



# **A case study of Warangal Municipality**

**Presented to : Municipal officials under Rajasthan city at  
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# **WARANGAL BEFORE 12 OCT 2012**

Warangal, 3 hrs NE of Hyderabad, is a tri-city with total population 648,000

Has usual cement-ring dustbins on street, overflowing with garbage, 'black spots'

Piles of uncleared debris on street corners

Mixed waste being open-dumped on 39 acre land at Madikonda, 15 km away

# ACHIEVEMENTS IN ONE WEEK

100% door-to-door collection of waste

80% segregation success during the week

Ring bins & debris piles removed from street

Segregation into 4 types: wet food waste,  
paper, plastic, and combustibles & other

**100% weighing of every fraction from  
every route during one week –  
priceless data awaiting analysis!**

Dry waste sorted, combustibles also sold

# HOW? RUN LIKE AN IPL 20-20 MODEL

Effort conceived as an exciting competition  
with individual cash rewards to winning  
teams and best-performing households  
20 days intense planning and awareness  
Ward mapping done with street-map/Google  
400 pushcart routes planned, with move-  
ment detailed by local maistrys on ground  
No add'l manpower for 3 persons/pushcart.  
240 local teams + 134 from 59 nearby towns

# **HARDWARE NEEDED**

Pushcarts with bins are a must for sorted collection. Can use old eqpt with bins in it.

One dumper-placer costs Rs 5 lacs + 2 skip bins @Rs 50,000 each, need repair in 6-12 m.

Can replace with 100 MS pushcarts @ Rs 6000, lasting 3-5 yrs, or 30 of Warangal-type new SS (non-recyclable) pushcarts @ Rs 20,000 which last 10-15 years or more.





# INFRASTRUCTURE PLANNING

- A weighing-cum-transfer point like hi-level watertank area where drums are emptied into tractors for transport.
- A disused office hall repaired as a dry-waste collection centre with hydraulic baling machine and sorting/storage space.
- A 5 tpd trial biogas unit next to a plant nursery where stack composting is done prior to feeding to vermi-beds.







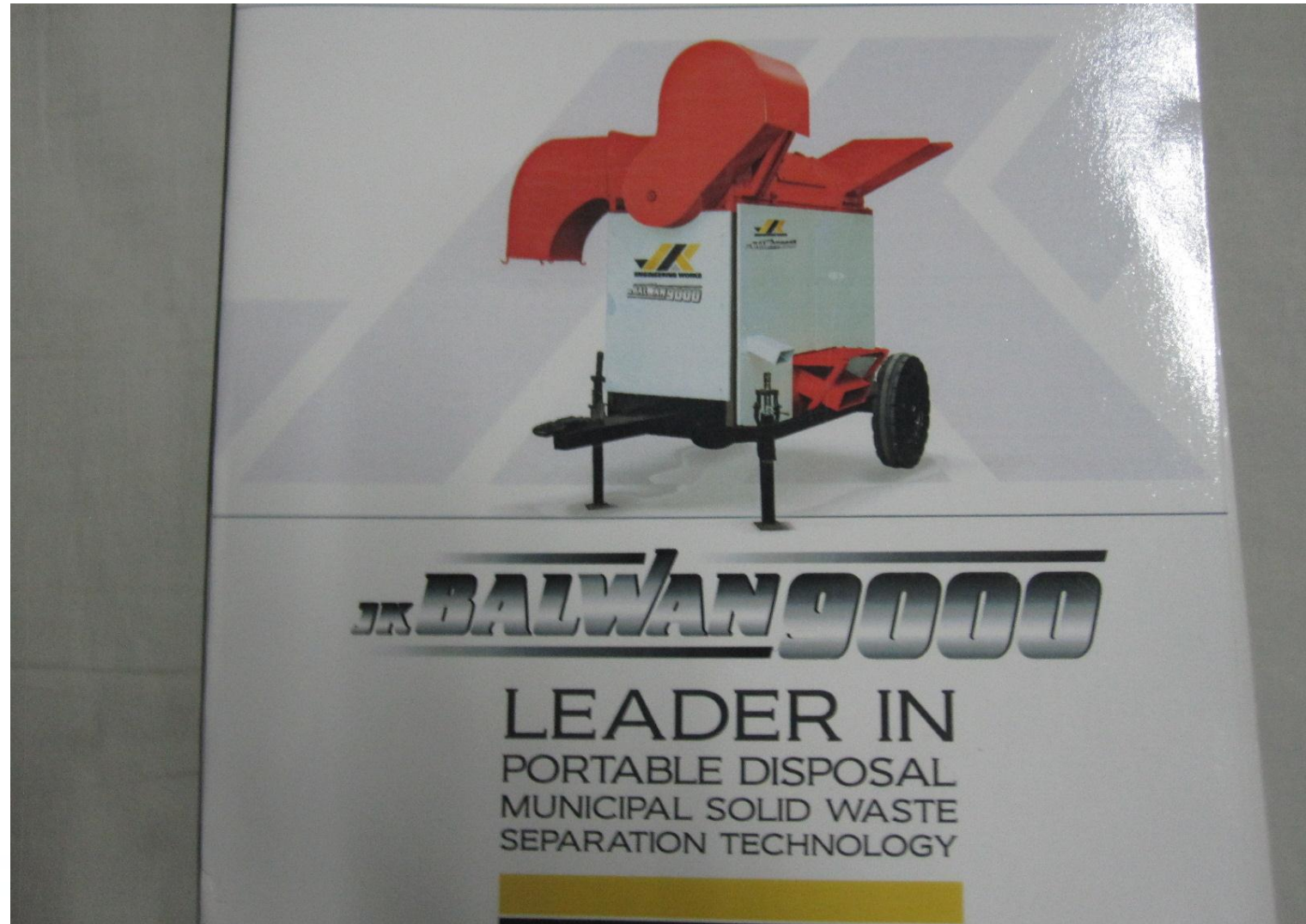
# DUMPING-GROUND IMPROVEMENT

Dump entrance converted to garden with lawn and palms in 3 days.

Random waste-heaps moved to form wind-rows. Unloading of only pure wet waste.

A Balwan 3000 garbage sorter from JK Engg Malegaon screens old semi-dry waste into saleable plastic fragments, clean grit/gravel+ fine organic bio-earth useful as compost-starter for fresh wet waste or for gardens.

**Malegaon garbage sorter: 93722 54865**  
**[jkenengineeringworks.jk@gmail.com](mailto:jkenengineeringworks.jk@gmail.com)**





# **GOOD WASTE MINIMISATION**

Huge POSITIVE media support daily before and during week led to good segregation.

20 tons saleable recyclables recovered.

Mixed plastics being sold to best bidder.

Coconut shells and combustibles lifted by Shalivahana Power Co as fuel, 80 km away.

40% dumpsite space saving.

Vehicle loading more efficient, fewer reqd.

# **COST BENEFITS OF CCC CAMPAIGN**

Accurate figures on waste quantities, only 43% of earlier estimates.

30% diesel saving with more trips at full capacity, shorter unloading distances.

Field force efficiency increased three-fold.

MSW Rules almost fully complied with.

Happier healthier citizens, clean streets.

Warangal is now a byword for a cleaner city.



# **INGREDIENTS FOR A CITY'S SUCCESS**

Visionary leadership, open to new ideas.

Administrative will at City and DMA level.

Political support : 24 lakhs from APSPCB.

Persistent follow-through by City Commiss'r  
till good SWM practices become a habit.

Strong impartial monitoring with rewards for  
good performance.

Faith in volunteer advisors, working onsite.

# WHAT YOU CAN DO, NOW !

Collect AND TRANSPORT wet & dry waste unmixed.

Create wardwise sorting spaces for dry waste.

Monitor waste-processing sites. UNLOAD WASTE IN WIND-ROWS, stabilise with old or mature compost.

Cover fresh heaps with compost rejects, not soil.

Avoid over-mechanisation, no dumpers, compactors

Invite Clean Cities Championship Team to your city to kick-start transformation to a No Dumping town.