

# Pinnacle of Solid Waste Management and COVID - 19

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**Abstract:** Quick industrialization, populace blast in India combined with rising monetary development has prompted the relocation of individuals from towns to urban areas to live in an improved expectation for everyday comforts came about into per capita generation rate in India daily representing a significant test attributable to unempirical the management of municipal solid waste that harm the health and environment. The current SWM managements are inefficient, bring about overwhelming consumption and are so low as to be a potential risk to the general health and environment quality. Initially the paper highlights the status of global solid waste generation, effect of solid waste on health, opinion summary of research and studies on spiraling levels of civic and industrial waste, significant initiatives to control waste management carried out in India and especially in a powerful crisis reaction wherein rise in waste quantities is anticipated from the COVID – 19 outbreaks, one has to follow the guidelines as per the directions of WHO and CPCB.

**Keywords:** Municipal solid waste management, pollution, WHO, CPCB, COVID-19

## I. INTRODUCTION

India faces major environmental difficulties related with waste generation and deficient waste collection, transport, treatment and disposal. There is fast increment in Municipal solid waste because of urbanization, populace development and growth of industrialization, its arrangement relies upon number of variables, for example, way of life of individuals, relative standards of living, general customer patterns and level of innovative technological is getting significance because of stringent environmental standards and mindfulness.

In India, literature study indicates that more than 377 million urban individuals are living in 7,935 towns/urban areas. There are three super urban communities—Greater Mumbai, Delhi, and Kolkata—having populace of in excess of 10 million, 53 urban areas have more than 1 million populace, and 415 urban areas having populace at least 100,000 (Census, 2011a). The executives of Municipal solid waste are getting troublesome because of its changing quality and expanding amount. As per Municipal Solid waste Rule 2000, In India, elected representatives of the Municipal/town administer local administrative body needs to follow. The district magistrates or deputy commissioners of the concerned areas are liable for upholding the arrangements inside the regional furthest reaches of their purviews. The state pollution control boards must screen consistence with manure quality norms and burning benchmarks as determined in the standards.

Be that as it may, till date, no concrete steps had been taken to examine explicit waste generation designs for these urban towns. Every year, around 12 million tons of latent generations are created in India from road clearing and C&D generation and in the landfill destinations. The solid waste buried covered in the land debases groundwater. The absence of powerful solid waste management makes genuine health, security, and environmental results. Ineffectively oversaw generation fills in as a rearing ground for sickness vectors, adds to worldwide environmental change through methane generation, and even advances urban brutality. At present the general public's discernment and practice of aimless removal can be a potential source of pollution representing an inalienable peril to personal or the earth when exposed. Numerous examiners have done research for treatment of risky waste treatment. The ebb and flow audit condenses research and studies on solid generations.

## II. STATUS OF GLOBAL SOLID WASTE GENERATION

In a time of quick urbanization and populace development, solid waste management is basic for practical, sound, comprehensive urban areas and networks. On the off chance that no move is made, the world will be on a risky way to progressively generation, lives, employments and the earth would follow through on a considerably greater expense than they are today.

Evidential report says that the normal rates (0.5–0.99 kg per individual every day) of waste generation are higher in India when contrasted with those (0.1–0.49 kg per individual every day) in low-salary nations worldwide and much increment in the waste generation particularly in the bigger urban areas because of way of life changes, utilization of bundling materials, and so on. Development of urban populace of 2.7 percent to 3.5 percent per annum will bring about an expansion of more than five percent in a solid waste generation. According to the estimation of the Energy and Resource Institute (TERI), the waste generation surpasses 260 million tons for every year by 2047, which is in excess of multiple times the present level in India. Urban areas with a populace more than 100,000 are the significant benefactors (72.5 percent) of absolute waste created in the nation when contrasted with the 3955 urban focuses which produce about 17.5 percent. Fig. 1 shows the comparison of global solid waste generation wherein the position of India is shown (January 2019).

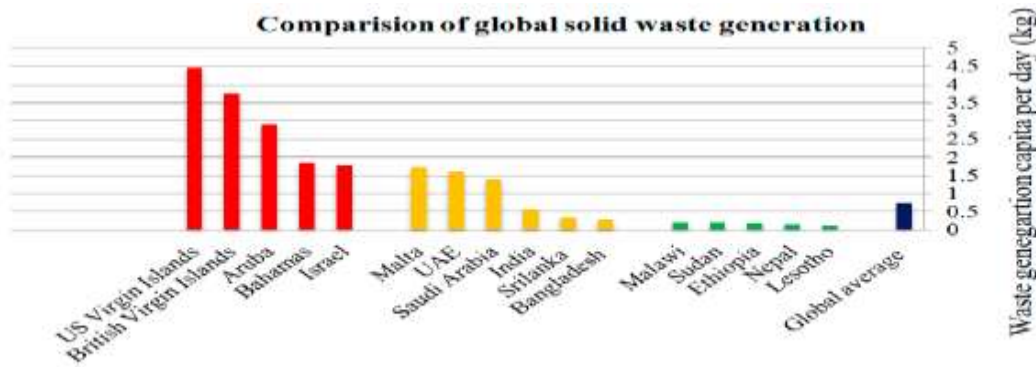


Figure 1. Comparison of global waste generation per capita per day in kg (source: <http://datatopics.worldbank.org/what-a-waste/>).

**III. EFFECT OF SOLID WASTE ON HEALTH**

The groups at risk from the unscientific disposal of solid waste include the population in areas where there is no proper waste disposal method and other risk group of population living close to a waste dump. Emergency crises due to COVID – 19 outbreaks could cause an unforeseen effect on human health and environment. Coronavirus is a family of Coronaviridae can cause disease fever, cough, shortness of breath, pneumonia, severe respiratory syndrome and sometimes death. Uncollected solid waste poses a serious threat to public health and environment as shown in figure 2. This calls a vital element in an effective emergency response for the safe handling and final disposal of waste.

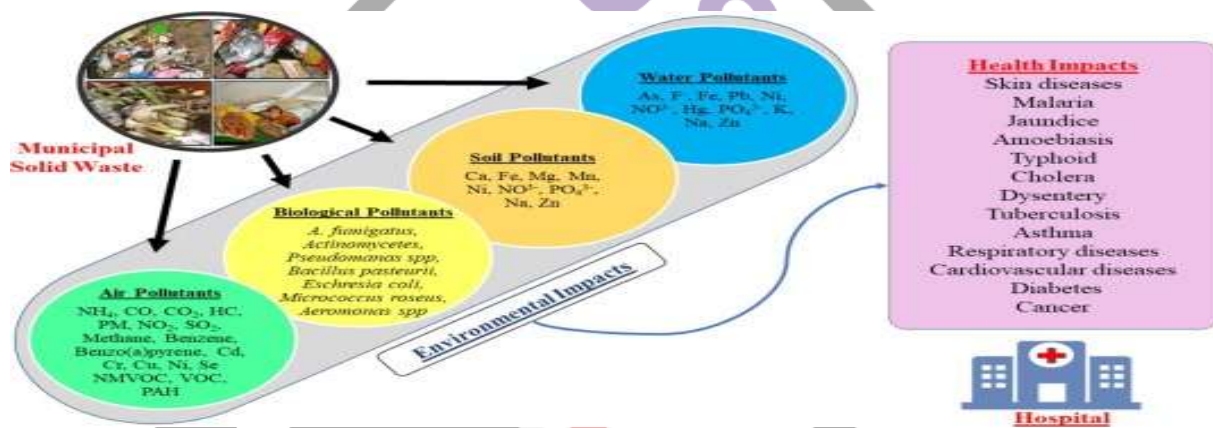


Fig 2: Impact of MSW in urban areas as a potential threat to public health and environment

**IV. REVIEW ON SOLID WASTE MANAGEMENT**

1. Economictimes.indiatimes.com on March 09, 2020 by Sharik Khan reveals that India’s growth story has resulted in spiraling levels of civic and industrial waste being generated. Currently India generates 70 million metrics of municipal wastes of which only 20 % is recycled and rest 80% ends up in landfills and oceans affecting humans, marine life and destroying the environment. Waste picker’s are given dedicated app for, enabling to various incentive programs to potentially alter their livelihoods
2. Deccan Herald, a news paper (March 28, 2020) of Mumbai uncovers the general public’s recognition and practice of unpredictable removal of things which can be a potential wellspring of pollution of COVID – 19. One ought to follow the rules as laid down by CPCG.
3. Livemint (2020) on 8<sup>th</sup> April, 2020 by Sourabh Manuja TERI division of environment and waste management raises the question that can India’s healthcare facilities handle the rise in waste quantities anticipated from the COVID – 19 outbreaks. To put this in context, coronavirus epicenter Wuhan witnessed a six times increase in biomedical waste during the peak of its outbreak. An estimated ragpicker’s workforce of 1.5 to 4.0 million in our country performs waste collection, sorting and recycling. CPCB has issued guidelines for BMW management for COVID – 19. There is a need for immediate building and guidance to manage solid waste, especially household hazardous waste.
4. Sachin K. Kamble, (2019) reveals in his study area on “Challenges in Municipal Solid Waste Management in India” that an endeavor has been made to consider the changing patterns of amount and qualities of Municipal solid waste to discover its effect on the presentation and scope organization of recovery/recycle, compost, incineration and landfill facilities. For effective activity of waste management offices, the changing example of waste creation underscores the significance of isolation. Municipal specialists ought to keep up the storerooms in such a way, that they don’t make unhygienic unsanitary environments.
5. J. Sankar, (2019) mentions in his work on “Municipal Solid Waste Management System in Salem District”, that lack of ill-advised measure from the municipal specialists there is a need the generous waste assortment and discarding in the Municipal.

Eccentric waste removal because of populace and business incensement in and around the examination region will lead in the uncontrolled method for removal of MSW are bring about gigantic natural maintainability issues with respect to social, physical, organic and biological terms.

6. Dana Adamcova (2016), took a shot at “Household Solid Waste Composition Focusing on Hazardous Waste”, passes on that 70% of Municipal solid waste is discarded in landfills. They tended to issue of risky waste with regards to Municipal solid waste created in an ordinary urban situation. As per them, the detailing of waste is a significant issue with every day family unit items.

7. Rajkumar Joshi (2016) uncovers the work on “Status and challenges of municipal solid waste management in India: A review”, stating that the investigation reasons that establishment of decentralized solid waste handling units in municipal urban areas/towns and improvement of formal reusing industry part is the need of great importance in developing nations like India.

8. Paul Lichtberger (2015), in his work on “Hazardous waste management in a natural heritage site: A case study from the Sagarmatha National Park and Buffer Zone in Nepal”, researched waste generation, waste composition and waste removal rehearses. They completed contextual investigation of waste in Sagarmatha National Park and Buffer Zone (SNPBZ) in the Himalayas. They did material flow analysis to recognized pathways of HW inside the SNPBZ. The reason for this investigation was to decide negative effects brought about by contamination through inappropriate HW-management. The HW was seen to 1% of all out generations produced in the SNPBZ. They found that at dumpsite HW increments to 6% of waste disposed.

9. Mane Ashish Vilas (2015), in his examination zone on “A Critical Overview of Legal Profile on Solid Waste Management in India”, expresses that dangerous waste must be dealt with uniquely in contrast to solid waste before it arrives at a landfill. He examined legitimate profile and strategies accessible on solid waste management in India. As per him, environmentally solid and practical methods for managing waste generation, calls for stricter laws. He emphasized the need to generate sufficient funds at initial stage for the treatment of wastes. Additionally as indicated by him, the idea of generation of riches from waste can decrease practical weight on the general public.

## V. SIGNIFICANT INITIATIVES TO CONTROL SOLID WASTE MANAGEMENT

As urban solid waste management turned into the nation's most concerning issue as far as environment and stylish, yet potential hazard to general health due to non logical treatment of solid waste, The Government of India gave the Ministry of Urban Development the obligation to set up the Municipal Solid Waste Management Manual for Urban Local Body for basic and environmentally agreeable solid waste management in the municipality and to embrace reasonable measures for generation minimization at source with an accentuation on the standards of 3Rs, containing Reduce, Reuse and Recycle; with legitimate frameworks of segregation, collection, transportation, processing, treatment and disposal in complete amicability with the environment and in accordance with common guidelines. Looking to the significance and to accomplish the objectives under the management of Prime Minister Shri Narendrabhai Modi following Bharat Mission, Mahatma Gandhi Swachhata Mission, Swachhata App, Swachhata Helpline, Swachhata Survekshan, renewal of municipal solid waste management manual, funds allocation and rules regarding municipal solid management in India like solid waste management rules, 2016, plastic waste management rules 2016, construction and demolition waste management rules, 2016, hazardous and other waste management rules 2016, E waste management rules, 2016, bio-medical waste management rules 2016 were formed and one has to work in accordance to the framework.

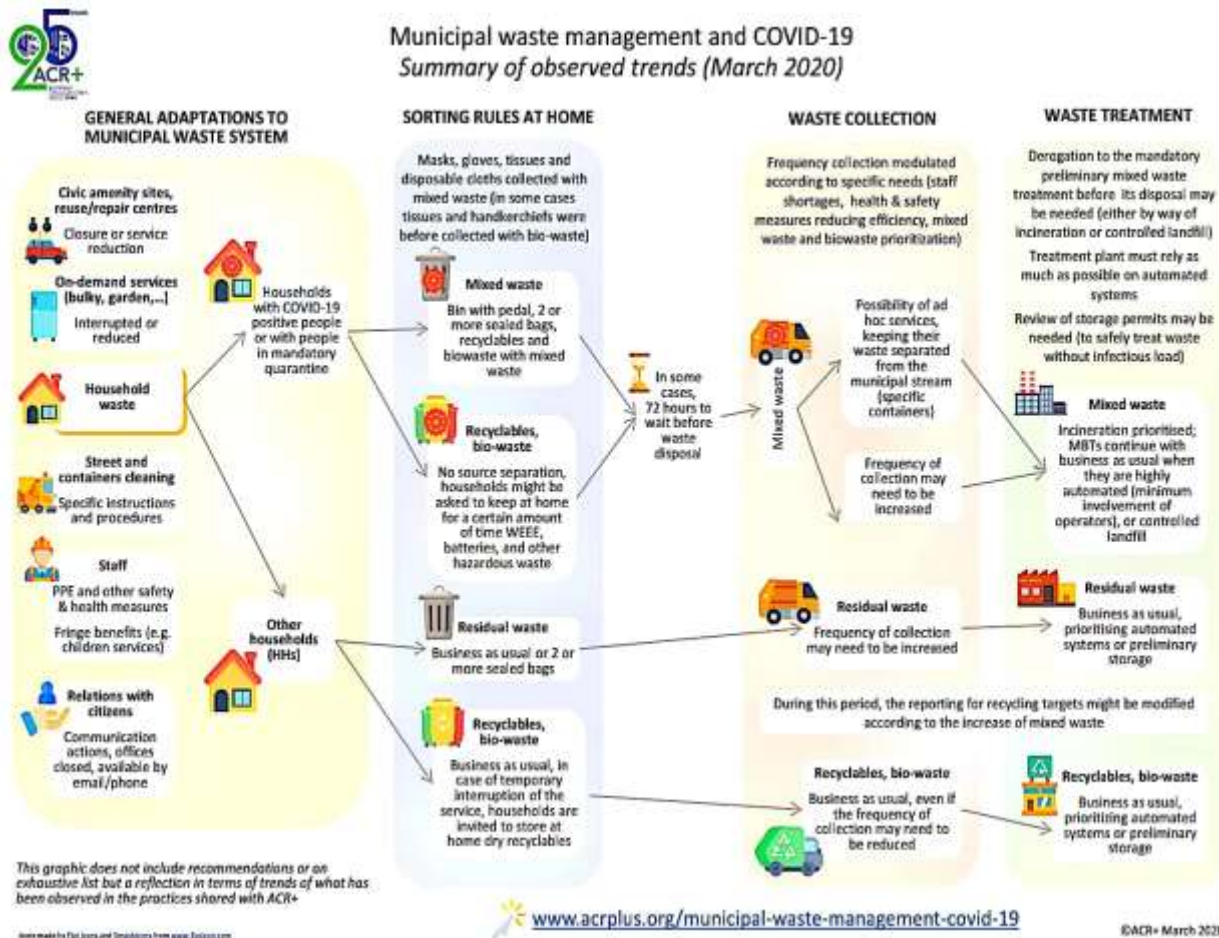
Swachh Survekshan: A plan formed under Ministry of Housing and Urban Affairs (previous Ministry of Urban Development) since 2016 is meant to empower huge scope resident interest, to bring issues to light among all fragments of society, to cooperate to make urban areas and towns a superior spot to live. It additionally helps the towns and urban communities to improve their management to society so as to assemble a Municipal clean by sound rivalry. Resident cooperation is improved in the review. In a record time of 28 days, Swachh Survekshan 2019 canvassed 4,237 urban communities in a completely paperless, information gathered in an advanced organization. Indore won the Swachh Survekshan 2019 (SS 2019) grants for the nation's cleanest Municipal, while Bhopal was announced the cleanest town.

Another body is formed i.e. the Central Pollution Control Board, who is answerable for planning the exercises of SPCB, giving the staff specialized help and preparing, circulating waste management data or request, executing government errands and so on. A far reaching framework for the counteraction and control of air and water pollution must be planned by the State Pollution Control Board. Local authorities are answerable for giving municipal solid waste management services, waste collection from sources of generation and road sweeping, transportation, storage and disposal at local level for the disposal, reuse and composting of municipal solid waste.

## VI. MUNICIPAL SOLID WASTE MANAGEMENT AND COVID – 19:

At present due to COVID-19, pandemic proceeding to spread and its effect on human health, government urged to regard waste management as a dire and fundamental open assistance so as to limit conceivable optional effects upon health and the environment. Unsound management of this waste could cause unexpected "knock on" impacts on human health and the earth. The protected taking care of and last removal of waste is hence an essential component in a powerful crisis reaction. According to world health organization, the protected removal of solid waste is basic and is particularly valid during a crisis. Likewise the circle standard express that individuals ought to have the option to live in a situation that is uncontaminated by solid waste, including clinical waste and have intends to discard their domestic waste conveniently and viably. COVID-19 brings up issues and brings difficulties in

regards to municipal waste management practices and methodology. In India, CPCB discharged the rules to keep Bio-Medical Waste Management rules 2016 to guarantee that the waste created is discarded in a logical manner and should implement all WHO guidelines to tackle COVID – 19 fare safeguarding health. While ACR+ a universal system of individuals from urban areas and locales who share the basic point of advancing reasonable utilization of assets and the board of waste through avoidance at source, reuse and recycle collected information on the various frameworks and arrangements actualized across Europe to oversee municipal waste in the present circumstance is given to outline the patterns saw among these training is appeared in the graphics.



## VII. CONCLUSION AND POLICY IMPLICATIONS

Municipal solid waste management issues are turning into the consuming issue in India. It ought to be handled in a thorough way. Government and open inclusion is significant in taking care of MSW issue. Preparing and advancement of representatives fill in as a prime persuasive device and help associations to be progressively adaptable and proactive. Mindfulness programs on solid waste management ought to be masterminded by the local bodies consistently with the contribution of NGOs and Residential Welfare Associations (RWAs). Laborers and common people ought to be given a few impetuses, for example, best path/road grants to oversee waste appropriately. Likewise there is a requirement for executing punishment framework to force fine on the workforce just as the network for changing mentality and conduct. Urban neighborhood bodies need to take open criticism and keep reviewing at normal interims concerning solid waste management. It is critical to interpret the vision from the Rules and the Missions into an operational incorporated technique of solid waste management. Indian Government is doing their level best in overseeing solid waste in the critical occasions of pandemic.

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