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Waste Management: Highlighting the Gravity of Situation in Indian context

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Abstract:
Various studies and researches have shown that it is very pertinent to know the sources and characteristics of wastes as well as the possible adverse effect of inappropriate handling and best international practices. But it is still very difficult to find what exactly constitutes a waste. The present paper seeks to understand the intensity of the problem and how a proper management of waste can do wonders in the world. The paper uses a descriptive approach to gather information from peer reviewed publications such as, journal articles, environmental organizations reports and books. It was found that there is an immediate need to ascertain the seriousness of the problem. COP26 and the protests outside Glasgow Conference in Scotland in 2021 has not just witnessed as an event, but a high pitch alarm bell for the world of inaction to call for a collective action and commitment for waste management and Climate Action. The saviours of the planet or climate action warriors as we call them like Swedish activist Greta Thunberg who started an online petition which I also signed prior to this, joined thousands at the "Global Day of Action for Climate Justice" marches the biggest so far during the COP26 summit which took place alongside hundreds of similar events around the world.

Keywords: environment, waste, wastes classification, management, vulnerability

1.The Concept of Waste

Most human activities generates waste (Brunner and Rechberger, 2014). Despite that, the production of wastes remain a major source of concern as it has always been since pre historic period (Chandler et al, 1997). In recent times, the rate and quantity of waste generation have been on the increase. As the volume of wastes increases, so also does the variety of the waste increases (Vergara and Tchobanoglous, 2012). Unlike the pre historic period where wastes were merely a

source of nuisance that needed to be disposed of. Proper management was not a major issue as the population was small and a vast amount of land was available to the population at that time. In those days, the environment easily absorbed the volume of waste produced without any form of degradation (Tchobanoglous et al, 1993). A substantial increase in volume of wastes generation began in the sixteenth century when people began to move from rural areas to cities as a result of industrial revolution (Wilson, 2007). This migration of people to cities led to population explosion that in turn led to a surge in the volume and variety in composition of wastes generated in cities. It was then that materials such as metals and glass began to appear in large quantities in municipal waste stream (Williams, 2005). The large population of people in cities and communities gave rise to indiscriminate littering and open dumps. These dumps in turn formed breeding grounds for rats and other vermin, posing significant risks to public health. The unhealthy waste management practices resulted in several outbreaks of epidemics with high death tolls (Tchobanoglous et al, 1993). Consequently, in the nineteenth century public officials began to dispose waste in a controlled manner in other to safe guard public health (Tchobanoglous et al, 1993).

2. Statement of the Problem

Although it is generally agreed that wastes management services are essential services that must be provided in every society, nonetheless very little is known on what exactly constitute a waste. Knowing that the concept of waste is highly subjective as one man's wastes is a resource to another. Hence, it is important to have a clear guide as to what could be classed as waste. The present research therefore examines the concept of wastes and wastes management with a view to determining what waste is, how they are classified and managed.

3. Methodology

This paper which is a review of literatures relied heavily on secondary data as is the case with most desktop study where existing information are used for analysis and to draw vital conclusions. Some of the specific sources of data for the study includes books, journal articles, unpublished papers, government reports, organizational and private webpages. This type of research approach is employed when a substantial amount of work has been done on a research topic and when the intention of the study is to answer specific questions based on previous works. It is for these reasons that the

present paper utilized this approach to examine what different researchers have said on wastes, its classification and management

4. Waste Management

Human interactions with the environment (human activities) have always resulted in waste production. However, Giusti (2009) reported that waste production and management was not a major issue until people began living together in communities. Vergara & Tchobanoglous (2012) reported that as population and purchasing power of people increases worldwide, more goods are produced to meet increasing demand, thereby leading to the production of more waste. Marchettini et al. (2007) pointed out that, these continuous flows of waste resulting from human activities, overburdened the environment. Vergara & Tchobanoglous (2012) reported that proper planning and control is required in other to prevent the negative impact of waste on the environment. As a result, Ghiani et al. (2014) added that, a proper organisation of solid waste management has become an essential task needed to safeguard the environment. Beranek (1992) argues that the provision of an efficient solid waste management system is now as important as other essential amenities such as electricity, airports, and highways. Basu (2009) pointed out that due to the increasing volume of waste. The continuous disposal of waste to landfill is unsustainable. Hence, Basu argues that the processing of waste is a necessary step needed to safeguard public health. Demirbas (2011) describes waste management as a process by which wastes are gathered, transported and processed before disposal of any remaining residues. Similarly, Tchobanoglous et al. (1993) describe solid waste management as the effective supervision and handling, keeping, collection, conveying, treatment and disposal of waste in a manner that safeguard the environment and the public. Tchobanoglous et al added that, solid waste management utilizes skills and knowledge from various discipline such as legal, financial, administration among others in the day to day running of waste management issues. Demirbas (2011) suggested that the main reason for managing waste is to ensure a safe environment. Troschinetz & Mihelcic (2009) pointed out that some waste management methods are often preferred than others. For instance, reuse, recycling, composting and energy generation from incineration are often preferred to landfills. However, Dijkema et al. (2000) argued

that even some of the preferred management methods, often produce some hazardous materials such as incineration residues. Strange (2002) reported that landfilling is the final destination of most waste produced from waste treatment and processing facilities. Strange, added that, other technologies merely serve the purpose of volume reduction or treatment before final disposal. Cheremisinoff (2003) reported that, there are different forms of approach to waste management. He added that, wastes streams with different characteristics may require different management approach. For instance, industrial waste might contain more hazardous materials than municipal waste streams. Hence, the management of these two waste streams might differ. Vergara & Tchobanoglous, (2012) found that, although waste management might jms.ccsenet.org Journal of Management and Sustainability Vol. 6, No. 4; 2016 94 differ between countries, there are some basic processes or paths that waste management needs to follows. These paths are illustrated in Figure 1, the study reported that, wastes generated must be gathered and stored by the generator in a place. The municipal authorities or their agents collect the waste from the point of storage, for transportation to processing or disposal sites. The study added that, in some instances, the waste generators separate the waste into various materials from where they are collected for recycling by the recycling industries.

If I begin to quote statistics regarding the issue, this page will turn into a book of Statistics. However, for the reference of the audience, the fifth session of the United Nations Environment Assembly (UNEA) hosted by the UN Environment Programme highlighted that the near 300 million tonnes of plastic waste – the equivalent of the weight of the entire human population – needs to be at the front of mind.

Of that waste, approximately 8 million tonnes ends up in the ocean, accompanied by an estimated 24.4 trillion pieces of micro-plastics, the plastic particles we can't see. The number of those particles per cubic meter has been suggested to outnumber zooplankton in the same area, thereby reducing the ability of oceans to act as the most promising carbon sinks, essential for maintaining marine ecosystems and affecting our climate.

Putting it simply, it is estimated that there will be more plastics in ocean than fish by 2050.

Coming to India, as per the ministry of Environment and Climate Change report

2017,India's plastic demand is going to increase by 129% by 2023.

The catastrophic second landfill fire in a month at Bhalaswa Gazipur in New Delhi is a testimony to the alarming situation of waste mismanagement and the attitude of the government authorities, turning away eyes from the social, environmental and health rights of nearby inhabitants.

In his role as the President of COP26., Alok Sharma, the Indian-origin UK Cabinet minister said,"If we are to limit global warming and keep the goal of 1.5 degree Celsius alive, then the world needs to use land sustainably and put protection and restoration of nature at the heart of all we do".

Not just this, there is a change in the way some governments and socially oriented businesses look at the scenario. Loud and clear Calls are being made by them for an international and legally binding treaty mandating targets to reduce plastic pollution and not just sign them on pages but convert into actions. Building Momentum Towards a Global Treaty on Plastic Pollution became a headline at the World Economic Forum's meeting held online on 9 February 2022, prior to the United Nations Environment Assembly (UNEA).

5. Looking for Breakthroughs

Understanding the gravity of the situation, it is clear that the problem of plastics is a trans- boundary phenomenon and cannot be tackled at an individual level. Taking action together is important because it opens a conduit for an immediate change through collaboration, technology and knowledge transfer and social impact initiatives by NGOs or through Corporate Social Responsibility of big businesses, if done effectively.

From United Nations Environment Programme to UNICEF, every agency has a mission for Climate Action. In India ,NITI Ayog has been dynamically concerned about the cause and action. The recent collaboration and signing of Memoranda of understanding between UNEP India's country ambassador Shikha Nadu marks an action agenda to work for Environmental and Climate Action through Collaboration.

However, impactful action is yet to be seen on ground.

6. Conclusion and Recommendation

It may be pertinent to mention that these global level organisations have been formulating policies and action plans around the round tables of the Paris, Stockholm and Glasgow for the recent reference, however, the mind boggling

reports of loss of biodiversity in the drought hit deserts of Kenya and Uganda a few days ago are an an eye opener for all of us. India is not an exception to it. A report about a recent study carried out by a Committee appointed by National Green Tribunal that three (3) landfills have cost Delhi Rs.450 crore in environmental damages, made headlines in Hindustan Times. This takes our attention to the flip-side of the story. These environmental damages manifest in the form of pandemics, droughts, hazards as well as a heavy toll on the human and animal health. Water borne disease like Jaundice, Hepatitis, etc is the dining table conversation of every family. So there is a concern about it across every section of the society including social sector entrepreneurs even from remote corners of the country like Jammu & Kashmir as well, who have started to work on Plastic Waste Management in an innovative and cost effective manner. **WaWe (Waste to Wealth) Enviro and Agri-Biotech Solutions**

-a social enterprise founded by a Kashmir based engineer Aamir Ayoub Khan who is a Clinton Global Initiative University 2022 Fellow based in Srinagar Kashmir is such an example.

So all the above highlights act as a warning that action must be taken and taken now because tomorrow it may be too late. If we do not care to nurture our land now, it will one day cease to nurture us and we would have left nothing to feed our future generations and the day is not very far from us.

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