

UNCSD Thematic Seminar on Waste Management

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WASTE MANAGEMENT IN THE CARIBBEAN

- This presentation will look at the *Strengths, Weaknesses, Opportunities and Threats* related to waste management in the English speaking Caribbean Region
- Waste management within the context of this presentation refers to:
 - Municipal solid waste
 - Sewage
 - Industrial wastewater
 - Hazardous wastes

EXPLORE THE CARIBBEAN...



Bermuda

ATLANTIC OCEAN

GULF OF MEXICO

The Bahamas

- US Virgin Islands
- British Virgin Islands
- Anguilla
- St. Martin, St. Maarten
- St. Barts
- St. Eustatius
- St. Kitts & Nevis
- Barbuda
- Antigua
- Montserrat
- Guadeloupe
- Dominica
- Martinique
- St. Lucia
- Barbados
- St. Vincent
- The Grenadines
- Grenada
- Tobago
- Trinidad

Turks & Caicos Islands

Cuba

Haiti

Puerto Rico

Mexican Caribbean

Cayman Islands

Jamaica

Dominican Republic

Belize

CARIBBEAN SEA

Aruba

Curaçao

Bonaire

Venezuela

Guyana

Suriname

SITUATION



- During the last 15 years, Caribbean countries have made significant efforts to address waste management problems
- Focus has been on municipal solid waste, urban sewage and industrial wastewater, to varying degrees; less focus on rural, peri urban and inner city communities
- Initiatives have included new legislation, policies & institutional arrangements; public education and improved collection& disposal operations
- Many challenges have prevented major success stories
- Efforts continue as there have been some meaningful progress

WEAKNESSES



- Some countries still lack national policies, legislation and institutional arrangements for effective and efficient waste management; legislation has been in draft for many years; Acts passed without supporting regulations
- Lack of training for waste management workers (operators & contractors); competency requirements not clearly defined; no licencing regime in place
- Lack of enforcement; systems designed with heavy emphasis on enforcement (command & control) without commensurate capability to effectively implement

WEAKNESSES

- Lack of public awareness; insufficient investment in consistent and continuous public awareness programmes to effectively communicate waste management messages; leads to inappropriate personal hygiene, sanitation and waste management practices
- Insufficient rural and inner city community outreach programmes to introduce effective waste management solutions
- Ineffective and inappropriate waste and wastewater management systems for rural communities and inner city communities

WEAKNESSES

- Lack of political will; waste management is low on the list of Government priorities; exacerbated more recently by the global economic crisis
- Overlapping agency responsibilities: Public Health, Local Government, Environmental Regulatory Agencies, Waste Management Authorities (Jamaica, Guyana):
 - results in some matters not being addressed at all (gaps)
 - causes territorialism and a reluctance to share information

WEAKNESSES

- Insufficient/inconsistent investment in waste and wastewater management; no master plan for (integrated) waste management; focus is on short term initiatives
- Inability to develop sustainable financing mechanisms for waste management (cost recovery through fees and levies)
- Focus is on capital projects; insufficient financial mechanisms to fund operations and maintenance; weak or non-existent institutional arrangements to effectively operate and maintain systems
- Data collection, monitoring and evaluation systems weak

DUMPING AROUND 'NO DUMPING' SIGN



OVERFLOWING SKIP



COLLECTION IN BUSINESS DISTRICT DOWNTOWN



ILLEGAL DUMP



THREATS

- Increasing consumption patterns, mimicking developed countries result in ever increasing waste streams including hazardous wastes such as electronic, chemical, radioactive wastes
- Tourism is the main income earner for many countries: Barbados, Jamaica, St. Lucia, Bahamas, Antigua & Barbuda but it leads to the generation of significant quantities of waste which threaten to pollute the product and spoil the experience being offered
- Inability to properly and safely dispose of industrial hazardous wastes which adversely impact on public health, water resources, air quality, biodiversity:
 - Jamaica and Guyana; caustic mud from bauxite alumina production plants
 - Jamaica, Bahamas, Barbados, Bermuda, Dominica, Grenada, St. Lucia, St. Vincent, Trinidad; effluent from rum distilleries
 - Trinidad: Petrochemical wastes

THREATS

- The dominant source of marine litter from the Caribbean Region is land-based-LBS (91.7%). Ocean-based (OBS) debris comes in at 8.3%.
- Land-based sources of debris are documented to have a profound impact on tourism (and other economic indicators) and human health and safety.
- St. Lucia - From the assessment undertaken by the SWMA, it is proposed that marine litter is estimated to result in a total loss of US\$333,000.00 for the fisheries, ports and tourism sectors in the Castries port area.

MARINE RESOURCES THREATENED BY POLLUTION



THREATS

- Human Resources
 - Low wages paid
 - Low recognition of workers
 - Low level of expertise at the operational level e.g. wastewater treatment plant operators; disposal site operators
 - Poor safety and health considerations
- Poor development planning which leads to the proliferation of informal settlements which causes:
 - Difficulty in municipal solid waste collection
 - Problems with proper excreta disposal

THREATS

- Limited options for siting new disposal sites recognising that many are running out of space
- Lack of affordable financing for the private sector to improve waste management practices
- Low private sector involvement in waste management
- Political interference in hiring labour and awarding contracts in the waste sector

THREATS

- Failure to understand gender roles and how to design messages to reach the target audiences to promote behaviour change
- Typical role of men in waste management
 - Garbage collection
 - Operators of wastewater treatment plants
 - Waste pickers at disposal sites
- Typical role of women in waste management
 - Sanitation in the household
 - Janitorial services in commercial, institutional and industrial entities
 - Waste pickers at disposal sites

STRENGTHS

- Technical expertise; well trained management; tertiary level engineering diplomas and degrees offered within the region
- Member countries of OECS, Jamaica and Trinidad & Tobago and Guyana have developed solid waste management policies, legislation and institutional arrangements
- Member countries of OECS, Jamaica and Trinidad have improved collection of municipal solid waste and operations of disposal sites
- OECS Countries include:
 - *Anguilla*, Antigua and Barbuda, *British Virgin Islands*, Dominica, Grenada, Montserrat, St. Kitts and Nevis, St. Lucia, St. Vincent & the Grenadines

STRENGTHS

- Increased waste diversion from disposal sites
- Private sector actively involved albeit primarily SMEs
- Waste streams include:
 - Metals, plastic, glass bottles, waste oil, automotive batteries, cell phones

SOLID WASTE MANAGEMENT PROGRAMMES

Barbados

- In 1994 Barbados' solid waste generation rate was approx. 300 tonnes/dy of garbage, by 2005 it had risen to a staggering 900 tonnes/dy; an increase of over 300%.
- Private sector companies collect approximately 60% of the waste collected in Barbados
- SWMP include:
 - construction of a sanitary landfill and a waste management centre (comprised of a Transfer Station with Materials Recovery, a Chemical Waste Storage Facility and an In-Vessel Composting Facility), Bulky Waste Disposal Facility along with the upgrade of the road infrastructure to service the facilities
 - the development of Solid Waste Management Policies, an Institutional Strengthening Programme for key governmental and private sector entities, an Economics aspect with a focus on Recycling, a Legislative aspect to support the physical and non-physical components and an Education and Public Awareness Programme
- The recycling sector is expanding

OPPORTUNITIES

- All the Caribbean countries recognise the areas of weakness; with political will and funding long lasting improvements can be made
- Countries within the region that have developed policies, legislation and institutional arrangements for municipal solid waste management can share experiences & lessons learnt with others
- Countries such as Jamaica and Bahamas are looking at waste-to-energy facilities as a method of municipal waste management while benefiting from energy

OPPORTUNITIES

- Access to engineering/technical expertise within the region
- Skills training institutions within the region can implement training and certification programmes to strengthen the technical capacity of waste management workers
- Improvements in waste management by private sector and industries through the implementation of Environmental Management Systems and certification

SOME RECENT ACCOMPLISHMENTS

- Jamaica constructed in 2008 the first tertiary level domestic wastewater treatment facility for the capital city and environs
- Autoclave shredder systems are being utilised in St. Lucia, Bahamas, Jamaica for the treatment of medical waste

AUTOCLAVE SHREDDER IN KINGSTON



SOAPBERRY, KINGSTON



WORKS IN PROGRESS

- Trinidad's Water & Sewage Authority has invited tenders to bid for prequalification to Build/Own/Operate/Transfer (BOOT) Wastewater Reuse project.

The End
Thanks for your attention
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