

# **“Waste and Climate Change” Workshop**

November 7, 2012

Senate Lounge at “The Claridges”, Aurangzeb Road, New Delhi – 110 011, India

Organized By

UBA, IFEU, GIZ, IGEP

## **Background**

India is the world's second most populous country, with over 1.21 billion people (2011 census) and therefore has more than a sixth of the world's population. Coupled with population increase, municipal solid waste (MSW) is also increasing in India at a rate of almost 5% per year. In 2005, the overall amount of waste generated was estimated to be 42 million metric tons which has increased to roughly 65 million metric tons in 2010. The MSW collection rates in most Indian urban areas are between 50% to 90% and in some cities the collection rate is as low as 25%. Apart from recyclables collected by the informal sector, non-collected waste is either disposed of in uncontrolled dumps or burnt openly, both illegal and unhealthy practices. Collected waste is mainly disposed of in low-lying areas without taking any precautions or operational controls. These practices are not in compliance with MSW Rules (Management and Handling) set by the Ministry of Environment and Forests (MoEF) and which came into force in September 2000.

As India's society continues to evolve, it is important to consider the role of waste management and its potential impact on the environment, climate, and the health of people in India and the world. Germany is presently supporting the policies of the Government of India (GoI) in the environment and climate sector in the area of Sustainable Urban and Industrial Management (known as ASEM-Programme: Advisory Services in Environmental Management). The intention of the ASEM Programme has been to achieve verifiable environment improvement addressing priority needs of India and streamlining the Indo-German cooperation in the area of environment, climate and sustainable development. Also, the cooperation was intended to contribute significantly to achieving the Millennium Development Goals (MDGs) and other international environmental conventions. The ASEM Programme is implemented jointly by the Ministry of Environment and Forests (MoEF) and the Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) on behalf of the German Ministry for Economic Cooperation and Development (BMZ).

## **Introduction**

To shed light on cross-cutting issues of waste management and climate change as part of the ASEM-Programme, a stakeholder workshop was held on 7 November, 2012 at Claridges Hotel, New Delhi. The workshop took place within the Indo-German Environmental Partnership (IGEP) framework and was supported by the Federal Environment Agency (UBA) of Germany and the Institute for Energy and Environmental Research.

As participants in the workshop, relevant stakeholders, including Ministry of Urban Development and Ministry of New & Renewable Energy, State Officials and Municipal Officials, Waste Management Companies and NGOs discussed the current waste management situation in India and possible future developments. They also took into consideration the co-benefit of managing municipal solid waste in order to provide benefits to climate protection.

A second component of the workshop included the presentation of a new “Aid to Decision Making” (ADM) Tool developed by GIZ-Indo German Environmental Partnership (IGEP) Program with the support of the Institute for Energy and Environmental Research (IFEU), Heidelberg. The ADM tool provides a technical and professional foundation for evaluating different waste treatment options against status quo practices within Indian municipalities in terms of economic, environmental, climate and social implications.

## **Objective**

The objectives of the workshop were as follows:

- Facilitate a discussion between key players in the waste management arena to discuss challenges and opportunities for India.
- Provide a greenhouse gas accounting for the current waste management system in India.
- Describe future scenarios that would promote more sustainable waste management and quantify the resulting greenhouse gas reductions, economic and social benefits and costs.
- Gather feedback from relevant participants in the workshop concerning the status of waste management in India including data, regional differences, information on the informal sector, and political issues on the municipal level.
- Present a tool that helps aid decision makers on how to choose between various alternative waste management scenarios depending on user-customizable inputs. The objective of the showcased tool is to provide a technical and professional means to evaluate decisions of different waste treatment options in India including the relative impact of these systems on economic, environmental, climate and social aspects.

## Workshop Proceedings

The workshop was kicked off by a short introduction from Dr. Dieter Mutz of the GIZ. Dr. Mutz welcomed the guests and participants in the workshop and highlighted the importance of the waste management issue in light of the pursuit of economic growth in India.

**Volker Weiss** of UBA provided an overview of the historical and political storyline of waste management in Germany. His presentation described the various policies that have been enacted in Germany to promote sustainable waste management with an emphasis on reduction, reuse, and recovery. Perhaps the most significant of the various legislations was the Closed Substance Cycle and Waste Management Act of 1996 which redefined waste as a resource that needs to be managed. In 2001, the Waste Storage Ordinance was passed with the effect of creating a landfill ban for all untreated waste after 1 June 2005. After this legislation, a significant increase in alternative waste management technologies and options came about including mechanical biological treatment (MBT), incineration with energy recovery, and mechanical biological stabilisation (MBS). Mr. Weiss showed that since 1990, municipal solid waste entering landfills has significantly decreased and the trend continues to the present day. These landfill reductions have led to increases in recycling and have contributed to the waste sector's reduction in greenhouse gas emissions. After the talk, many questions from the workshop participants focused on the costs associated with the technology transition used to cope with the additional material being diverted to the landfill. Mr. Weiss responded that it depends on the technology and the regional characteristics so it is difficult to make a general statement about costs.

**Marlene Sieck**, also of UBA, presented on the climate benefits associated with the waste management initiatives in Germany and also made comparisons to other nations in the EU. Her presentation focused also on the greenhouse gas reductions in Germany associated with the various policies and regulations that have been enacted in Germany to more sustainably manage waste. Mrs. Sieck presented results that show the emissions from landfills in Germany have steadily declined since 1990 and will continue to do so in the future. She also presented on some possible scenarios of further reductions assuming additional alternative waste management in Germany. Finally, Mrs. Sieck compared the waste management situation in Germany with other European countries. Questions to Mrs. Sieck included a few about the situation in Europe as a whole and how many EU countries are still catching up to Germany in terms of implementing landfill bans. One participant noted how it is impressive (and perhaps encouragement for India) that some of the eastern European countries like Estonia have come a long way in only 17 years in terms of implementing recycling systems and diverting waste from landfills.

**Regine Vogt** of IFEU presented on the current situation of MSW management in India and provided some preliminary results on the implications to greenhouse gas emissions. She also provided results for two scenarios (high-tech and low-tech) that would both reduce GHG emissions from waste management in India while also complying with the MSW Rules. Some comments raised by the audience included the need to incorporate new data into the baseline picture for India. There was also a comment that the amount of compost is actually quite a bit higher than depicted in the presentation because the official data does not always reflect private industry data. There was a lively discussion surrounding the compost quality derived from MSW and its ability to use on the market for agricultural purposes. One workshop participant suggested that a literature review of all existing data on the waste

generation and recovery statistics be compiled to really obtain a clearer picture of the current waste management situation in India.

Following the introductory talks, a discussion panel had an open conversation about the future development of MSW Management in India. The panel members were Nisha Singh of MoUD, Dr. Furniturwala of Hanjer Biotech, Dr. Ravi Aggarwal of Toxic Links, Marlene Sieck of UBA, Dr. Anil Dhussa of the Ministry of New & Renewable Energies and Regina Dube of GIZ.

The discussion panel began with a short discussion of two concerns that each panel member had with the current waste management situation in India. Some of the listed concerns included;

1. Land issues – currently there is not a plan for urban land dedicated to waste/sewage management.
2. Regional differences require different technologies – it should be stressed that a “one size fits all” approach will not work for all of India.
3. Data issues and lack of regulation/measurement systems – currently there is not enough quality data to enable planning. Also, the skills, guidance, and regulations for waste management are lacking.
4. Lack of goals or objectives – without objectives and goals that are set and strived for, the waste management situation in India will not progress.
5. Need to formerly integrate informal waste sector – not only from a technology standpoint, but including and recognizing the waste picker community in the waste management infrastructure should be an important social objective.
6. Financing issues – the infrastructure for financing waste collection is not currently optimal. Most of the funding is directed to the private sector which has little incentive for paying attention to municipalities needs. More attention should be focused on creating and maintaining public policy partnerships.

After the concerns for each panel member were described, the panel also discussed the waste management system in India in more detail. For example, a lively discussion centered on the need for a specific office dedicated to waste management at the municipal level. Currently, there is limited capacity to deal with municipal solid waste and it was mutually agreed across the panel members that more capacity is needed at the municipal level. At the same time, models and reports describing MSW management issues should be state or region based. This will allow for better data and information to the municipalities charged with dealing with MSW in their state and/or region. It was also voiced in the discussion that there is need for synergy between the regulators and the implementers of waste management.

Another major topic of the panel discussion was the issue of the informal recycling sector. There was mutual agreement that they be recognized officially and that perhaps they should not be referred to as the “informal sector” but rather “economic actors”. Currently there is a disconnect between the support of certain technologies (like incineration plants) and waste pickers who stand to lose their jobs. The panel voiced differing opinions on the role of industry in supporting the waste pickers indicating that certain industry programs aim to improve the lives of waste pickers so that their lives are improved. On the other hand, the situation currently is such that alternatives to the status quo waste management structure are in direct competition with waste picker employment.

The second part of the workshop after lunch was a presentation by Pravinjith of Paradigm Solutions on the Aid to Decision Making (ADM) tool. The objective of ADM tool is to provide a technical and professional means to evaluate decisions of different waste treatment options in India including the relative impact of these systems on economic, environmental, climate and social aspects. The ADM tool describes the technical benefits of managing municipal solid waste (including organic waste) as per the MSW Rules using the current situation in India as a baseline. The goal for the use of the ADM tool is to support urban planners, political decision makers, private sector stakeholders, and NGOs to find more sustainable solutions for municipal solid waste management in India. Pravinjith provided a live walk-through of the tool and then engaged the audience to generate a real life case situation using the city of Nasik in the state of Maharashtra.

## **Next steps**

Following the workshop, the ADM tool will be finalized and made available to the Indian public and stakeholders. The goal is to support the preliminary planning and assessment of alternative waste management systems on a city or state level. The “Waste and climate change” workshop will be followed up with other workshops supported by the MoUD on the technology assessment of various municipal solid waste technologies. Dr. Mutz of the GIZ ended the workshop with a closing statement about the MSW situation in India. His sobering statement indicated that since his time working in India starting in 1977, he personally has not seen the waste management situation in India progress at all. Although there have been a few good examples of positive developments over the years, in general, the waste management situation in India is and remains to be “a catastrophe”. That said, it is all the more important to set targets and goals for which India can strive for in terms of MSW reduction and management. The GIZ will continue to work with India to provide guidance on more sustainable MSW management and to provide knowledge and analytics on the co-benefit of climate protection.