An aerial photograph of Padang, Indonesia, taken during the golden hour of sunset. The sun is low on the horizon, casting a warm, golden glow over the city and reflecting off the surface of the Andalas River. A large bridge spans the river, with cars visible on it. The city is densely packed with buildings, and the surrounding landscape includes hills in the distance.

LOCAL ACTION PLANS AND POLICIES TO IMPROVE CIRCULARITY AND EMPOWERING INFORMAL SECTOR IN PADANG THROUGH PILOT PROJECTS

Environmental Protection Agency –
Padang Municipality Government

Waste Generation in Padang 2024→ ±647 Tons/day

The Populatin of= 924.840 multiplied by the waste generation index a result of 647,39 tons/day.

Waste handling= 478 Tons/day (73,84%)



→Padang in 2024

Waste reduction

= 141 Ton/Hari (21,86%)

Unmanaged waste

= 28 Ton/Hari (4,31%)

Handling target = 70%



→Jaktranas Target for 2025

Reduction target= 30%

Waste handling= 453 Tons/Hari (70%)



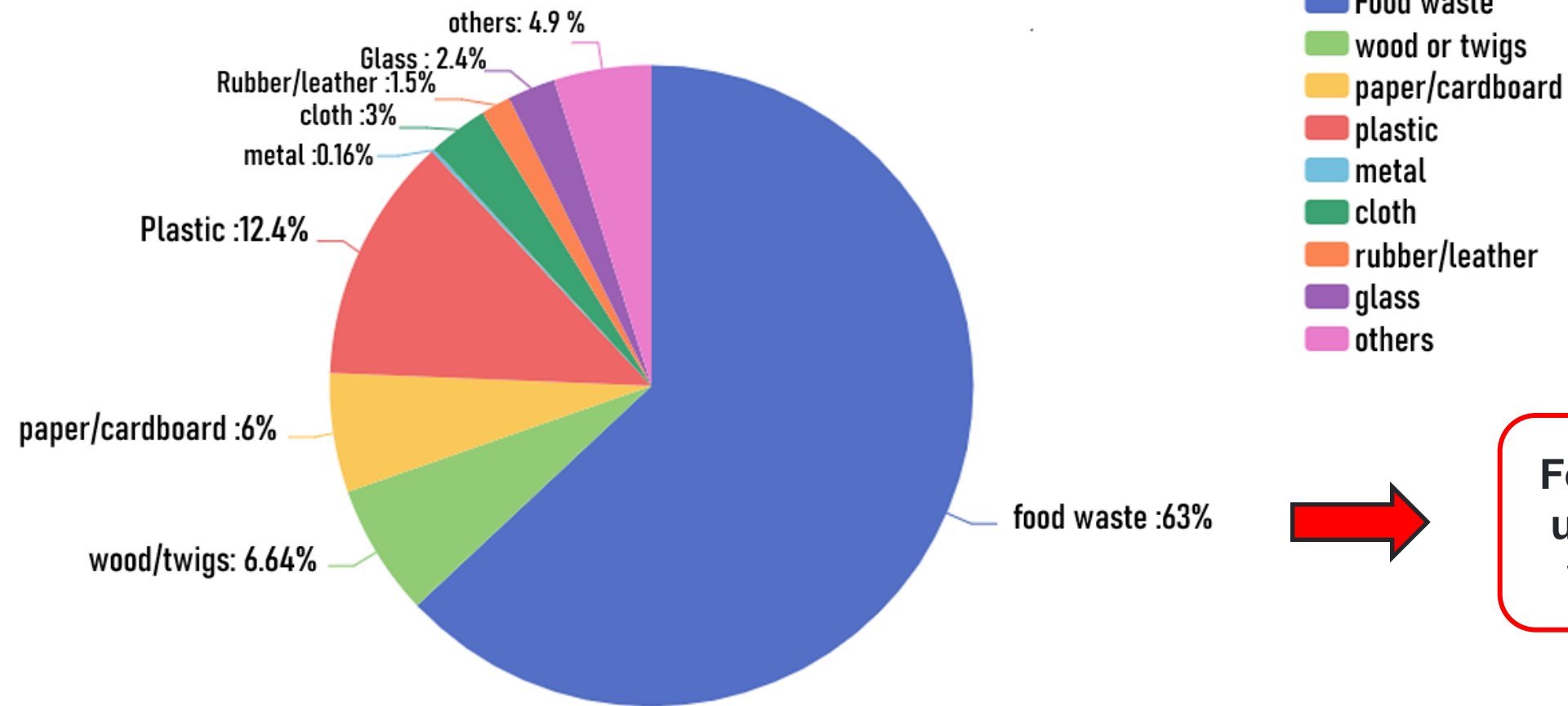
→Padang Target for 2025

Reduction target
= 194 Tons/Hari (30%)

Supply for RDF (70% Anorganic dan 30% Organic)
= 200 Tons/Hari (31%)

Remaining Unprocesecd
Waste 253 Tons/Hari (39%)

Waste Composition



- Food waste
- wood or twigs
- paper/cardboard
- plastic
- metal
- cloth
- rubber/leather
- glass
- others



Food waste makes up the majority of waste produced

Local Policy for Waste Management in Padang



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Dinas Lingkungan Hidup Kota Padang

WASTE MANAGEMENT STRATEGY OF PADANG

1 SEPARATION OF WASTE (30%)

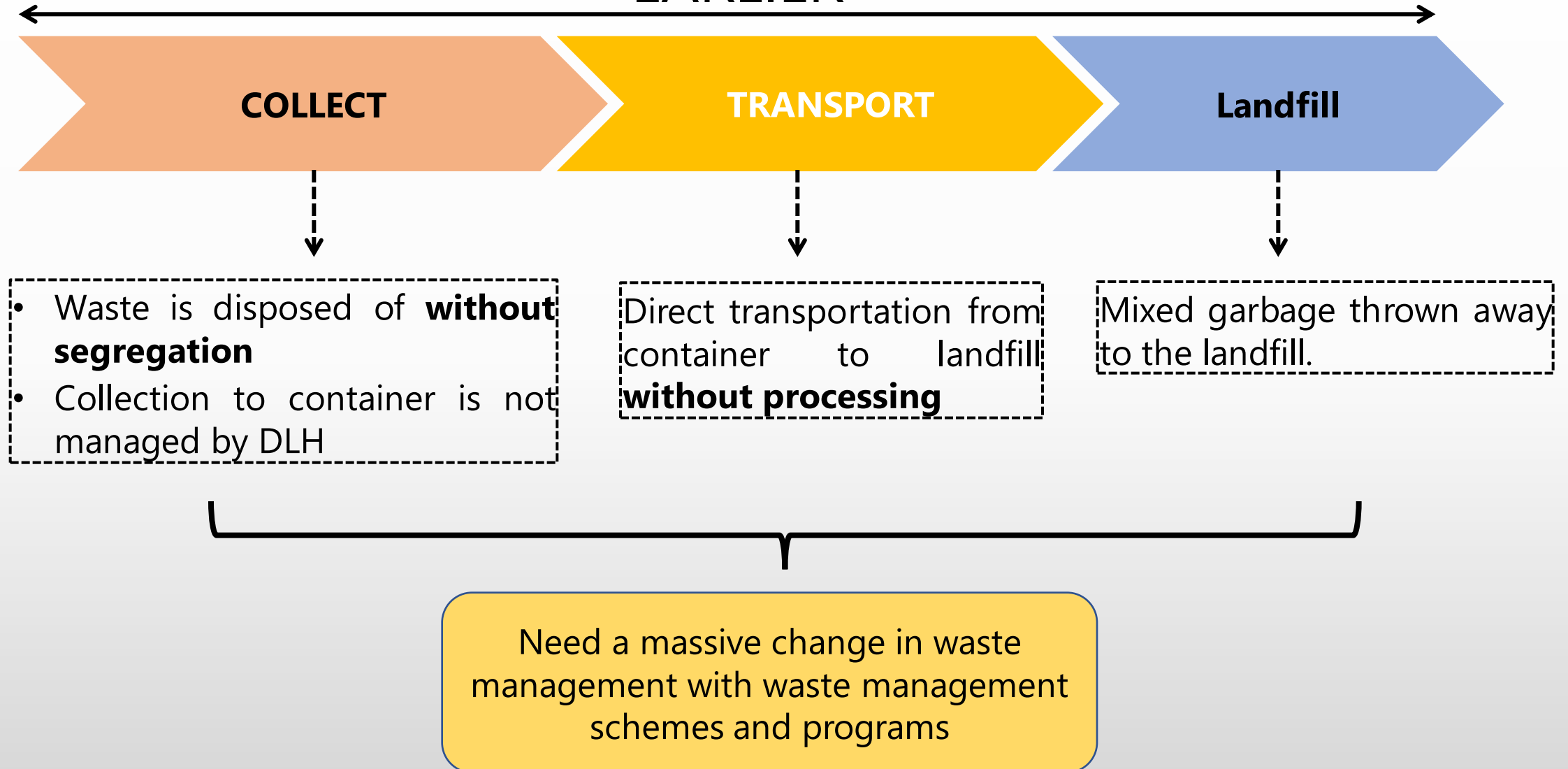
2 REDUCTION OF ORGANIC WASTE (10%) THROUGH COMPOST

3 INCREASED RECYCLING OF ORGANIC WASTE (20%)

4 STRENGTHENING INSTITUTIONAL CAPACITY AND COLLABORATION

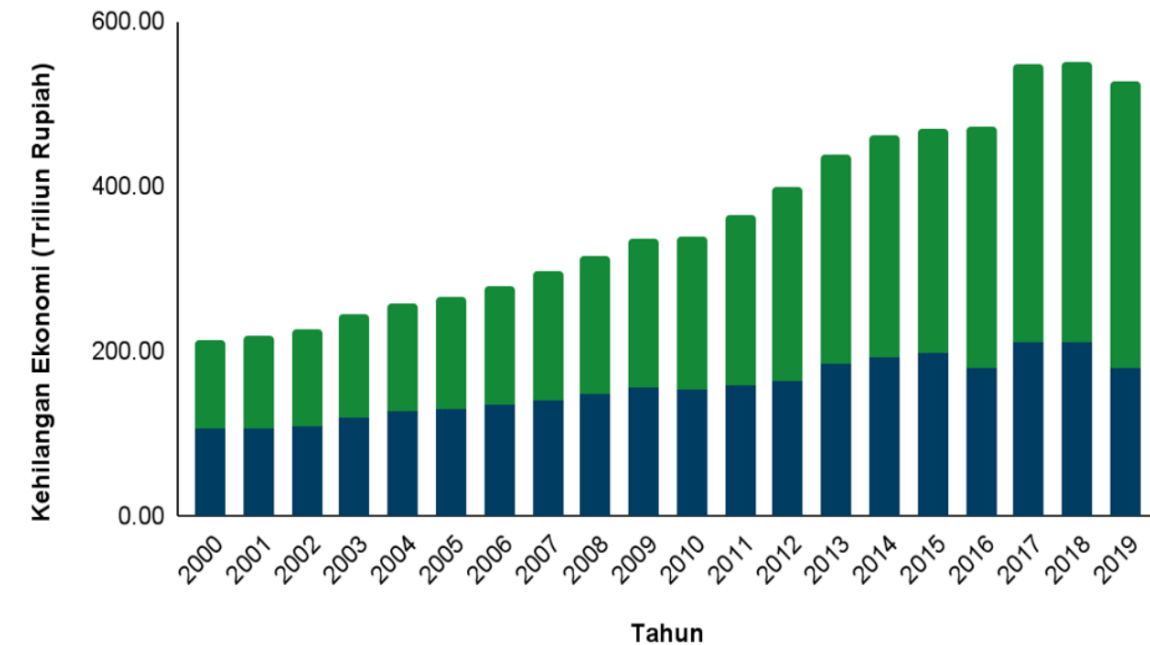
Waste Management Conditions

EARLIER





Economic Loss from FLW Generation Graph



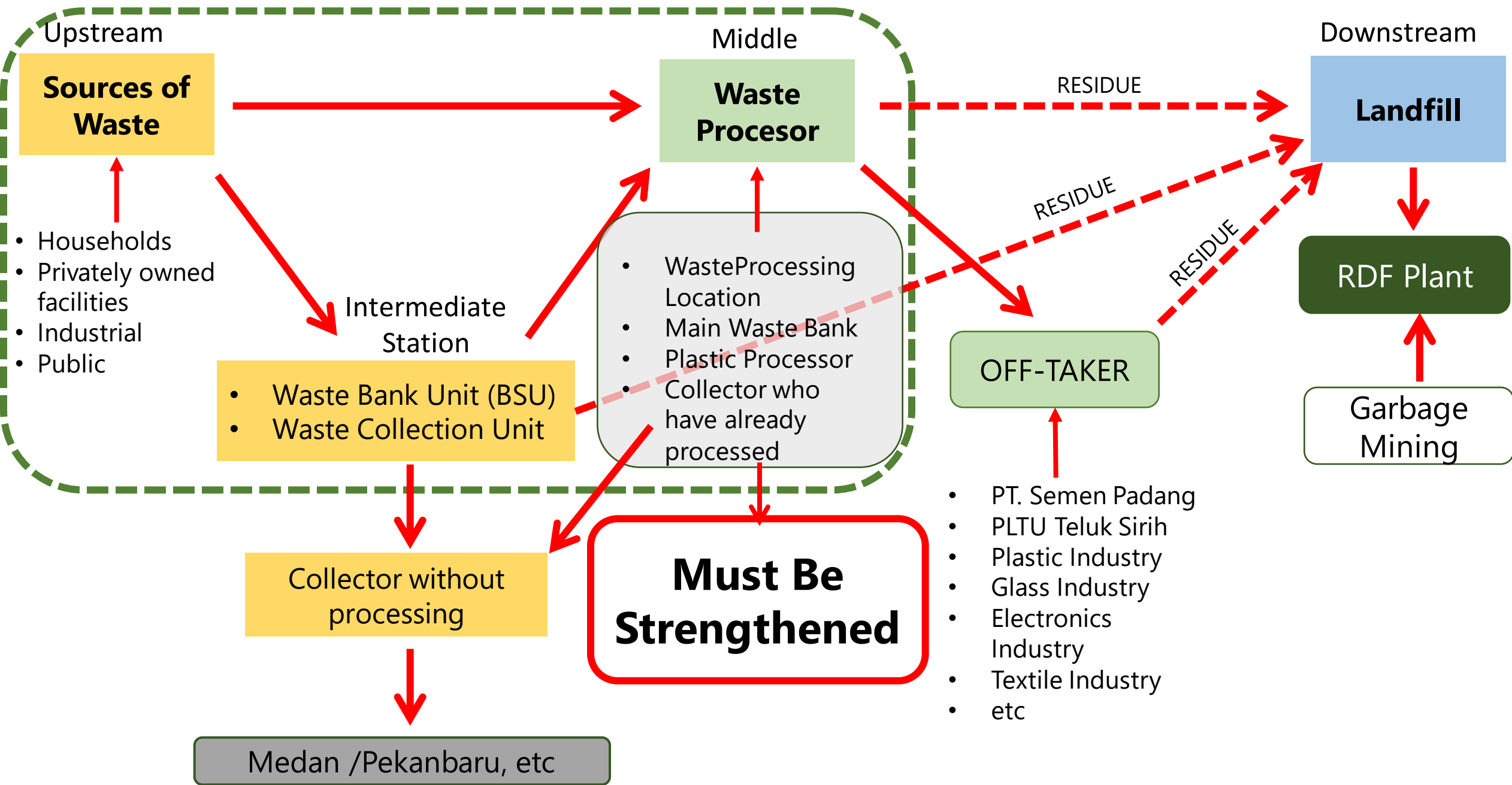
The largest economic loss occurs at the FW stage, namely **107-346 trillion rupiah/year**.

Total National Food Loss + Waste (FLW) losses from 2000 to 2019 reached **213-551 trillion rupiah/year**.

Padang

Total Food Loss + Waste (FLW) losses 1.54 to 3.98 trillion rupiah per year.

The Waste Management Scheme in Padang





HOW??

- 1 Build Waste Management Facilities
- 2 Connected to the source
- 3 Waste Management Facility Management Plan

Provide the land (8 Locations)

1. Sources must do the segregation
2. Provide the transportation (transport vehicles)

Problems

1. Unavailability of facilities, connection and management
2. Insufficient of infrastructure and facilities, example: lack of waste collection vehicles (rickshaws)

Options of Location for Integrated Resource Recovery Center (IRRC) in Padang

1. Government Asset at Jl. Adinegoro, Koto Tangah ($\pm 1.984 \text{ m}^2$)
2. Government Asset at Jl. Simpang Haru Samping ($\pm 3.799 \text{ m}^2$)
3. Government Asset Next to DLH Office at Balai Baru ($\pm 1.300 \text{ m}^2$)
4. Government Asset at Jl. Kimia, Indarung ($\pm 1.300 \text{ m}^2$)
5. Government Asset at Rahaka Residen, Lubuk Buaya ($\pm 600 \text{ m}^2$)
6. Government Asset at Kurao Pagang, Nanggalo ($\pm 189,25 \text{ m}^2$)
7. Government Asset at Teluk Kabung Tengah, Bungus ($\pm 520 \text{ m}^2$)
8. Government Asset at Bungus Barat, Bungus ($\pm 292,5 \text{ m}^2$)



Padang Government's Main Program to Increase Circularity & Empower the Informal Sector



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EFFORTS THAT HAVE BEEN DONE BY GOVERNMENT OF PADANG IN CREATING A CIRCULAR ECONOMY

1. Padang BaGoro!

Mutual cooperation activities with **3 (three) main principles**: (1) **simultaneously every month** throughout Padang; (2) with **family** (father, mother, children); (3) clean the environment **in front of each house**.

Implemented regularly with a different theme for each month. This activity involves all stakeholders (government, waste banks, NGOs, private sector, educational institutions).



Padang Mayor Decree Number 48 of 2024 concerning the Padang Bagoro Task Force and Padang Circular Letter



Circular Letter Number 660/02.46/DLH-PDG/2024 regarding the Implementation of Padang Bagoro July-December 2024



Padang Bagoro Event Photo

2 WASTE BANK OPTIMALIZATION

- **GOVERNMENT REQUIRES: 1 HAMLET 1 WASTE BANK (887 HAMLET) Currently: 182 waste bank units (82 active)**
- Efforts to reduce waste from the source while increasing community income
- Management not only of inorganic waste, but also **ORGANIC**
- All Civil servant and Honorary employee of Padang Government are required to become a Waste Bank Customers.



3 Padang Mamulah

Educate residents to sort organic and inorganic waste from households. Organic waste is used for maggot cultivation, inorganic waste is brought/sold to the waste bank and converted into gold in collaboration with PERSERO

4 Community-based waste collection service directly from the source in a self-managed manner

- ▶ service for collecting waste from homes, businesses, industries, etc., where the waste collected has been sorted by the community, then the waste will be transported to waste processing sites (Trash Bank, IRRIC, Maggot Cultivation, Composting facilities, etc.).

- ▶ Waste management's self-management duties :
 - ✓ carry out capacity building to the community through **socialization** to do reduce and segregate garbage
 - ✓ **organize the sorting and collection of waste** which is carried out every day from the source to the temporary disposal location or processing location.
 - ✓ ensure that the community **does not dispose** of waste to temporary disposal locations independently;

- ▶ So that services are well integrated into one system, an **application** is needed that can make it easier for the public to get services in collecting waste, recording waste volume, making it easier for the Padang Government to implement incentives and disincentives for the community.



 NO MORE WASTE



Waste Taken from Source

**Source of Waste
(Housing Area)**

Waste collection from the source to the garbage container will be managed by DLH in collaboration with Waste Management Agency in each sub-district

Waste Management Agency can collaborate with the Waste Bank to reuse waste that has been sorted and has economic value

Impact of implementing the Self-Management System:

- By managing waste from the source, it will reduce the risk of illegal container appearing.
- Waste transportation and collection schedules are more organized and scheduled.
- Supervision of waste management could be better.
- Collaboration with the Informal Sector is easier (Waste Management Agency and Waste Bank).

As of January 2025, there are 11 sub-district LPS ready to contract with DLH

5 Cultivating BSF Maggots (Black Soldier Fly)

CSR Program of Semen Padang Factory –
Kube Organic Feed

Collaboration between the Environmental Service and Semen Padang Factory is managing waste by creating IRRC Rawang with a maggot cultivation program which makes organic waste including food waste used as a food source for BSF maggots.



Collaboration between the Environmental Service and environmental activists regarding Community Empowerment in the Waste Bank program and BSF maggot cultivation in Rimbo Kaluang Village.



6. CONSTRUCTION OF REDUCE, REUSE, RECYCLE (IRRC) WASTE PROCESSING PLACE

► The waste processing facilities at IRRC consist of:

- Waste Sorting Place
- Composting
- Maggot Cultivation
- Waste Bank
- Plastic waste shredding and waste recycling
- Pyrolysis waste destroyer
- Continuous education program for the community regarding the importance of proper waste management, the benefits of 3R, and how to sort waste at the household level.



Example of IRRC

WTE Program



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Dinas Lingkungan Hidup Kota Padang

Construction of RDF Facilities

→
± 15 KM



SEMEN PADANG FACTORY

Coal Requirement : **4.500 Tons/Day**

Co-Firing Demands: 5%
(225-250 Ton/Day)

Already Obtain 60 Tons

There are still opportunities for RDF Products **(± 165 Tons/Day)**
Caloric Requirements : 3000



AIE DINGIN LANDFILL

→
± 48,6 KM

↑
Off Taker
RDF
↓

Status :
Currently in the auction process by the PUPR Ministry, the auction is being held by BPPW West Sumatra - The auction winner will be announced in February 2025

ELECTRICAL COMPANY



Coal Requirement: **3.000 – 3.600 Tons/Day**

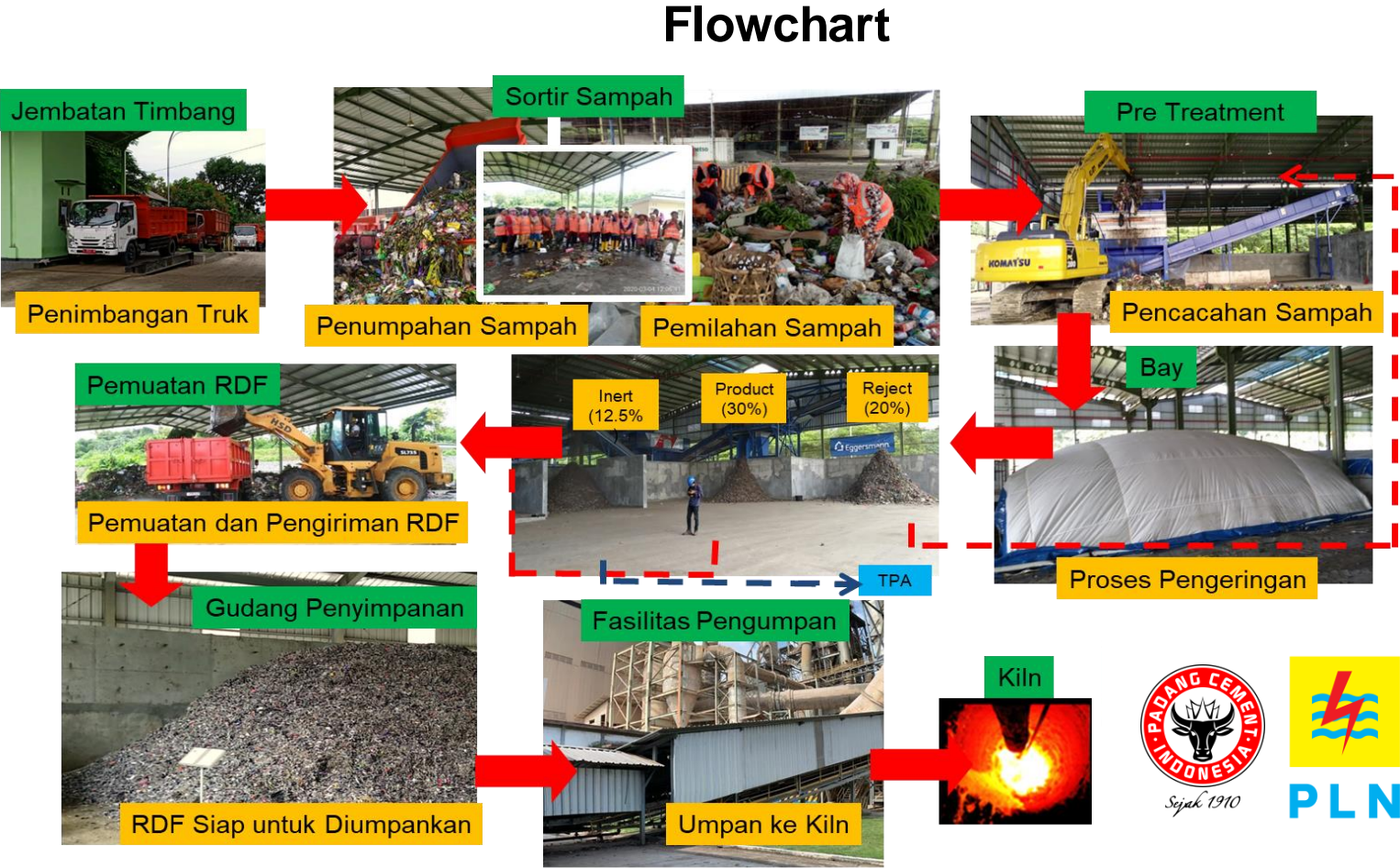
Co-Firing Demands : 30%
(900-960 Tons/Day)

Already Obtain 30 Tons

There are still opportunities for RDF Products **(± 930 Tons/Day)**
Caloric requirements : 4000

"Sustainable Operation of Integrated Waste Processing Facility (RDF Plant)"

| | | |
|---------------------------------------|---|---|
| Planned Location | : | Aie Dingin landfill |
| Facility Area | : | ±3 Hectare |
| Investment cost | : | Rp. 128 billion (APBN) |
| Operating cost | : | Rp. 18,25 billion / year |
| Construction plan | : | February 2025 – September 2025 |
| Processing capacity | : | 200 Tons /day |
| Off-taker | : |   |
| Distance between Container & Offtaker | : | 15 KM & 48 KM |



Padang needs capacity/competency building programs to manage the RDF-Plant

Foreign Cooperation for Garbage Management

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Dinas Lingkungan Hidup Kota Padang



ONGOING PARTNERSHIP COLLABORATION

ISWMP

The Improvement of Solid Waste Management to Support Regional and Metropolitan Cities Program



Ministry of Public Works



Solid Waste Management

- RDF Plant
- RIPS
- Separation of operator and regulator
- Padang Mamilah



Urban-Act

Integrated Urban Climate Action for Low-Carbon & Resilient Cities



National Development Planning Agency
(IKI Jerman)



Solid Waste Management

- Integrated Resource Recovery Center (IRRC)

IGES

Institute for Global Environmental Strategies



Ministry of Environment
(Japan)



Solid Waste Management
Enhancement of Waste
management Capacity



KEMITRAAN INDONESIA AUSTRALIA
UNTUK INFRASTRUKTUR

SIIP



KIAM
(Australia)



DOMESTIC WASTEWATER



THANK YOU



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