

# **Study on generation of plastic waste type and its effect on clogging of drain for successful management**

A.J. Kashyap<sup>1</sup>, J. Kalita<sup>2</sup>, S. Kalita<sup>3</sup> and R. Borthakur<sup>4</sup>

Abstract:

A study was carried out in Guwahati, Assam, India on generation of different plastic waste type and its effect on clogging of drain for successful plastic waste management. Out of the 60 wards under the Guwahati Municipal Corporation 10 wards were considered for thorough study of household generation of plastic waste and differentiated its type as per the recycling potentiality. It was found that among the plastic waste 60% is recyclable plastic and 40% is non recyclable plastic. Distribution of NRP in drain is 89% and RP is 11% respectively. All the multilayered and laminated plastics are non recyclable and often mixed with the recyclable plastics and biodegradable solid waste and chiefly responsible for clogging of drain, artificial water logging, development of waste land etc. Therefore differentiation of plastic waste type into recyclable plastics (marked as RP) and non recyclable plastic (as NRP) would help for systematic segregation and management. For sustainable plastic waste management a special type of litter bin is developed for source collection and effort are also being taken for production of useable fuel from both RP and NRP through a simplified process. Once the plastic waste is segregated, the biodegradable solid waste in the land field will not create any problems rather it will act as soil conditioner.

<sup>1</sup> Environ, Guwahati, Assam, India.

<sup>2</sup> Department of Zoology, Gauhati University, Assam, India.

<sup>3</sup> Department of Environmental Science, Gauhati University, Assam, India.

<sup>4</sup> Department of Zoology, Aryavidyapeeth College, Assam, India.

**Published and presented in the 1<sup>st</sup> International Conference on “Municipal Services, Urban Development and Public Works”, November, 2009. Organized by Centre for Quality Management System. Jadavpur University, Kolkata. *IconSWM*, 2009. Pp. 179-182. (ISBN: 81-86862-39-0).**

\*\*\*\*\*

## **Present scenario of solid waste with special reference to plastic and other non-biodegradable solid waste and its management for the sustainable urban poor development in Guwahati city, Assam, India**

Amarjyoti Kashyap<sup>1</sup>, Jatin Kalita<sup>2</sup>, Sarbeswar Kalita<sup>3</sup> and Kripaljyoti Mazumdar<sup>4</sup>

**Abstract:** Solid waste has been one of the key problems in most of the cities around the world, which has been placed at second most difficulty that the modern cities are facing at the moments by

UNDP. A scientific study was carried out in 12 different localities of Guwahati city covering more than 0.21 million population. The study includes on generation of solid waste and the type of plastic waste consisting of various recyclable & non-recyclable plastics and possible suggestive measure on plastic waste management and sustainable urban poor development are also discussed. In the present scenario only 10% plastic is being collected for recycling where as glass and metal is 50% and 70% respectively with 559 numbers of waste collecting points by 15000 numbers of waste collectors and rag pickers in the studied localities of the city. It was found that among the plastic waste generated from household 60% are of recyclable plastic (RP) and 40% are non recyclable plastic (NRP) according to the present scenario. The plastic waste has been playing a major role in clogging of drains and artificial water logging. During the study it was found that 89% plastics in the drain are non-recyclable and only 11 % are recyclable plastics. Analysis of samples collected from drain reveals that the proportion of the NRP was found highly significant ( $p=0.0008<0.05$ ) as compared to that of RP ( $p=0.29>0.05$ ). The study also highlight the prospect of source collection and utilization of the plastic waste and other non biodegradable solid waste, which is one of the untapped issues and if they are properly linked to the recycling processes and industries, there would be visible change on economy of the urban poor towards sustainable development.

1, 4 Environ, Guwahati, Assam, India-781 006

2 Department of Zoology, Gauhati University, Assam, India-781 014

3 Department of Environmental Science, Gauhati University, Assam, India-781 014

4 G. B. Pant Institute of Himalayan Environment and Development, NE Unit,  
Itanagar-791 113, Arunachal Pradesh, India

**Published in *NeBIO* 1(1). 2010a. Pp 18-26. (ISSN 0976-3597).**

\*\*\*\*\*

## **Analysis of municipal solid waste and its management practices in Guwahati**

A J Kashyap<sup>1</sup>, Jatin Kalita<sup>2</sup> and Sarbeshwar Kalita<sup>3</sup>

**Abstract:** Different types of municipal solid waste are classified as organic, paper, plastic, glass, metal, rubbish and others. The Guwahati Municipal Corporation is the only concerned authority for the solid waste management of Guwahati. Under the Jawaharlal Nehru National Urban Renewal Mission (JNNURM) responsibilities of Integrated Solid Waste Management of Guwahati City are vested to the Guwahati Waste Management Company Pvt. Ltd. for the next twenty years. Presently all the solid waste both biodegradable and non biodegradable is collected together from dust bin and other different public places and disposed it into law lying areas of West Bora Gaon which is the periphery of Deepor Beel, the lone Ramchar site of Assam. Moreover, more than 5000 numbers rag pickers are playing a vital role on solid waste management in Guwahati. Moreover under the JNNURM a pilot project on door to door segregated non-biodegradable solid waste collection programme is going on in ward no. 55 and 59 respectively.

<sup>1</sup> ENVIRON, 60, L.N.B. Road, Hatigaon, Guwahati, Assam, India-781006

<sup>2</sup>Department of Zoology, Gauhati University, Assam, India-781014

<sup>3</sup>Department of Environmental Science, Gauhati University, Assam, India-781014

\*\*\*\*\*

## **ROLE OF RAG PICKERS ON SOLID WASTE MANAGEMENT IN GUWAHATI CITY**

Amarjyoti Kashyap<sup>1</sup>, Jatin Kalita<sup>2</sup>, Sarbeswar Kalita<sup>3</sup> and Ruli Borthakur<sup>4</sup>

**Abstract:** Rag pickers are the most neglected urban community and contributing significant role towards solid waste management. The composite garbage including plastic left at the street corners, various public places, roadsides, dustbins and drains etc. in the city starkly reflects the fact that people in Guwahati city do not make any effort to segregate the solid waste. Only the Rag pickers are segregating the plastic and other non-biodegradable solid waste from biodegradable solid waste. At the present scenario rag pickers are collecting waste from road side and road side bins, common dumping grounds, drains, open public places, and backyard of the houses etc. and able to collect only few amount of non-biodegradable solid waste. If they are organized and engaged in source collection of non-biodegradable solid waste including plastic carry bags, there will be a visible change in solid waste management in the Guwahati city as well as in other places also.

<sup>1,4</sup> Environ, Guwahati, Assam, India.

<sup>2</sup> Department of Zoology, Gauhati University, Assam, India.

<sup>3</sup> Department of Environmental Science, Gauhati University, Assam, India.

<sup>4</sup> Department of Zoology, Aryavidyapeeth College, Guwahati, Assam, India.

**Published and presented in 2<sup>nd</sup> International Conference on “Solid Waste Management”, November, 2011. Organized by Centre for Quality Management System, Jadavpur University, Kolkata & International Society of Waste Management, Air and Water. *IconSWM*, 2011. Pp. 760-764. (ISBN: 81-86862-41-2).**

\*\*\*\*\*