

PART I

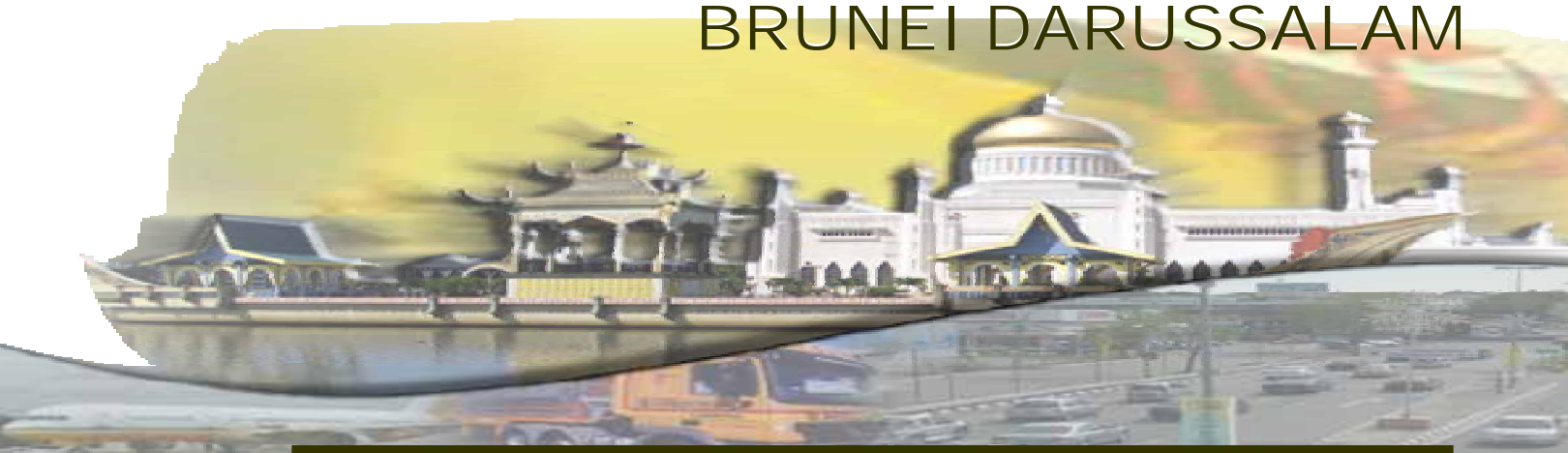
HJ MOHD ROZAN DATO PADUKA HJ YUNOS /
HJ ZAKARIA HJ TARIP / HJ MOHD NOOR HJ SALLEH
MINISTRY OF DEVELOPMENT
NEGARA BRUNEI DARUSSALAM



THE SECOND MEETING OF REGIONAL 3R FORUM

KUALA LUMPUR, MALAYSIA 4 - 6 OCTOBER 2010

3R (REDUCE, REUSE, RECYCLE
CONCEPT) in
BRUNEI DARUSSALAM



Country Presentation

14 September 2010

COUNTRY'S PROFILE

Area :

5,765 sq.km

Population :

383,000

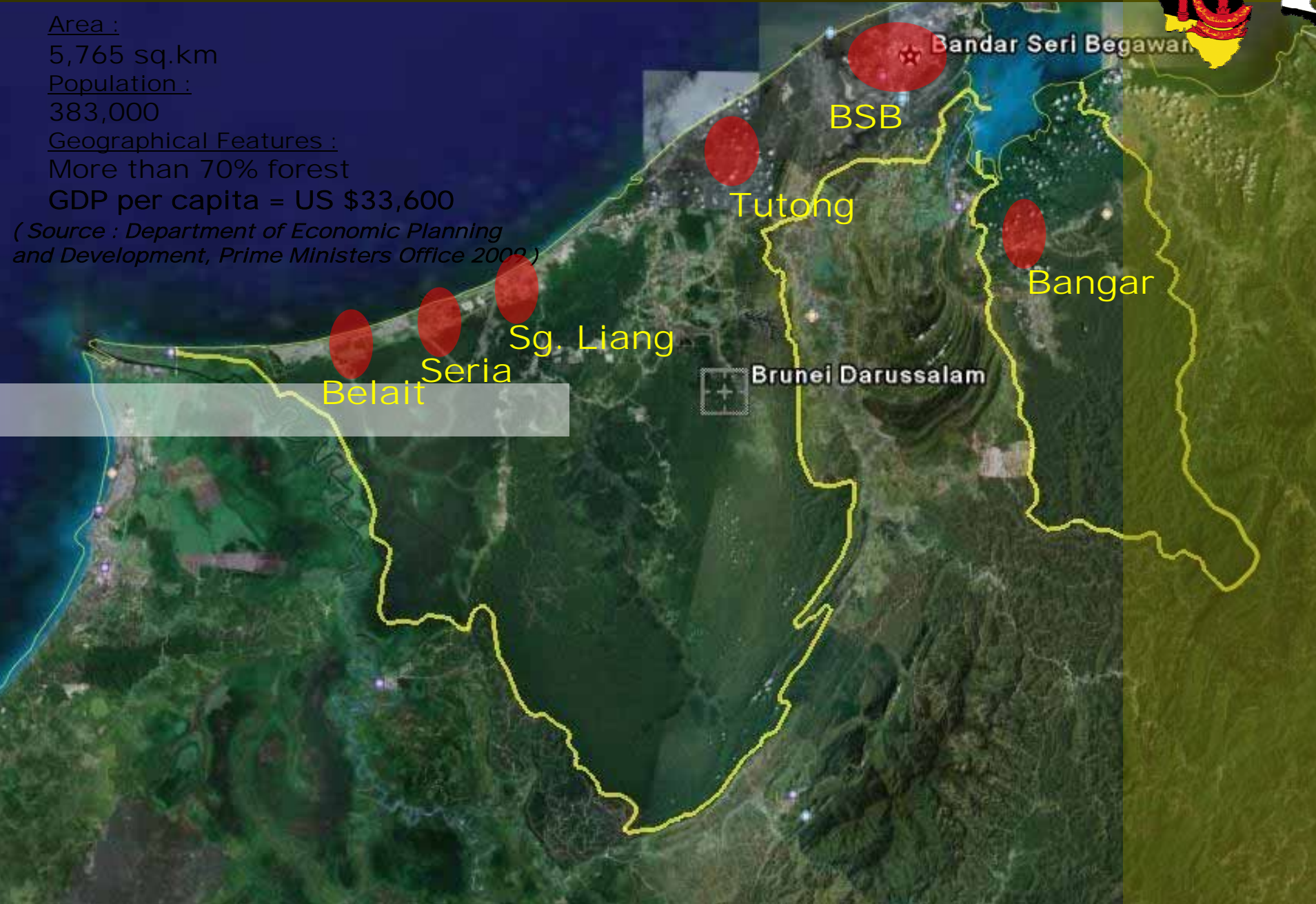
Geographical Features :

More than 70% forest

GDP per capita = US \$33,600

*(Source : Department of Economic Planning
and Development, Prime Ministers Office 2002)*

Densely Populated Areas



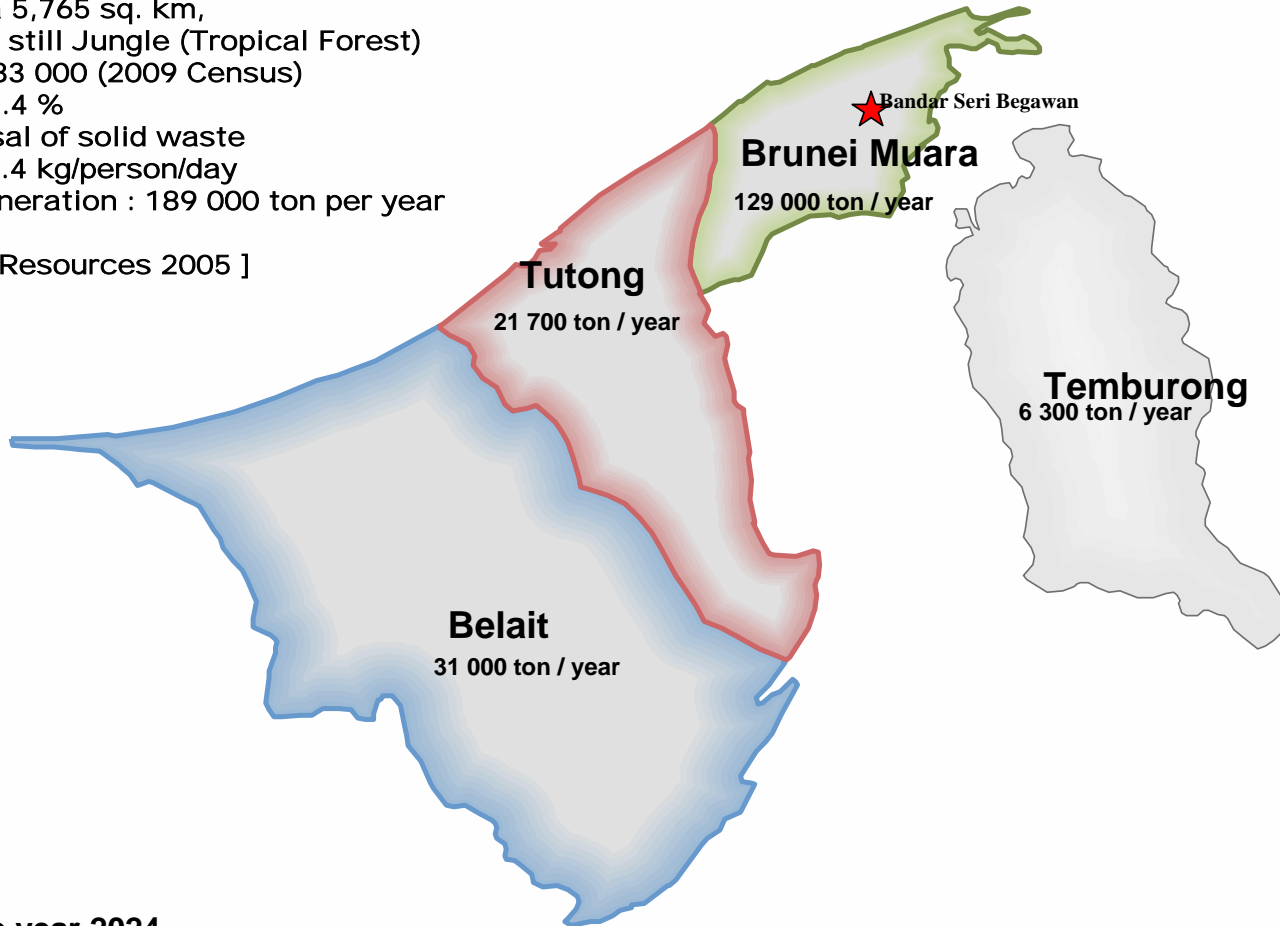
BASIC FACTS ON SOLID WASTE



Year 2005

Total land area 5,765 sq. km,
More than 70% still Jungle (Tropical Forest)
Population : 383 000 (2009 Census)
Growth rate : 2.4 %
Average disposal of solid waste
per capita : ~ 1.4 kg/person/day
Solid waste generation : 189 000 ton per year

[Review : LTL Resources 2005]



By the year 2024

Population : ~ 526 000

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

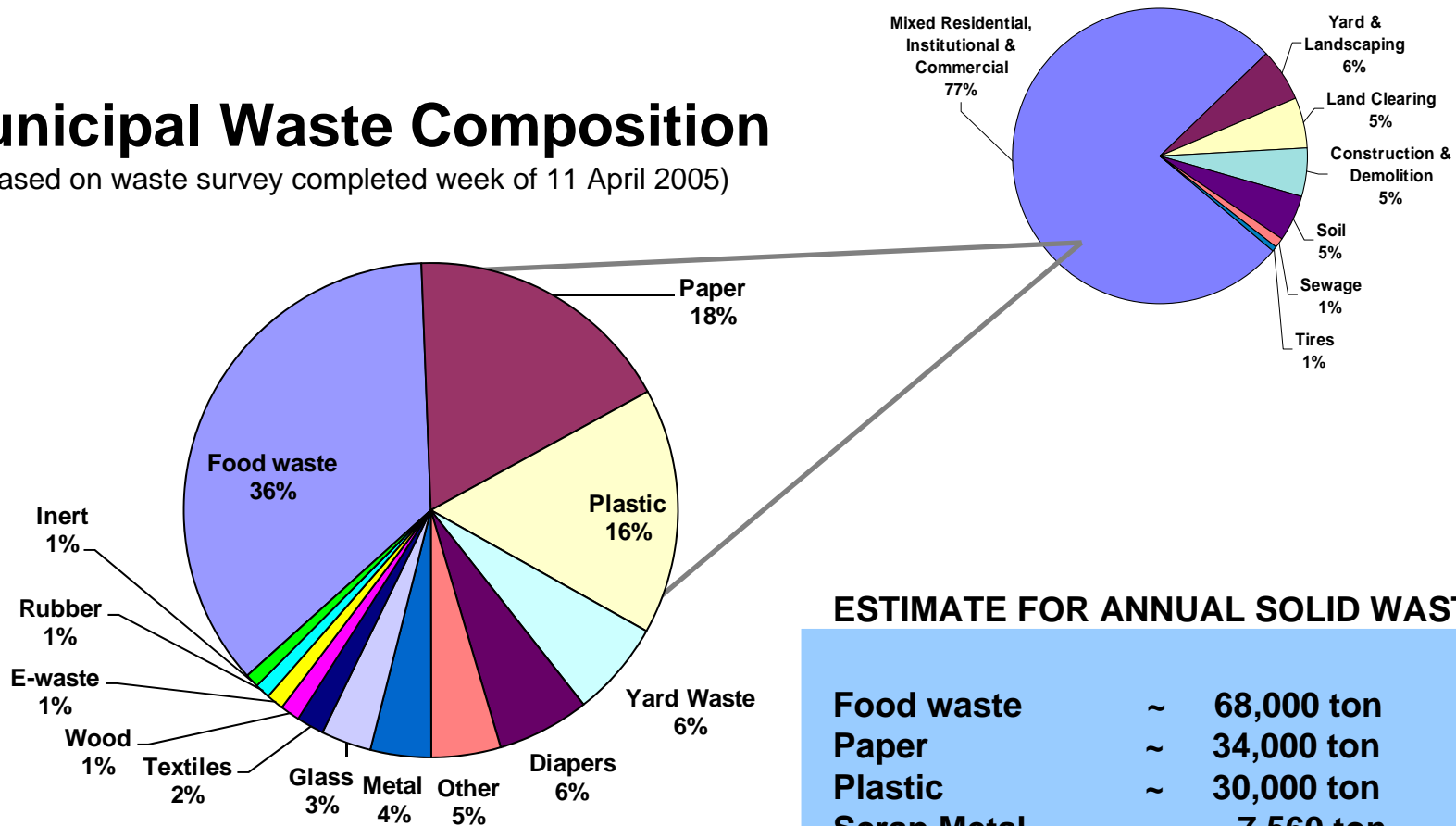


Total Waste Stream Estimate

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

Municipal Waste Composition

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

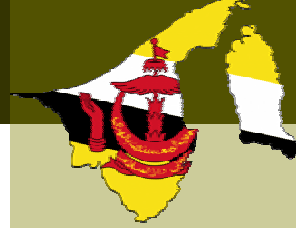


ESTIMATE FOR ANNUAL SOLID WASTE

Food waste	~	68,000 ton
Paper	~	34,000 ton
Plastic	~	30,000 ton
Scrap Metal	~	7,560 ton

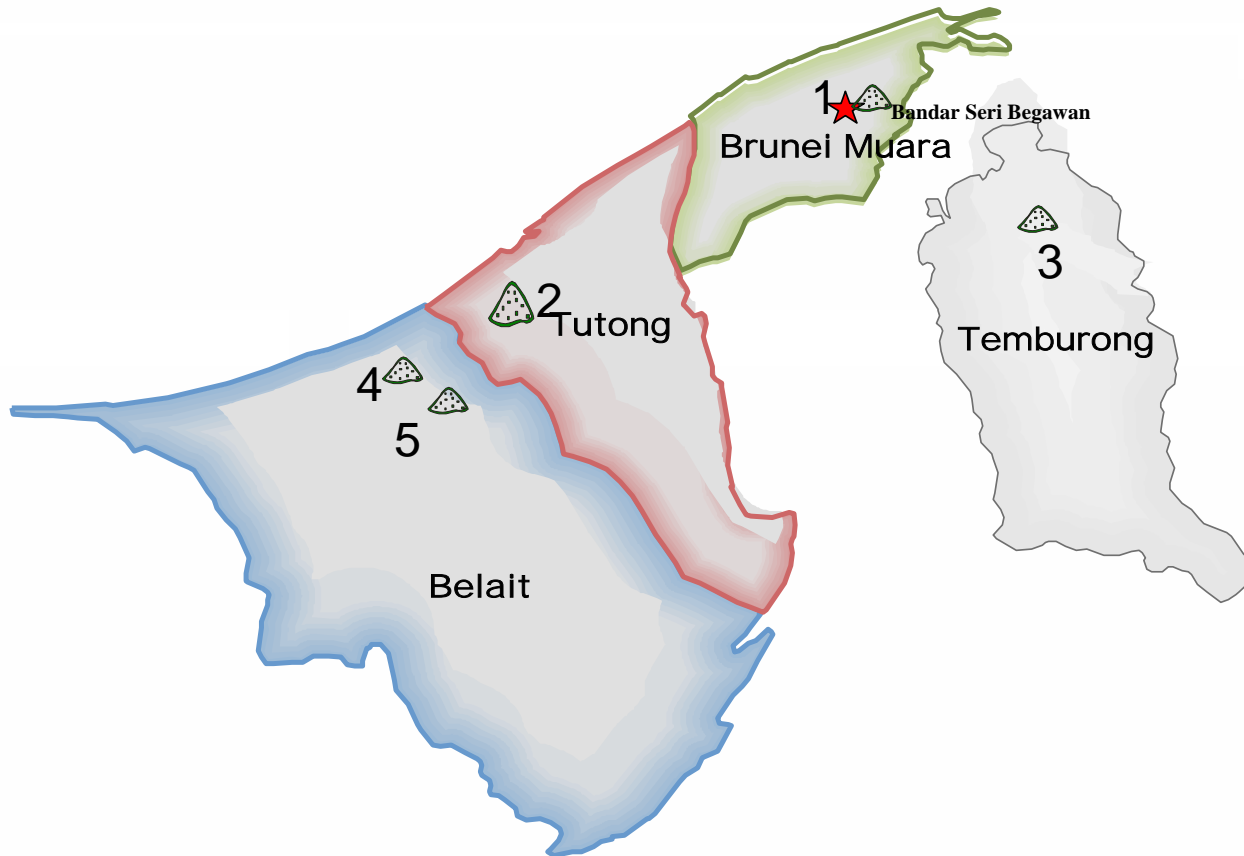


Location of Landfill in Brunei Darussalam

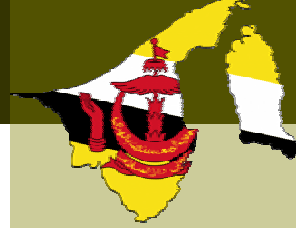


1. Sungai Akar, Brunei Muara
2. Bukit Udal, Tutong
3. Kampong Rubada, Temburong
4. Anduki, Seria
5. Dua-o-Dua, Seria (Eng. Private own)

Note: All landfills are dumpsite style except No: 5

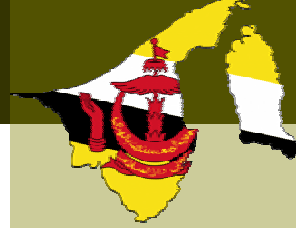


E-Waste and industrial Waste



E-Waste only contributes 1%, however it might be increased in the near future as more individuals will be disposing more electronic wastes (esp. Old computers and old mobile phones)

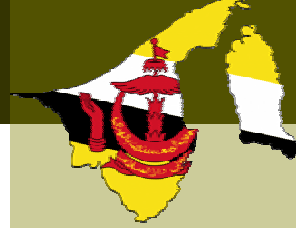
Industrial wastes generation are mainly from Brunei Shell Petroleum Industry (BSP), Brunei Liquefied Natural Gas Industry (BLNG) and New Brunei Methanol Industry. Basically, most of the wastes which are generated will be treated by companies themselves, however some chemicals waste will be disposed by exporting the chemical wastes to other approved countries through Basel Convention. Department of Environment, Parks and Recreation, Ministry of Development, Brunei Darussalam is a signatory to Basel Convention will be making the process.



EXISTING WASTE MANAGEMENT

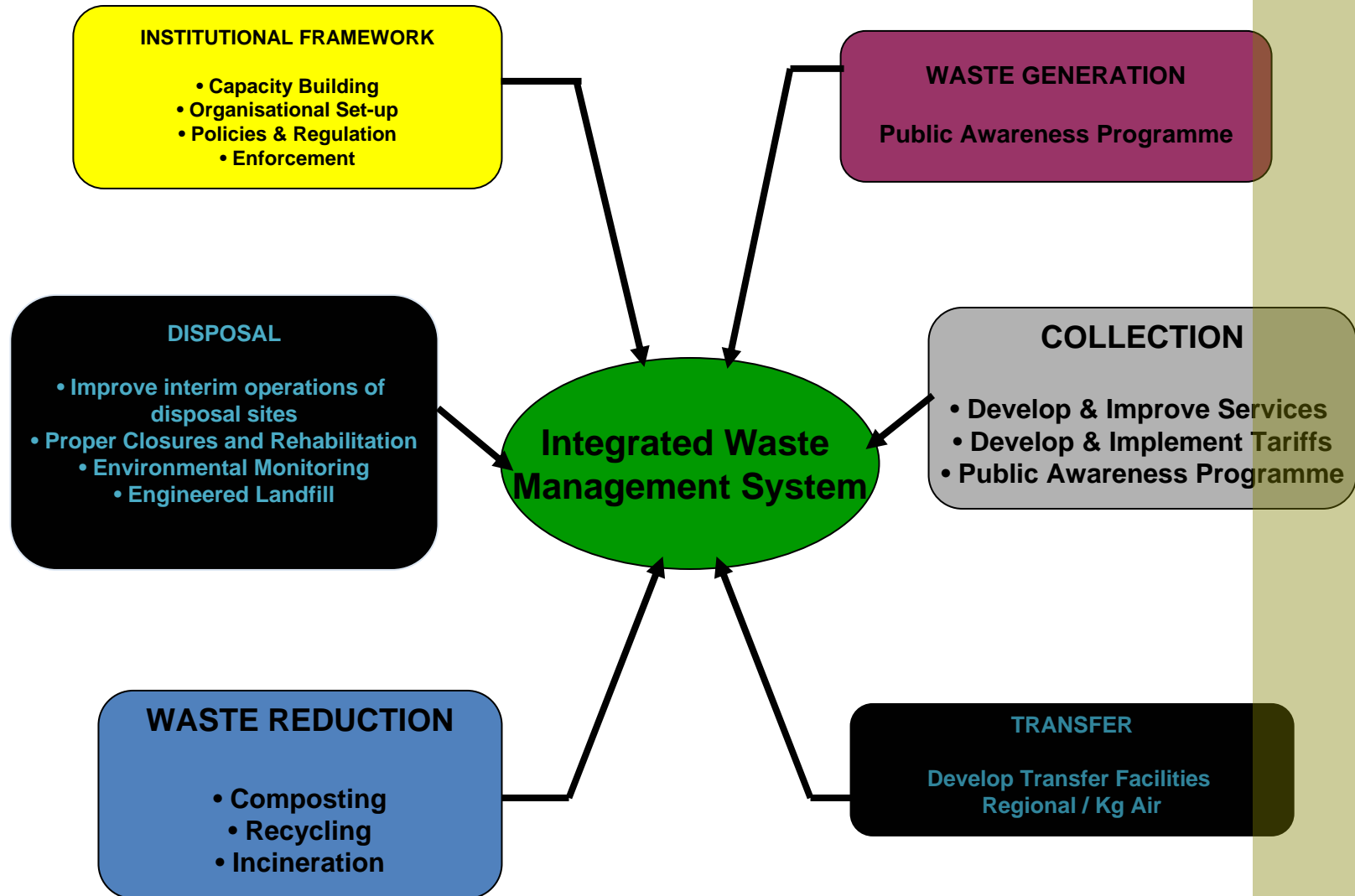
There are 2 existing authorities are dealing in waste management:

1. Department of Environment, Parks and Recreation, Ministry of Development. Basically, DEPR responsible for collecting and disposing solid waste for the whole Brunei Darussalam.
2. Department of Municipal Boards, Bandar Seri Begawan, Tutong and Belait -Seria, Ministry of Home Affairs, responsible for collecting and disposing municipal waste from municipal areas only.



Challenges and problems affected waste management to set up Recycling activities (or 3R concept)

- Often solid waste from homes, shops and offices are mixed together; wet and dry wastes.
- There is no company yet establish recycling plant either for scrap metal, plastic, paper or glass.
- Some companies have started to establish stock piling of recyclable wastes such as scrap metals, plastic, paper, used motor-vehicle batteries for recycling.
- These recyclable wastes are being exported to other countries for recycling.
- There should be a responsible authority set up to monitor and issue license to recycling companies.
- Location of recycling companies are always in the residential areas due to companies are renting land. Often public is complaining due to concerned companies are unable to arrange the stock file of recyclable wastes in systematic way as requested by Health Dept.
- Prices of recyclable waste are normally unstable and very low especially plastic and paper, on the other hand aluminum and other metals have a competitive prices.
- Many companies are not able to set up compost making industries in the country due to expensive process, cheap price and considerably low returns.





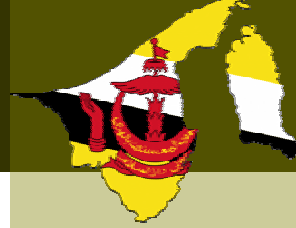
List of private companies in Brunei Darussalam already established recycling activities

These companies are only stock piling recyclables materials and export them to other countries for recycling.

- Daikyo Environmental Recycling Sdn. Bhd
(Scrap metal, used paper, used computers and used plastics)
- Syarikat Perindustrian Dan Perkembangan Pemotongan Dan Memasak Besi
(Scrap metal and used motorcar batteries)
- Sallima Recycling Works
(Scrap Metal and used motorcar batteries)
- Brucycle Sdn. Bhd .Company
(Scrap Metal and used plastics)
- Seri HK Recycling Sdn Bhd
(Scrap Metal and used tires)
- Kawan Bumi Enterprise,
(Scrap Metal and used paper)
- Vallevard Trading Company
(used paper only)
- P.Z.Imansyah Enterprise
(Scrap Metal and used paper)

Example of Stock Piling

Daikyo Environmental Recycling Sdn. Bhd.
(Scrap metal, used paper, used computers and used plastics)



Stock piling

Used paper recycling activities

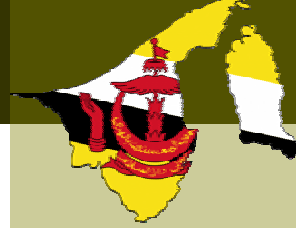


Daikyo Environmental Recycling Sdn. Bhd.
(used computers)



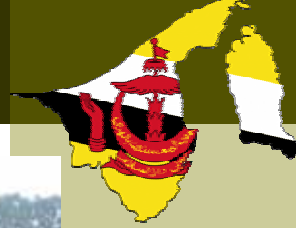
Example of Stock Piling

Sallima Recycling Works

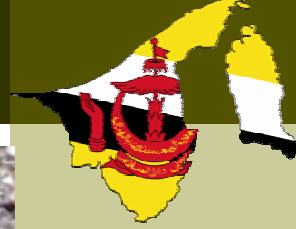


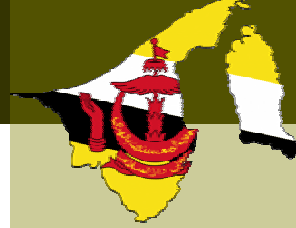
Example of Stock Pile

Sallima Recycling Works



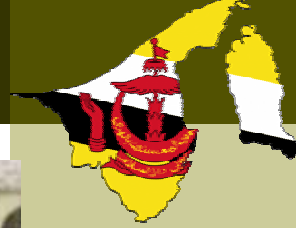
Sallima Recycling Works Sdn Bhd

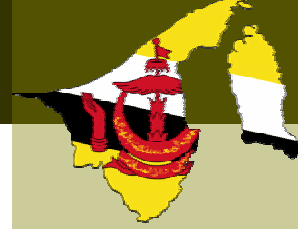




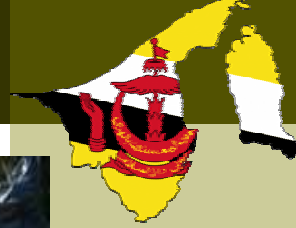
Weight bridge is very crucial in recycling of scrap metals







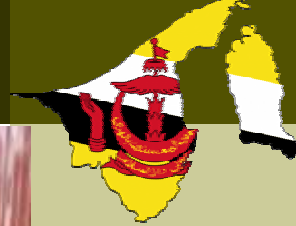
Department of Environment, Parks and Recreation staff make use of green waste to make composting



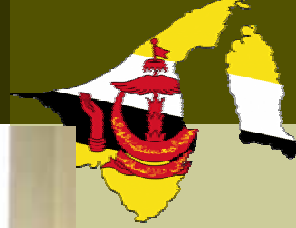
These compost products are used for department's recreation and landscaping areas



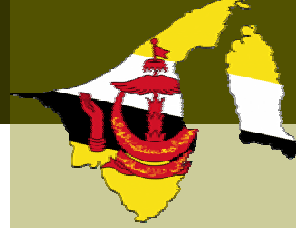
Dept. of Environment, Parks and Recreation initiates used tires shredding activities.



The main objectives of the shredding used tires activities are to reduce wastes, to reuse the resources, to get economic returns and to creates healthy environment.

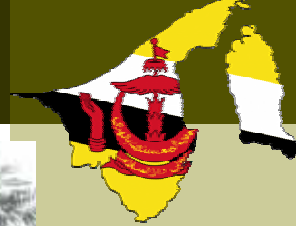


Initiative undertaken by Dept. Environment Parks & Recreation



1. Promotes 3R in the new integrated solid waste management system.
2. Promotes secondary school to establish eco club or environmental club.
3. Set up activities in the secondary schools to do separation of waste which 3 types of bins provided by local companies.
4. Promotes the usage of reusable bags in order to reduce plastics.
5. Giving talks/lectures to schools and villages committee(grass-root level) promotion on 3R should be practice by Brunei society.
6. Cooperation with Recycling companies to provide Recycling Bins for some of government offices.
7. Promotes public-private Partnerships with university student to conduct public awareness in 3R initiatives in primary schools.
8. Set up cooperation with supermarket operators to promotes reusable shopping bags targeting the reduce of plastic wastes.

Initiative undertaken by DEPR



Recycling bins have been placed in the government and public compounds



Recycling bins have been placed in the school compounds

Conclusion and Recommendation

Although Brunei Darussalam is a very small country with a low population, but solid waste generation is considerably fast and high due to modern lifestyle (1.4 kg/person/day). Therefore, integrated waste management with the adaption of 3R should be implemented in the country.

3R concept has been implemented in almost all developed countries. It has been proven that this system could help to reduce the volume of wastes being land filled and sustaining the healthy environment and leads to good economic development .

Brunei Darussalam has been supporting 3R concept by promoting this activities to all medium the schools and grass-root level (villages) as a part of continues public awareness campaign.

Brunei Darussalam has been continuously participating in international activities in 3R such as seminars, conferences, courses and workshops. More knowledge and experiences could be gained by participants in order to implement 3R activities in the country.





Conclusion and Recommendation (cont.)

3R activities that have been attended.

Three officers from Ministry of Development, Brunei Darussalam have participated in the Training Program On Minerals/Metals Recovery And Recycling [ANMR] held 8 March to 26 March 2010, in Tokyo, Japan.

Brunei Darussalam had participated in the Regional Technical Training Workshop on environmentally sound collection, separation and management of e-wastes. The Workshop was held from 13 to 15 July, 2010 in Jakarta, Indonesia and 2 officers from Department of Environment, Parks and Recreation attended this workshop.

Participants from Brunei Darussalam also have been participated in several 3R Conferences in Tokyo, Japan.



- The End -

“Thank you”

