

Managing Wastes to Build a Green Bangladesh

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Abstract

Waste management and recycling has been a widely addressed area in the world of scarcity in terms of resources. The first world has already been able to awaken the society and has established a social green movement. Sustainable development cannot be imagined if the resources are not properly utilized. Recycling non-biodegradable wastages such as plastic bottles can help in saving the environment as well as reusing them as resources. This paper aims at analyzing the existing practice of waste management processes, comparing the practice with a first world city i.e. London, provides techniques to collect them successfully, by the contribution of local government in this regard and eventually triggering a social movement in order to initiate a social green movement in Bangladesh. The paper also attempts to propose a Waste Management Triangle for a successful waste management process. This comparative analysis has been done mainly by using secondary data from internet, particularly from Youtube, and from observation of the author in different towns in Bangladesh and in London.

Key terms: Non-biodegradable wastes; green Bangladesh; green movement

Introduction

Loss of something by using too much of it or using it in a way that is not necessary or effective is called wastage (Merriam-Webster Dictionary, n.d.). Non-biodegradable waste is, according to Anon. (n.d.) in reference.com, "a type of waste that cannot be broken down into its base compounds by micro-organisms, air, moisture or soil in a reasonable amount of time". The typical non-biodegradable nature of plastic items itself is an environmental threat, as it concerns to overwhelm landfills and create disposal problems. The huge number of growing population poses the threat of managing non-biodegradable waste in Bangladesh like other countries of the world. An effective process of managing non-biodegradable waste can contribute towards making a green Bangladesh.

Objectives

Use of plastics has been increased geometrically according to the increased population and the challenge of disposing of those plastics has been emerged along with other degradable and non-biodegradable waste. Successful management of the non-

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biodegradable waste can contribute achieving the 6th target of 11th goal of SDGs, which suggests to 'make cities inclusive, safe, resilient and sustainable'. The 6th target of 11th goal is 'by 2030, reduce the adverse per capita environmental impact of cities, including by paying special attention to air quality and municipal and other waste management'. Apart from addressing the 6th target of 11th SDG, this study attempts to-

- a. explore and analyze the existing practice of managing waste in Bangladesh
- b. compare the practice of managing those of a first world city i.e. London
- c. figure out relevance of green movement among the citizens of the society
- d. recommend a management model for successful management with an involvement of the local governments of Bangladesh

Scope and Limitations

The challenge of managing the waste is a global concern, and the importance for Bangladesh is undeniable. The recyclable waste items include aluminum, plastic, glass, paper, bones, plastic bags, electronic waste, medical waste etc. that needs a little more attention rather than the biodegradable waste like kitchen items, clothes, jute bags etc. The research has been conducted by the author not backed by solid theoretical knowledge but the experience of living in a developed city (London) and living in the cities of Bangladesh. Showing dares to compare waste management process of Bangladesh with a first world city can be considered as another questionable aspect of the research. But as Bangladesh proceeds to become a middle income country, the development with sustainability like successful waste management and green movement can contribute in this regard. The reasons for undertaking London as a comparing city are, firstly, London is one of the best cities in the world in waste management and recycling and secondly, the practical experience of the author living in London for six years.

Methodology

This comparative analysis is typically qualitative in nature. Exploratory approach has been undertaken to compare management processes of Bangladesh and London. The data has been explored and collected mainly by using secondary data from internet. Practical experience of the author by living in different cities of Bangladesh and London, not as the home cities, has contributed a lot in developing the idea, placing the opinions and attempting to draw a conclusion. The findings have been organized and created the Waste Management Triangle showing the role of local government (municipality). Similarly, the waste management process of London has been developed from the data collected from secondary sources.

Classification of Waste

Various forms of waste include solid, electronic, liquid, plastic, metal, medical and nuclear. The wastes can be classified into two categories based on the degradability viz. biodegradable and non-biodegradable. Biodegradable wastes can easily be managed in the household with a little care. But the non-biodegradable wastes like plastic bags, buckets, plates, glass, metal scrap (Varghese, 2013) cannot be easily managed and above all the dimension of threats created by this category has the widely spoken long-term effect in the climate of the world.

Use of Non-biodegradable Items in Bangladesh

The maximum number of plastic use is found in the mega cities of Bangladesh. Figure 1 demonstrates the use of plastics in the cities of Bangladesh in percentage. Presumably, the highest 65% belongs to Dhaka city.

Plastic Use in Bangladesh

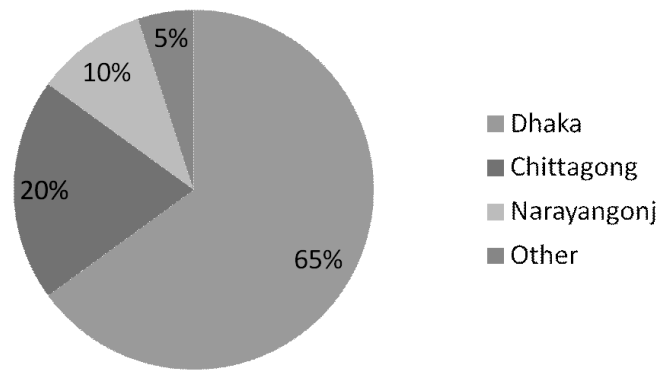


Figure 1: Plastic Use in Bangladesh *adapted from Ahamed (n.d.)*

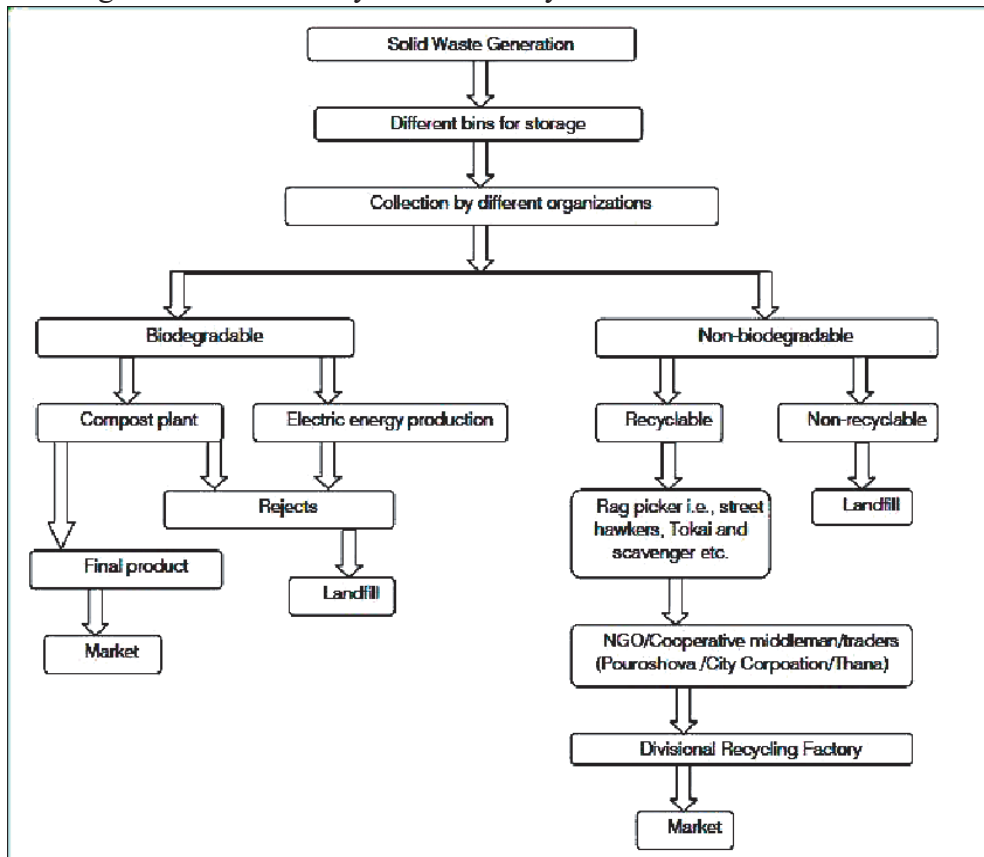
Being a signatory to Basel Convention, Bangladesh prohibits trans-boundary movement of hazardous waste and government permission is required to import any kind of waste (Waste Concern, 2009). Basel Convention is a treaty aiming 'to protect human health and the environment against the adverse effects of hazardous wastes' (Secretariat of the Basel Convention, n.d.). As at the end of March 2016, the number of total internet users in Bangladesh are 61.288 million (BTRC, 2016[a]) and at the end of January 2016, the number of total subscribers of mobile phones in Bangladesh are 131.956 million (BTRC, 2016[b]). And this huge number of users is behind causing approximately 3 million metric ton e-waste in Bangladesh (ESDO, 2014). The number of vehicles is increasing day by day in accordance with the population increase. As a result, the number of used lead acid battery and bio medical waste are increasing geometrically. Bangladesh pioneering ban on manufacturing and use of polythene in the world (Green Page, 2013) cannot ensure the enforcement of this law. The bitter consequence is the huge poly waste all over the country.

Recycling As an Industry

Recycling has emerged as a promising industry in Bangladesh like many other countries of the world. The idea of recycling has been able to grasp the attention of many socially conscious people in the developed world whereas it has been emerged as an industry in Bangladesh. The businesspersons of the country have discovered the industry and scope of making money out of it. Bangladesh when attempting to be a middle-income country needs to focus on the smooth management of the waste by increasing the role of local government rather than just relying on the businesspersons. Countries and continents are taking responsibilities to protect their countries. Bangladesh needs to address the problem by ensuring contribution from businesspersons, general people and the local government in order to achieve sustainability in the development.

Waste Management Process in Bangladesh

Most of the garbage is thrown on the roadside in the cities of Bangladesh. There are designated bins in the cities. However, insufficient numbers of bins are not properly utilized because the municipalities do not collect the garbage on time; the citizens are not keen to protect the environment. Riyad and Farid (2014) proposed a model of solid waste management in their study in Khulna city.



The key advantages of the management process (Figure 2) are that it not only addresses all sorts of waste that are created but also indicates specifically how to manage them. The process itself seems to be a replica of that of a western society. Even though it could not be confirmed how this process was implemented, it demonstrates the involvement of all stakeholders in order to manage the waste successfully.

How do the City of London Collect Waste?



Figure 3: Waste Management Process of City of London (Prepared by the help of the video of NV at CEPImperial, 2014)

Time Bandings in the City of London

| Time bandings | | |
|-----------------|---------------------------------|---|
| Times | Restrictions | Details |
| 8am to 6pm | No bags on highway or footpaths | Between 8am and 6pm businesses and residents will be restricted all year round from putting out bagged/loose waste and recycling for collection on the highway/pavements. |
| 6pm to midnight | 2 hour restrictions | Between 6pm and midnight, any waste placed out by businesses for collection will have to be collected within a two (2) hours period from placement time. Residents will have to place their waste out for collection between 6.30pm and 7.30pm. |
| Midnight to 8am | No restrictions | Between midnight and 8am no restrictions on placement for businesses but any bagged/loose waste must be cleared by 8am. |

Figure 4: Time Bandings in the City of London (City of London, n.d.)

Waste Collection in London



www.alamy.com - A98NYP

Figure 5: A Typical Scene of Streets in UK (Alamy, n.d. [a])



a alamy stock photo

GW5919
www.alamy.com

Figure 6: Mixed Recycling Bins in Limehouse, Tower Hamlets, London (Alamy, n.d. [b])

Littering Dhaka City



Figure 7: Littering Dhaka City (The *Daily Star*, 2015)

Notion of Green Bangladesh

Green movement has had a major attention in the western societies since long. However, the people of Bangladesh are not as aware as they should be. The idea of making a green world has gained popularity when human being is creating threats for the world by exploiting the natural and artificial resources. After the commencement of modern green movement in the western world (Lallanilla, 2016), the western society has been able to lift up the notion to its mass people; on the contrary, among all other social problem, this notion failed to be established as a priority. Therefore, it is important to create awareness among the citizen of Bangladesh about the notion of green Bangladesh. The Public Social Responsibility (PSR) of the citizen of this country will be enhanced when they will be inspired to build a green Bangladesh. Thus, the role of citizen is vital to create a green Bangladesh and citizen can be considered as one of the key stakeholders in this process.

It is the government who takes the initiative for the management of biodegradable or non-biodegradable wastage. However, unfortunately, it is hardly easy for the government to implement the plans undertaken. The key reason is the lack of awareness among the mass people. The Non-Governmental Organizations (NGOs) play the vital role in the society to create awareness for the contribution to manage the wastage.

Waste Management Triangle

It is quite impossible to manage wastage and create a green Bangladesh if the key three stakeholders, namely, the government, the NGOs and the Citizen do not work together. Therefore, the following Waste Management Triangle can deserve more attention. It is a model, which demonstrates the role of local government, civil society and the citizen in order to manage the waste successfully.

Role of Local Government

Local government plays the most important role in managing wastage and making a city green. The Green Town Bus Service is a pioneer initiative taken by the Feni municipality back in 2004 in Bangladesh. The service, somewhat first in the district level in Bangladesh, contributes a lot for the transportation in Feni town. If the town undertakes a long term plan like Waste Strategy 2013-2020 (City of London, 2014), taken by the city of London, it can contribute in the long run towards building a sustainable city like London. Engaging people, inviting the contribution of them and frequent supervision of the local government can help creating a sustainable management process combing the government, the civil society and the citizen. The local government, particularly, can undertake the following activities, like the city of London, to manage the waste successfully-

1. Sending the recyclable bin bags to the households, commercial places to keep the waste as part of the collection process (e.g. figure 5);
2. Arranging vehicles to collect the bags from the streets next to the households or commercial places;
3. Introducing time-band for waste collection from the households and corporate areas (e.g. figure 7);
4. Setting up recycle factory to sorting the wastes out, composing the bio-degradable wastes converting them into fertilizer; recycling the non-biodegradable wastes into new items for further use.

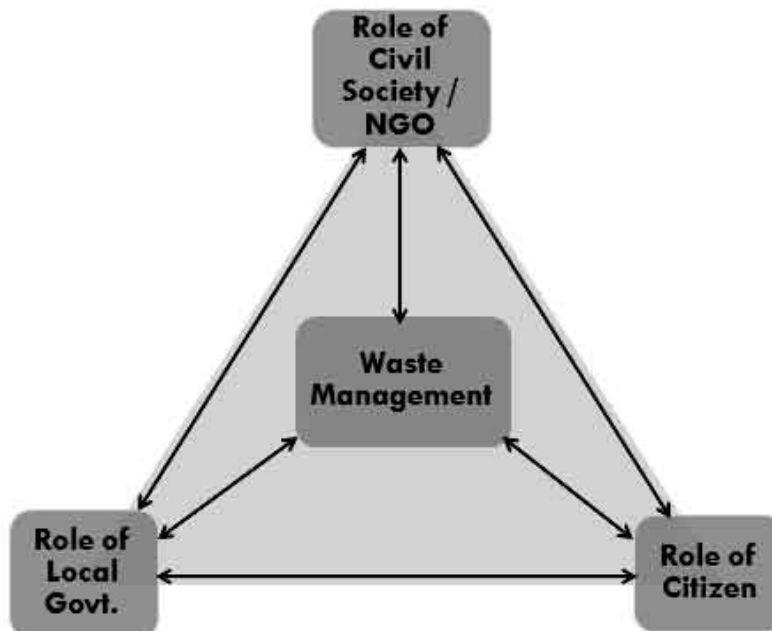


Figure 8: Waste Management Triangle

Role of Civil Society / NGOs

It is the civil society of a country, which contributes to aware the common people to achieve any great cause. Successful waste management is somewhat impossible without a motivated society. If the society itself is interested in implementing the plan of the local government, then, there is no other option than to be successful. Inclusion of Amitabh Bacchan, a mega-star of Bollywood, in the TV commercial of Clean India Movement introduced by the Ministry of Drinking Water and Sanitation of the Government of India, encourages and inspires common people to make India clean (Swachh Bharat Mission Gramin, 2016). Inclusion of religious leaders is another way to motivate common people for a social movement. Holding procession, rallies, meetings, seminars, etc. can be a way of including civil society and the common people in order to implement the waste management triangle.

Role of Citizen

The primary role of the citizen towards the success of the waste is to participate actively. The participation will be ensured, the plan of the local government can be executed. For this purpose, a motivated society is essential. A motivated society can be built by the active participation of NGOs and civil societies.

Concluding Remarks

The notion of Green Bangladesh and the term Reduce-Reuse-Recycle is the motto of modern world for future sustainability. The scarcity of resources may be complemented by reducing the use of items harmful for the environment; by reusing the same thing repeatedly to save the further production of the reusable items and lastly making new items by recycling them to subsidize the scarcity.

The Waste Management Triangle (figure 8) proposed here can be influential for the successful management of waste in Bangladesh as it has been tested and followed in the western countries, particularly, in London. In spite of having various rules and acts in force by the government in Bangladesh, the success rate is not significant. By following the Waste Management Triangle, the country can see a remarkable development in waste management. The local government can consider public-private partnership (PPP) in order to collect and establish recycle industry. The sustainability and the better health condition can be achieved through the successful management of waste in Bangladesh and the success can be achieved if the three components of Waste Management Triangle perform harmoniously.

References

Ahamed, M. (n.d.). "A Report on Plastic Industry of Bangladesh". Retrieved on 04 March 2017 from <http://docplayer.net/28602902-A-report-on-plastic-industry-of-bangladesh-mansur-ahamed-ph-d-research-department-jbbc-corporation.html>.

- Alamy (n.d. [a]). "Council supplied plastic black rubbish bags outside ready for collection." Retrieved on 20 March 2017 from <http://www.alamy.com/mediacomp/imagetdetails.aspx?ref=AE16H6>.
- Alamy, (n.d.[b]). "Stock Photo - Overflowing mixed recycling bins in Limehouse, Tower Hamlets", London. Retrived on 20 March 2017 from http://www.alamy.com/stock-photo-overflowing-mixed-recycling-bins-in-limehouse-tower-hamlets-london-118745461.html?pv=1&stamp=2&imageid=402F5E5D-7883-417F-ABD1-2FEF0E5F43EC&p=216171&n=0&orientation=0&pn=1&searchtype=0&IsFr.omSearch=1&srch=foo%3dbar%26st%3d0%26pe%3d001%26so%3d4%26pn.%3d1%26ps%3d100%26sortby%3d2%26resultview%3dsortByPopular%26np.gs%3d0%26qt%3doverflowing%2520litter%2520bin%26qt_raw%3doverflowing%2520litter%2520bin%26lic%3d3%26mr%3d0%26pr%3d0%26ot%3d0..%26creative%3d%26ag%3d0%26hc%3d0%26pc%3d%26blackwhite%3d%26.cutout%3d%26tbar%3d1%26et%3d0x000000000000000000000000%26vp%3d0...%26loc%3d0%26imgt%3d0%26dtfr%3d%26dtto%3d%26size%3d0xFF%26ar.chive%3d1%26groupid%3d%26pseudoid%3d%26a%3d%26cdid%3d%26cdsr.t%3d%26name%3d%26qn%3d%26apalib%3d0%26apalic%3d%26lightbox%3d%26gname%3d.....%26gtype%3d%26xstx%3d0%26simid%3d%26saveQry%3d%26editorial%3d1%26nu%3d%26t%3d%26edoptin%3d%26customgeoi.p%3d%26cap%3d1%26cbstore%3d1%26vd%3d0%26lb%3d.
- Anon. (n.d.). "What is non-biodegradable waste?" Retrieved on 03 March 2017 from <https://www.reference.com/science/non-biodegradable-waste9154deccb3048454>.
- BTRC (2016[a]). "Internet Subscribers Bangladesh March 2016". Retrieved on 04 March 2017 from <http://www.btrc.gov.bd/content/internet-subscribers-bangladesh-march-2016>.
- BTRC (2016[b]). "Mobile Phone Subscribers Bangladesh January 2016". Retrieved on 04 March 2017 from <http://www.btrc.gov.bd/content/mobile-phone-subscribers-bangladesh-january-2016>.
- City of London, (2014). "WASTE STRATEGY 2013-2020". Retrieved on 20 March 2017 from <https://www.cityoflondon.gov.uk/services/environment-and-planning/waste-and-recycling/Documents/city-of-london-waste-strategy.pdf>.
- City of London, (n.d.). "Time Banding". Retrieved on 20 March 2017 from <https://www.cityoflondon.gov.uk/services/transport-and-streets/clean-streets/Pages/time-banding.aspx>.
- ESDO (2014). "Magnitude of the Flow of E-waste in Bangladesh". Cited by Rahman. S.(n.d.).*Global Journals Inc.* (USA). Online ISSN: 2249-4596 & Print ISSN: 0975-5861..Retrieved on 19 March 2017 from<http://engineeringresearch.org/index.php/GJRE/article/view/1075/1007>.
- Green Page (2013). "Bangladesh: world leader in banning the plastic bag". Retrieved

- on 19 March 2017 from <http://greenpagebd.net/bangladesh-worldleader-in-banning-the-plastic-bag/#.WM43MNKGNDg>.
- Lallanilla, M. (2016). "The History of the Green Movement". Retrieved on 20 March 2017 from <https://www.thespruce.com/what-is-the-green-movement-1708810>.
- Merriam-Webster Dictionary, (n.d.) "Wastage". Retrived on 23 September 2017 from <http://www.learnersdictionary.com/definition/wastage>.
- NV at CEPImperial (2014). "London's Municipal Waste". Retrived on 20 March 2017 from <https://www.youtube.com/watch?v=Qf4912XQnz8>. Retrieved on 19 March 2017 from <http://greenpagebd.net/%E0%A6%87-%E0%A6%AC%E0%A6%B0%E0%A7%8D%E0%A6%9C%E0%A7%8D%E0%A6%AF%E0%A6%AA%E0%A6%B0%E0%A6%BF%E0%A6%AC%E0%A7%87%E0%A6%B6%E0%A6%AC%E0%A6%BF%E0%A6%AA%E0%A6%B0%E0%A7%8D%E0%A6%AF%E0%A7%9F%E0%A7%87/#.WM4pENKGNdg>.
- Riyad, A.S.M. and Farid, S.H. (2014). "Challenges of Waste Generation & Improvement of Existing Scenario in Commercial City of Bangladesh". *Global Journal of Researches in Engineering: eCivil and Structural Engineering*, Volume 14 Issue 1 Version 1.0 Year 2014. Retrieved on 23 September 2017 from <https://globaljournals.org/item/2600-challenges-of-waste-generation-improvement-of-existing-scenario-in-commercial-city-of-bangladesh>.
- Secretariat of the Basel Convention (n.d.). "Objective". Retrived on 19 March 2017 from <http://www.basel.int/TheConvention/Overview/tabid/1271/Default.aspx>.
- Swachh Bharat Mission Gramin, 2016. "Amitabh Bachchan as 'Mard' - Swachh Bharat Mission". Retrieved on 23 September 2017 from <https://www.youtube.com/watch?v=rXy9UJjmdng>.
- The Daily Star (2015). "We Need a Clean City". Retrieved on 20 March 2017 from <http://www.thedailystar.net/letters/we-need-clean-city-112015>.
- Varghese, S. (2013). "Waste Management". Retrieved on 04 March 2017 from <https://www.slideshare.net/SijinVarghese1/waste-management-22323709>.
- Waste Concern (2009). "Waste Data Base of Bangladesh". Retrieved on 04 March 2017 from http://www.wasteconcern.org/documents/Waste%20Data20Base_2009.pdf.

Correction notice:

The word 'wastage' has been corrected as 'wastes' in the title and key terms of this article in the online version which was a printing mistake.

-Chief Editor