

Waste Management & the Green Economy

ISWA/APESB INTERNATIONAL CONGRESS

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II AFRICA SUSTAINABLE WASTE MANAGEMENT

What is the Green Economy?

"an economy that results in improved human well-being and reduced inequalities over the long term, while not exposing future generations to significant environmental risks and ecological scarcities"

UNEP definition

Basically

= valuing enterprises where factors such as the creation of sustainable employment and protection of the environment are valued alongside economic growth and profit.

=recognises, that neglecting health and environment comes at a cost

A United Nations study carried out in 2008 calculated that human use of environmental goods and services (ecosystem services) equated to around **\$ 6.6 trillion USD** in environmental costs, equal to **11% of the global economy**.







II AFRICA SUSTAINABLE WASTE MANAGEMENT

WHY DOES IT MATTER?



Population



Consumption 1



Extraction of raw materials



Products are becoming more complex (materials, life-span, repairability, recyclability...)



But the earth is limited as a source (incl. resilience of some renewable resources) and as a sink



3

Without approp. management this situation leads to:

- Impact on Human Health
- Increased pollution to water, air and soil
- Increased GHG emissions
- Resource Scarcities

WASTE GENERATION

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TABLE 4

Waste Generation Projections for 2025 by Region

	Current Available Data			Projections for 2025				
Region	Total Urban Population (millions)	Urban Waste Generation		Projected Population		Projected Urban Waste		
		Per Capita (kg/capita/day)	Total (tons/day)	Total Popula- tion (millions)	Urban Popula- tion (millions)	Per Capita (kg/capita/day)	Total (tons/day)	
AFR	260	0.65	169,119	1,152	518	0.85	441,840	
EAP	777	0.95	738,958	2,124	1,229	1.5	1,865,379	
ECA	227	1.1	254,389	339	239	1.5	354.810	
LCR	399	1.1	437,545	681	466	1.6	728,392	
MENA	162	1.1	173,545	379	257	1.43	369,320	
OECD	729	2.2	1,566,286	1,031	842	2.1	1,742,417	
SAR	426	0.45	192,410	1,938	734	0.77	567,545	
Total	2,980	1.2	3,532,252	7,644	4,285	1.4	6,069,703	



Waste generation across Africa is projected to grow by **260%** (2010-2025) not expected to peak before **2100**



FIG. 3 Urban Waste Generation by Income Level and Year

Figure Source: What a Waste World Bank

EXTERNAL COSTS



The costs of climate change and biodiversity losses are less intuitive, more difficult to assess, but Waste external costs... from a public perspective, they are considerable (and far from negligible for the private sector). LANDFILL, INCINERATION AND OTHER WASTE-RELATED ACTIVITIES EMISSIONS TO LAND SOIL AND WATER EMISSIONS TO AIR DISAMENITIES CONSUMPTION Landfill leachates and Landfill gases: Incineration fumes Odour The space dedicated incineration ashes Visual impact to landfill and other Mercury Particulate matters Heavy Methane Pests (insects, rats) waste management or Lead Dioxins metals Carbon dioxide Heavy vehicle trafic confinement sites is lost Cadmium Furans Nitrogen oxides Noise for farming, housing Arsenic Asbestos Sulphur dioxide Polychlorinated and leisure Chromium biphenyls (PCBs) Radioactivity ل لح ل لح ح لح Endangered resources Loss of **Climate change** Loss of value Land competition biodiversity and (land, house) ecosystem Contaminated rivers, ocean, aquifers Conflicts Disasters services Contaminated soil and cropland More infectious diseases related to environmental Air pollution Salinisation of freshwater justice (poor vs. rich Sanitation problems Freshwater Agricultural changes neighbourhoods) and food and land competition resources **Quality of life** at stake Drop in impaired vield Health consequences Climate change Liver, kidney dysfunctions costs POSSIBLE WAYS Breast feeding OF MEASURING Respiratory system impairment THESE COSTS Blood and nervous disorders EXAMPLES 1 **Disasters** casualtie Cancers (live losts) Biodiversity Cost of Disasters insurance costs costs disamenities Loss of "ecosystem services' Volume or price Health costs of yield losses Price of land Cost of remediation Loss of land revenue Cost of drinkable Humanitarian and Heath Cost of remediation water alternative Institutional expenditures health expenses Health spending related to Impact on tourism (famines, disasters) psychological Years of Life Lost (YOLL) approach disorders Famine casualties (including Value of Statistical Life (VSL) approach depression) Lives saved by remediation Cost of litigation Years of proceedings Sea-level rise ... a (dry but) useful approach Number of refugees Price of land lost Source: Emmanuelle Roumay from various sources including 4 Study on the Economic Cost of conflicts Valuation of Environmental Externalities from LandfW Disposal and incheration of Waste, European Commission, 2000; Stem Review Report on the Economics of Climate Change, over land

Figure Source: Vital waste Graphics 3; Secretariat of the Basel Convention 5

2006; The Economics of Ecosystems and Biodiversity (TEEB) Study, 2011.

Costs unaccounted for by improper practices in waste management

In Mexico the average life expectancy of a waste worker is 39 years, while the normal life expectancy is 69.

Source: Solid Waste Management in the World Cities, **UNHABITAT 2010**

In Austria between 1989 until 2002, ~€700 Million (collected from landfill taxes) were spent to cover the costs of >140 land remediation projects.

Source: European Environmental Agency, 2011

A study by the New Zealand Ministry of the Environment in 2001 calculated that a degraded environment could result in a loss of \$938 Million NZD from the tourism sector.

Source: MfE (2001) Valuing New Zealand's Clean Green Image

How can waste management contribute to a Green Economy?





BENEFITS OF A GREEN ECONOMY



GREEN ECONOMY

ECONOMIC

\$ Economic savings/gains through waste prevention measures

\$ Value obtained from waste in form of secondary material/ energy

\$ Resource security and availability of less costly substitute materials for production through recycling

\$ Less costs associated with residual waste management

\$ Greater availability and value of land

HEALTH & SOCIAL

medical costs through improved health & safety

f productive work force
through less sickness

¹ Job creation unemployment

Poverty alleviation

Improved employment conditions

Improved public amenity

Public engagement/ participation

ENVIRONMENTAL

Conservation of natural resources (raw materials), water and fossil fuels (energy)

Environmental protection Saved environmental costs (flooding, water quality, air quality, land, biodiversity and ecosystem services)

Climate benefits – through↓ GHG emissions

SPECIFIC BENEFITS



• The **global waste market**, from collection to recycling, is estimated at **US\$ 410 billion** a year, not including the considerable informal segment in developing countries.

Source: UNEP, 2011, Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication.

• 12 million people are currently employed in recycling in the 3 major economies of-Brazil, China and the United States. Sorting and processing recyclables alone sustain ten times more jobs than landfilling or incineration on a per tonne basis.

Source: UNEP, 2011, Towards a Green Economy: Pathways to Sustainable Development and Poverty Eradication.

According to Italian Composting and Biogas Consortium (CIC) the Italian
 Composting and Anaerobic Digestion sector has a turnover of 640M€/yr, including the cost for collecting Bio-waste and the management of composting and AD-plants. CIC estimates that about 3000 working places have been created between the late '90s and today for managing composting plants in Italy

Source: 20 years of CIC, anniversary publication, 2012, Rome

KEY POINTS

- Waste Management is the largest expense for many cities
- Poorly managed waste has a huge & costly impact on health, environment, and economy
- Improperly managed waste usually results in greater costs than what it would have cost to manage the waste properly in the first place



- Most important service a city provides particularly in low & middle income countries
- Can be one of the largest employers for municipalities
- More Jobs can be created from implementing IWM rather than just disposal
- Value can be obtained from waste
- Properly managed waste protects human health and the environment, avoiding associated costs

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CCAC MSW INITIATIVE

II AFRICA SUSTAINABLE WASTE MANAGEMENT

support to cities to help them improve waste management and reduce SLCP emissions.

	PARTICIPATING CITY		MENTOR CITY			
WHO CAN JOIN THE MSW INITIATIVE? Cities in developing CCAC or non-CCAC partner countries that are interested in gaining access to resources that can help them improve their waste management practices and reduce SLCP emissions			Cities that are advanced in waste management and are interested in exchanging information about improving waste management practices and reducing SLCP emissions MISW Knowledge Platform http://waste.ccac- knowledge.net/ Webinar Series on C Waste Management			
				26 th May and 9 th June		
WHAT ARE THE BENEFITS OF JOINING?	 Access to an expert network Access to information on best practices Capacity building (e.g., trainings and events) Potential support in identifying sources of sustainable financing of MSW Initiative-related projects Potential technical advice* (e.g., feasibility assessments) *Assistance does not include support for establishment of infrastructure or 		 Opportunity to share know-how and promote successful MSW management experiences Recognition as a leader and expert in MSW management Access to information on best practices and lessons learned from other mentor cities Access to an expert network 	26 th May and 9 th June. For details see http://waste.ccacknowledg e.net/content/webinars- online-training		
				The municipal solid waste (MSW) sector is a key contributor to emissions of short-lived climate pollutants (SLCP), including methane and black carbon, that contribute to climate change and air pollution. Activities aimed at motions SLCP emissions from the MSW sector can help address climate change and protect homan at motions of Climate or Cruticities as Packod Stars in a different Pallet strategies protection of the		



Global Waste Management Outlook

Authoritative, analytical, evidencebased, concise and visual: To be published in early 2015





To raise the profile of waste management as a priority for action, to protect public health & the environment and achieve sustainable development



Global Waste Management Outlook

MANDATE	From UNEP's Governing Council, Post Rio+20: 'To develop a global outlook of challenges, trends and policies in relation to waste prevention, minimization and management,'					
AIM	To raise the profile of waste management as a priority for action, to protect public health & the environment and achieve sustainable development					
AUDIENCE	High-level decision- makers	Professional	Public			
OUTPUTS	Executive report	100-150 p. main report	Media briefs			





AMBITIONS OF THE GWN ISWA

Waste management within context of sustainable development			
Why waste should be a priority – both for decision makers AND the people			
Showcase the real progress made as well as remaining challenges			
Move upstream – reduce consumption, consider waste management as a resource, improve resource efficiency and create jobs for green growth			
Focus on governance, implementation and financial sustainability – technical solutions alone are not enough			
Promote partnerships and inclusive approach			





GWMO is.....



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 evidence based,
 analytical

Concise, use
 'vital info graphics'

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