

# **Project Component 2 : Outreach and Education**

**By**

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**STAKEHOLDERS WORKSHOP ON PROTECTING THE MARINE ECOSYSTEM AND HUMAN HEALTH IN THE GULF OF GUINEA FROM UNCONTROLLED DISPOSAL OF PLASTICS AND MUNICIPAL WASTES. 22<sup>ND</sup> SEPTEMBER, 2010. AVE MARIA HOTEL TEMA. GHANA.**

# Outline

## Part I

- Background : Ghana- Accra
- Introduction :
  - Definition, source, composition, collection of solid waste

## **Part II: Marine Debris**

## **Part III: Outreach and Education**

## **Conclusion and Recommendation**

## **References**

# Ghana Fact Sheet

- A West African country.
- Its largest river is the Volta.
- Land Surface area: 92,456 sq mi (239,460 sq km)
- Population (2008 est.): 23,382,848



# Critical Issues of Waste Disposal System in Accra

- **Privatization of Waste Removal** : Opponents of this program point out that private firms do not bother to repair inadequate infrastructure in poorer townships and instead prefer to focus on areas that yield higher profits.
- **Rural to Urban Migration patterns**: The decline of the cocoa industry in the 1980's, most seasonal migrants from the north sought employment in the urban centers, such as Accra. This has led to rapid, but inadequate, development within the city of Accra to try and house these migrant workers.
- **Urban Bias theory**: Waste collection or removal tends to be reserved for the wealthier citizens of Ghanaians, because they are the only one's who can afford it.

# Accra: Population and waste

Census Year	Population
1970	624,091
1984	969,195
2000	1,658,937
2007	2,200,000* (estimated)

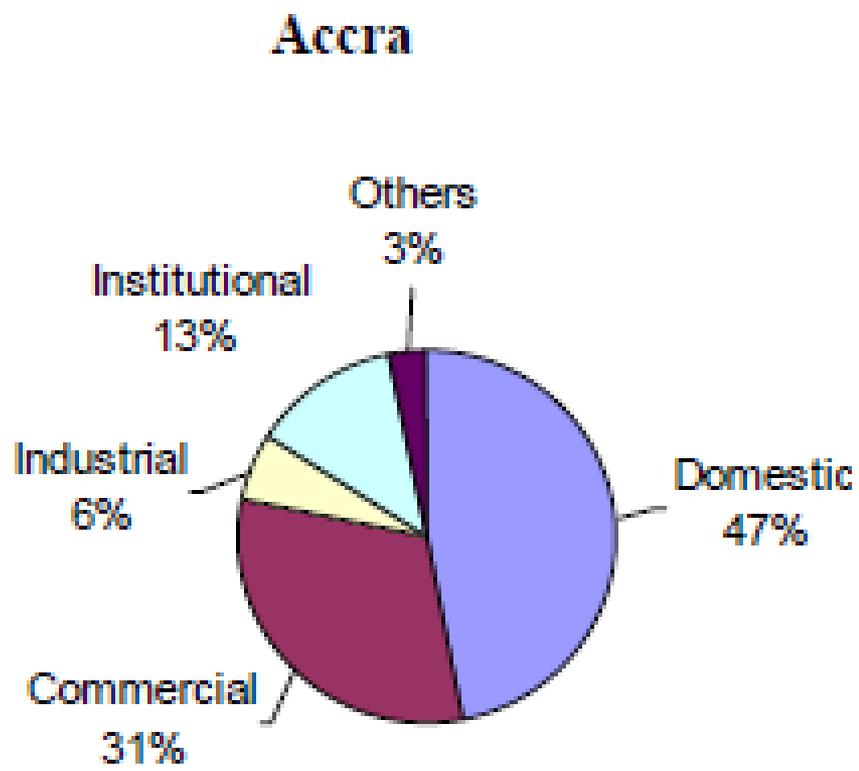
- Population

- Presently stands at approximately 23 million with a floating population of 300,000 (Ghana Statistical Services 2002).

- The statistical service observed that approximately 50,000 economic migrants come to Accra daily and about 5,000 stay behind after close of business for weeks or months. While the national population growth rate as at the year 2000 stood at 2.7 % that of Accra stood at 3.5%.

- This population growth has not been accompanied by increase in housing and basic sanitation facilities.

# Sources of solid waste in Accra



Source : Waste Management Department of AMA (1999)

# Waste Collection in Accra

Volume and Daily tonnage of waste collected in Accra over the past 6 years.

Year	Average tonnage generated/day	Average tonnage collected/day
1998	750	450 - 600
1999	960	600 - 800
2000	1650	1200 – 1500
2001	1700	1300 - 1500
2002	1720	1300 – 1500
2003	1800	1300 – 1500

Source: AMA Waste Management Department  
(August 2004)

# Uncollected Waste

- Every day there are still at least 300 tonnes of waste left uncollected in Accra .....



# Current Situation :



- Primarily open dumps
- Ghana: 2,000 tons (daily) and 3,000 million tons (annually) (EPA, 2002).
- Accra: 760,000 tons of municipal solid waste (MSW) per year or a pproximately 2000 metric tons per day (EPA, 2002).

# Uncollected Waste



# Uncontrolled dumping



- located at the perimeter of major urban centres in open lots, wetland areas, or next to surface water sources.
- The recent proliferation of plastic bags for packaging has seriously aggravated the negative impact.



# Dumping sites: Mallam and Kwashibu



# Open dump and Urban Litter



## Dumping sites (2) : Tweebleo and Oblogo



# Controlled dumping



- Operation and maintenance on these landfills are inadequate.
- No mechanical equipment for spreading and compaction of waste.
- Sustained operation of controlled landfill sites a real burden due low central government budgets.

# Kaneshie Market



# Landfilling



- landfill facilities commissioned in the 4 largest towns (Accra, Kumasi, Sekondi-Takoradi and Tamale) from 2003-2004 (Gov. of Ghana, 2003)
- 2 key problems : (i) difficulties with acquiring suitable landfill sites and (ii) the negative impact of worsening traffic problems.

# The challenge

- No comprehensive collection and recycling services for solid-waste.
- Problematic final disposal (lack of engineered landfill).
- Lack of knowledge and skills in proper sorting and collection and awareness at all levels.
- No guidance manuals currently available to provide a framework or basis for national plans to address marine –litter.
- Lack of policies and legislative frameworks to address current marine –litter problems.



# PART TWO

# Introduction: Marine Debris or litter

- ***Persistent, manufactured or processed solid material*** disposed of or abandoned in the marine and coastal environment.
- Produced by human activities, either on land or at sea, that finds its way into the marine environment.
- Plastics, rubber, paper, metal, wood, glass, etc. can be found floating on the surface of the sea, beneath the surface of the sea, washed up on the beaches or lying on the seabed.

Table 1.1 below provides an indication of the necessary time for the decomposition of various litter items in the marine environment.



#### How long does it take for marine litter to decompose?

glass bottle	1 million years
fishing line	600 years
plastic bottle	450 years
aluminum can	80-200 years
rubber boot sole	50-80 years
plastic cup	50 years
tin can	50 years
nylon fabric	30-40 years
plastic bag	10-20 years
cigarette filter	1-5 years
woolen clothes	1-5 years
plywood	1-3 years
waxed milk carton	3 months
apple core	2 months
newspaper	6 weeks
orange peel	2-5 weeks
paper towel	2-4 weeks

source: *The Ocean Conservancy, "Pocket Guide to Marine Debris", 2006.*

# Why are we concerned?

- 8 million items of litter may enter the seas on daily basis (Benton, 1995).
- The very slow rate of degradation of most marine litter items (mainly plastics) together with the continuously growing quantity of the litter disposed, is leading to a gradual increase in marine litter.
- The Gulf of Guinea has been severely impacted by marine litter pollution that has reached the beaches and the sand dunes along the coastal line.
- Actions must be taken to reduce this type of pollution.



THE GUARDIAN

# Homes & Property

Monday, May 3, 1999

## Sub-regional group seeks stakeholders participation in marine debris management

**M**ARINE experts from six West African states have endorsed the establishment of a regional co-management system for wastes in coastal towns bordering the Gulf of Guinea.

The experts' recommendation formed part of an adopted document, "Marine Debris/Solid Waste Management Survey of the Gulf of Guinea Large Marine Ecosystem (GOG-LME)", sponsored under the United Nations Industrial Development (UNIDO) and Global Environment Facility (GEF)

project.

The co-management system according to the 12-member expert group from Cameroon, Nigeria, Ghana, Benin, Togo and Cote d'Ivoire who met for three-day in Abidjan, Cote d'Ivoire, necessitates an institutional arrangement in which government and other parties such as local community groups and authorities or industry sectors will enter into a formal agreement specifying their respective rights, powers and obligation in marine environment conservation and resource development.

The four-day meeting of experts from six countries of the West African sub-region in a joint statement canvassed the introduction of co-management for marine debris. The meeting adopted the working document on the marine debris and solid waste management of the Gulf of Guinea Large Marine Ecosystem presented to it

### The Environment

Essentially, the 63-page report, which consists of results of a one-year beach monitoring survey involving marine of debris on three beaches in each participating country and its socio-

*By Chinedu Uwaegbulam,  
who was in Abidjan*

economic impact, also recommended the provision of centralised services and to the

local population in each coastal town of the region.

The report makes a case for countries of the Gulf of Guinea to obtain technical assistance and financial support from

international and inter-governmental organisations and donor agencies in order to extend as well as enhance programmes on industrial solid waste reduction and recycling. It also lists action plans that provide a mechanism of approach which obliges industries and other coastal users to finance national research programmes or projects on solid waste.

Also recommended is the reinforcement and implementation of the existing legislation on solid waste management, "MARPOL Convention 73/78", calling on participating states to install

harbour reception facilities for oil, chemicals and garbage in all major ports and make their use compulsory.

MARPOL is the main international convention relating to the prevention of pollution by substances including garbage from ships.

Besides, the experts want regulatory bodies at national level to initiate and promote the mandatory preparation of Environmental Management Plans (EMPs) by industry as a voluntary compliance-plus tool for co-regulation of existing operations

*Continued on Page 38*

General News of Friday, 16 July 2004

Source: GNA

## Aliu launches programme to rid Ghana of plastic waste

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Accra, July 16, GNA - Vice President Aliu Mahama, on Friday, launched a National Plastic Waste Management Programme and called for a collective societal effort to stem the increasing environmental, aesthetic and health hazards posed by plastic waste.

He, however, warned that drastic measures would be applied against polluters who would fail to cooperate and tasked agencies responsible for the enforcement of regulations and bye-laws to rise up to their responsibilities.

"The public health of society is being threatened seriously and it can not be compromised any longer to hold this nation back," he stressed and urged the media, educational institutions and stakeholders in the plastic industry to assist in the campaign.

Vice President Mahama cautioned: "The alternative, I am afraid, is to completely ban the production and importation of plastics, which will be a very painful action, considering the plight of industry and employment.

## Ghana: Project to Address Marine Pollution Takes Off

Stephen Odoi-Larbi

21 September 2009

Ghana on Friday took a giant step towards controlling its marine pollution, by launching an ambitious project that seeks to clean and protect its beaches along the coastal areas of the country.

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The project code-named, "Eco Brigade", is a collaborative effort between the Government of Ghana and Zoil Ghana Limited, a subsidiary of ZoomLion Ghana Limited, a leading waste management company.

The project was launched over the weekend, by the Minister of Environment, Science and Technology, Madam Sherry Ayittey, at Esiam in the Western corridors of the country.

Instructively, our West African state has for sometime now been struggling on its feet in the fight against environmental pollution.

It was, until recently, bereft with numerous garbage problems in the cities, as a result of lack of access to landfill sites. thanks to ZoomLion Ghana Limited. a company

# Composition of beach litter

Relative composition of litter sampled from La Pleasure Beach and Korle Beach Resort (italics show those in the world's 'dirty dozen')

No	Types of litter	La Pleasure Beach		Korle Beach Resort	
		Total No.	Total Wt (g)	Total No.	Total Wt (g)
1	Aluminium foils	2	15	9	95
2	Back pack	1	32500	0	0
3	Biscuit wrappers	149	965	286	1188
4	<i>Black polythene</i>	<i>84</i>	<i>2440</i>	<i>194</i>	<i>3477</i>
5	Bones	120	231	49	1270
6	Charcoal	5	75	0	0
7	Clothes	15	510	22	443
8	Coconut husk	3	475	0	0
9	Comb	1	10	0	0
10	Corn comb	0	0	2	50
11	Crown cork	109	220	174	473
12	Disposable plates and spoons	95	379	48	837
13	Footwear pieces	5	210	2	304
14	Fruit peels	5	110	19	5667
15	<i>Glass pieces</i>	<i>30</i>	<i>6525</i>	<i>9</i>	<i>6044</i>
16	Kenkey peels	1	5500	5	1675
17	Khebab sticks	170	745	233	808
18	<i>Metal beverage cans</i>	<i>58</i>	<i>2720</i>	<i>64</i>	<i>2635</i>
19	Metal pieces	3	450	0	0
20	Paper drink pack	55	1185	50	2352
21	<i>Paper pieces</i>	<i>393</i>	<i>2145</i>	<i>272</i>	<i>2728</i>
22	Pieces of cigarettes	55	10	23	10
23	<i>Plastic containers</i>	<i>113</i>	<i>1550</i>	<i>118</i>	<i>1896</i>
24	Pure water sachet	408	5125	803	5230
25	<i>Straws (plastic)</i>	<i>59</i>	<i>25</i>	<i>39</i>	<i>108</i>
26	Syringe	1	10	0	0
27	Used battery	0	0	3	3
28	Used sanitary pads	0	0	3	3
29	Used pampers	1	150	3	352
30	Waste food	2	195	1	1848
31	<i>White polythene</i>	<i>306</i>	<i>8150</i>	<i>283</i>	<i>3728</i>
32	Yarns	10	90	0	0
Total		2261	72695	2691	43239
Mean		570.66	2271.72	86.81	1394.81

➤ Plastic material dominated the total litter at 66% for Korle and 53% for La, respectively

Source: Sitsofe A. Tzagbey, Adelina M. Mensah and F. K. E. Nunoo (2009): **Influence of Tourist Pressure on Beach Litter and Microbial Quality – Case Study of Two Beach Resorts in Ghana** *West African Journal of Applied Ecology*, vol. 15

# Potential Impacts from Marine Litter

## 1. Environmental Impacts:

- **Direct:** Threat to marine wildlife (mammals, sea turtles and birds) through ingestion and entanglement.
- **Indirect:** Ecosystems alteration: alter aquatic habitats and harm native plants and animals.

2. **Economic:** Tourism, Fishing industry and navigation through loss of revenue from tourism, catch revenue as well as costly vessel repairs.

3. **Human Health and Safety Impacts:** Injure people e.g beachgoers

## Project Component 2

### • Outreach and Education

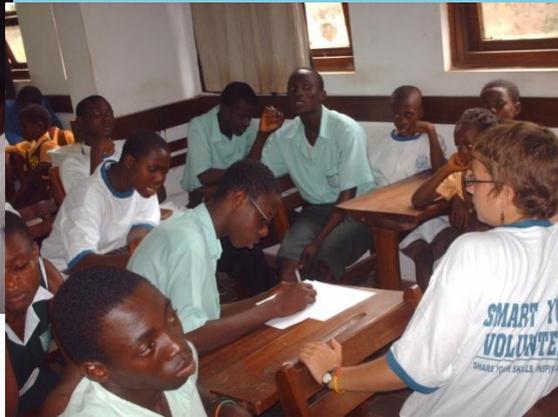
#### Objectives:

- To educate young people and the general public about the value of coastal and marine environment for sustainable protection.
- To raise awareness on the impact of marine debris and provide evidence that action must be taken to reduce marine pollution.
- To engage active participation of young people in addressing environmental pollution in Ghana.
- Identify (type)-and quantify (weight) marine debris in selected coastal beaches in Ghana.



# Awareness programmes

➤ For school children



# Strategy

- **Raising awareness** (monthly visits to selected schools, radio presentations) about the issue so as to help individuals and young people **acquire knowledge** about the environmental and socio-economic issues relating to marine litter.
- **Changing of behaviour** patterns that contribute to the pollution.
- **Engage** young people to **identify the sources** of marine debris.
- **Strengthen** participation of **all stakeholders**.

# Conclusion

- The coastal area of Ghana is subject to pollution from domestic and industrial activities largely as a result of incompatible landuse, inadequate waste management facilities and ineffective legislation.
- Marine debris impacts the environment, economy and human health and safety.
- Awareness and education campaign make a valuable contribution to raising the awareness of impacts of marine litter.
- Local efforts to prevent the incidence of marine litter are ineffective without regional, national and international collaboration to address the sources of the problem.

# Recommendation

- Increasing awareness on marine –litter and impacts.
- Provision of alternatives to plastic bags....and advocating for adoption of 6Rs (Reduce, Reuse, Recycle, Responsibility Remember, Rethink ).
- Existing community attitude that needs to be reinforces include importance and relevance of traditional values for the control of activities in coastal areas and recycling of waste such as plastics.
- Beach clean-up campaigns.
- Media

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