



CRITICAL ANALYSIS OF THE LEGAL ISSUES RELATING TO MUNICIPAL SOLID WASTE MANAGEMENT

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ABSTRACT

Municipal solid waste (MSW) has become a challenge before society as it is neglected subject in the field of environment which is hazardous for the health of human being as well as other creatures too. In general terms, MSW refers to solid wastes from houses, streets and public places, shops, offices, and hospitals. To dispose these wastes in a sound way, the management of municipal wastes is required which involves a planned system of effectively controlling the production, storage, collection, transportation, processing and disposal or utilization of solid wastes. The Constitution of India provides a lot of rights to people like right to pollution free environment which is very crucial. Through judicial articulation, the Indian Judiciary has also played a vital role to protect the environment. Under the provisions of Environment Protection Act, 1986, the Municipal Solid Waste (Management & Handling) Rule, 2000 has been made which lays down the norms to be followed in case of MSW. Life cycle of the MSW may be as- generation-segregation- storage and collection- transportation- treatment- disposal. But, it has been found that in most of the cities, open dumping of MSW is the common practice which adversely affects the environment and public health. Present paper discusses the legal profile and policies available on solid waste management in India, responsibilities of the concerned departments and future need to enhance legal regime for better management of Indian environment. The government make new law for municipal solid waste management rule 2016. If there is strict and proper implementation of new law done by municipality then it is possible to manage waste and to improve legal regime.

KEYWORDS: Municipal Solid Waste, Law, Rules.

INTRODUCTION

The problem of solid waste management (SWM) in India, in combination with rapid urbanization, population growth and unplanned development is worsening day by day. Municipal solid waste (MSW) includes degradable (paper, textiles, food waste, straw and yard waste), partially degradable (wood, disposable napkins and sludge, sanitary residues) and non-degradable materials (leather, plastics, rubbers, metals, glass, ash from fuel burning like coal, briquettes or woods, dust and electronic waste)^[1,2]. According to United Nations Development Programme survey of 151 mayors of cities from around the world, the second most serious problem that city dwellers face (after unemployment) is insufficient solid waste disposal^[3]. Solid waste pollution occurs when the ecosystem functioning is hampered by an overload in carrying capacity of the natural environment due to sheer bulk and complexity of waste^[4]. Pollution of whether air, water or land results in long-term reduction of productivity leading to deterioration of economic condition of country. Therefore, control on pollution, reduce risk of poor health, protect natural environment and thereby



contribute to high quality of life is a key component of sustainable development^[5]. Generally, solid waste is disposed off in low-lying areas without taking any precautions or operational controls. The SWM in India seems to be of long-standing problems of poor waste disposal systems, inadequate regulation and unauthorized dumping. The social task of waste management has always been to get rid of it^[7].

The growing volume of solid waste generated by communities is a concern for public health officials. Solid waste results from various sources including animal wastes, hazardous wastes, industrial, medical wastes, food wastes, mineral wastes etc. The wastes may degrade the resource quality and damage the aesthetic quality, groundwater contamination, an increase in disease spreading vectors and other issues regarding sanitation. The government's consciousness in India has mostly been the response after UN declarations, conferences, agreements and ideal protocols by some developed countries. Detection of toxic chemicals in drinking water supplies, polar ice caps, groundwater sources of various regions and deadly episodes mainly experienced in Minamata, Chernobyl, London smog, Bhopal Gas Tragedy and Love Canal Tragedy have focused the attention of public worldwide on the risks posed by environmental pollutants including hazardous wastes. India put strong and internationally acceptable points regarding sustainable development in world summit, Stockholm conference and Rio- conference for protection of environment. India has experienced a disastrous condition in Bhopal on 2/3 December 1984. Improper SWM contributes to 6% of India's methane emissions and is the third largest emitter of methane in India. It currently produces 16 million tons of CO₂ equivalents per year and this number is expected to rise to 20 million tons of CO₂ equivalents by 2020^[8]. Landfilling of municipal solid waste (MSW) is a common waste management practice and one of the cheapest methods for organized waste management in many parts of the world^[9]. It is found that landfills causes serious health and environmental risks in the form of externalities like formation of leachate and landfill gas leading to water and air pollution along with disamenity effects like increased population of pests, flies, vermin and visual impacts^[10]. The alkaline nature of the solid waste is responsible for increase in soil pH^[11].

In future it is expected to increase the municipal solid waste generation as the country strives to attain an industrialized nation status by the year 2020^[12]. There has been significant increase in generation of solid wastes in India over last few decades and reason is largely associated with population growth^[13]. The solid waste generated in Indian cities has increased from 6 million tons in 1947 to 48 million tons in 1997 and is expected to increase to 300 million tons per annum by 2047^[15]. The present system of solid waste management is not evenly implemented throughout the country and there is no proper storage of wastes. The street sweepings are not carried out regularly and transportation of the wastes is not satisfactory. The main problem also lies in unscientific management of the wastes. Although typical urban growth rate has been determined at around 2.5 percent annually^[16], waste generation is out pacing the urban population growth in Indian cities^[17]. According to the Central Pollution Control Board, average collection coverage ranges from 50 to 90 percent. Urban local bodies (ULBs) spend about \$10- 30 (INR 500-1,500) per ton on SWM. About 60-70% of this amount is spent on collection, 20-30% on transportation. No financial resources are allotted for scientific disposal of waste^[17, 18]. Furthermore, of all collected waste, 91 percent is disposed of in an unacceptable manner without any consideration of state-of-the-art engineering principles. The present review article discusses the salient features of the important provisions of the laws and rules enacted in Indian context (MOEF is base for information) and concludes with important suggestions, present situation seen throughout the country in relation with solid waste management.

INDIAN CONSTITUTION AND WASTE MANAGEMENT

For the protection of environment India has made constitutional provisions and for safe and healthy environment for people and all human beings. The Indian constitution made a platform and provides a broad framework of law and regulations in which clearly mention all powers and functions which smoothly give us direction to go safer place and healthy environment. For the protection of environment, Article 243(W) of the constitution specifies the responsibility, power, authority of the municipalities to carry out functions for the management of solid waste management. In Article 38 for the welfare of people and to secure a social

order for the promotion. In Article 47 the state have a duties to improve the standard of living and public health. In the same side in the constitution. These provisions have formed the basis for the outcome of current environmental governance for the protection of environment in India.”

MINISTRIES RELATED WITH TASK OF WASTE DISPOSAL IN INDIA

Ministry of Environment and Forest (MOEF) is the nodal agency to deal with all environmental matters in India. MOEF is required to examine awareness, research and development initiatives, sustainable development initiatives, location of industrial sites and secured landfills for hazardous wastes, use of environmentally sound technologies along with many other activities and implantation of programmes. It also deals with enforcement and implementation of plastic waste management rules and batteries rules. They are also entitled to form authenticated National Inventory on Hazardous Waste dumpsite. Ministry of Law has assigned the task of formation of legal measures in connection with state government for successful implementation. Ministry of Water Resources plays a significant part to control water pollution. Ministry of Health deals with toxicological aspects of wastes like heavy metals, hormone disrupting chemicals and such other issues.

Criminal Laws and the Waste Management

Solid waste is equated with ‘public nuisance’ under this code, enacted during the British times. Since, solid waste gives rise to various types of diseases and is dangerous to public health, it has been treated as ‘public nuisance’ and made punishable. Provisions under the Criminal Procedure Code, 1973, Section 133 of the Criminal Procedure Code, 1973 deals with ‘removal of nuisance’ and empowers the Sub- Divisional Magistrate or any executive Magistrate, on receiving information to order the removal of the public nuisance and desist from carrying any trade, business that is causing public nuisance.”

Constitution of the High Power Committee

On the basis of the recommendations of HPC, Supreme Court had passed an order on October 14, 2003. The order was based on principles of sustainable development, environmental protection in support of Article 21. It states the right to information and public participation is very important in developmental process and confers the duty of government departments to motivate. These also serve as a guide on how to comply with the MSW rules . Court also held that the precautionary principle and polluter pays principle should be ensured in decision-making.

Waste Management Governance

“The central government has enacted various laws to regulate various kinds of waste generated in the country. The wide range of wastes include household, municipal waste, biomedical waste, e-waste, electronic and electrical equipment, construction and demolition waste, mining waste, power plant waste, hazardous waste, agriculture, forestry waste etc. The Environment Protection Act (EPA), 1986 is the umbrella act that pertains to management of wastes in the country. Ministry of Environment and Forests (MOEF) has enacted rules under EPA that govern the management of all kinds of waste in India.” Though the HWM Rules came into existence in 1989, it is seen that they are never implemented in a spirit of minimum cause to the environment, many things are ideal and remains on paper. On the other hand environmental impact assessment should be strictly practiced in order to designate the future impact on the environmental components and selection of proper sites for treatment of hazardous wastes. Soft corner should not be given especially for the treatment of hazardous wastes in ecologically fragile areas. Perhaps not accepting the wastes from outsiders and step-by-step implementation of advanced means to treat the hazardous wastes could be best option to save valuable ecosystems of our country. As a final point, there is need to carry out changes in existing laws regarding disposal of e-wastes, hazardous wastes, plastic wastes etc. as per changing conditions of lifestyle patterns of the Indian society.

Recycled Plastics Manufacture, Sale and Usage Rules, 1999 as Amended in 2003

Plastics are essentially non-degradable and their volume eventually consumes a disproportionate amount of landfill space. The Recycled Plastics Manufacture and Usages (amendment) Rules [95], 1999 as amended 2003 are applicable to every manufacturer, stockiest, distributor or seller of carry bags containers made of virgin or recycled plastic. These rules have been framed to regulate the manufacture, sale and usage of virgin or recycled plastic bags/containers. District collector/deputy commissioner of the concerned district has been designated as authority for the enforcement of provisions. As per provisions, carry bags and containers made of virgin plastic shall be in natural shade or white. Carry bags and containers made of recycled plastic and used for purposes other than storing and packaging foodstuffs shall be manufactured using pigments colorants as per IS:9833:1981 ^[95]. No vendor is allowed to use containers made of recycled plastics for storing, carrying, dispensing or packaging of foodstuffs. Recycling is allowed strictly in accordance with the Bureau of Indian Standards (BIS) specifications and the manufacturers have to print on each packet of carry bags as to whether these are made of 'recycled' or of 'virgin material'^[95].

Plastic Waste Management Rules, 2011

“As per the estimate by central pollution control board (CPCB) the plastic consumption in India, is 8 million tons per annum and about 5.7 million tons of plastics are converted into waste annually. The waste plastic finds its way into drains, open lands, rivers, railway tracks and coasts ^[19]. The informal recycling sector responsible for the recycling of around 70% of plastic waste ^[20] and up to 56% of all recyclable waste generated in India. Plastics (Manufacture, Usage and Waste Management) Rules, 2009 gives the definition of the terms biodegradable plastic, carry bags, commodities, compostable plastic, container, disintegration, post-consumer plastic waste, waste management and the guidelines in relation with manufacture and usage. The Plastic Waste Management Rules, 2011 gives more emphasis on the management of plastic wastes ^[21].

These rules mainly specify the minimum thickness of plastic bags as to be of 40 microns as opposed to the previous 20 microns specified by Plastics Rules, 1999. Carry bags can be made from compostable plastics conforming IS/ISO,17088,2008 and requires a label 'recycled' while those made from compostable material bear a label 'compostable'. Sachets using plastic material can not be used for storing, packaging or selling of tobacco and gutkha. These rules do not allow the carry bags for consumers, co-retailers at free of cost. State level advisory (SLA) body is to be created by each state government for the effective implantation of these rules. As per these rules, use of recycled or compostable plastics for storing, carrying or packing foodstuffs is prohibited. Municipal authorities are assigned the task to engage responsible and expert agencies for implementation of these rules ^[22]. They can also ask the manufacturers to establish plastic waste collection centers, in line with the principle of 'Extended producer's responsibility' (EPR). As per generation of plastic waste scenario, there is urgent need for coordinated work among manufacturers and government departments to ensure environmentally safe management ^[23]. In addition to this, the responsible and careful move by the consumers will also help in conservation of the environment.

Hazardous Wastes Management

“The adverse effects of hazardous wastes as well as the significant potential risks posed by them to the life and its supporting systems are increasingly recognized ^[21]. Hazardous wastes, which may be in solid, liquid or gaseous form, may cause danger to health or environment, either alone or when in contact with other wastes. It is presumed that about 10 to 15 percent of wastes produced by industry are hazardous and the generation of hazardous wastes is increasing at the rate of 2 to 5 percent per year”.

Hazardous wastes can be identified by the characteristics that they exhibit viz., ignitability, corrosively, reactivity, or toxicity [24]. While observing data from various sources, the rate of generation of hazardous wastes in India could be above 6.7 MT/year ^[25]. Hazardous wastes (HWs) are generated by various industrial and anthropogenic activities mainly from mining, tailings from pesticide based agricultural practices, industrial processes of textile, pesticides, tannery, petrochemicals, pharmaceuticals, paints, oil refineries and petroleum processing, fertilizers, asbestos, caustic soda and in production of many chemicals.

Toxic materials present in solid waste are determinants for respiratory and dermatological problems, eye infections and low life expectancy^[26]. In India, unauthorized dumping of HWs is however continuing and in most of the places, HW is being utilized to fill low-lying areas^[27]. Twelve states of the country (Maharashtra, Gujarat, Tamil Nadu, Orissa, Madhya Pradesh, Assam, Uttar Pradesh, West Bengal, Kerala, Andhra Pradesh, Karnataka and Rajasthan) account for 97% of total hazardous waste generation. The top four waste generating states are Maharashtra, Gujarat, Andhra Pradesh and Tamil Nadu. Very few industrial units in India own proper treatment and disposal facilities to such highly toxic and dangerous wastes.

A common waste treatment and disposal facility such as treatment, storage and disposal facility (TSDF) for management of such wastes is one of the useful options under such conditions. Hazardous Waste (Management and Handling) Rules in 1989 through the MoEF under Environment Act, 1986 and amended in 2000, 2003 to deal with hazardous wastes and to curb related environmental problems. Under the HW (M & H) Rules, the hazardous wastes are divided into 18 categories [28]. Moreover, the role and responsibilities of waste generator, state/central pollution controls boards and state government are clearly defined. MoEF has started a separate Hazardous Substances Management Division (HSMD) apart from MoEF, CPCB and SPCB's have been delegated certain powers for control and regulation of hazardous wastes. The MOEF has elaborately identified various treatment and disposal options of different hazardous waste streams that include physical, chemical treatment, landfill, biological treatment, incineration, recycle and recovery and solidification etc. Hazardous wastes landfill refers to a waste disposal unit, which is designed and constructed with the objective of minimum impact to environment^[29].

Basel Convention

Basel Convention deals with Transboundary movement and disposal of hazardous wastes as well as other chemical wastes. India is a signatory to Basel Convention and ratified the convention in 1992. The basic objectives of Basel Convention are for the regulation, control and reduction of Transboundary movements of hazardous, prevention and minimization of generation, environmentally sound management and promotion of cleaner technologies. After ratification of this convention, India will be unable to source hazardous wastes for treatment from Organization for Economic Co-operation and Development (OECD) countries because of the ban. The convention requires specialized treatment facilities in order to ensure an environmentally sound recovery or disposal. Therefore, trans boundary shipment of hazardous waste is regulated by the convention. Import of hazardous waste is legally prohibited in India but the import may be allowed for the purpose of recycling, recovery or reuse^[30].

National Hazardous Waste Management Strategy

The hazardous waste management strategy incorporates the essence of National Environmental Policy 2006, relevant multilateral environmental agreements like Basel Convention and the national regulations. It deals with effective management of hazardous wastes to avoid environmental pollution call for appropriate strategy for regulatory bodies, generators, recyclers and operators. The strategy also facilitates implementation of action plan as per National Environment Policy 2006 and obligations under the Basel Convention. Application of 'polluter pays principle', inventory of hazardous waste generation, cement kilns for incineration, common treatment, storage and disposal facilities, interstate transportation, safe disposal, illegal dump sites, remediation and strengthening of the infrastructure of regulatory bodies are some core areas of immediate attention in this field.

Hazardous Waste (Management and Handling) amended Rules, 2003

"The Ministry of Environment and Forests (MOEF) has promulgated Hazardous Wastes (Management and Handling) Rules, 1989 and amended the same in 2000 and 2003 for effective management and handling of hazardous wastes. These rules define hazardous waste as 'any waste which by reason of any of its physical, chemical, reactive, toxic, flammable, explosive or corrosive characteristics causes danger, or is likely to cause danger, to health or environment, whether alone or when on contact

with other wastes or substances”^[31]. There are 36 types of industrial processes listed in schedule-I of these rules. Wastes containing Hg, as, waste Asbestos (dust or fibers), waste oil etc., are in the list of banned wastes for import and export. The 2003 amendment rules have excluded biomedical wastes, MSW wastes and wastes related with lead batteries from the list of hazardous wastes as these are covered under special rules. These rules have also listed the hazardous wastes mainly mercury, its compounds, clinical and related wastes which are prohibited for import and export ^[32].

Biomedical Waste (Management and Handling) Rules, 1998 amended 2011

Management of biomedical wastes (BMW) is governed by the Biomedical Waste (Management and Handling) Rules, 1998 and are published under EPA, 1986. Prior to 1998, the management of healthcare waste in India was the responsibility of municipal or governmental authorities. Hospitals generate various kinds of wastes from wards, operation theatres and outpatient areas. These wastes include bandages, cotton, soiled linen, body parts, sharps (needle, syringes etc.), medicines (discarded or expired), laboratory wastes etc. Other wastes generated in healthcare settings include radioactive wastes, mercury containing instruments and polyvinyl chloride (PVC) plastics. These are among the most environmentally sensitive by-products of healthcare. Tuberculosis, pneumonia, diarrheal diseases, tetanus, whooping cough etc., are other common diseases spread due to improper waste management. The government hospitals and major private hospitals have their own arrangement for treatment of biomedical waste ^[33]. Lakshmi ^[34] argues that the management of health care waste in India is ‘bleak’. It is common scene in India that biomedical waste generated from health care facilities in most of the places are collected without segregation and are disposed in municipal bins located either inside or outside the facility premises. These rules apply to all persons who generate, collect, receive, store, transport, treat, dispose, or handle biomedical waste in any form ^[35].

The occupier of an institution generating biomedical waste has to get authorization of handling from the concerned SPCB. Under the BMW rules 2011, every occupier generating BMW require authorization which was only mandatory for the occupier having 1000 beds as per 1998 rules [36]. It shall be the duty of every occupier of an institution generating biomedical wastes to take all necessary steps and ensure safe handling. The wastes also include a hospital, nursing home, clinic, dispensary, veterinary institution, animal house, pathological laboratory, blood bank etc. The biomedical wastes are not allowed to mix with other wastes and require segregation at the point of generation, which is required to be done in accordance with standard procedures prior to storage, transportation, treatment and disposal. The containers shall be labeled appropriately. The biomedical waste shall be transported only through authorized vehicle. Biomedical wastes are also not allowed to store beyond a period of 48 hours. The treatment and disposal shall be in accordance with standard procedures. These rules also demands for treatment facilities like incinerator, autoclave, microwave system and requisite treatment at common facility. When any accident occurs, authorized person has to report to prescribed authority. In addition, every occupier/operator has to submit annual report related with maintenance of record, collection, reception, storage, treatment and disposal. Despite the introduction of the Biomedical Rules, Lakshmi ^[37] states that waste generated by government hospitals is still largely being dumped in open area, waiting to be collected along with general waste.

The Batteries (Management and Handling) Rules, 2001 Amendment 2010

“The Batteries (Management and Handling) Rules, 2001 amended in 2010 apply to every manufacturer, importer, re-conditioner, assembler, dealer, recycler, auctioneer, consumer and bulk consumer involved in manufacture, processing, sale, purchase and use of batteries”^[38]. They also ensure that used batteries are collected back for the purpose of recycle or proper disposal. These rules also required to file a half-yearly return of their sales and buy-back to the concerned state board, set up collection centers and ensure that used batteries are sent only to the registered recyclers without any damage to the environment. It is also the duty of producers and others to raise public awareness, publications, and posters

or by other means against the hazards of lead. It is the responsibility of consumers to return their used batteries only to the dealers at designated collection centers to avoid environmental damage. The importer shall get himself registered with MOEF. Only one export-import (EXIM) code exists for both old and new computers, preventing targeted compliance monitoring^[39]. Furthermore, imports are often falsely declared to be for charity, going instead to informal recyclers or becoming e-waste within two or three years^[40]. Lacking an effective enforcement mechanism and awareness throughout the country, the legislation remains fruitless, as the success at selected urban areas cannot form the basis of ideal output as expected.

E-Waste (Management and Handling) Rules 2010 Amended 2011

In India, e-waste generation is growing at about 15% and is expected to cross 800,000 tons per year in 2012. As per Central Pollution Control Board report, 65 cities in India generate more than 60-70% of total e-waste. These wastes which come from 10 states, namely Maharashtra, Tamil Nadu, Andhra Pradesh, Uttar Pradesh, West Bengal, Delhi, Karnataka, Gujarat, Madhya Pradesh and Punjab^[40]. E-waste from developed countries find an easy way into developing countries in the name of free trade which is further complicating the problems associated with waste management. The electronic devices reach at the end of their useful life, they become e-waste or waste electrical and electronics equipment's (WEEE)^[41]. The fraction including iron, copper, aluminum, gold and other metals in e-waste is over 60%, while plastics account for about 30% and the hazardous pollutants comprise only about 2.70%^[42], India is experiencing the environmental problems of E-waste^[43].

The issue of EEE disposal, import and recycling has become the subject of serious discussion and debate among the government organizations, environmentalist groups and the private sector manufacturers of computers and consumer electronic equipment's^[44]. The Central Pollution Control Board, India had released guidelines in 2008 for environmentally sound management of e-waste, which apply to all those who handle the e-waste^[45].

Municipal Solid Waste (Management and Handling) Rules, 2000

"The Municipal Solid Wastes (Management and Handling) Rules 2000 are not the only policy documents targeting the issue. In addition, as part of the National Environment Policy 2006, the action plan for soil pollution comprises strengthening the capacities of ULBs for segregation, recycle, reuse of municipal solid wastes and setting up of sanitary landfills, in particular through competitive outsourcing of SWM services^[46]. The MSW amount is expected to increase significantly in near future as the country strives to attain an industrialized nation status by the year 2020^[47]. Municipal administrations often lack financial and technical abilities to provide proper SWM services and introduction of community-based schemes involving communities in collecting, sorting and recycling activities has proved a viable alternative^[48]. The per capita solid waste generation varies from 300 g in Bangalore to 500-550 g in Mumbai and Delhi^[49]. It would not be easy for the Municipal Corporation to handle them efficiently until they design comprehensive policies to overcome present problems^[50]. The inadequate collection of revenue and meager sources of revenue is another reason for pitiable finances^[51]. Indian municipalities have overall responsibility for solid waste management in their cities. The difficulties in providing the desired level of public service in the urban centers are often attributed to poor financial status of managing municipal corporations"^[52,53].

In low-income countries, composting is rarely done whereas in developed countries it is a popular tool at backyard and large facilities^[54]. Under aerobic process, organic portion of the waste is decomposed and compost having high N, P, K values and C/N ratio is produced. "Nearly 55 per cent of urban household waste generated, consists of organic waste that can be composted, and another 15 percent, which can be retrieved as recyclables. The residual 30 per cent would require scientific land filling^[54]. Majority of MSW disposal sites in developing countries especially in Asia and Africa are open dumping ground where insufficient or no cover soil is provided"^[55].

PRIVATIZATION

The tremendous pressure on budgetary resources of States/ULBs due to increasing quantities of MSW and lack of infrastructure has helped them involve private sector in urban development. Government of India has also invested significantly in SWM projects under the 12th Finance Commission and Jawaharlal Nehru National Urban Renewal Mission (JNNURM). The financial assistance provided by GOI to states and ULBs amounted to USD 510 million (INR 2,500 crores). Private sector participation in SWM has been actively encouraged since last decade in several urban local bodies. The scope of the participation however, is restricted largely to awarding contracts for door-to-door collection of waste, street sweeping, composting of waste, transportation of waste and storage in depots/dust bins. In certain cities, for instance Surat, contracts are awarded for night cleaning of major roads. Rate per square metre is fixed for making the roads litter and dust free. Hyderabad city has introduced a contractual system of street cleaning as well as transportation of waste. The contractors are paid fixed monthly amount for the area allotted to them. Several cities (Mumbai, Bhopal, Bangalore, Thane, Ahmedabad, Pune, Kolhapur and Nasik) have entered into a contractual arrangement with private sector for setting up compost plants. The land is given to the private sector on a nominal lease rent for a long term of 15-30 years. In general, institutions refer to conventions, norms and legal rules of a society that provide expectations, stability and meaning essential for coordination that in turn regularize life, support values and protect-produce interests^[70].

The challenges of effective solid waste management are exacerbated with the growing urbanization^[71]. A more environmentally oriented view of urban solid waste management includes reuse, recycling and recovery activities^[72]. The actors involved in capacity development can be categorized into three levels, individuals, organizations and institutions/society (Task Force on Aid Approaches). A typical example is the urban development program that the World Bank promoted from 1976 in 40 cities around the world, including Cairo, Alexandria, Manila, Djakarta and Singapore^[73]. In most cases, overseas development assistance often took the form of providing waste collection machinery or waste disposal facilities^[74]. Privatization is actively pursued under the principle of 'public private partnership (PPP)'. One of the recent characteristics is that such initiatives are taken in many cities of developing countries as well^[75]. Therefore, growth of private companies by free competition, proper planning, work environment, monitoring and control of services are keys to the success of PPP^[76].

CONCLUSION

So the solid waste management law whether implemented successfully is a questionable and truly matter of discussion. In MSW few laws deal with performance evaluation of the government authorities and concern agencies. In every city of the country it seems that there is no immediate attention of the governments, civic organization to stop and solve environmental related problems. It is need to apply holistic and comprehensive approaches. For the treatment of wastes there is need a strong legal framework should be apply for the management and use ideal guidelines for the treatment of wastes. The other thing is related to funds. There is requirement to ideal aspects of ISWM and there is need to generate sufficient funds and to reduce economic burden on society. In law there is principle of polluter pay principle in which strictly punishment for that who pollutes environment. So it is need of the hour to make strict rules and regulations for management of SWM and give strict order to all boards and agencies to implementation of existing rules and laws.

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