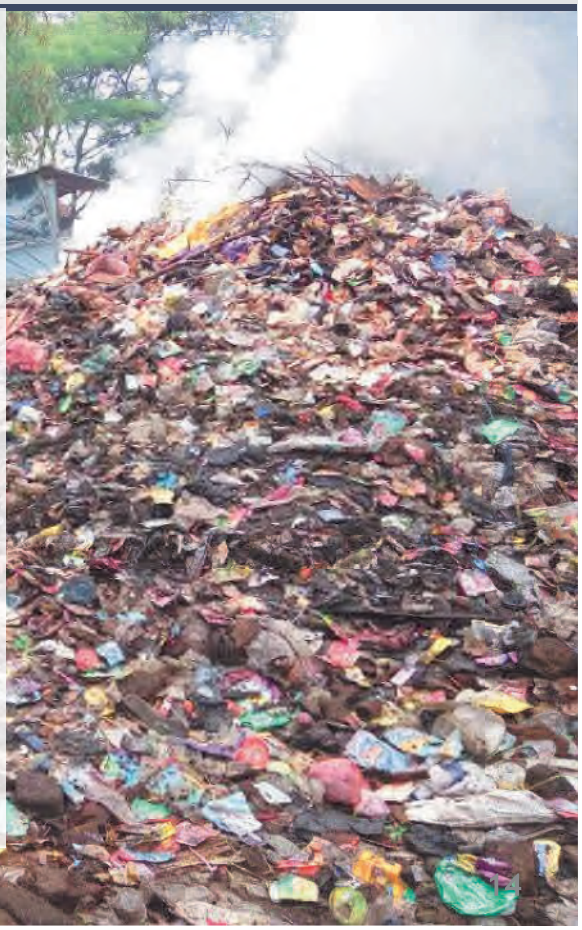
Component 1: Institutional Development and Policy Development	National Government (e.g. MoEF, MPWH, MEMR, MOHA) institutional analysis and strategic studies to support policy reform, planning, and capacity building to support solid waste sector.
Component 2: Planning Support and Capacity Building for Local Government and Communities	Direct technical assistance to cities/districts across Indonesia to improve their planning and management of solid waste management services (approximately 50 cities).
Component 3: Solid Waste Infrastructure and Services in Selected Cities	Support for the construction of large complex infrastructure including advanced treatment technologies (approx. 10 cities) and smaller incremental investments (20-30 cities) – tailored to city capacity.
Component 4: Implementation Support and Technical Assistance	Provide technical support, advisory services and training of Program Management Units (PMUs) at national level, provincial, and district levels as necessary.

What Does Proper Collection Look Like ?

- It seems likely that community-based collection will remain for the long-term.
- To get to 100% collection, there needs to be:
  - RW + LG Accounting (Waste Quantities, Financial) – maybe web-based
  - Government Oversight (*requires funding*)
  - Increased Capital Financing
- Direct local government collection system being implemented in Makassar is also interesting for future development.

What Does Proper Intermediate Storage Look Like ?

- TPS:
  - Highly Inefficient Transfer
  - Highly Polluting & Unattractive
- No longer acceptable
- Need to transition:
  - Direct Collection
  - Large Transfer Stations
  - Managed TPS (*open/closed hours; staffed*) with container (and separate compartment) system



What Does Proper Waste Transport Look Like ?

- Current transport is highly inefficient, costly, and causes increased traffic congestion
- Improved waste transfer requires
  - Modern transfer stations (*where needed*)
  - Compaction trucks
  - Modern, large (40m^3) waste compaction trucks

What Does Proper Disposal Look Like ?

- Only a handful of TPAs meet sanitary standards, although construction methods are well known.
- Critical needs:
  - Requires more funds and technical capacity for operations.
  - Large deficit in investment in landfills causes many to run over-capacity.
  - Improved government supervision

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Screening of cities' and district's SWM commitments for C3

Evaluation Parameters	Weighting
Landfill capacity and/or land available to 2025	5 %
Performance level of SWM service	10 %
Alternative funding sources for SWM investment program, including recent investment completed	10 %
MoEF *Adipura* Assessment Score	15 %
MPWH and MoEF Priority Ranking	30%
Percentage of APBD Allocation per Ton of Solid Waste Handled	30 %

Component 3 Tiers of Investments

Tier 1 City + Districts
- Highest Commitment + Potential
- Implement Full Systems (*100% Collection, 100% Sanitary Disposal; 30% Waste Reduction*)
- 18 Cities + Districts Identified

Tier 2 City + Districts
- Medium Commitment + Potential
- Incremental Investments to Prepare for Tier 1
- 28 Cities + Districts Identified

Tier 3 City + Districts
- Lowest Commitment + Potential
- No Investments
- 54 Cities + Districts Identified

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Priority cities identified (Tier 1 + 2)

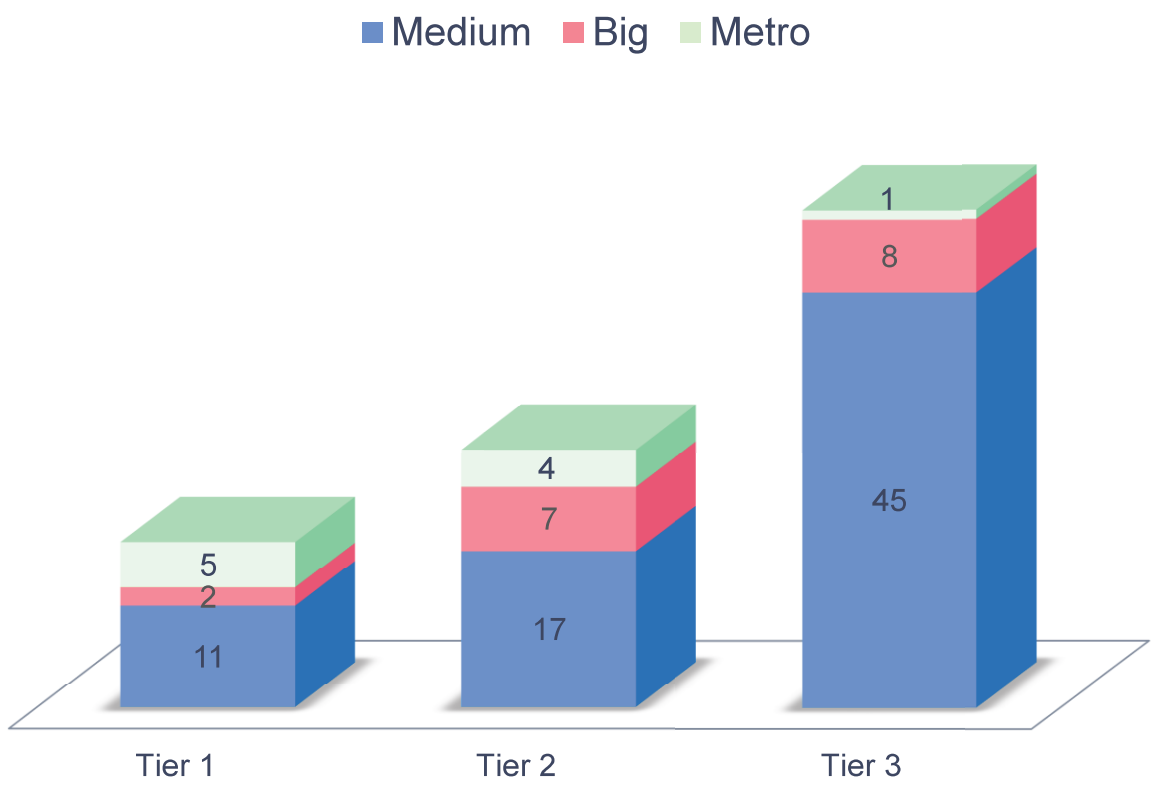
Tier 1 Cities + Districts

Metropolitan Cities	Medium Cities / Districts
Makassar	Banjar Baru City
DKI Jakarta	Bitung City
Palembang	Bukit Tinggi City
Surabaya	Karimun District
Tangerang	Kendari City
Big Cities	Magelang City
Balikpapan	Pare Pare City
Malang	Pematang Siantar City
Padang	Probolinggo City
	Salatiga City
	Sukabumi City

Tier 2 Cities + Districts

Metropolitan Cities	Medium Cities / Districts	
Bandung	Ambon City	Mojokerto City
Depok	Banda Aceh City	Pasuruan City
Medan	Banyumas District	Payakumbuh City
Semarang	Banyuwangi District	Tangerang District
Big Cities	Bau-Bau City	Tanjung Pinang District
Banjarmasin	Blitar City	Tebing Tinggi City
Denpasar	Cianjur District	
Jambi	Jepara District	
Manado	Kudus District	
Pekanbaru	Lahat District	
Surakarta	Madiun City	

Distribution of City Sizes by Program Priority Tiers



Financing Gaps ($USD M) : Infrastructure Investments

City	World Bank Investment Calculation	Investment Financing Available		Total Financing Gaps		Minimum Program Financing Gaps
	100% Collection & Disposal + 30% Waste Reduction	ABPD Funds	APBN Funds*	Public	Private	ABPD/APBN? Or Donors?
Tier 1 Cities (*n*:17)	1,130	30	262	288	550	288
Tier 2 Cities (*n*:33)	2,037	422#	176	459	990	100†
Tier 3 Cities (*not including "small" cities*) (*n*:50)	1,070	161	84	825	-	0
Total	**4,238**	**613**	**44**	**1,572**	**1,540**	**388**

 # DKI Jakarta (5 cities combined): $ USDS 328 million

† 30% of Tier 2 cities investment

** Includes - KfW ERIC 1 and 2 Project ($71 M + 130 M) + Proposed World Bank Program ($47 M)*

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Investment Financing Gaps are Apparent

- In 2016, it was estimated that US$1.2 billion is available for investments (25% of need), which is large enough to deliver improved sector performance measurable at a national scale **only if funds are spent effectively and efficiently.**
- **Need to confirm this much financing is available over the next 5 years for waste investments.**
- **Also need to define sources for that financing.**

Investment Funding Challenges (2015-2019)	
Required (MPWH Estimate)	IDR 66 trillion ($5 billion)
Likely Available Financing (e.g. APBN, APBD, Donors)	IDR 17 trillion ($1.2 billion)
Financing Gap (e.g. DAK, APBN, APBD, PPP)	IDR 49 trillion ($3.7 billion)

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Section 4:

Program Financing & Implementation Options

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Conclusion: Program to maximize impact with limited budget

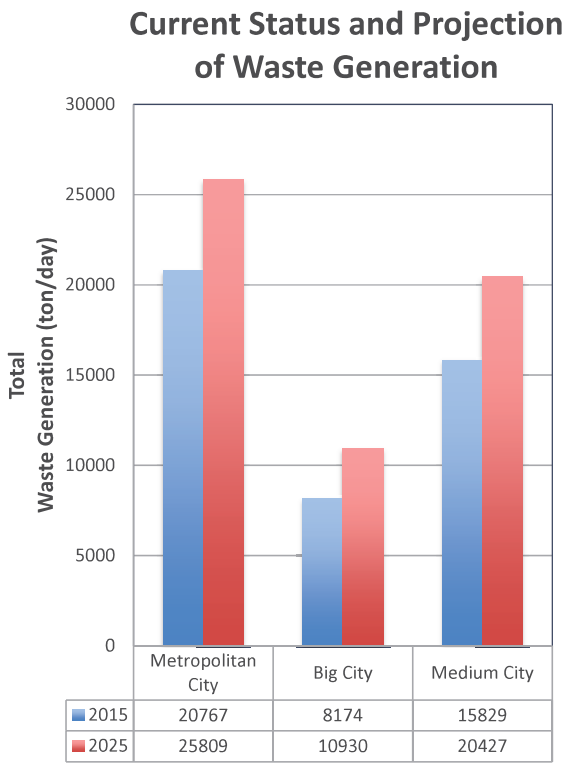
Prioritization is essential:

- Investments in metropolitan and big cities highest impact for national SWM targets;
- … and are generally more ready and committed to implement.
- Other cities can follow good examples

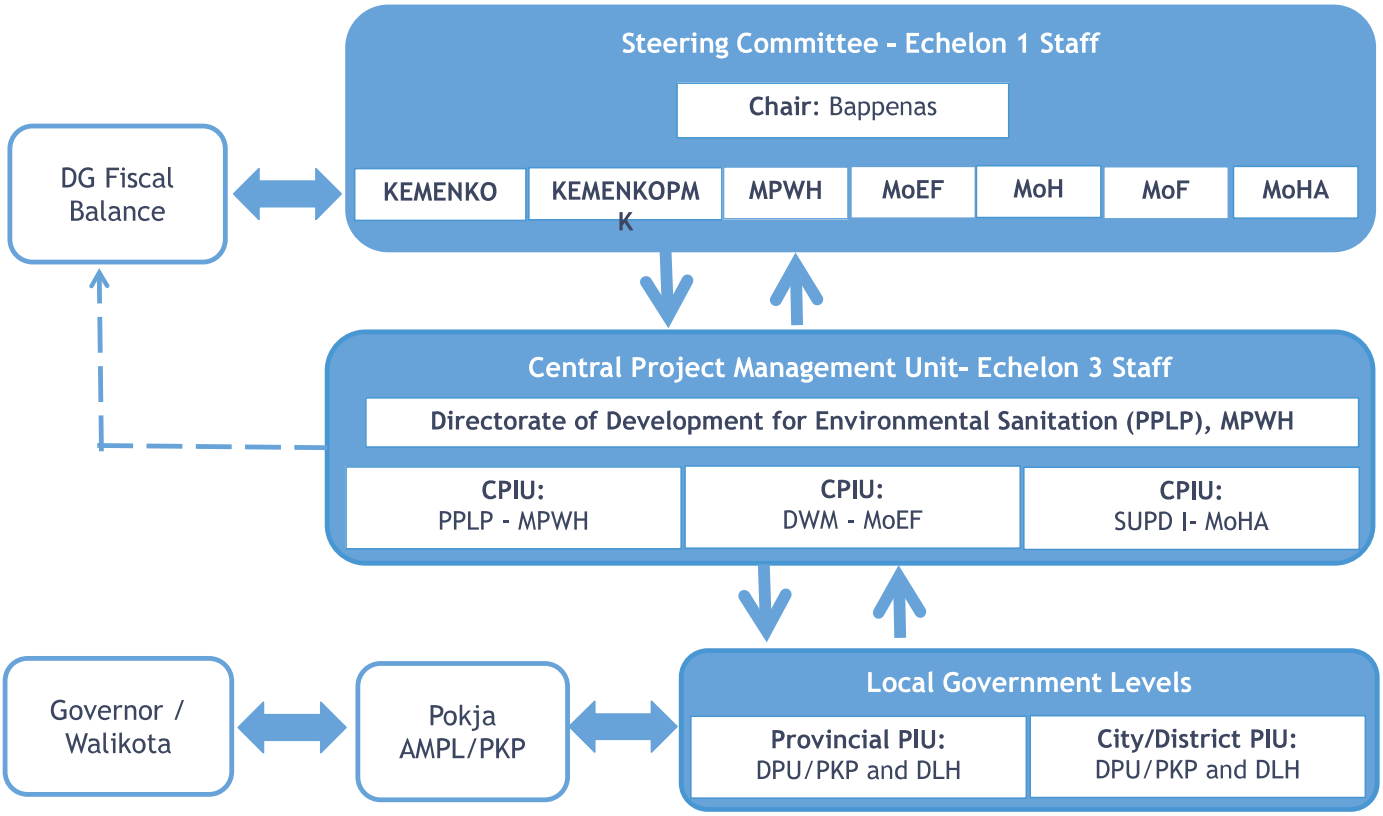
All **Tier 1** cities/districts should receive complete investment packages including TA. **Tier 2** receives smaller packages and TA.

TA essential to solve key sector challenges (underfunding, operational capacity, enforcement, community level waste collection, land).

Securing a more favorable business environment for private investment is urgently needed, especially for **Waste to Energy**.



Supporting institutional arrangements

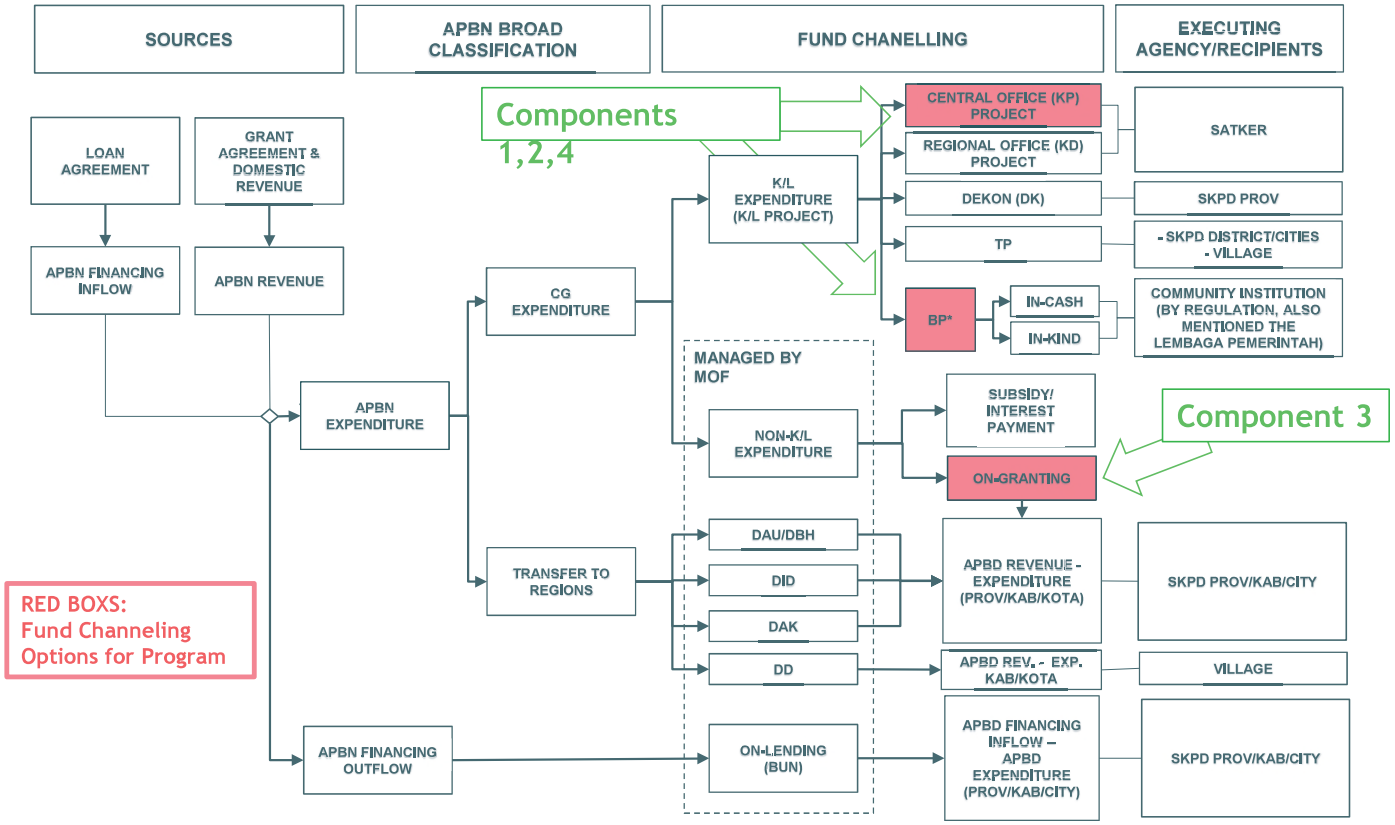


Past financing approaches have been ineffective & unsustainable

Past inefficiencies demonstrate the need for new financing and institutional approaches

- Many experts in the sector estimate that roughly 70% of all solid waste investments completed by the central government are managed improperly and in a short-time span the asset's function is largely destroyed.
- Local governments often complain that they are not involved in the planning or construction phases of investments.
  - Often used as an excuse for why appropriate budget and skilled staff are not allocated to manage the assets once transferred to the local level.
- However, local governments mostly lack the expertise and often the willingness to manage large/complicated procurement contracts.
- Traditional fiscal transfer mechanisms to the local governments (e.g. DAK) often have very little oversight be central government ministries.
- At the national level, solid waste investments are often not coordinated between ministries (e.g MPWH, MoEF).

FINANCING OPTIONS



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- BP : BANTUAN PEMERINTAH (GOVERNMENT ASSISTANCE), further clarification needed for "LEMBAGA PEMERINTAH)
- Green Box : RELEVANT Fund Channeling Options for the project

Why HIBAH for local government transfers?

Strong local government ownership of project/asset

- If project implemented at local level, asset will belong to local government
- No excuse for not funding operations and maintenance

Flexibility

- HIBAH is suited to projects that are a) larger b) only target selected districts c) temporary funding line
- HIBAH instrument is an agreement

Strong line ministry oversight role

- HIBAH is disbursed at the direction of the line ministry.
- Region must report to K/L; K/L supervises validation, and MoF relies on K/L advice for disbursement
- At the same time, low risk to K/L because budget is on MoF not K/L

Good international practice

- As Indonesia urbanizes, more responsibility for urban infrastructure should pass to city governments

Policy direction of GoI

- DG Budget and DG Fiscal Balance currently eliminating financing for local government functions from K/L budgets

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Next Steps

1. Defining Program Financing and Implementation Arrangements

2. Identifying Amount of Financing Available & Reasonable Targets

- Once the amount of investment financing is clearly defined, waste collection and reduction targets can be accurately calculated.

3. Preparing the First Pipeline of Program Investments

- A successful program needs to have a strong initial portfolio of investments (10-20% of total financing) to demonstrate seriousness:
  - ❑ **World Bank-supported investments – Ready for bidding late 2017**
    - ➢ for consultant firm to assist 2-4 cities in preparation of their feasibility studies, EIAs, RAPs, and bidding documents for design-build infrastructure, other cities will follow in the next tranches.
  - ❑ **KfW supported cities – Start bidding for investments in 2017**
  - ❑ **APBN supported cities – Balikpapan, Tangerang, others?**