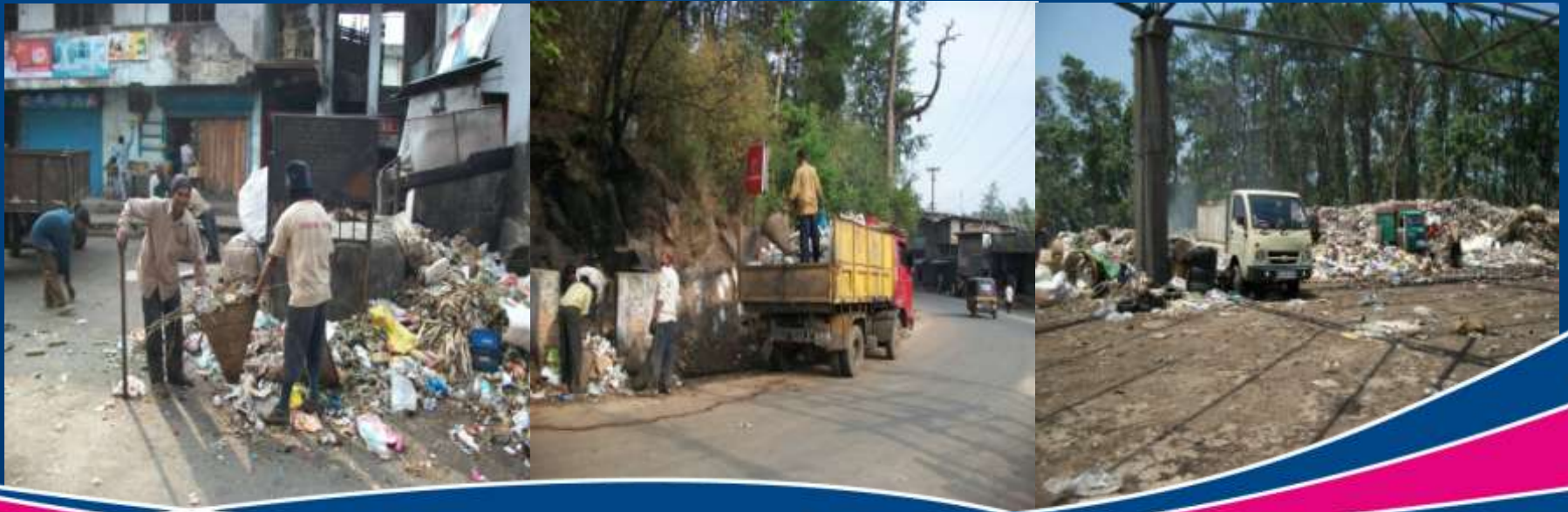


North Eastern Region Capital Cities Development Investment Programme



Presentation on Solid Waste Management in
Shillong – Practices and Challenges

29th April 2013

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BRIEF BACKGROUND

- SHILLONG HAS GROWN FROM A CLUSTER OF FEW VILLAGES TO A THRIVING URBAN CENTRE OF OVER 3.5 LAKHS POPULATION.
- A CITY ONCE KNOWN AS SCOTLAND OF THE EAST IS TODAY LITTERED WITH FILTH AND GARBAGE AND BURSTING AT ITS SEAMS.
- GREATER PART OF SHILLONG CONSTITUTE TRIBAL AREA UNDER 6TH SCHEDULE OF THE CONSTITUTION OF INDIA.
- APART FROM A MUNICIPAL BOARD, SUA CONSISTS OF A CANTONMENT BOARD AND 9 CENSUS TOWNS

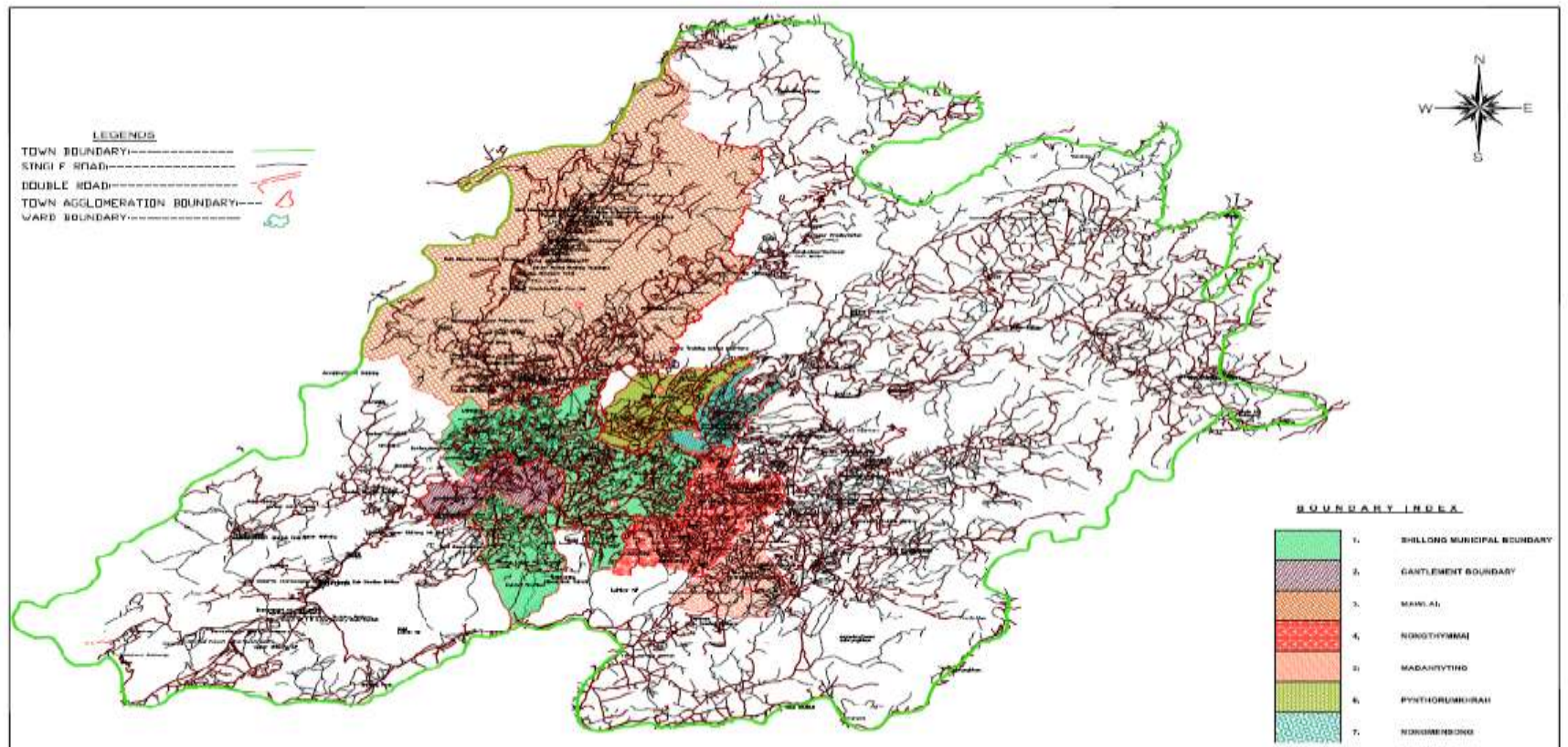
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SWM PRACTICES IN SHILLONG

- WASTE MANAGEMENT IS THE RESPONSIBILITY OF MULTIPLE AGENCIES IN SHILLONG.
- AS PER WASTE CHARACTERISATION AND QUANTIFICATION STUDY RECENTLY CONDUCTED THE PER CAPITA WASTE GENERATION IS 341GRAMS AND QUANTUM WASTE GENERATION FOR WHOLE GSPA IS 133 MT.
- THE COLLECTION EFFICIENCY IS 74.54 % IN SMB AREA.
- DOOR TO DOOR COLLECTION IS PRACTICED IN SOME LOCALITIES.
- IN TOWNSHIPS OUTSIDE SMB AREA, SW IS MANAGED BY THE TRADITIONAL INSTITUTIONS.
- THERE IS A CENTRALISED MUNICIPAL WASTE DISPOSAL FACILITY LOCATED AT 9 KM DISTANCE FROM THE CITY CENTRE WITH A 100TPD COMPOST PLANT OPERATED ON PPP ARRANGEMENT.
- A BIOMEDICAL WASTE TREATMENT FACILITY IS ALSO OPERATING IN THE SAME SITE.

Subproject Area

Greater Shillong Planning Area (GSPA) – 174sq.km.



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Analysis of Existing SWM Practices

- Absence of practice of segregation at source is leading to increasing load on the compost plant and the final disposal
- Rejects from compost plant is as high as 40 %
- Absence of practice of segregation at source is leading to increased activity of rag pickers working in unhygienic conditions
- Absence of house to house collection for the whole city is leading to dumping of waste in public places, streams and nullahs
- Multiplicity of agencies is leading to blame game without any agency solely responsible.
- Open dumping of rejects from compost plant is leading to environmental pollution
- No service charges is being paid to Shillong Municipal Board for Solid Waste Management
- Transport of waste in open trucks is leading to littering in roads

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Strategy for improvement

The current status of Solid Waste Management is far from satisfactory and needs improvement.

In order to maintain the cleanliness and hygiene the following actions are desired keeping in view the Municipal Solid Waste (Management & Handling) Rules, 2000

- Improvement on primary collection with house to house collection and segregation at source.
- Improvement in the secondary collection by doing away with age old masonry bin collection.
- Introduction of transfer points involving compactors for effective collection.
- Improvement in transportation with introduction of closed body refuse vehicles.
- Improvements in the disposal system by adopting sanitary landfill system and waste processing facility.
- Need for new institutional arrangement for coordination etc.

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INTERVENTIONS UNDER NERCCDIP

Appreciating the need for improvement of the waste management system in Shillong Asian Development Bank and Ministry of Urban Development has agreed to fund an environmental improvement programme called the North Eastern Region Capital cities Development Investment Programme

As per the requirement of the programme, the State Government has created State Investment Programme Management and Implementation Unit (SIPMIU) under the administrative control of its Urban Affairs Department dedicated to project planning and implementation

A Design, Supervision and Management Consultant (DSMC) has been engaged for implementation of two components of the project (i) Solid Waste Management for upgradation of the existing waste management system, and (ii) introduction of sewerage system in Shillong.

Both the sub-projects will be reinforced by capacity building and training for efficient management and creating appropriate community awareness to enlist due co-operation of the public for successful implementation of the project and also institution building for sustaining the programme

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PROPOSALS FOR SWM UNDER NERCCDIP-SHILLONG

Primary Collection

- Adoption of house to house collection with segregation of waste at source. Each household will be provided with 25 lts hh bins and training imparted. The collection shall be done through special type of 1.5 cu m capacity vehicles designed for the purpose with a view to increasing the output and ensuring better cleanliness.
- Door-to-door collection to be done preferably by the community using local unemployed youths
- Organic waste to be collected every day and inert every alternate day. Disposal of recyclables left to the community
- Elimination of masonry bins and intermediate storage. 1.5 cu m capacity vehicles to transfer waste to bigger vehicles of 4.5 cum capacity and compactors at identified points for transport to waste disposal site
- Role of rag pickers to be regulated and brought under social security scheme

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Transfer points

- The satellite vehicles will bring the waste to pre-identified transfer points, thereby reducing travel time and distance. The vehicles (Tata ACE with due modifications) that will be used for collection of wastes from houses, commercial establishments etc are termed as satellite vehicles.
- The satellite vehicles will unload the waste in a vehicle, which will be of higher capacity, standing at the transfer station. This vehicle will carry the waste to disposal site. One such vehicle will take the load of 3-4 satellite vehicles. This arrangement will reduce the collection time as well as multiple handling of waste.
- A vehicle routing plan has been finalised in consultation with the communities

Secondary Collection

- The secondary collection will be done through heavy duty vehicles as already mentioned above, which will transport the waste from transfer station to the landfill site.
- The vehicle will have a mechanical cover from top so that solid waste is confined to the space and will not fly and will not litter the roads and surrounding areas during travel.

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Disposal

- After composting of the segregated waste sanitary Landfilling method shall be adopted for disposal of rejects from plant and inert materials. Following are the salient features:
 - First biodegradable waste shall be processed for composting at compost plant.
 - Only rejects from compost plant and inert waste will be used for sanitary land filling purposes.
 - A geo-membrane and leachate collection pipes shall be laid at the bottom of the area, selected for sanitary landfilling
 - The geo-membrane will not allow the leachate to percolate through soil and pollute the ground water.
 - The waste dumped shall be dressed with bulldozer and compacted with landfill compactor to achieve the desired density and covered with earth on alternate days depending on the availability of earth. This will eliminate fly nuisance, odour nuisance, bird nuisance etc.
 - The Air Quality and Water Quality shall be monitored regularly in order to ascertain that the pollution levels are within the standards prescribed by the Meghalaya State Pollution Control Board.

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□ Disposal (Contd)

- Construction of a short-term sanitary landfill over an area of 6500sqm in phase-1 and 8500 sqm in phase-2 in the existing waste disposal site.
- Short-term landfill to meet the immediate requirement of waste disposal and meet requirement of around 4 years.
- Development of along-term landfill to meet the future requirement of the city.
- Long-term landfill designed for 30 years requirement.

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Waste processing

- ❑ The existing 100 TPD compost plant has almost outlived its life
- ❑ There has been problems in marketing the product
- ❑ There has been problems in maintaining quality
- ❑ Recent study by IIT Guwahati reflects high level of chromium
- ❑ State Govt is exploring possibilities for setting up a waste to energy plant either in the form of electricity or fuel pellets
- ❑ Proposal is to go on PPP mode with firm making part investment and responsible for O&M. Bidder to be selected on lowest tipping fee

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PROGRESS OF THE LANDFILL SITE AT MARTEN



□ RETAINING WALL &
WATER TANK AT MARTEN
LANDFILL SITE



GARBAGE COMPACTOR
FUNDED BY
ASIAN DEVELOPMENT BANK & MINISTRY OF URBAN DEVELOPMENT
UNDER
NORTH EASTERN REGION CAPITAL CITIES DEVELOPMENT INVESTMENT PROGRAMME







PROGRESS
ON
COMMUNITY PARTICIPATION
AND
PUBLIC AWARENESS
(As on 31.03.2013)

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SWM IMPLEMENTATION PLANS

1. Mass awareness campaign in all localities
2. Formation of locality level task force
3. Creation of model localities: MAWPREM & CLEVE COLONY.
4. Zero littering campaign by school students (70 schools completed orienting their students on a Zero Littering Lifestyle. Total number of students – over 8000.)
5. Print and electronic media campaign- Yet to Start.
6. Intensive training for SWM workers- one training held.
7. Enforce segregation of waste at source by training and live-demo and distribution of two colored household waste bins.
8. Collection, transportation and disposal of the segregated waste with help of the new fleet of vehicles.

PROGRESS OF COMMUNITY MOBILIZATION AND PUBLIC PARTICIPATION

SL NO	PROGRAMME	NO. OF LOCALITIES /INSTITUTIONS COVERED	NO OF TRAININGS DONE
1	Locality Level Awareness Training & EC MEETING	30 LOCALITIES	81
	Solid Waste		76
	Sewerage		5
2	ZERO LITTERING ORIENTATION	70 SCHOOLS	70
3	PUBLIC CONSULTATION MEET		30
4	GENDER WORKSHOP		4
5	LIVELIHOOD, HEALTH – HYGIENE, SANITATION TRAINING	Women from Slum Localities, domestic workers union.	3

PUBLIC CONSULTATION MEETING



Headmen Collective: Shillong



Members of the National Domestic Workers Movement



Federation of Women Organizations



Members of the Lachauchiere Dorbar

TRAININGS: Ensuring Women & Youth Participation

Kench's Trace



Training on SWM at Bishops Fall



Women



Youth



COMMUNITY LEVEL AWARENESS TRAINING ON SOLID WASTE MANAGEMENT



SUNNY HILL



WAHINGD



Lachaumiere



A local resident taking part in a live demonstration on segregation

ZERO LITTERING CAMPAIGN BY SCHOOL STUDENTS

- “Zero Littering” through a signature campaign by School Students have been started by orienting school students of Classes 6 to 9. Schools are expected to adopt certain localities for intensive campaign for better waste management.
- Promotion system to motivate the students. 1. **Zero Littering Crusader** can be promoted to (2) **Zero Litter Champion**, who can be promoted to (3) **SWM Opinion Leaders**, after fulfilling certain criteria of successful campaign. **Deputy Commissioner** is coordinating this programme.
- Award system includes providing Badges and name plates, prizes and certificates on been promoted to the next level leadership or winning the prizes for thematic competitions like drawing, debate etc.



GENDER ACTION PLAN & ACTIVITIES

- A comprehensive Gender Action Plan for Shillong has been developed as per the ADB's guidelines.
- Three Consultations on Gender Issues were held so far under the Gender Action Plan for Shillong City.
- Survey on Female Headed households has been done and 4386 FHH have been identified in the city.
- Training on Health and Sanitation and segregation of waste has been conducted three times to cover 161 women from poor localities, slums and members of Domestic Workers Movement.
- Training on livelihood enhancement through waste recycling technologies have been conducted for 20 women in collaboration with Science and Technology Department.





CONSULTATIVE WORKSHOP TO IDENTIFY GENDER ISSUES



PROBLEMS & ISSUES

- Husband stay at home. She work in godown. Daughter stay at home. She wants something for daughter. But daughter does not want anything. What to do?
- Husband stay at home not doing anything. Daughter at home not doing anything. What can be done for daughter?
- 3 children. Husband in Nestle. Wants to educate/train the children.
- 2 children. Husband work in pharmacy. She sell buttons and get Rs. 5/- She wants a change.

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OUTCOMES OF PUBLIC AWARENESS-1

- Community leaders view the Solid Waste Management plans as a blessing, as they view the Shillong situation as critical.
- Synjuk Ki Rangbah Shnong (Headmen Collective) is co-operating with the Project well and the President is constantly helping the DSMC.
- The Ka Lympung Ki Seng Kynthei (Federation of Women's Organisation) has welcomed the project and request the government to implement the project properly.
- The public are responding well to the locality level awareness training. In one locality of 340 households about 95.4% attended the awareness training programme organised by DSMC.

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OUTCOMES OF PUBLIC AWARENESS: 2

- Suggestions and recommendations have been offered by the Common people, like proper training to the waste collectors, sweepers and with periodic training inputs as well as providing good quality, durable uniforms, with ID cards issued by the government. Suggestions to do away with open garbage trucks plying across the city. Suggestions on regulating a people friendly timing of the garbage vehicles coming to different localities were also made by the people. Suggestions to paint the garbage tippers with Green for Bio-degradable waste and Blue for non-biodegradable waste

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RESPONSES FROM LOCALITIES

1. Highest attendance from Sunny Hill – 99% House Holds
2. Second highest from Jaiaw Shyiap & Lumpyllon- 95.4% HH
3. Third highest participation in the training are from Lama Vila, Jaiaw Langsning and Mission Compound, with about 80% households attending the training programmes.
4. Other localities, participation range from 7% to 80%, but on the whole the
5. In Laban Dorbar Shnong 13 Locality Level Trainings were conducted, in Mawprem 11 trainings were conducted and in Laitumkhrah 7 training programmes were held.

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□ CHALLENGES

- Finalisation of a urban governance structure for SUA/GSPA
- Citizens involvement for waste management
- Introduction of segregation of waste and door to door collection
- Selection of a simple and environmentally tenable waste processing technology
- Construction of sanitary landfill in a hilly terrain
- Recovery of the cost of operation and maintenance of the SWM system



THANK YOU