

4th December, 2012

To
Shri. S.K. Srivastava,
Vice Chairman,
Delhi Development Authority
1st Floor, 'B' Block,
Vikas Sadan, INA,
New Delhi.

6-899
05/12/12

OFFICE OF THE D.A. (M.P.R.)
M.P.R./C, D.D.A. II, DELHI 2
Dy. No. 6-276
Dated 11-12-12

Dear Mr. Srivastava,

Thank you for meeting us. Chintan is a non-profit organization that works on issues urban sustainability and livelihoods, with a special focus on waste. We have consultative status with the UN-ECOSOC and work through a large number of partnerships. Our work is through implementation as well as through meticulous research and capacity building. Chintan was awarded the first US Secretary of State's Award for Innovation earlier this year.

As part of our discussion we would like to give you a detailed note regarding waste and its inclusion in the Delhi Master Plan for 2021.

We are available to discuss the same with your team at any time

Sincerely,

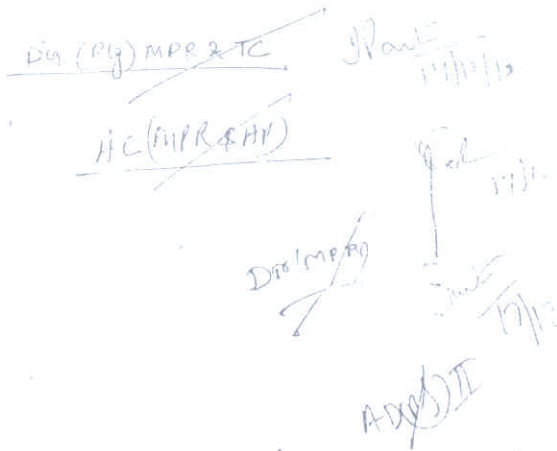
Bharati Chaturvedi
Director
+91 9818400007

M.P.D. 2021 Review
Let it be considered
for
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Discussed with Dir (Ply) MPR & TC
waste management. Therefore, if
CHINTAN Group can be called
giving the presentation.



This issue will
of V.C. MPR

used in 9th meeting
record in VC MPR file
9/12/12

is regarding
called that the
AC of V.C. MPR

11/12/12



Inclusive, Sustainable
and Equitable
Growth for All



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ENVIRONMENTAL RESEARCH
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www.chintan-india.org

Master Plan for Delhi 2021 Space for Waste Picker Inclusion in Delhi's Future Some Comments and Suggestions December, 4th 2012

Handwritten notes in the top right margin:

- Handwritten: "MDD & Services" (with "MDD" crossed out and "MDD & Services" written below it)
- Handwritten: "Solid Waste Management" (with "Solid" crossed out and "Solid Waste Management" written below it)
- Handwritten: "Chintan" (with "Chintan" crossed out and "Chintan" written below it)

Municipal waste, already a problem, is going to continue to pose a challenge to the city of Delhi as population increases and incomes rise over the coming decades. Recent estimates by the World Bank suggest that per capita waste generation is currently 0.57kg/day and is expected to double by 2025¹. Of this, 46 percent is dry and 54 percent is wet waste, most of which can be recycled and composted. Several cities globally are considering these options, as populations rise and a growing middle class generates increasing quantities of waste. For example, San Francisco, under the leadership of its Zero Waste Manager, Jack Macy, has earned worldwide praise for being able to recycle more than 70 percent of its waste².

On the bright side, cities such as Delhi also have a massive population of workers in the informal waste sector (estimated to be as high as 150,000) that provide a crucial municipal service as they earn a livelihood from collecting, sorting and recycling urban wastes. In doing so, they reduce municipal waste management costs for the city and provide invaluable environmental and public health service. Estimates of the contribution of the informal sector to waste recovery and recycling in Delhi range between 20-59% of the total waste generated. Informal sector recyclers are actually able to handle waste more cost effectively compared to the formal sector³. Further, estimates of greenhouse gas emissions reductions from their services in Delhi alone is over 3.6 times that of any single waste management project that has applied for or has been approved for receiving carbon credits through CDM in India⁴.

¹ Borchweg, Daniel and PerinatBhadda Tata, 2012, *What a Waste: A Global Review of Solid Waste Management*, Washington, DC: World Bank

² <http://www.sfoxaminer.com/blogs/under-dome/recycling-official-jack-macy-honored-award>

³ Ganshu, E., B. Chaturvedi and A. Scheinberg, 2011, *The Economics of the Informal Sector in Solid Waste Management*, Eschborn: GTZ and CWG

⁴ Chintan, 2009, *Cooling Agents: An Analysis of Greenhouse Gas Mitigation by the Informal Recycling Sector in India*, New Delhi: Chintan Environmental Research and Action

Moreover, in recent years, several new policies and rules have come about, which require the inclusion of the informal sector in solid waste management and hence, require further compliance and cognizance in the MPD 2021. These are detailed in Annexure 1.

That the city needs to plan for increased quantities of waste is a moot point. Any planning for the city's future must also provide a space for the informal sector that allows them to earn a living under safer and cleaner work conditions. To do this, the Master Plan has already made various provisions for space for waste. However, it must also accommodate the following needs by allocating space for a sustainable future of urban waste management in Delhi:

However, junk shops for all recyclable waste are not allowed under mixed use. Registration of units where they are located, occupational health and safety, and environmental regulations on unsound practices such as open burning and then registering with the MCD. Currently, junk shops are allowed only for paper and glass, this must be expanded to allow all dry wastes to comply with the rules and laws enclosed.

1. In Chapter 15, Section 15.6.2 (d) junk shops (except paper and glass) are not allowed under mixed use. Registration of units where they are located, occupational health and safety, and environmental regulations on unsound practices such as open burning and then registering with the MCD. Currently, junk shops are allowed only for paper and glass, this must be expanded to allow all dry wastes to comply with the rules and laws enclosed.
2. Given how often residents or those working for more affluent residents sell newspapers, bottles, PET bottles etc to junk dealers, these should also be permitted in the list under Section 15.6.3, based on the same conditions as above.
3. Every ward needs Materials Recovery Facilities (MRFs) where dry waste can be stored and segregated as per the MSW Rules, 2000. *Dhalaos* already exist and are currently unused in many parts of the city as skips are being placed outside these. Such *dhalaos* could be used as MRFs rather than other uses.
4. Per the MSW (Management and Handling) Rules, 2000, no recyclable dry waste may be landfilled. Space for an MRF needs to be allocated near landfills for segregation and sorting (non-mechanized value addition) to urban waste. Existing wastepickers can run these MRFs. As Delhi is increasingly looking to waste-to-energy plants as a solution to landfill space constraints and the growing waste problem, this is also leading to loss of livelihoods for the waste pickers who rely on collecting recyclables from landfills as their main source of income. An MRF space near a landfill will provide an opportunity for rehabilitating some of those who will lose their livelihoods with a transition in waste management system. Our estimate of the space requirement for such a facility is 4000 ft² which includes space for segregating, bailing, cutting, sorting, storage, and back-office functions, such as accounts and training. It may be noted that 100 percent segregation does not take place at any of the prior levels, hence some dry waste does end up at the landfills.
5. Space should be provided for composting at the zonal level. According to some recent estimates by the World Bank, as much as 54 percent of Delhi's waste is organic. Further, MSW Rules 2000 disallow organic waste from being disposed of in landfills. Space for composting will allow this waste to be repurposed and reused rather than take up space in already over-capacitated landfills. For processing 3 tons of waste per day, Excel Industries Ltd, manufacturer of Organic Waste Converter (OWC), estimate space requirements of approximately 150 m² for the curing process in addition to 12 m² required for the OWC itself. Based on current organic waste generation estimates (0.30kg/capita/day), such a facility processing all of the organic waste produced would serve approximately 10,000 persons in Delhi. For processing 3 to 5 tons of waste per day, UN Economic and Social

⁵ <http://www.emt-india.net/Presentations/38/ECandCT3-4Nov2006/SeminarDay1/12-A-HARSHAD%20GANDHI-EXCEL.pdf>

Commission for Asia and the Pacific, (UNESCAP) space requirements range between 770 m² and 810 m² for box and windrow composting facilities, respectively⁶. We understand that allocating space based on UNESCAP estimates is unlikely since city land is already scarce but Excel's OWC has already been successfully implemented in at least one area in Delhi and requires much less land to be allocated.

6. Since the issuance of E-waste Management and Handling Rules in 2011, managing the growing problem of e-waste has emerged as a priority for many cities including Delhi. In each ward, spaces should be allocated for collecting and storing e-waste before being sent to dismantling and extraction units.

7. Despite having established policies and rules that clearly recognize the informal recycling sector⁷, Section 14.6 titled "Solid Waste" of the Delhi Master Plan 2021, fails to adequately account for the important role this sector will continue to play in managing municipal solid waste. To this end, we recommend the following additions to this section:

- a. Waste pickers must be particularly encouraged to operate in door-to-door waste collection so that city streets are free of litter and open dumping of waste is minimized. A registered association or group of informal sector waste pickers must be treated as ideal contractors for door-to-door collection.
- b. Waste pickers must be allowed to segregate recyclables at MRFs. Unused *dhaloo* spaces and spaces near landfills must be allocated for such activities that involve non-mechanized value addition to waste materials.
- c. Temporary waste handlers and buyers (sometimes referred to as *thiwalas*), some of whom are women, provide a valuable environmental service that decreases the amount of waste that reaches Delhi's increasingly over-capacitated landfills. Their work should be allowed to continue in commercial areas.
- d. Many waste recyclers use cycles and rickshaws to transport waste and recyclables but are often lacking spaces to safely park these. Spaces for waste recyclers' cycles and rickshaw parking must be allocated so they do not have to worry about the safety of their vehicles.

⁶ <http://www.unescap.org/esd/suds/swm/workshop/2010/dhaka/Resources/02-SWM-InteractManual/Source%20sekt.html>

⁷ Some examples of policies are inclusive of waste pickers are the *National Action Plan for Climate Change 2009* and the *National Environment Policy 2006*. Similarly, both the *Plastic Waste (Management and Handling) Rules 2011* and the *Electronic Waste (Management and Handling) Rules 2011* have asked for including informal sector associations in waste management programs and projects.

MPD 2021

Space for Waste in Delhi's Future



Presentation to the Delhi
Development Authority

December 4, 2012

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Waste: A Growing Problem

- Current waste generation at 0.57 kg/capita/day
- Expected to double by 2025
- Waste composition: 46% dry and 54% wet

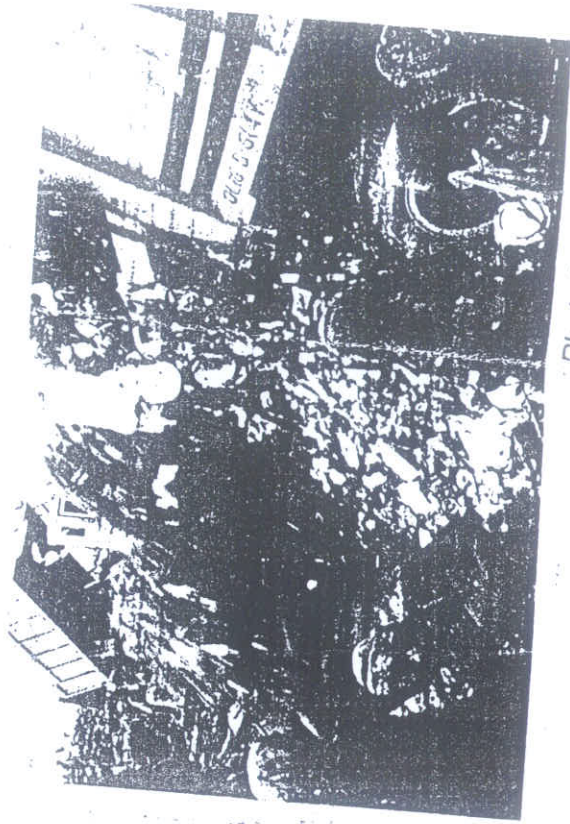


Photo by Enrico Fabian

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Waste: An Opportunity

- Most waste can be recycled and composted
- Estimated 150,000 informal sector workers provide waste management services
- Informal sector recycle between 20-59% of total waste
- GHG emission reductions from their work much higher than approved CDM projects



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Waste Rules and Policies:

Providing policy space for inclusion

- National Action Plan for Climate Change, 2009
- National Environment Policy, 2006
- Plastic Waste (Management and Handling) Rules, 2011
- E-waste (Management and Handling) Rules, 2011
- CAG performance audit on "Management of Waste in India", 2008

... But the informal sector continues to be excluded in city plans and waste management programs.

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MPD 2021: Recommendations for providing real space for inclusion

- Junk shops for all recyclable waste materials should be allowed in the city subject to registration of these units with the Municipality (Chapter 15, Section 15.6.2 (d))
- Selling of newspapers, bottles, PET bottles etc. to junk dealers should be permitted in the list under Section 15.6.3
- Every ward needs Materials Recovery Facilities (MRFs) where dry waste can be stored and segregated as per the MSW Rules, 2000 (e.g. dhalaos)

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MPD 2021: Recommendations for providing real space for inclusion

- Space for an MRF needs to be allocated near landfills for segregation and sorting (non-mechanized value addition) to urban waste (estimated requirement = 4000 square ft)
- Space should be provided for composting at the zonal level (estimated space requirement = 150 square meters for processing 3 tons of waste daily)
- Space should be allocated for collecting and storing e-waste before being sent to dismantling and extraction units

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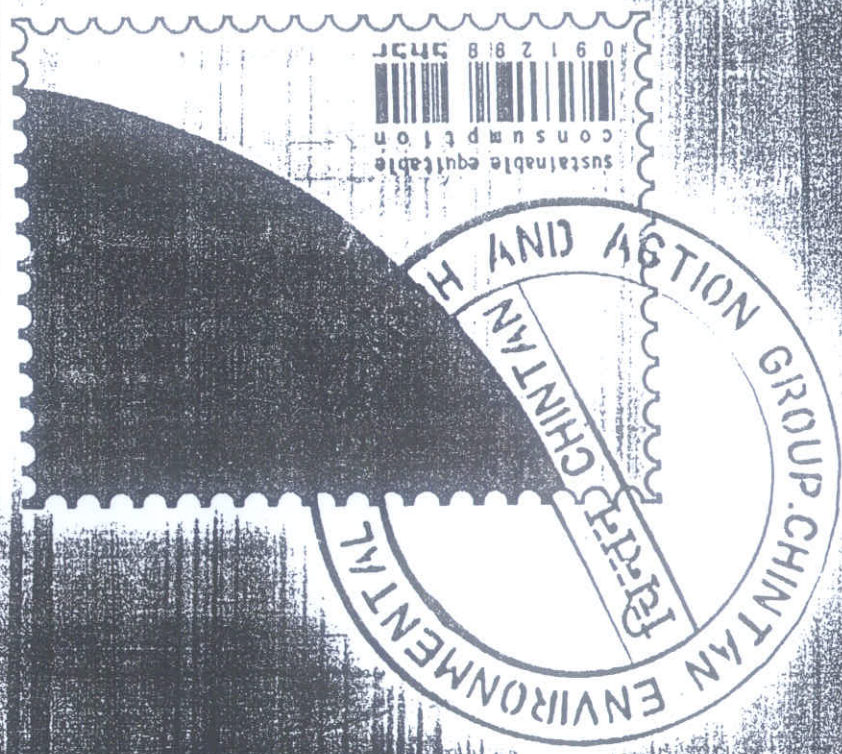
MPD 2021: Recommendations for providing real space for inclusion

Section 14.6 should include:

- Waste pickers must be encouraged to operate in door-to-door waste collection through registered associations
- Waste pickers must be allowed to segregate recyclables at MRFs
- Temporary waste handlers and buyers (sometimes referred to as thiawalas) should be allowed to continue work in commercial areas
- Spaces for waste recyclers' cycles and rickshaws parking must be allocated

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THANK YOU

PROVIDING SPACE FOR INCINERATION

- Space for an MRF needs to be allocated near landfills for segregation and sorting (non-mechanized value addition) to urban waste (estimated requirement = 4000 square ft)
- Space should be provided for composting at the zonal level (estimated space requirement = 150 square meters for processing 3 tons of waste daily)
- Space should be allocated for collecting and storing e-waste before being sent to dismantling and extraction units

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