

Fourth Regional 3R Forum in Asia

“3Rs in the Context of Rio+20 Outcomes – The Future We Want”

Ha Noi, Viet Nam, 18-20 March 2013

Country Analysis Paper

(Draft)

< Brunei Darussalam >

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1.0 BACKGROUND

The concept of 3R (Reduce, Reuse and Recycle) is slowly taking its place in Brunei Darussalam, particularly amongst the younger generation. More and more youths are becoming active and participative in various environmental initiatives, and more are expressive and concern over environmentally related issues like climate change, environmental pollution, biodiversity, and also waste management and reduction. It is hoped, however, that this 3R concept will eventually be adopted by the different walks of life, no matter young or old.

With a small population of around 400,000 people, Brunei Darussalam rates amongst the highest in the region in terms of the waste generation per capita i.e. 1.4 kg per person per day.

Much of this waste comprises food waste (36%), paper (18%) and plastics (17%).

Looking at the broad canvas of this waste composition, there is a plethora of opportunities in terms of social, economic and environmental benefits with regards to waste minimisation in Brunei Darussalam.

2.0 POLICIES, PROGRAMMES AND INSTITUTIONAL

Brunei Darussalam through the Department of Environment, Parks and Recreation (DEPR), Ministry of Development, aims to achieve a recycling rate of 15% by 2015 and 20% by 2020.

Towards achieving this target, the DEPR looks at the potential of minimising plastics and paper wastes.

No Plastic Bag Weekend

Brunei Darussalam launched the *No Plastic Bag Weekend*, a nation-wide initiative, on 26th March 2011. This initiative promoted the use of reusable and biodegradable bags as one of the ways to minimise plastic wastes. This initiative engaged a few big departmental stores, as the key players to impact the change of minimising the use of plastic bags.

The *No Plastic Bag Weekend* initiative was received well by the public at large. On 17th February 2012, this initiative was therefore extended to include Fridays, in addition to Saturdays and Sundays.

Recently, on 26th February 2013, Brunei Darussalam also launched the promotion of paper bags as an alternative to the use of plastic bags for groceries. This initiative was

pioneered by the local community of the Tanjong Maya village in one of Brunei Darussalam's four districts. A few selected provisional shops in the locality were engaged to undertake this initiative.

Brunei Environment Youth Envoy

The DEPR also focuses on empowering the youth to champion and partake in various environmental initiatives and activities, and become change agents in moving their peers and the community towards environment ownership and sustainability.

In 2009, the Brunei Environment Youth Envoy (Brunei EYE) was established under the guidance of the DEPR to : nurture and build a network to foster environmental awareness and action amongst youths at the national and regional level ; collaborate and cooperate on environmental sustainability projects ; and, enhance environmental knowledge and build capacity for them to be able to share and impart their knowledge to other youths.

Thus far, the Brunei EYEs had successfully carried out awareness on 3R programmes for five (5) primary schools in Kampong Ayer (water village on the Brunei River), and also two (2) primary schools on land.

The Brunei EYEs also participated in the Youth Environmental Programme i.e. exchange programme with Singapore, and the ASEAN+3 Youth Environment Forum in 2010, as a means to gain exposure and broaden their horizons, and also exchange ideas, knowledge and experience with regards to environmental sustainability projects for their own professional and personal development.

Eco-Clubs

Currently, the DEPR is also guiding and supporting 16 secondary schools with Eco-clubs that are registered under the DEPR throughout Brunei Darussalam.

These Eco-clubs are self-run by the students and guided by the teachers at the respective schools. They are involved with various environmental projects and activities such as the 3R programme and greening activities carried out in their own schools.

These Eco-clubs are also participative in the DEPR environmental awareness activities like beach cleaning campaigns to reduce the amount of litters along the beaches, particularly plastics, in the effort to keep the beaches clean.

3.0 TECHNOLOGIES AND INFRASTRUCTURE DEVELOPMENT

The DEPR plays an important role in promoting green and environmentally sound technologies and also the development of various infrastructures in relation to 3R. Aside from the house-to-house collection of domestic wastes, the DEPR is also responsible for the management of waste collection centres at strategic locations throughout the country as an alternative mode of waste collection and disposal for the public.

Recycling Bins

Recycling bins for papers, plastics and metals, are a must in all the waste collection centres in the Brunei Muara District (the largest of all the four Districts in Brunei Darussalam that houses almost 80% of the country's population). This is intended to educate and increase the awareness to practice recycling in the everyday lives.

These recycling bins will eventually be introduced to other waste collection centres in other districts in stages. The recycling bins are also actively being introduced to higher learning institutions like the Universiti Brunei Darussalam, Institute Technology Brunei and Business Schools, to name but a few.

Waste Shredder

In 2008, the DEPR had undertaken Phase 1 of the Cleaning up of the Brunei River Project. Along with this project, the DEPR promoted several activities amongst the local community in the Kampong Ayer towards waste reduction and conservation efforts of the Brunei River.

The DEPR introduced recycling bins in Kampong Ayer to create awareness on recyclables i.e. paper, plastics and metals ; waste shredder at the Ayer Bekunchi waste collection centre along the Brunei River, to shred wood and timbers extracted from the Brunei River clean up to be used as chippings and composting materials ; and, promoting 3R programmes amongst primary schools in Kampong Ayer.

During the period of the project, as much as 195.5 tonnes of plastics and around 93.18 tonnes of metals were collected as recyclables respectively. And at least 1500 tonnes of the wood wastes collected were either shredded to make chippings for landscaping and composting purposes or given to local brick factories for burning purposes.

Composting

In relation to green wastes, the DEPR continues to implement the initiative of making compost as one of the ways to utilise grass cuttings, and the branches and leaves from tree cuttings. The DEPR is responsible for the landscaping works and tree pruning activities along major roads and some government premises.

This composting initiative is a follow-up of the small-scale project undertaken in late 2005 where DEPR initiated composting as a way to reduce the use of organic and non-organic fertilizers in its routine landscaping works.

This project was awarded the Bronze Award for projects that merits cost savings and revenue making in the finance sector at the Brunei Darussalam's Civil Service National Project Awards in 2006.

Material Recovery Facility for Used Tyres

The DEPR also initiated the development of a material recovery facility for used tyres, in the Tutong District (one of the four districts in Brunei Darussalam).

This initiative involved the engagement of a local company to undertake the shredding of used tyres and separate it to rubber and metal threads as the by-products that are used for other purposes. This was considered a practical and more appropriate and viable solution, as a first step towards other downstream processes e.g. granulation or producing rubber crumbs, which could thus be utilised for other applications or to be eventually landfilled.

The company was given the freedom to propose and introduce technology for the purpose of material recovery, and so long as the technology was compliant to the emissions and discharge limits, within the capabilities and capacities of the company, and also within the realms of regional or the local market and expertise, and the technology was practical and implementable, it was acceptable to the DEPR.

4.0 NEW EMERGING WASTE STREAMS

Development of the downstream petrochemical industry in Brunei Darussalam will give rise to many and new types of wastes in the waste stream. These wastes merits special attention in order to be managed and reduced its adverse impacts to the environment.

Toxic and Hazardous Wastes

In 2012, the DEPR had recently completed the development of toxic and hazardous waste management plan for Brunei Darussalam. The plan entails the inventory of toxic and hazardous wastes in the government and private sector, and the setup of a basic facility for treatment and disposal facility for Brunei Darussalam.

Electronic Wastes

This accounts for only 1% of the total waste composition. Currently, Brunei Darussalam does not have any written policy on the collection and separation of e-wastes. It has yet to embark on establishing policies and regulations on the collection and separation of e-wastes. As a norm, some recyclables like plastics and glass are extracted for reuse while the remaining parts are crushed and disposed at the landfills.

5.0 INDUSTRIAL AND BUSINESS SECTOR

Oil and Gas Industry

The economy of Brunei Darussalam is highly dependent on the oil and gas industry. Much of the wastes resulting from this industry are dealt with by the respective companies viz. Brunei Shell Petroleum (BSP), Brunei Liquefied Natural and Gas (BLNG) and the Brunei Methanol Company (BMC).

In the absence of a full-scale and proper treatment and disposal facilities for these toxic and hazardous wastes e.g spent catalyst and chemicals, carbon with mercury, and motor fuel, these wastes are arranged for export under the Basel Convention.

Packaging

Beverage cartons comprise approximately 75% fibre, 25% polyethylene and 5% aluminium. When further processed and recycled, the components of the beverage cartons can be separated, and again be used as raw materials for new products. The fibres can be used again as paper and board products, the polymer for plastic applications and the poly-aluminium for pellets.

In this regards, a collaborative effort between the Ministry of Development, through DEPR, Tetra Pak (one of the world's leading food processing and packaging solutions company in the region), and Daikyo Environmental Recycling (a local company), to collect beverage cartons from the community, including schools and learning institutions, shopping malls and supermarkets, commercial areas like restaurants and hotels, and also residential houses, for the purpose of recycling, was initiated on 5th May 2011.

This initiative is still on-going and it is in line with the aspiration towards waste minimisation, that forms an integral part of the integrated waste management system. It compliments the initiative of promoting reusable bags to reduce the use of plastic bags over the weekends, introduced by the DEPR in 2011, where the collection of beverage cartons for recycling will contribute to waste diversion and waste reduction in the waste stream, before being disposed at the landfills.

6.0 CONCLUSION

Recycling is still in its infant stage in Brunei Darussalam. In its strive towards an integrated waste management system and towards a zero waste society, it foresees and anticipate many challenges as follows:

- consolidating efforts and participation of the government bodies and various stakeholders
- bridging the gap of the 3R concept to a wide range of sectors and waste streams such as agriculture, industry, business, and energy
- the need to change the mind-set and behavioral pattern of the public towards resource efficiency
- enhancing the capacities and technologies in the public and private sectors, local communities and the civil society, and also learning institutions, and
- institutionalising the 3R policies to build a resource efficient and resilient society.