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Preface

During the last few decades, the problem of MSW management has acquired an alarming dimension in the developing countries. Although cities of LDACs have a lower rate of waste generation with compare to the cities of the developing countries, the quantum of waste is high owing to their higher levels of population density and low technology. The tropical climates with a high degree of rainfall and humidity aggravate the problem of solid waste disposal. As cities are becoming more urbanized, their waste composition also changes. The substantial increase in the use of paper and packaging is probably the most obvious change. The other most significant change is the higher proportion of plastics, multilateral items and consumer products and their related packaging material in the solid waste. A negative side of greater affluence is that it brings with it more wastes of higher volume, making it more expensive for management. However, the situation needs to be improved which depends completely on the change of the attitude of the individual citizen, the community and the authority directly or indirectly responsible, otherwise environmental degradation will make a threat for the sustainability of the inherent socio-economic settings.

This *WasteSafe 2013, 3rd International Conference on Solid Waste Management in Developing Countries* –is organized at Khulna, Bangladesh to exchange the views and experiences at international level and to understand the solid waste management concept as a whole. It is expected that the academicians, researchers, officials and professionals will unfold the prevailing reality in this sectors, innovative ideas, latest findings and experiences in this forum in order to provide the necessary guidelines through which a safe and sustainable system for solid waste management can be designed based on the local socio-economic settings, technological capabilities and present needs. It will open the eyes how a system can be made effective within limited resources and constraints.

To address this most striking social and environmental issue Khulna University of Engineering & Technology (KUET) has taken several initiatives in the past since 2002. In this footstep, several seminar, workshops and stakeholders' dialogue were organized at the Department of Civil Engineering, KUET, Khulna and other cities of the country and finally WasteSafe 2009, the 1st International Conference on Solid Waste Management was organized successfully in 9-10 Nov. 2009 at Khulna. The success of WasteSafe 2009, encouraged the organizer to continue such activities in Bangladesh in every odd year in a particular time of the year. To materialize such attempt, the WasteSafe 2011, the 2nd International Conference on Solid Waste Management in Developing Countries was held successfully at Khulna, Bangladesh on 13-15 February 2011. To continue these activities at an excellent forum –WasteSafe - in a Least Developed Asian Countries (LDACs) - Bangladesh, the WasteSafe 2013, the 3rd International Conference on Solid Waste Management in Developing Countries has arranged at Khulna, Bangladesh on 10-12 February 2013. WasteSafe 2013 is jointly organized by Khulna University of Engineering & Technology, Bangladesh; Bauhaus University Weimar, Germany; University of Padova, Italy, International Waste Working Group (IWWG) and ORBIT Group. Technical papers were invited through website (www.wastesafe.info) and information bulletin from the academicians/ researchers/ professionals/ social activists working on solid waste management around the worldwide before the conference date.

After review, a total of 90 technical papers including 5 Keynote papers were selected for publications into the Conference Proceedings and Oral Presentation in the inauguration session, 3 Keynote Sessions and 14 Technical sessions. Academicians, researchers, professionals and other personalities from 10 different countries - Austria, Bangladesh, Germany, India, Italy, Japan, Nepal, Sri Lanka, Africa and Switzerland - submitted their scientific contributions in this conference. Papers have been lightly edited to homogenize the style and to revise the contents based on reviewers' comments. However, the final responsibility for the contents, quality and the presentation of the papers is held by each individual author. In this proceedings only the executive summary of the papers are printed and hence published, however, full papers are available in a CD ROM enclosed with this proceedings.

I would like to acknowledge the great efforts of the authors, who jointly and/or individually contributed by submitting papers. I might appreciate the supports received from the reviewer's who did it perfectly. The contributions of the members of all committee are gratefully acknowledged. Heartiest thanks to I.M. Rafizul, S.M.T. Islam, I. Nazir and S.R. Saha for putting their excellent joint efforts with me for editing the proceedings including composing the text, figures, tables and photographs, which is indeed a tedious job.

Finally, great appreciation is due to Prof. Dr. W. Bidlingmaier, Prof. Dr. Raffaello Cossu and Prof. Dr. Eckhard Kraft for their warm cooperation and encouragement.

Muhammed Alamgir

Khulna, February 2013