



SOLID WASTE MANAGEMENT IN NEGARA BRUNEI DARUSSALAM

**Department of Environment, Parks and Recreation
Ministry of Development**

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CONTENTS

- **SOLID WASTE GENERATION**
- **EXISTING SOLID WASTE MANAGEMENT IN NEGARA BRUNEI DARUSSALAM**
- **TOWARDS INTEGRATED SOLID WASTE MANAGEMENT**
- **SOLID WASTE COLLECTION & SOME EFFORTS ARE BEING IMPLEMENTED**
- **SOLID WASTE DISPOSAL & EFFORTS ARE BEING IMPLEMENTED**

SOLID WASTE GENERATION

BASIC FACTS

Year 2005

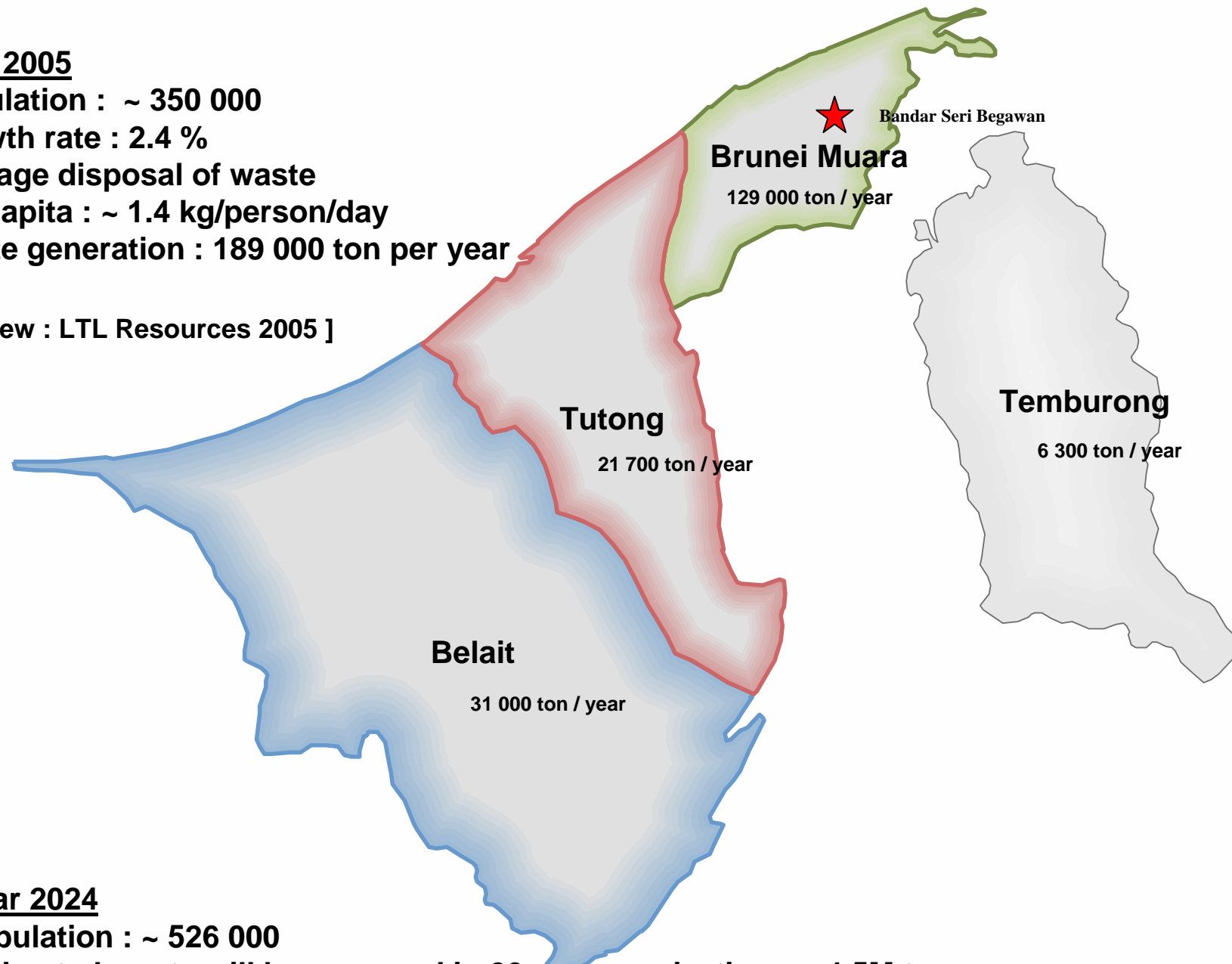
Population : ~ 350 000

Growth rate : 2.4 %

Average disposal of waste
per capita : ~ 1.4 kg/person/day

Waste generation : 189 000 ton per year

[Review : LTL Resources 2005]

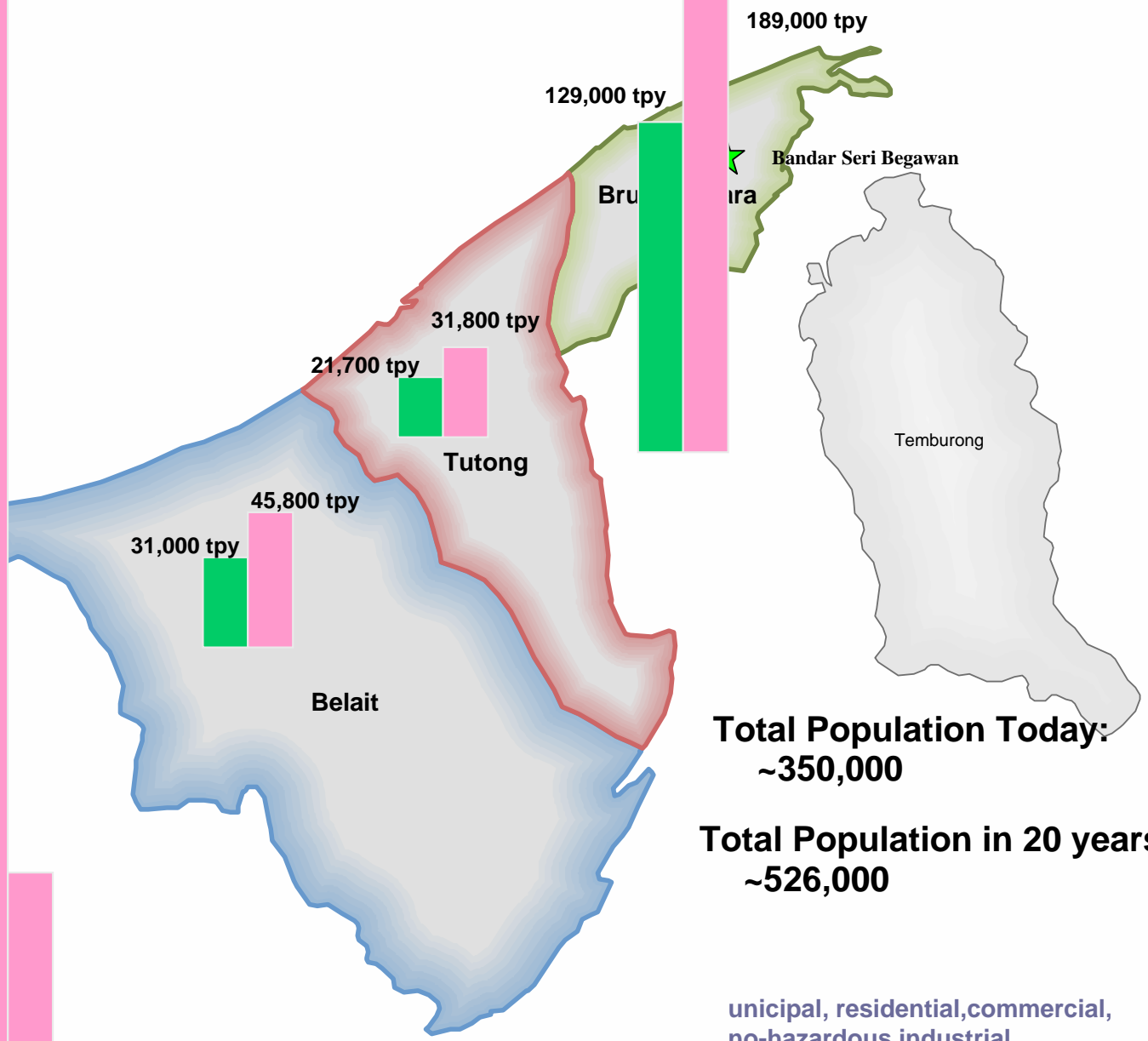


Year 2024

Population : ~ 526 000

Estimated waste will be managed in 20 years projection : ~ 4.5M ton

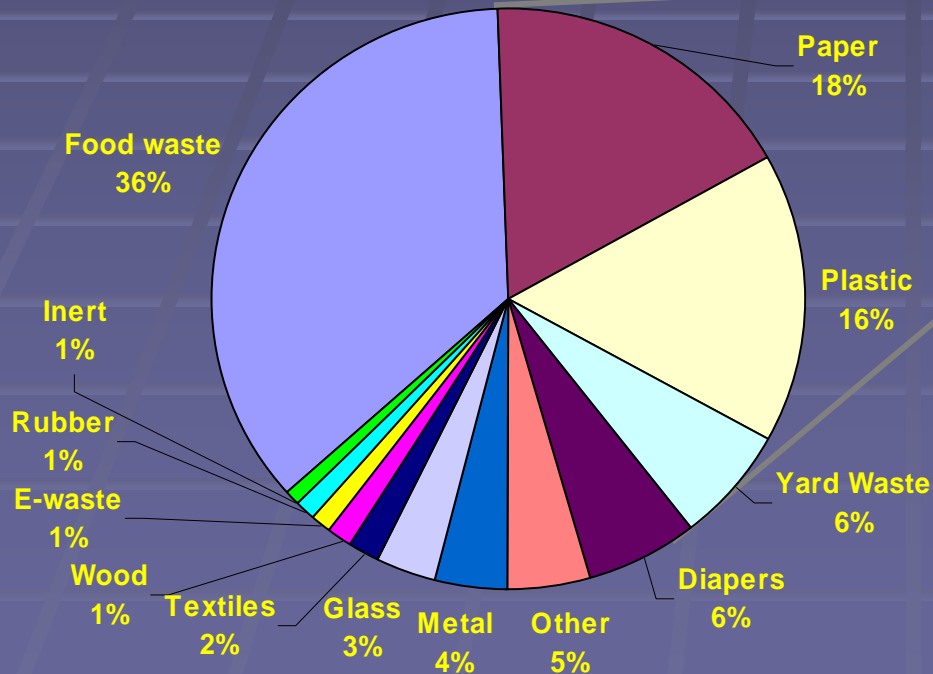
Total Waste to be
Managed Over 20
Years:
4,500,000 tonnes



Brunei-Muara District: 2005 Waste Composition

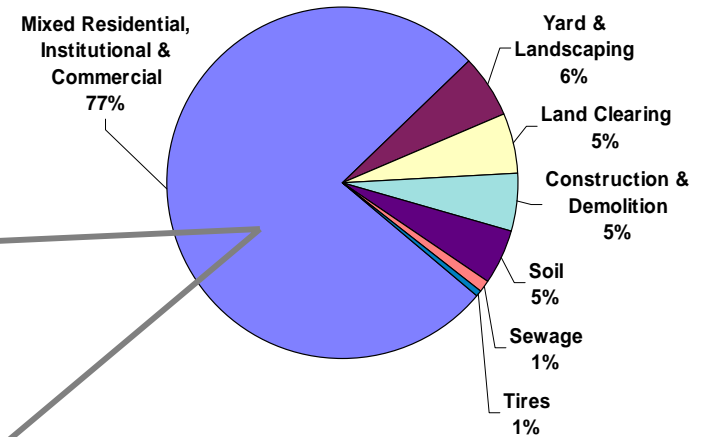
Municipal Waste Composition

(based on waste survey completed week of 11 April 2005)



Total Waste Stream Estimate

(based on vehicle count completed week of 25 January 2005)



WASTE GENERATION

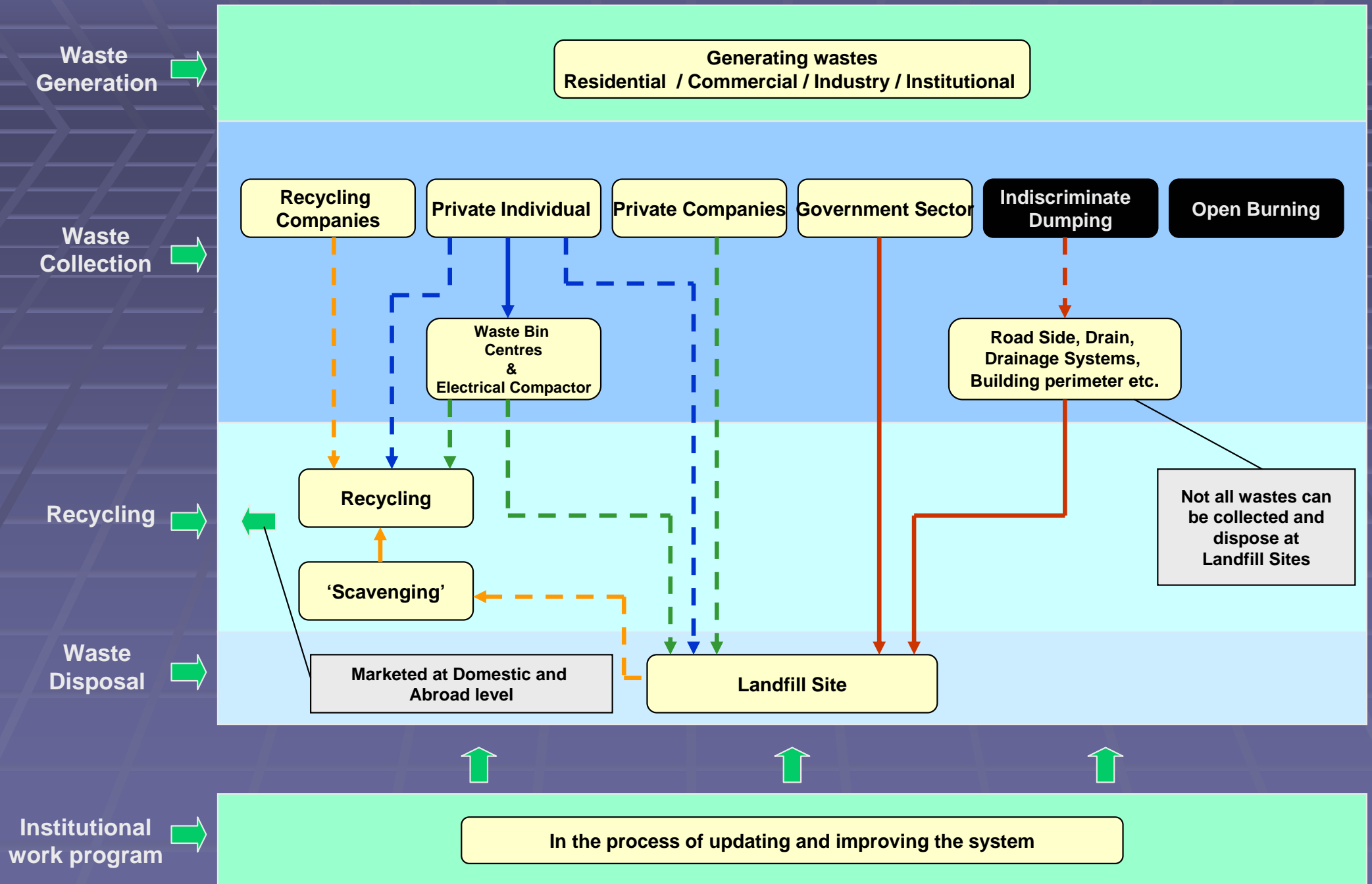
- **RESIDENTIAL**
[private dwellings and high rise flat]
- **COMMERCIAL**
[shop houses, restaurants, market, open market, bank]
- **INSTITUTIONAL**
[schools, hospitals, government office buildings .]
- **INDUSTRY**
[Goods manufacturing factories and storing or warehouses]

OTHER WASTES :

waste soil ; construction wastes ; toxic wastes and hazadarous wastes ; waste oil or used oil

EXISTING SOLID WASTE MANAGEMENT SYSTEM IN BRUNEI DARUSSALAM

EXISTING SOLID WASTE MANAGEMENT SYSTEM



TOWARDS THE INTEGRATED SOLID WASTE MANAGEMENT

INSTITUTIONAL FRAMEWORK

- Capacity Building
- Organisational Set-up
- Policies & Regulation
- Enforcement

WASTE GENERATION

Public Awareness Programme

DISPOSAL

- Improve interim operations of disposal sites
- Proper Closures and Rehabilitation
- Environmental Monitoring
- Engineered Landfill

COLLECTION

- Develop & Improve Services
- Develop & Implement Tariffs
- Public Awareness Programme

Integrated Waste Management System

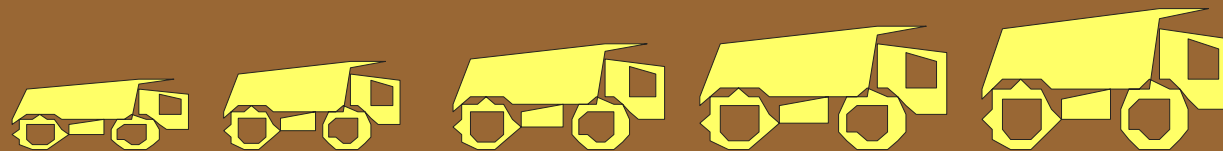
WASTE REDUCTION

- Composting
- Recycling
- Incineration

TRANSFER

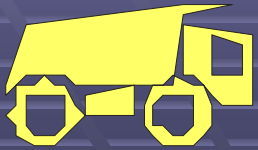
Develop Transfer Facilities
Regional / Kg Air

SOLID WASTE COLLECTION



WASTE COLLECTION

- **PRIVATE INDIVIDUAL DISPOSAL TO LANDFILL SITES & WASTE CENTRES**
- **HOUSE TO HOUSE COLLECTION**
 - Brunei Muara
 - Kampong Air
- **REGISTERED PRIVATE WASTE COLLECTING COMPANIES**
 - Brunei Muara
 - Commercial Areas
 - Light Industrial Areas
- **WASTE BINS CENTRES**
 - Electrical waste Compactor and skips in Brunei Muara
 - Skips and bins in Tutong
 - Bins in Temburong
 - Skips in Seria & Belait
- **UNREGISTERED PRIVATE COLLECTING WASTE COMPANIES**



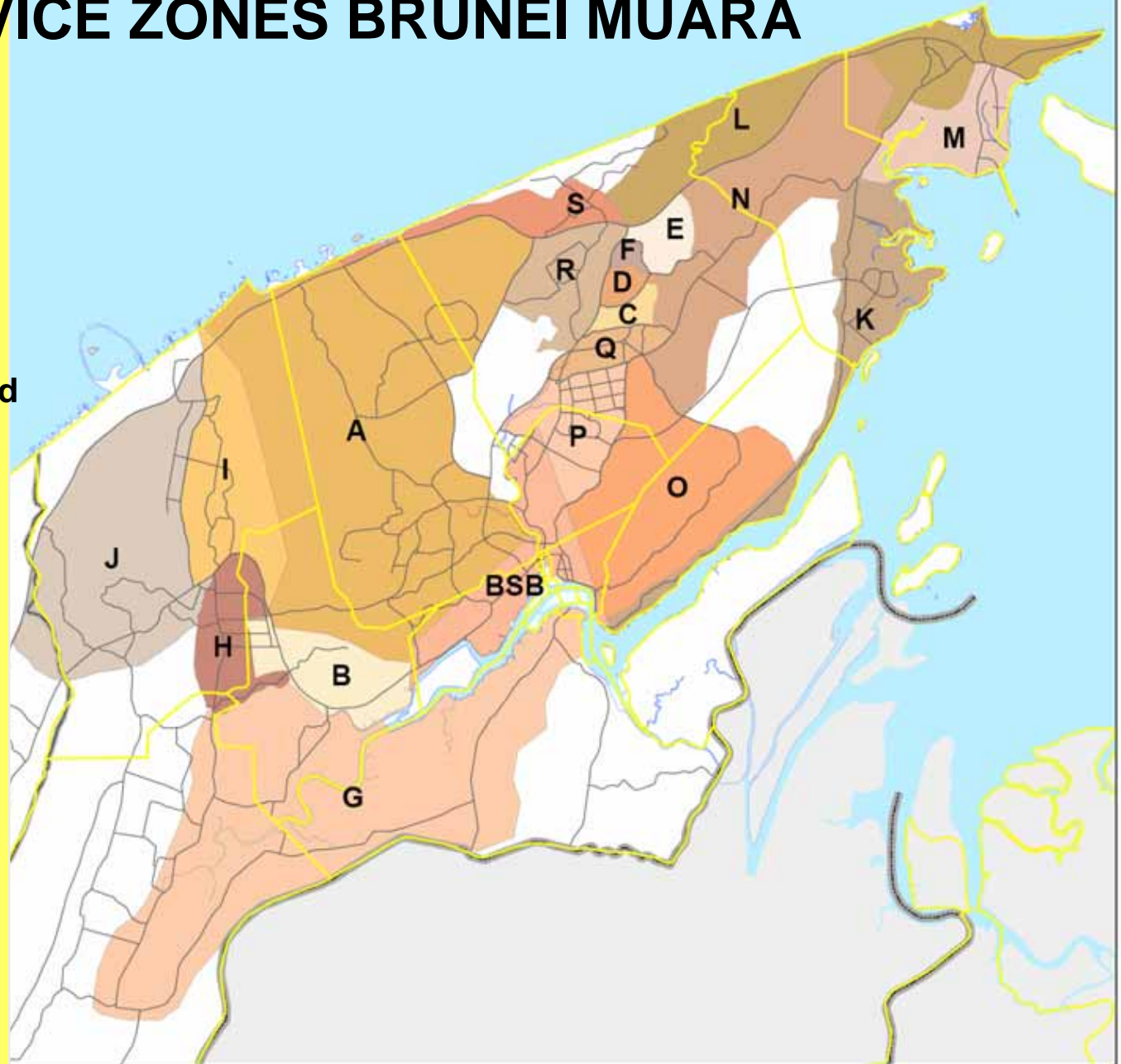
PUBLIC SECTOR HAULERS	26 %
REGISTERED & APPROVED HAULERS	34 %
UNREGISTERED HAULERS (including self haul)	40 %

COLLECTION SERVICE ZONES BRUNEI MUARA

REGISTERED & APPROVED HAULERS

1. Sisco Simin Company
2. Kyohei Buildmaintenance Sdn Bhd
3. MBJ Services
4. Rome Suri Enterprise
5. Mashhor General Contractor Sdn Bhd
6. Syarikat Hamsal & Anak-anak
7. Syarikat Pg Hjh Patimah & Anak-anak

Total Zone : 19 Zones



EFFORTS ARE BEING IMPELEMENTED

- **TO TAKEOVER TASKS & RESPONSIBILITY OF THE SERVICE STAGE BY STAGE**

- **TO IMPROVE EFFICIENCY AND STANDARD OF COLLECTING SERVICE FOR TUTONG AND TEMBURONG DISTRICTS :**
 - **COLLECTION CONTRACT DOCUMENTS**
 - **IMPLEMENTATION IMAGE AND STATUS OR POPULARITY**
 - **FREQUENCY OF COLLECTION**
 - **USAGE OF WASTE COMPACTOR TRUCK**
 - **MONITORING**
 - **MEETING WITH HEAD VILLAGE LEADERS**

- **TO IMPLEMENT WASTE COLLECTING PROJECTS THROUGH 'DEPARTMENTAL'**
- **TO REVIEW COLLECTION ZONES IN BRUNEI MUARA DISTRICT**
- **PLANNING FOR NATIONAL DEVELOPMENT PLAN (RKN) 9 PROJECTS**

WASTE COLLECTION MANAGEMENT

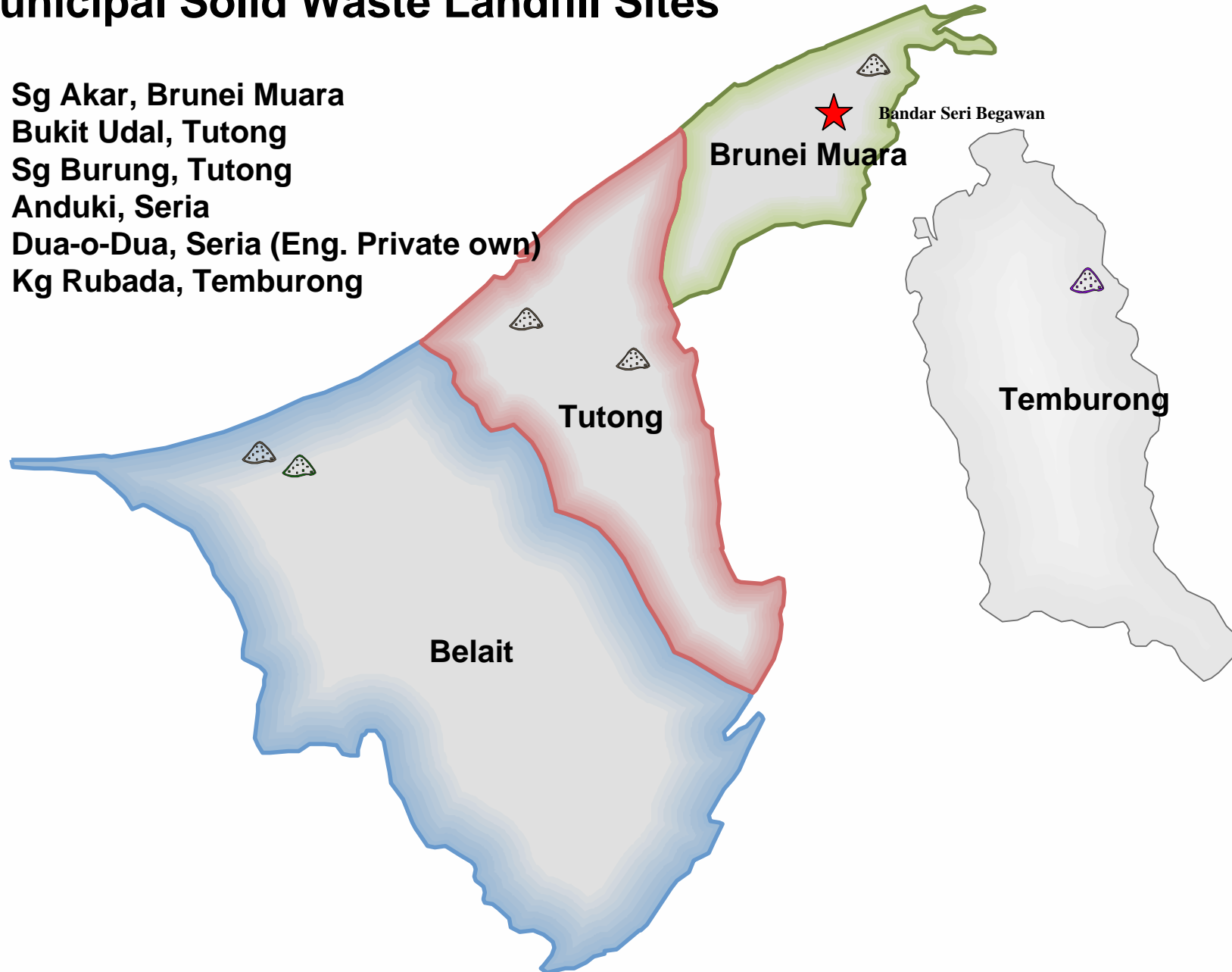
BRUNEI MUARA	TUTONG	BELAIT	TEMBURONG
<p>Collection and Transporting service for house to house waste manage by Dept. of Environment, Parks & Recreation (JASTRE)</p> <p>Transfer by Municipal Board BSB 1st April 2004</p>	<p>19 Waste bin Centres + 7 bus stop manages by the Dept. of Environment, Parks & Recreation (JASTRE)</p> <p>Transfer by Tutong District Office 26th January 2005</p>	<p>Collection is still manage by Belait District Office</p> <p>Except all waste collection manage by Public Works Dept. (JKR)</p> <p>Transfer by Public Works Department 1st April 2006</p>	<p>All solid waste collection centres</p> <p>Transfer by Temburong District Office 15th September 2005</p>

SOLID WASTE DISPOSAL



Municipal Solid Waste Landfill Sites

1. Sg Akar, Brunei Muara
2. Bukit Udal, Tutong
3. Sg Burung, Tutong
4. Anduki, Seria
5. Dua-o-Dua, Seria (Eng. Private own)
6. Kg Rubada, Temburong



Sungai Akar Brunei-Muara Landfill Sites



Sungai Akar Landfill Sites



Green wastes have been made for Composts as the Photos shows.









THANK YOU