

- **Dr. Dinesh Kumar**, Deptt. of Civil Engg., IIT Delhi
- **Ms. Mamuni Pandit**, Prog. Officer, Waste & Resources Management Group, CEE
- **Ms. Indu Kumari**, Prog. Officer, Waste & Resources Management Group, CEE
- **Mr. Subroto Banerjee**, IAS (Retd.) Chairman, SEIAA, M.P.
- **Dr. V.C. Goyal**, Director, Science & Society Division, DST, Govt. of India
- **Prof. Rajesh**, Delhi University
- **Dr. Subir Saha**, Director SPA and Member SEAC
- **Mr. G. S. Baveja**, GM, (HSS & E), BPCL, Mumbai
- **Mr. Raj Kumar**, E- Waste Management, E Parisaraa, Bengaluru
- **Prof. C. P. Kaushik**, Member SEAC, Govt. of Haryana
- **Mr. Ravi Kumar Aggarwal**, President, All India Plastic Industries Association
- **Mr. Nitin Goel**, Co-founder, Green-O-Bin
- **Mr. A. N. Singh**, Retd. Chairman, Central Electricity Authority
- **Ms. Kamlesh**, Mayor, Chandigarh
- **Mr. Mohd. Sahil A.**, W2E Projects & Systems Pvt. Ltd. Kochi
- **Mr. Sumit Barat**, Manager CDM, IL & FS Ecosmart, New Delhi
- **Dr. Chirashree Ghosh**, School of Environment Sciences, Delhi University
- **Dr. P. G. Jose**, SES, JNU, New Delhi
- **Mr. Swapan Mehra**, Evolution Markets
- **Dr. V. Gupta**, Medical Superintendent, Escorts Hospital, New Delhi
- **Prof. (Dr.) Arti Kapil**, Deptt. of Microbiology, AIIMS, Delhi
- **Air Marshal Lalji K. Verma**, AVSM (Retd.), President ISHWM
- **Dr. Shanta Nagarajan**, Rockland Hospital, New Delhi
- **Dr. Talat Halim**, Chief Administrator, Max Healthcare
- **Dr. Kirti**, Medical Superintendent, KGMC, Lucknow
- **Mr. Sanjay Chauhan**, AGM-Env, SMS Infrastructure Ltd.
- **Prof. H. S. Gupta**, Deptt. of Civil Engg., IIT Delhi
- **Dr. J. K. Bhasin**, Sc 'F', NEERI
- **Mr. Neeraj Khatri**, Dy. Director – Flyash, MoEF, Govt. of India
- **Mr. Amit Jain**, MD, IRG System South Asia Pvt. Ltd.
- **Dr. K. G. Gandhi**, Head, Air Cleaning – Waste Management, BARC
- **Dr. Bhoop Singh**, Sc 'G', Deptt. of Sc. & Tech. Govt. of India
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- **Mr. Suresh Chandra Jain**, Chairman, SEAC, M.P.
- **Dr. A.K. Ambasth**, Member Secretary, SEAC, Delhi
- **Dr. Anil Kr. Jain**, Chairman, SEAC, Punjab



Major Recommendations

- There should be closer coordination between the government sector and non-government sector for evolving effective policies, programs and strategies to ensure sustainable environment.
- A National Waste Management Cell would be created whose responsibility would be to invite frequently asked queries from various State Level Nodal Agencies (SLNAs) and subsequent clarifications on waste management would be issued regularly.
- Public awareness should be created to modify life-styles to conserve resources and produce less waste, and to support and promote policies and strategies for effective Solid Waste Management.
- Efficient guidelines and policy corrections on managing solid waste have to be established to avoid converting the country into a dumping ground for wastes.
- The sites for development of Sanitary Landfill Facility (SLF) have to be identified based on Environmental Impact Assessment study.
- Management and technical personnel in City Municipal Authority offices should be properly trained with latest technologies and techniques for efficient handling and disposal of Municipal Solid Wastes.
- Social audit through community supervision of performance of the Safai Karamcharis would facilitate in maintaining an effective monitoring and accountability system.
- Various stakeholders like public, policy makers, NGOs, Media, Scientific and Student Communities should work together to create wide –spread awareness of reducing and effective handling of Solid Wastes.
- The objectives of this Conference should be propagated and realized at various levels viz., local level, district level, state level, national level by involving Universities, Colleges, Schools, Local administration and key officials working in the field of Solid Waste Management through organizing National Workshops/ Seminars/ Conferences/ Symposia and other awareness/ action-based Programs.
- MSW-composting project should explore CDM and carbon finance as a means of promoting economic viability.
- JNNURM should include CDM projects development to promote waste management
- Universities and institutions in the States capitals should be involved and encouraged to set up CDM cells to promote CDM vis-a-vis Environmental Sustainability.
- Setting up Rock Gardens in various Capital cities of India, on the pattern of Rock Garden, Chandigarh, under blessings and guidance of Shri Nek Chand, the pioneer creator of this marvel, as an effective step towards sustainable and healthy environment.

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Brief Report on National Workshop-cum-Conference

ENVIRONMENTAL IMPACT THROUGH EFFICIENT MANAGEMENT OF SOLID WASTE: TECHNOLOGY IMPETUS & POLICY TRANSFORMATION

With support from Ministry of Environment & Forests (MoEF), Govt. of India

September 10-11, 2009
India International Centre (IIC), 40, Max Mueller Marg, New Delhi - 110 003



"We have responsibility to look after our planet. It is our only home". The Dalai Lama



Introduction

During these two days of the Conference, we had lot of fruitful deliberations. We focused on the colossal scale of the task on hand, the burgeoning amount and variety of Solid Waste; latest technologies and techniques which could be employed to tackle this gargantuan task. It is heartening to note that lot of work is going on across the country; Corporations as well as Govt. Sector are adopting innovative ways and means to exploit this Solid Waste for useful purposes. We are quite optimistic that this Workshop-cum-Conference would provide a great fillip towards more effective and profitable management of Solid Waste.

Govt. of India has taken a very timely and forceful action by initiating JNNURM on the National scale. It is the single largest central government initiative in the urban sector with an estimated provision of Rs. 50,000 crore over a period of 7 years. Solid waste management is one of the thrust areas of this mission. The suggestions and recommendations of this Workshop will surely be a handy tool to fine-tune strategies, plans and methodologies to utilize JNNURM towards achieving better cities.

This Workshop also provided an opportunity to interface between policy regulators and other stakeholders. The planning, design and operation of sanitary landfills were discussed in detail. Sustainable Development was indeed the buzz word of the Workshop and would surely help immensely to facilitate easier and smoother Environmental Clearance, as per MoEF Notification of 14th September, 2006.

Objectives

- To provide a forum to share ideas and experiences in the field of Solid Waste Management (SWM).
- To provide an interface between policy regulators and various stakeholders.
- Application of Clean Development Mechanism (CDM) in Solid Waste Management.
- To focus on guidelines on siting, planning, design and operation of sanitary landfills.
- Upgrading options for existing open dumps and lack of standards and regulations in existing scenario.
- To discuss new concepts and technologies for more effective waste management in a sustainable manner.
- To facilitate the process of Environmental Clearance (EC).
- To discuss the lessons learnt from national and international waste management projects.
- To create awareness regarding the environmental, economical and social impacts of SWM.
- To create rock gardens in capital cities of various States on the model of Rock Garden, Chandigarh.

Solid Waste Management: A tool for sustainable development

Solid Waste consists of household, construction and demolition debris, sanitation residue and waste from streets. Hazardous, Industrial, Nuclear, Refinery, Thermal, Domestic and hospital wastes as well as biomedical waste also form a part of SWM. Similarly, E-waste is one of the fastest growing waste materials; its disposal is complicated due to the unethical practices adopted by Corporates and IT Companies. With rising urbanization and change in lifestyle and food habits, the amount of Solid Waste has been increasing rapidly and its composition changing.

To achieve true sustainability, we must reduce our garbage index to near zero. Production activities must be organized as closed systems. Minerals and other non-biodegradable resources, once taken from the ground, must become a part of society's permanent capital stock and be recycled in perpetuity. Organic materials may be disposed into the natural ecosystems, but only in ways that they are absorbed back into the production system. Management of Solid Waste is a complex exercise—it requires innovative and speedy

implementations of the sanitary Landfills. Lot of issues regarding their site selection, designing and technologies need to be understood and the possible solutions adopted speedily for effective management of Solid Wastes. Waste Management can be taken up for energy generation, as well as global Carbon Trading and Clean Development Mechanism (CDM). This, in itself, is a huge market and we should gear up for a part of the pie.

Participants

- Officials of MoEF, Ministry of HRD and MNRE, Govt. of India
- Officials of Central Pollution Control Board
- Officials of ONGC and BPCL
- Officials of NBCC
- Chairmen and Members of various EACs of MoEF, Gol
- Chairmen and Members of States SEACs and SEIAAs
- Officials of Dept. of Science and Technology, Gol
- Officials of CSIR
- Authorities of Urban Development (Centre and States)
- Planning Commission experts, officials of well known hospitals, corporate bigwigs
- Scientists, Environmentalists, Academicians, NGOs, Research Scholars, Community Leaders, Policy Makers and Regulators etc.

Technical Sessions

- Session I : Solid Minimization and Management**
Chaired by: Mr Yogesh Sharma, Head (Environment), NBCC, New Delhi
- Session II : MSW: Characterization, Treatment and Upcoming Technologies (Refuse – Derived Fuel)**
Chaired by: Dr. Anil Kumar Dhussa, Director, Ministry of New & Renewable Energy, Govt. of India
- Session III : Design and Management of Landfill Sites**
- Session IV : Policy Planning and Strategy**
Combined Session Chaired by: Mr. M. Sankar Narayanan, Adviser (PHE), MoUD, Gol
- Session V : Electronic, Thermal, Hazardous and Refinery Wastes**
Chaired by: Mr G. S. Baveja, GM (HSS & E), BharatPetroleum Corporation Ltd., Mumbai
- Session VI : Clean Development Mechanism (CDM) for SWM Projects**
Chaired by: Mr A. N. Singh, Retd. Chairman, Central Electricity Authority
- Session VII : Biomedical Waste**
Chaired by: Dr. V. Gupta, Medical Superintendent, Escorts Hospital, New Delhi
- Session VIII : Urbanization: Issues, Concerns and Upcoming Technologies**
Chaired by: Mr Subroto Banerjee, IAS, Chairman, SEIAA, M.P.
- Session IX : Environmental Impact Assessment (EIA) for SWM and Environmental Clearance (EC)**
Chaired by: Dr. Bhoop Singh, Scientist 'G', DST, Govt. of India

This event had the blessings and support of eminent authorities and luminaries actively involved in the propagation of the concepts of sustainable development and preservation of environment. We place on record our thankful gratitude to the following dignitaries:

- Mr. Nek Chand Saini**, Founder – Creator, Rock Garden, Chandigarh
- Dr. K. Kasturirangan**, Member, Planning Commission of India.
- Prof. S.P. Gautam**, Chairman, Central Pollution Control Board, Govt. of India
- Mr. Ashok Thakur, IAS**, Addl. Secretary, Ministry of HRD, Govt. of India
- Dr. S. K. Bhargav**, Chairman, SEAC, U.P.
- Dr. A. K. Sahu**, President, National Waste Association of India, Mumbai
- Prof. S. N. Singh**, Dean, Industrial Research & Development, IIT Delhi
- Prof. A. L. Ramanathan**, School of EnvSciences JNU, New Delhi
- Mr. Yogesh Sharma**, Head (Environment), NBCC New Delhi
- Major Narendra Pal (Retd.)**, Executive Director Hanjer Biotech (P) Ltd.
- Dr. S. K. Chakraborty**, Sc 'F', Deptt. of Scientific & Industrial Research, Ministry of Sc. & Technology Govt. of India
- Dr. P. K. Jha, Advisor (Tech)**, Sulabh International
- Mr. R. N. Mallik**, Member SEIAA, Govt. of Haryana
- Dr. Lakshmi Raghupathy**, Advisor, MAIT-GTZ
- Mr. Manoj Sharma**, Head – Microbio, Dabur India Ltd.
- Dr. Manik Thapar**, Director, Eco – Wise Waste Management
- Dr. Anil Kumar Dhussa**, Director, Ministry of New & Renewable Energy, Govt. of India
- Mr. J. Phani Kumar**, ED, RDF Power Projects Ltd. Hyderabad
- Dr. Sangita**, Sr. Scientist, Flexical Pavement Div, CRRI, New Delhi
- Mr. Krish Iyengar**, VP – Business Development Reliance Group, Mumbai
- Mr. J. K. Bhattacharya**, Sc 'E-II', Solid Waste Management Unit, NEERI, Nagpur
- Mr. P.A. Backer**, Director, Dowac GreenTech Bengaluru
- Mr. Anil Raj Rai, IAS**, Jt. Secretary, Urban Development & Housing Deptt, Sikkim
- Prof. V. Sukumaran**, Deptt. of Biotech, Periyar Maniammai University Tamil Nadu
- Mr. Rajnish Kumar, IAS**, Director (Urban Development), HP.
- Mr. M. Sankar Narayanan**, Dy. Adviser (PHE) Ministry of Urban Development, Govt. of India
- Dr. N. B. Mazumdar**, Sr. Tech. Advisor, IL & FS Ecosmart, Gurgaon
- Dr. Babu Alappat**, Deptt. of Civil Engg, IIT Delhi

