

Impact on Solid Waste Management in India-Some Issues

P.Manickam
Research Scholar (PhD Part Time)
Department of Environmental Economics,
School of Economics,
Madurai Kamaraj University, Madurai, Tamilnadu, India 625021.

Abstract

Urbanization gives improved municipal solid waste (MSW) generation and intuitive treatment of MSW reduces the urban environment and reasons health hazards. As well as a complete appraisal of MSW generation, its characterization, collection, and treatment options as experienced in India. The position of MSWM in Indian conditions and significant cities of India is also stated. The vital conditions for harnessing optimal welfares from the options for public private partnership and tests thereof and invisible part of rag pickers are also maintained. The study achieves that installation of devolved solid waste dispensation units in urban cities/towns and improvement of formal recovering industry sector is the need of the hour in emerging countries like India. An incompetent municipal solid waste management scheme may make serious harmful environmental effects like infectious sicknesses, land and water pollution, obstacle of drains and damage of biodiversity.

Keywords: Solid Waste Management, Environmental impacts, Land Pollution.

Introduction

India is having second largest population in the world after China with more than 1.27 billion population contributing 17.6 per cent of world's total population (Official population clock). On the contrary, India is sharing only 5 per cent of world's area accounting 3,185,263 km². Out of total population, 68 per cent lives in rural areas, while 32 per cent lives in urban areas (WorldBank, 2014). Urban population is increasing day by day since last few decades. In modern society, industry becomes an essential part. Developing countries like India is in industrialization phase, which also contribute to urbanization. Large number of people are migrating towards city area for better opportunities. In terms of GDP, India is one of the fastest growing economy in the world with 7.30 per cent GDP. It is expected that by 2030 India will be growing with GDP of 10 per cent. Higher GDP will result into improved living standards. Over-population, Rapid industrialization. Uncontrolled urbanization and improved living standards thereby lead to increased rate of per capita waste generation. Presently, 1,27,486 tons per day of municipal solid waste is presence produced due to several domestic actions and other profitable & official activities (CPCB, 2012). Public waste and sure industrial waste have moderately important impression on atmosphere. A considerable amount of these wastes is extremely dangerous to the living organisms including human beings (Misra et al. 2004). It may reduce groundwater

excellence by leachate filtration and cause air contamination by production of greenhouse gases over many course of management.

Statement of the Problems

Variations in Knowledge takes around fluctuations in the intake habit of the community and consequently the arrangement of waste resources.

Therefore a lot of non-biodegradable excess (that is material that cannot be wrecked by bacteria) are produced and meanwhile non-biodegradable are not simply engrossed or diluted obviously such waste collect in heaps beside major streets. The foul-smelling odour and blackish liquid contamination stemming after such heaps particularly during the raining period institute ecological threats and damage the artistic standards of our setting.

They as healthy inspire education of mosquitoes and infectious illnesses. Therefore, the rate of group of solid waste is not coordinated with the rate of clearing as a result of difficulties ranging from lack of reserves and specialized knowledge operates of government and redtapism.

Review of Literature

Solid waste management has develop main concern in ecological problems (Mazzanti & Zoboli, 2008). This is predominantly factual to urban zones where people is speedily increasing and quantity of waste produced is growing like never before (Kathiravale & Mohd Yunus, 2008).

Solid Waste Management is a complex task which requires appropriate organizational capacity and cooperation between numerous stakeholders in the private and public sectors. Though it is important to public fitness and ecological safety, solid waste management in greatest metropolises of developing countries is extremely inadequate. If it is not touched prudently the problem of Solid Waste will multiply and will become a disaster for the world. To resolve this issue, cities and their citizens should join together to create sustainable lifestyles and an ecological civilisation in which people and environment coexist in harmony(Mansi Khadke,2015).

Objectives of the Study

Objectives of the study are (i) To know the Urbanization and solid waste generation in India (ii) To improve the Solid Waste Treatment

Research Methodology

In order to accomplish the objectives of the study to collect data for this research study, secondary data source is used. Secondary data collected through the researcher-reviewed articles related to research objective

that appeared in the scholarly literature, key journals, reports, magazines and proceeding were systematically scanned for articles to the research topic.

Urbanization and Solid Waste Generation in India

Urbanization the consequences of burgeoning population in urban centers are more noticeable in developing countries as compared to the developed countries. The people of urban India remained 377 million (Census of India, 2011a), which financial records for 31 per cent of the total population. Global case histories reveals that when a country's urban population ranges beyond 25 per cent of the general people (as in the current case), the pace of urbanization accelerates (Kumar & Gaikwad, 2004). The population residing in urban regions increased from 18 to 31.2 per cent from 1961 to 2011 respectively (Census of India, 2011).

Generation and Collection

In India, speedy growth and unrestrained development rate of population are highest details for MSW to develop an important unruly. According to population size per capita surplus generation rate and its development during a decade are designated that expected that population of India would be about 1,823 million by 2051 and about 300 million tons per annum of MSW will be generated that will need about 1,450 km² of land to location it in a systematic method. if ULBs in India stay to trust on landfill way for MSW organization (Location daily on the solid excess organization sector in India, 2009).

Planning Commission Report (2014) exposes that 377 million people exist in in town area make 62 million tons of MSW per annum currently and it is projected that by 2031 these urban centers will generate 165 million tons of waste yearly and by 2050 it could spread 436 million tons. To accommodate this sum of surplus produced by 2031, about 23.5×10^7 cubic stress of landfill space is essential and in positions of area, it would be 1,175 hectare of land per year. The area compulsory from 2031 to 2050 would be 43,000 hectares for landfills heaped in 20 meter elevation.

To improve the Solid Waste Treatment

The outstanding ending solid waste is inclined in landfills after essential action to lessen the opposing ecological influences. The impartial of action is to recover bodily and/or biochemical features of waste, diminish deadliness and lessen its closing volume (Misra et al., 2005). In India, diverse treatment systems are experienced conditional on the kind of waste. They are categorized by their size to treat exact form of waste, remains group, cost, risk related, security and other ecological aspects (Blackman, 1996). The numerous action methods skillful for MSW and other alike kind of waste are : Composting, landfills, Current developments (burning, pyrolysis) etc. However, the similar is not actual for dangerous manufacturing excess. There must be distinct deliberation to grip dangerous waste. Common methods, which are adopted, for harmful waste are biological obsession, capacity decrease, decontamination, squalor, encapsulation etc. (Dawson and Mercer, 1986).

Composting

Composting is an organic procedure of breakdown and steadying of biological matter of compact waste by bacteria of either biological matter of compact waste by bacteria by either bacteria by either bacteria either in attendance or by nonappearance of oxygen. Contingent on obtainability of oxygen, it is additional confidential as aerobic composting and anaerobic composting recognized as biomethanation.

Aerobic Digestion

As name suggest, aerobic composting means bacterial conversion of organics in presence of air. It yields compost as final product, which is extensively used as fertilizer. Final product is free from odour and pathogens (Ahsan, 1999; Khan, 1994). It can reduce waste volume to 50-85 per cent. Automatic measured plants are being connected in urban cities, while physically regulator plants are set in comparatively slighter urban town (Bhide and Shekdar, 1998; Chakrabarty et al., 1995).

Biomethanation

It is the procedure of change of biological matter into stable, inert residue by microorganisms in the oxygen-free environment. It yields methane-rich biogas which can be used for electricity, cooking and inert residue which can be used as manure. Microorganisms used in this process are known as methanogens. The largest benefit of biomethanation is that it can decrease the announcement amount of methane – a influential greenhouse air and concurrently makes electricity. Additional essential feature of this knowledge is its applicable use in country areas for food.

Incineration

Burning is an incineration method which purely means drying and burning of excess. The last product of the procedure is CO₂, H₂O in gas form and ash complete a big amount of warmth. It needs great temperature success among 980 to 2000 °C (Sharholy et al., 2008). Burning decreases the final waste upto 75% approximately (Rajvaidya and Markandey, 2008). This process announcements big amount of heat which if improved correctly can turn out to be a possible cause of energy group (Tan et al., 2015).

Pyrolysis

Pyrolysis is an operative waste-to-energy idea mention to unhelpful concentration of the solid waste to improve its residents and energy. In order to, pyrolysis is a current deprivation progression in nonappearance of air, which harvests biodegradable goods such as char, oil/wax and explosive gases (Chen et al., 2014). It is usually favored for action of waste consuming less humidity content like paper, material, elastic; yard wastes etc. as excess covering high moisture gratified need more warmth source.

Landfills

In India similar numerous developing countries, excess is inclined in an open area deprived of any protections. In greatest of the Indian cities, waste is terrified borders of the city area without any prior treatment, which leads to environmental deterioration. Exposed removal of solid waste mains filtration of leachate to subversive water and gas releases resulting into extreme air pollution. It also interrupts aesthetic immediate by its odorous atmosphere.

Conclusion

Notwithstanding the fact that Solid waste management performs has been refining in current years, the pace of development wants to be enhanced. Measures mentioned in MSW rules must be implemented. Period has come to inspire technology-based free enterprise to accomplish actual solid waste management. NGOs should be involved in various components of waste management including public awareness. Open participation in organization of solid waste is of significant position. Authorities must protect fundamental right of citizens by implementing best practices and citizens must perform fundamental duties by their contribution to those practices.

References

- Arena, U., Mastellone, M. L., Camino, G. & Boccaleri, E. 2006. An innovative process for mass production of multi-wall carbon nanotubes by means of low-cost pyrolysis of polyolefins. *Polymer Degradation and Stability*, 91, 763-768.
- Bhide, A. & Shekdar, A. 1998. Solid waste management in Indian urban centers. *International Solid Waste Association Times (ISWA)*, 1, 26-28.
- Mansi Khadke, 2015. A Study of Literature on Solid Waste Management, *MERC Global's International Journal of Social Science & Management*, Volume 2, Issue 6, November - 2015, pp. 425-431
- Reddy, S. & Galab, S. 1998. An integrated economic and environmental assessment of solid waste management in India – The Case of Hyderabad. India.(nd).
- Sharholy, M., Ahmad, K., Mahmood, G. & Trivedi, R. Analysis of municipal solid waste management systems in Delhi – a review. *Book of proceedings for the second International Congress of Chemistry and Environment*, Indore, India, 2005. 773-777.
- Sharholy, M., Ahmad, K., Mahmood, G. & Trivedi, R. C. 2008. Municipal solid waste management in Indian cities – A review. *Waste Management*, 28, 459-467. [14] Sharholy, M., Ahmad, K., Vaishya, R. & Gupta, R. 2007. Municipal solid waste characteristics and management in Allahabad, India. *Waste management*, 27, 490-496.