**Environmental impacts of improper management of solid waste in developing Nations: a case study of** **Kishangarh, Ajmer.**

**Rakesh Kumar Baser**

**(Assistant Professors, Dept. of Zoology, SD Government College, Beawar, (Ajmer), Rajasthan, India)**

**Abstract:** An improper solid waste management may create serious environmental impacts like water and land pollution, obstruction of drains, biodiversity loss in developing cities. In India, due to a lack of proper planning the solid waste management is becoming worse day by day **(Oseghale and Aja, 2011)**. Kishangarh city is selected as a case study to highlight the main causes of improper solid waste management in developing countries. Kishangarh is an important industrial city of Ajmer district, located in the north –East direction of Ajmer on National Highway No. 8 (Delhi to Bombay) between Ajmer and capital Jaipur. Once upon a time, when this city was known for its splendid art and culture, whether it be in the field of drawing and painting in the form of “Bani Thani” or in the field of sculpture; but now the scenario has been changed and the present Kishangarh is known as marble market all over the world. Total area covered by the marble units (about 1800 marble units) is about 1212.88 acre. Due to the strategic location and close proximity of the city to Ajmer and Jaipur, the city serves as a commercial centre. The solid waste of Kishangarh consists of residential waste, garbage, biomedical waste, polythene waste, marble slurry and market waste. This city is facing solid waste management crises due to rapid industrialization, urbanization. It is investigated during the research that due to rapid growth in population, increase in solid waste production rate, deficiencies in management, lack of legislative implementation, lack of social awareness, improper resources, the solid waste management systems of the city are not working effectively.

**Keywords: solid waste management, Ajmer City, environmental impacts, land pollution.**

**Introduction:** Developing countries are seriously facing the problems in collection, transportation and disposal solid waste of community **(Jalil, 2010)**. Due to diverse life styles in communities, development authorities are not able to offer solid waste management system for different communities, therefore in India a lot of abnormal solid waste management systems are working **(Saheri *et al*, 2011)**. Collection efficiency of the existing solid waste systems in India is very low due to a lack of storage bins and improper management system. Open dumping, open burning and improper sanitary landfills are common practice throughout the country.

In India, according to the CPCB, about 1,43,449 metric tons of solid waste is being generated on daily basis in urban areas, less than 50 percent of this generated solid waste is being collected properly. Sporadic incineration is very common and no proper disposal facility has been provided for the municipal solid waste. According to CPCB solid management rules, 27.24-acre land will be reclaimed by biomining.

About 109,589 tons waste produced per day in India. 1994 plague in Surat was due to solid waste which blocked drains **(Dincer, 2000)**. Poly bags caused 2005 flood in Mumbai due to blocked drains. After Almira Patel writ petition 2000, municipal solid waste management and handling rules, give framework for MSW management. In India, different solid waste collection systems are in practice **(Shekdar, 1999).** Municipal authorities collects generated solid waste from the main cities with diverse collection efficiency throughout the country. Especially in remote areas of India, municipal authorities are not providing any facility for the collection and disposal of solid wastes. **(Kripalani *et al*, 2005)**.

It was observed that the collected solid waste is being transported in an open body tractor trolley and collected solid waste is being dumped on the ground which is totally unhygienic. During investigation it was concluded that improper solid waste management systems in Kishangarh City are resulting various negative impacts on the environment. Dispersed solid waste from the illegal open dumps often blocks the drains and sewers creating flooding and unhygienic conditions in the city. During the investigation it was observed that the flies and mosquitos are increasing their population so rapidly due to these waste dumps and they are spreading the malaria and dengue in the community. are. It was also reported that proportion of food waste in open dumps and waste drains providing an attractive shelter for rats for spreading disease, damaging various materials in the study area. The open burning of collected solid waste causing air pollution issues in the city. Uncollected solid wastes degrading the urban environment and discouraging efforts to keep streets and open spaces clean. A high percentage of collected solid waste from the city is being treated or disposed of in unsatisfactory ways. Discarded polythene bags in collected solid waste from the city are generating an aesthetic nuisance in terms of smell and manifestation and cause the death of grazing animals which eat them. Strong wind and storm are spreading dust from the open dumps of solid waste to adjacent areas. Ground water resources are contaminated by Percolation of rainwater through the open dump. Sweepers and sanitary crew deployed for collection of solid waste in Kishangarh city. Workers not provided with safety instruments like gloves, shoes, and safety uniforms. Workers connected with the solid waste management are at great risk of respiratory diseases and skin diseases because they are in direct contact with hazardous wastes, and harmful microbes **(Said, *et al* 2003)**.

 Solid waste is being temporarily collected in containers from where it is transported by the help of collection vehicles and carried out to final disposal sites. Due to a lack of health and safety facilities to the waste collection crew in the city, they are specifically facing occupational hazards, including injuries from sharp objects. The management staff of Kishangarh municipal committee comprises sanitary inspectors who supervise the collection and disposal of solid waste.

 As a result, a lot of dangerous items may cause risks of injury or poisoning to scavengers and school children. Total numbers of collection vehicles for the city are not sufficient. During the field visit it was also observed that most of the people have a habit of throwing the solid waste from a distance to the communal storage bins that present a view of spilled over garbage. **(Siraj, 2012)**.

**Conclusion:** There are no proper facilities for collection and disposal of communal solid waste in developing countries. Open dumps cause breeding of flies, blockage of drains, and spread of epidemics. Present solid waste management system is insufficient for the city due to lack of proper equipment and funding **(Fauziah *et al*, 2009)**.There should be involvement of all the stakeholders to participate in various activities of primary collection of municipal solid waste. This practice may effectively improve the collection and management efficiency of municipal authorities to enhance the solid waste collection efficiency and improvement of transportation and disposal system. Separation of recyclable waste material would lead to reduction in quantity of solid waste. Timely and proper collec­tion, transportation and development of proper operation like sani­tary land fill sites are required. Separation of different components of solid waste at the source is important **(Suhaimi and Fauzilah, 2004)**. Municipal waste should be recognized as a source for energy production. There should be strict implementation of municipal Solid Waste Management Handling Rules, 2000.

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