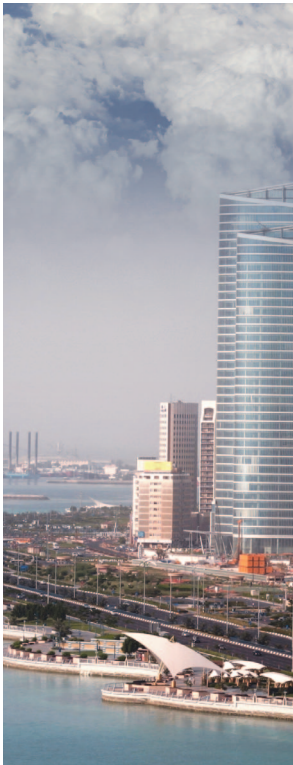




مركز الإحصاء - أبوظبي
STATISTICS CENTRE - ABU DHABI



Waste Statistics in **the Emirate of Abu Dhabi** 2009

February 2011

Waste Statistics in **the Emirate of Abu Dhabi** 2009

February 2011

Contents

Foreword	5
Introduction	6
1 Solid Waste in the Emirate of Abu Dhabi	7
1.1 Solid Waste by Type of Source Activity	7
1.2 Waste Recycling	8
1.3 Municipal Waste	9
1.4 Waste Management Plants	10
2 Hazardous Waste	11
2.1 Hazardous Waste Management	11

Foreword

In the endeavour of Statistics Centre - Abu Dhabi (SCAD) to support the plans and programs of sustainable development in the Emirate of Abu Dhabi, the Centre is pleased to present this report, which includes the key statistics of waste in the Emirate of Abu Dhabi for the year 2009. The report clearly demonstrates the success of the emirate's efforts in the treatment of various types of waste as an important environmental issue of direct bearing on strategic development planning in areas related to the increase in the population size and the rise in income levels.

Like other statistical studies on the generation and management of waste, the report is intended to promote environmental awareness among the population and to support decision-makers in the prediction of the increase in waste quantity and the expected change in its composition, in order to draw plans for the management of waste in conformity with the highest international standards, while avoiding improper land filling and environmentally unsafe measures in the handling of waste.

We seize this opportunity to express our sincere thanks and appreciation to the Centre for Waste Management - Abu Dhabi, whose cooperation in the preparation of this report supported the results of the survey conducted by the SCAD in 2009 on waste, covering several economic sectors, e.g. the construction, services, trade, transport, communications and other sector. The survey was implemented in the context of the Centre's commitment to strengthen its role in development and establish itself as a leading statistical center, in line with the wise vision of leadership in the Emirate of Abu Dhabi.



Butti Ahmed Mohammed Bin Butti Al Qubaisi
Director General

Introduction

Solid waste in its different forms and components is a major environmental issue that receives a great deal of attention nationwide. The Emirate of Abu Dhabi has supported the establishment of landfills that meet standard hygienic requirements reaching a total number of ten landfills in 2009. The number will certainly increase in the subsequent years so as to cater the continuous increase of waste, which proceeds proportionally with the growth in population and income levels. It is worth noting that increasing the number of landfill goes side by side with increasing its efficiency and capacity, and increasing waste recycling which reached about a quarter of the total amount of waste in the emirate. Waste management is going in accordance with Abu Dhabi 2030 strategy and plans for sustainable environment which seeks to incorporate the latest technologies in waste treatment and the support of awareness and recycling programs in order to reduce waste generation.

Statistical studies on waste aim to spread environmental awareness and come up with projections of growth in the quantity of waste generated and changes in its composition types, thus providing a chance to identify and be aware of the risk of improper landfilling or treatment procedures. Waste statistics can also contribute to the collection and saving of waste data pertaining to the Emirate of Abu Dhabi, thereby facilitating the processes of planning and follow-up.

1. Solid Waste in the Emirate of Abu Dhabi

1.1 Solid Waste by Type of Source Activity

In 2009, the total amount of solid waste in the Emirate of Abu Dhabi was 5,756 thousand tons according to the estimates of the Centre of Waste Management – Abu Dhabi. The construction sector contributed 61% of total waste, due to the construction boom taking place in the Emirate, whereas the municipal and commercial sources together contributed approximately one third of waste generated accounting for 16% and 17% of total waste generated in the emirate, respectively.

The annual per capita share of solid waste was 3,151 kilograms with a daily average of 8.6 kilograms of which 1.3 kilograms of is households waste is produced.

In general, the Emirate of Abu Dhabi is characterized by a high per capita share of waste, perhaps due primarily to the massive quantities of waste generated by the construction industry, necessitating serious attempts to recycle this type of waste in order to reduce landfills area. Cooperation with specialized companies is now taking place to recycle waste from the construction sector. Government entities and private institutions, must work on raising awareness to reduce the waste transferred landfills.

1.1 Quantity of Solid Waste by Source - Emirate of Abu Dhabi, 2009

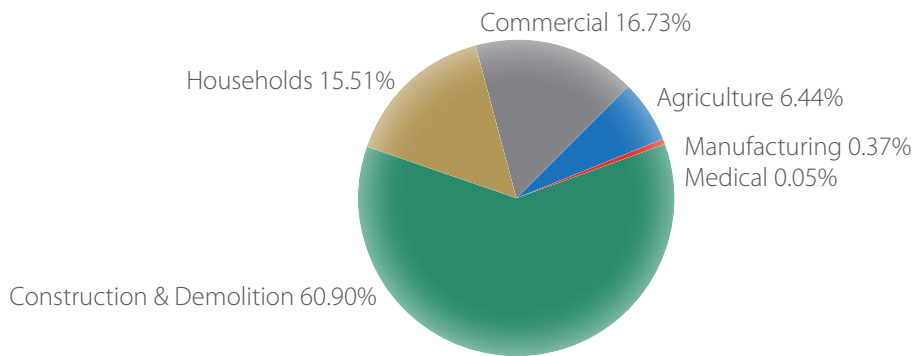
(Ton)

Source	Quantity	Daily Average	Annual Per Capita Share (Kg)	Daily Per Capita Share (Kg)
Total	5,755,503	15,768	3150.81	8.632
Households	892,603	2,445	488.65	1.339
Commercial	962,729	2638	527.04	1.444
Agriculture	370,851	1016	203.02	0.556
Manufacturing	21,223	58	11.62	0.032
Medical	2,971	8	1.63	0.004
Construction & Demolition	3,505,126	9603	1918.86	5.257

Source: The Centre of Waste Management - Abu Dhabi , The Statistics Centre – Abu Dhabi

It must be pointed out that total waste generation in the Emirate of Abu Dhabi is set to increase dramatically to reach 30 million tons by 2030 according to estimations made by the Centre of Waste Management - Abu Dhabi, assuming that the current waste and population growth rates will remain unchanged, however, the sustainable development strategies in the Emirate of Abu Dhabi aim to the reduce total waste to only 6 million tons in 2030.

Figure (1.1) Quantity of Solid Waste by Source Activity - Emirate of Abu Dhabi, 2009



1.2 Waste Recycling

A number of solid waste recycling projects are now in progress in the Emirate of Abu Dhabi, particularly construction and demolition waste, where waste is being disposed according to type. In 2009, the solid waste recycling rate was about 23.8% of the total amount of waste. The largest share was that of the construction and demolition waste, of which the proportion recycled was 21.6%, followed by composting, which recycled 2.1% of the total waste generated. Plans to attract investments in recycling should be supported in accordance with the approved plans of Abu Dhabi 2030 sustainable environment strategy and awareness should be rose to conduct waste separation by type at the source.

1.2 Waste Recycling Rate - Emirate of Abu Dhabi, 2009

Type	Rate
Total Recycled Waste	23.778%
Construction and Demolition	21.649%
Composting	2.126%
Other	0.003%

Source: The Centre of Waste Management - Abu Dhabi

1.3 Municipal Waste

Municipal waste includes household and similar waste as well as bulky solid waste (e.g. textiles, furniture, and household appliances), yard waste, grass clippings, street sweepings, the content of litter containers, and market cleansing waste, if managed as waste. It includes waste originating from: households, commerce and trade, small businesses, office buildings and institutions (schools, hospitals, government buildings) in addition to waste from park and garden maintenance if managed as waste. The definition excludes waste from municipal sewage network and treatment, municipal construction and demolition waste.

In 2009, the total amount of municipal waste in the Emirate of Abu Dhabi reached 1,115 thousand tons, of which 892 thousand tons was household waste and 223 thousand tons was waste collected from other sources.

Regarding the composition of municipal waste, organic waste constituted about 40% of the total amount, followed by paper waste with 23%, equivalent to more than 256 thousand tons.

The percentage of people served by municipal waste collection was 87% of the total population, of whom 95% were residents of urban areas, while the corresponding percentage retreats to 70% in rural areas of the Emirate.

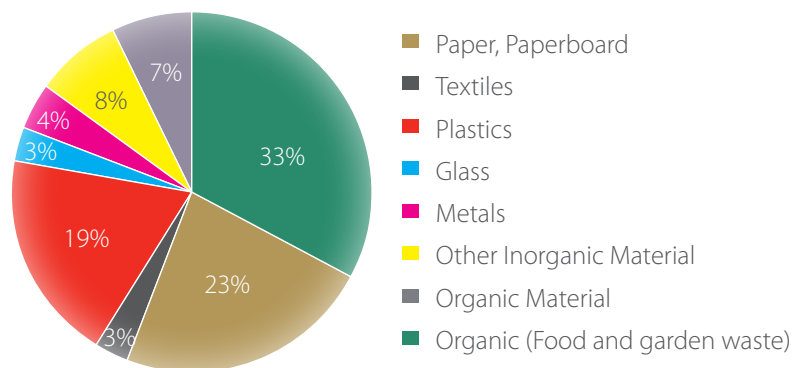
1.3 Quantity of Municipal Waste by Type of Disposal - Emirate of Abu Dhabi, 2009

(Thousand ton)

Type of Disposal	Quantity
Total	1,115
Recycling	10
Composting	29
Incineration	0
Landfilling	1,076

Source: The Centre of Waste Management - Abu Dhabi

Figure (1.2) Composition of Municipal Waste - Emirate of Abu Dhabi, 2009



1.4 Waste Management Projects

The number of waste management projects in the Emirate of Abu Dhabi increased from 19 plants in 2008 to 21 plants in 2009, of which 10 was dedicated to landfills and 4 plants for converting organic waste into organic fertilizer (compost).

1.4 Number of Waste Management Plants 2008- 2009

Region	Abu Dhabi		Al Ain		Western Region		Total	
	2008	2009	2008	2009	2008	2009	2008	2009
Recycling	N/A	N/A	N/A	N/A	N/A	N/A	N/A	N/A
Composting	1	1	1	1	2	2	4	4
Landfilling	1	1	1	2	7	7	9	10
Incineration	N/A	N/A	N/A	1	N/A	N/A	0	1
Other	1	1	4	4	0	0	5	5
Total	3	3	7	9	9	9	19	21

Source: The Centre of Waste Management - Abu Dhabi

According to the Frame Update Project 2010 preliminary results, there were 26 establishments working in waste management activities during the survey reference period.

1.5 Number of Waste Management Establishments* - Emirate of Abu Dhabi, 2010

Economic Activity	Number of Establishments
Collection of non-hazardous waste	14
Collection of hazardous waste	1
Treatment and disposal of non-hazardous waste	5
Treatment and disposal of hazardous waste	1
Materials recovery	4
Remediation activities and other waste management services	1
Total	26

Preliminary results according to Frame Update Project 2010 *

Source: Statistics Centre – Abu Dhabi

2. Hazardous Waste

According to the United Nation Statistics Division (UNSD), hazardous waste is defined as "waste that, owing to its toxic, infectious, radioactive or flammable properties, poses an actual or potential hazard to the health of humans, other living organism, or the environment."

In other words, hazardous waste is waste that, because of its use conditions, quantity, concentration, physical, chemical or infectious properties, may cause adverse effect on health and increase mortality rates, either between humans or animals and plants, or may exercise detrimental impact on the environment in the case of inappropriate treatment, storage, transfer or disposal.

2.1 Hazardous Waste Management

In the Emirate of Abu Dhabi, 4.5% of hazardous waste, which totaled 21,223 tons in 2009, is incinerated whereas the remaining amount of waste is disposed of through landfilling and other disposal methods at designated sties.

1.6 Hazardous Waste by Type of Disposal - Emirate of Abu Dhabi, 2009

(Ton)

Item	2009
Total	21,223
Recycling	0
Incineration	963
Landfilling	107
Other	20,153

Source: The Centre of Waste Management - Abu Dhabi

w w w . s c a d . a e

Tel: +971 2 8100000 - Fax: +971 2 8100800

P.O. Box: 6036, Abu Dhabi, U.A.E.