

EH1: NUMBER OF REPORTED CASES AND INCIDENCE OF ENVIRONMENTALLY RELATED DISEASES**DK****Concept and Definition**

Environmentally related diseases refer to diseases that cause an interruption, cessation or disorder of human bodily functions, systems or organs due to unfavorable environmental factors. According to the Dictionary of Epidemiology, edited for the International Epidemiological Association by John M. Last, a case in epidemiology, is a person in the population or study group identified as having the particular disease, health disorder, or condition under investigation. A variety of criteria may be used to identify cases, e.g. individual physician's diagnoses, registries and notifications, abstracts of clinical records, surveys of the general population, and population screening, among others. The epidemiological definition of a case is not necessarily the same as the ordinary clinical definition. (<http://www.paho.org/English/SHA/be991norms.htm>)

A CASE refers to a person who has the particular disease, health disorder, or condition which meets the case definition for surveillance and outbreak investigation purposes. The definition of a case for surveillance and outbreak investigation purpose is not necessarily the same as the ordinary clinical definition.

PREVALENCE refers to the number of instances of illness or of persons ill, or of any other event such as accidents, in a specified population, without any distinction between new and old cases. Prevalence may be recorded at a stated moment (point prevalence) or during a given period of time (period prevalence). (*Prevalence and Incidence. WHO Bulletin, 1966; 35:783-784*).

An INCIDENCE is the number of instances of illness commencing, or of persons falling ill, during a given period in a specified population. Incidence is usually expressed as a rate, the denominator being the average number of persons in the specified population during the defined period or the estimated number of persons at the mid-point of that period (*Prevalence and Incidence. WHO Bulletin, 1966, 35: 783-784*).

REPORTED CASES refers to the number of cases reported/registered in a specific year, for a given country, territory, or geographic area.

Types of Environmentally Related Diseases

Gastroenteritis is an inflammation of the stomach and intestines with many possible causes, such as: bacteria (responsible for acute food poisoning), parasites, food intolerances, drugs (antibiotics in particular) or most common viral infections. Symptoms can include nausea, vomiting, diarrhea, fever, abdominal cramping and/or pain and a general feeling of tiredness. It is often called the "stomach flu", although it is not caused by the influenza viruses. (*Please refer to the Center for Disease Control website at*

<http://www.cdc.gov/ncidod/dvrd/revb/gastro/faq.htm>.)

Typhoid: Typhoid fever is a bacterial infection caused by ingesting contaminated food or water. Symptoms are characterized by headaches, nausea and loss of appetite.

Malaria is caused by a parasite called *Plasmodium*, which is transmitted via the bites of infected mosquitoes. In the human body, the parasites multiply in the liver, and then infect red blood cells. Symptoms of malaria include fever, headache, and vomiting, and usually appear between 10 and 15 days after the mosquito bite. If not treated, malaria can quickly become life-threatening by disrupting the blood supply to vital organs.

(Please refer to the World Health Organization's website at <http://www.who.int/topics/malaria/en/>)

Cholera is an acute intestinal infection caused by ingestion of food or water contaminated with the bacterium *Vibrio cholerae*. It has a short incubation period, from less than one day to five days, and produces an enterotoxin that causes a copious, painless, watery diarrhoea that can quickly lead to severe dehydration and death if treatment is not promptly given. Vomiting also occurs in most patients.

(Please refer to the World Health Organization's website at <http://www.who.int/topics/cholera/en/>)

Poisoning: A poison is any substance that causes harm if it gets into the body. Harm can be mild (for example, headache or nausea) or severe (for example, fits or very high fever), and severely poisoned people may die. When people are in contact with a poison they are said to be exposed to it. Exposure may happen only once or many times. *Acute exposure* is a single contact that lasts for seconds, minutes or hours, or several exposures over about a day or less. *Chronic exposure* is contact that lasts for many days, months or years. It may be continuous or broken by periods when there is no contact. Chronic exposure to small amounts of poison may not cause any signs or symptoms of poisoning at first. It may be many days or months before there is enough chemical inside the body to cause poisoning.

Dengue is an acute, febrile illness, caused by one of four types of dengue virus. Viral transmission is through the bite of an infected *Aedes Aegypti* mosquito. The disease occurs in all countries infested with the vector and is prevalent in the Caribbean. Dengue fever is usually seasonal, with an increase in cases occurring after the onset of the rainy season.

Accidental Pesticide Poisoning: A case of *Accidental Pesticide Poisoning* is defined as any person who, after having been exposed to one or more pesticides, presents clinical manifestations of poisoning, or specific laboratory test results compatible with poisoning, in the first 24 hours after contact. Accidental refers to the unintentional and unexpected exposure to pesticides. This includes food poisoning. (PAHO/WHO *Epidemiological Bulletin*, Vol. 22 No. 4, December 2000)

Diarrhoea is the passage of three (3) or more loose or liquid stools per day, or more frequently than is normal for the individual. It is usually a symptom of gastrointestinal infection, which can be caused by a variety of bacterial, viral and parasitic organisms. Infection is spread through contaminated food or drinking-water, or from person to person as a result of poor hygiene.

Severe diarrhea leads to fluid loss, and may be life-threatening, particularly in young children and people who are malnourished or have impaired immunity

(Please refer to the World Health Organization's website at <http://www.who.int/topics/diarrhoea/en/>)

Respiratory tract diseases are diseases that affect the air passages, including the nasal passages, the bronchi and the lungs. They range from acute infections, such as pneumonia and bronchitis, to chronic conditions such as asthma and chronic obstructive pulmonary disease. *(Please refer to the World Health Organization's website at http://www.who.int/topics/respiratory_tract_diseases/en/ [last accessed: June 15th 2009])*

Other: Other refers to any other environmentally related diseases not previously mentioned.

Method of Computation

The number of reported cases and incidence of environmentally related diseases is classified from data obtained from Member States/Associate Members according to the categories: Gastroenteritis, Typhoid, Malaria, Cholera, Accidental Pesticide Poisoning, Dengue, Poisoning, Diarrhoea, Respiratory Diseases and Other as defined above.

Indicator Relevance

Setting priorities for action to reduce hazardous environmental exposures and their health effects, and evaluating the effectiveness of the actions carried out, require reliable information. This indicator, the number of reported cases and incidence of environmentally related diseases, provides the means for that information to be collected to ensure good decision making and the monitoring of potentially deadly exposure to environmental diseases.

Data Assessment

Of the eighteen Member States and Associate Members in the Community who usually submit data, only nine provided data for this indicator. Those nine countries were The Bahamas, Belize, Dominica, Grenada, St. Vincent and the Grenadines, Suriname, Trinidad and Tobago, Bermuda and The Turks and Caicos Islands. Of those nine countries, only The Bahamas, Belize, Dominica and Bermuda provided detailed data.

The degree of harmonisation for this indicator is difficult to assess since definitions were not provided by reporting Member States and Associate Members.

Data Sources

Please refer to **Appendix 1.3.1 (a)** for the sources of the data on the number of reported cases and incidence of environmentally related diseases of Member States and Associate Members.

Evaluation

Table 3.1 below reveals that *gastroenteritis*, *malaria*, *dengue* and *respiratory diseases* were the most significant environmentally related diseases in the Region during the period. *Gastroenteritis* was found to be prevalent in most Member States but more pronounced in Trinidad and Tobago. *Malaria*, meanwhile, was most prevalent in Suriname whereas in Trinidad and Tobago *dengue* was more common. Belize also reported a significant number of total cases of environmentally related diseases during the period with *Malaria* being the most common. Eight countries also presented data by gender with no significant disparities between men and women. Most notable was the increased cases of *Respiratory diseases*, a significant indicator of pollution, for most Member States from a total of 1,551 cases in 1998¹ to 10,179 cases in 2004². For both Associate Members, *Respiratory disease* was the highest reported environmentally related disease.

During the period 1998 to 2003, *Gastroenteritis* was the most significant environmental related disease in The Bahamas followed by *Other environmental related disease* which includes *Foodborne Illnesses*, *Leptospirosis*, *Salmonellosis*, *Shigellosis*, *Amoebiasis* of which *Foodborne Illnesses* accounted for more than 90 per cent of this value. Cases of *Gastroenteritis* in The Bahamas ranged from 1,493 in 1999 to 4,904 in 2002.

Data for Belize showed that *Gastroenteritis*, *Malaria*, *Diarrhoea* and *Respiratory diseases* were the most significant among reported environmental related diseases for the period 1998 to 2004. Reported cases of environmental related diseases were highest in 1998 (8,797) and 1999 (9,044) where *Diarrhoea* and *Gastroenteritis* accounted for 58 and 68 per cent of total cases, respectively. *Malaria* was the most significant environmental related disease in Belize during the period 1999 to 2003.

Reported cases of environmental related diseases revealed that *Gastroenteritis* was most significant for Dominica during 1998 to 2004. In Grenada an alarming number of cases of *Respiratory diseases* were reported during 1999 to 2004 ranging from a high of 9,503 cases in 2002 to 6,954 cases in 2001 and representing more than 70 per cent all cases reported. St. Vincent and the Grenadines reported data on *Gastroenteritis* cases only for the period 2000 to 2004 with the highest number of cases 3,787 reported in 2003.

¹ Includes totals for The Bahamas, Belize and Bermuda.

² Excludes The Bahamas for which data is not available.

Suriname reported significant cases of *Malaria* and *Gastroenteritis*; *Malaria* being the highest with 9,936 cases reported in 1999, 16,088 in 2000, 13,206 in 2001 and 14,683 in 2002. In Trinidad and Tobago, for 1998-2004, cases of *Gastroenteritis* were most significant averaging 8,858 during the period.

Table 3.1: Number of Reported Cases and Incidence of Environmentally Related Diseases

Country	Year	Gastroenteritis			Typhoid			Malaria			Cholera		
		F	M	T	F	M	T	F	M	T	F	M	T
BS	1998	...	...	1,679	...	...	9	...	...	21	...	...	0
	1999	...	...	1,493	...	...	1	...	...	30	...	...	0
	2000	...	...	2,544	...	...	3	...	...	2	...	...	0
	2001	...	...	2,521	...	...	1	...	...	4	...	...	0
	2002	...	...	4,904	...	...	0	...	...	1	...	...	0
	2003	...	...	3,759	...	...	1	...	...	1	...	...	0
BZ	1998	1,227	1,284	2,511	0	1	1	816	1,170	1,986	17	9	26
	1999	411	529	940	0	0	0	835	1,018	1,853	5	7	12
	2000	406	493	899	0	0	0	655	831	1,486	0	0	0
	2001	313	390	703	0	0	0	503	660	1,163	0	0	0
	2002	134	159	293	0	0	0	485	628	1,113	0	0	0
	2003	236	240	476	0	1	1	550	774	1,324	0	0	0
	2004	1,550	1,455	3,005	2	1	3	466	599	1,065	0	0	0
DM	1998	27	29	56	5	5	10	1	1	2	...	...	...
	1999	33	25	58	1	2	3	0	0	0	...	...	...
	2000	9	7	16	0	0	0	0	1	1	...	...	...
	2001	15	40	55	1	0	1	0	1	1	...	...	...
	2002	120	117	237	0	2	2	0	0	0	...	...	...
	2003	78	57	135	1	1	2	0	0	0	...	...	...
	2004	54	64	118	0	0	0	0	0	0	...	...	...
GD	1999	...	...	2,571	...	...	0	...	...	0	...	...	0
	2000	...	...	1,532	...	...	0	...	...	0	...	...	0
	2001	...	...	1,513	...	...	0	...	...	0	...	...	0
	2002	...	...	1,058	...	...	0	...	...	0	...	...	0
	2003	...	...	1,566	...	...	0	...	...	0	...	...	0
	2004	...	...	1,376	...	...	0	...	...	0	...	...	0
VC	2000	1,312	1,179	2,491	...	...	...	...	...	0	...	...	0
	2001	1,144	987	2,131	...	...	...	...	...	0	...	...	0
	2002	844	691	1,535	...	...	...	...	...	0	...	...	0
	2003	1,974	1,813	3,787	...	...	...	...	...	0	...	...	0
	2004	1,093	1,028	2,121	...	...	...	...	...	0	...	...	0
SR	1998	...	...	(a) 6,672	...	...	(b) 12	...	...	(d) ...	...	...	0
	1999	...	...	5,875	...	...	2	...	...	...	...	...	0
	2000	...	...	5,871	...	...	0	...	...	9,936	...	...	...
	2001	...	...	7,557	...	...	2	...	...	16,088	...	...	...
	2002	...	...	7,645	...	...	0	...	...	13,206	...	...	...
	2003	...	...	5,246	...	...	...	...	...	14,683	...	...	...
	2004	...	...	...	...	...	...	...	...	...	...	...	...

Table 3.1 Contd. Number of Reported Cases and Incidence of Environmentally Related Diseases

Country	Year	Poisoning			Dengue			Accidental pesticide			Diarrhea		
		F	M	T	F	M	T	F	M	T	F	M	T
BS	1998	81	45	126	...	...	336	5	7	12	...	...	...
	1999	38	39	77	...	...	0	3	1	4	...	...	...
	2000	45	40	85	...	...	0	2	2	4	...	...	...
	2001	64	51	115	...	...	0	3	2	5	...	...	...
	2002	50	28	78	...	...	0	1	9	10	...	...	...
	2003	75	32	107	...	...	180	3	4	7	...	...	...
BZ	1998	20	2	22	...	...	...	3	3	6	1,268	1,346	2,614
	1999	23	23	46	2	4	6	0	8	8	431	559	990
	2000	14	21	35	2	2	4	1	1	2	428	507	935
	2001	16	30	46	2	2	4	3	3	6	343	426	769
	2002	24	35	59	25	16	41	7	15	22	143	170	313
	2003	19	36	55	5	2	7	2	16	18	293	283	576
	2004	18	39	57	24	17	41	2	9	11	1,624	1,544	3,168
DM	1998	...	...	...	...	...	...	...	...	...	15	4	19
	1999	...	...	...	...	...	...	...	...	...	5	3	8
	2000	...	...	...	...	...	...	...	...	...	4	1	5
	2001	...	...	...	...	...	...	...	...	...	1	1	2
	2002	...	...	...	...	...	...	...	...	...	12	5	17
	2003	...	...	...	...	...	...	...	...	...	12	7	19
	2004	...	...	...	...	...	...	...	...	...	6	4	10
GD	1999	...	...	0	...	...	29	...	...	0	...	...	452
	2000	...	...	0	...	...	16	...	...	0	...	...	517
	2001	...	...	0	...	...	19	...	...	0	...	...	446
	2002	...	...	0	...	...	282	...	...	0	...	...	423
	2003	...	...	0	...	...	21	...	...	0	...	...	533
	2004	...	...	0	...	...	8	...	...	0	...	...	380
VC	2000	...	...	...	2	1	3	...	...	...	...	...	...
	2001	...	...	...	2	1	3	...	...	...	...	...	...
	2002	...	...	...	54	75	129	...	...	...	...	...	...
	2003	...	...	...	1	2	3	...	...	...	...	...	...
	2004	...	...	...	2	2	4	...	...	...	...	...	...
SR	1998	...	...	(c) 198	...	...	(e)	...	...	...	...	...	...
	1999	...	...	16	...	...	...	...	...	...	...	...	...
	2000	...	...	8	...	...	1,093	...	...	...	...	...	...
	2001	...	...	8	...	...	516	...	...	...	...	...	...
	2002	...	...	3	...	...	446	...	...	...	...	...	...
	2003	...	...	...	...	...	218	...	...	...	...	...	...
	2004	...	...	...	...	...	...	...	...	...	...	...	...

Table 3.1 Contd. Number of Reported Cases and Incidence of Environmentally Related Diseases

Country	Year	Respiratory diseases			Other			TOTAL CASES, all causes		
		F	M	T	F	M	T	F	M	T
BS	1998	129	134	263	...	...	1,177	...	...	3,623
	1999	161	172	333	...	...	1,153	...	...	3,091
	2000	156	176	332	...	...	999	...	...	3,969
	2001	124	131	255	...	...	1,019	...	...	3,920
	2002	140	191	331	...	...	1,333	...	...	6,657
	2003	171	194	365	...	...	1,213	...	...	5,633
BZ	1998	375	439	814	...	...	...	4,101	4,693	8,794
	1999	370	430	800	...	...	...	2,447	3,008	5,455
	2000	408	515	923	...	...	...	2,322	2,885	5,207
	2001	392	505	897	...	...	...	1,964	2,521	4,485
	2002	360	442	802	...	...	...	1,538	1,907	3,445
	2003	463	548	1,011	...	...	...	2,031	2,448	4,479
	2004	413	434	847	...	...	...	4,512	4,532	9,044
DM	1998	...	...	0	...	...	...	48	39	87
	1999	...	...	0	...	...	...	39	35	74
	2000	...	...	0	...	...	...	13	9	22
	2001	...	...	0	...	...	...	17	42	59
	2002	12	19	31	...	...	...	132	124	256
	2003	...	...	0	...	...	...	91	65	156
	2004	...	...	0	...	...	...	60	68	128
GD	1999	...	...	8,560	...	...	...	...	...	11,612
	2000	...	...	9,654	...	...	...	...	...	11,719
	2001	...	...	6,954	...	...	...	...	...	8,932
	2002	...	...	9,503	...	...	...	...	...	11,266
	2003	...	...	9,170	...	...	...	...	...	11,290
	2004	...	...	7,698	...	...	...	...	...	9,462
VC	2000	...	...	...	...	...	...	...	...	...
	2001	...	...	...	...	...	...	...	...	...
	2002	...	...	...	...	...	...	...	...	...
	2003	...	...	...	...	...	...	...	...	...
	2004	...	...	...	...	...	...	...	...	...
SR	1998	...	...	...	...	...	...	...	...	...
	1999	...	...	...	...	...	...	...	...	...
	2000	...	...	...	...	...	...	...	...	...
	2001	...	...	...	...	...	...	...	...	...
	2002	...	...	...	...	...	...	...	...	...
	2003	...	...	...	...	...	...	...	...	...
	2004	...	...	...	...	...	...	...	...	...

Table 3.1 Contd. Number of Reported Cases and Incidence of Environmentally Related Diseases

Country	Year	Gastroenteritis			Typhoid			Malaria			Cholera		
		F	M	T	F	M	T	F	M	T	F	M	T
TT	1998	...	...	14,109	...	...	...	...	...	8	...	...	0
	1999	...	...	19,796	...	...	...	...	...	8	...	...	0
	2000	...	...	17,356	...	...	3	...	...	17	...	...	0
	2001	...	...	22,694	...	...	...	...	...	11	...	...	0
	2002	...	...	16,897	...	...	...	...	...	8	...	...	0
	2003	...	...	18,925	...	...	...	...	...	9	...	...	0
	2004	...	...	22,231	...	...	...	...	...	11	...	...	0
ASSOCIATE MEMBERS													
BM	1998	36	24	60	0	0	0	0	0	0	0	0	0
	1999	22	26	48	0	0	0	0	0	0	0	0	0
	2000	30	26	56	0	0	0	0	0	0	0	0	0
	2001	20	21	41	0	0	0	0	2	2	0	0	0
	2002	37	21	58	0	0	0	0	0	0	0	0	0
	2003	29	22	51	0	0	0	0	0	0	0	0	0
	2004	27	23	50	0	0	0	0	0	0	0	0	0
TC	1998	...	...	...	...	...	...	...	...	...	...	...	...
	1999	...	...	...	...	...	...	...	...	...	...	...	...
	2000	...	...	...	...	...	...	...	...	...	...	...	...
	2001	...	...	158	...	...	0	...	...	0	...	...	0
	2002	...	...	99	...	...	0	...	...	2	...	...	0
	2003	...	...	217	...	...	0	...	...	1	...	...	0
	2004	...	...	371	...	...	0	...	...	0	...	...	0

Table 3.1 Contd. Number of Reported Cases and Incidence of Environmentally Related Diseases

Country	Year	Poisoning			Dengue			Accidental pesticide			Diarrhoea		
		F	M	T	F	M	T	F	M	T	F	M	T
TT	1998	...	...	...	...	...	2,984	...	..	...	...	...	...
	1999	...	...	...	...	...	1,199	...	..	...	...	...	...
	2000	...	...	...	...	...	2,235	...	..	...	...	...	...
	2001	...	...	...	...	...	2,417	...	..	...	...	...	...
	2002	...	...	...	...	...	6,311	...	..	...	...	...	...
	2003	...	...	...	...	...	2,371	...	..	...	...	...	...
	2004	...	...	...	...	...	594	...	..	...	...	...	...
ASSOCIATE MEMBERS													
BM	1998	14	13	27	0	0	0	0	0	0	5	4	9
	1999	15	11	26	0	0	0	0	0	0	8	1	9
	2000	28	21	49	0	0	0	0	0	0	5	9	14
	2001	24	13	37	0	0	0	0	0	0	2	0	2
	2002	27	16	43	0	1	1	0	0	0	0	0	0
	2003	13	14	27	0	1	1	0	0	0	4	1	5
	2004	21	11	32	0	0	0	0	0	0	5	0	5
TC	1998	...	...	...	...	...	...	...	..	...	...	...	...
	1999	...	...	...	...	...	...	...	..	...	...	...	...
	2000	...	...	...	...	...	...	...	..	...	...	...	...
	2001	...	...	...	...	...	...	...	..	...	...	...	...
	2002	...	...	31	...	...	0	...	..	...	...	...	...
	2003	...	...	104	...	...	0	...	..	...	...	...	...
	2004	...	...	172	...	...	0	...	..	...	...	...	...

Table 3.1 Contd. Number of Reported Cases and Incidence of Environmentally Related Diseases

Country	Year	Respiratory diseases			Other			TOTAL CASES, all causes		
		F	M	T	F	M	T	F	M	T
TT	1998	...	...	...	...	...	...	...	...	...
	1999	...	...	...	...	...	...	...	...	...
	2000	...	...	...	...	...	...	...	...	...
	2001	...	...	...	...	...	...	...	...	...
	2002	...	...	...	...	...	...	...	...	...
	2003	...	...	...	...	...	...	...	...	...
	2004	...	...	...	...	...	...	...	...	...
ASSOCIATE MEMBERS										
BM	1998	229	245	474	...	...	...	284	286	570
	1999	314	296	610	...	...	...	359	334	693
	2000	262	263	525	...	...	...	325	319	644
	2001	208	265	473	...	...	...	254	301	555
	2002	201	212	413	...	...	...	265	250	515
	2003	239	202	441	...	...	...	285	240	525
	2004	198	228	426	...	...	...	251	262	513
TC	1998	...	...	...	...	...	...	...	...	...
	1999	...	...	...	...	...	...	...	...	...
	2000	...	...	...	...	...	...	...	...	...
	2001	...	...	...	...	...	...	...	...	158
	2002	...	...	429	...	...	...	...	...	561
	2003	...	...	1,635	...	...	...	...	...	1,957
	2004	...	...	1,226	...	...	...	...	...	1,769

EH2: MDG 8: ENSURE ENVIRONMENTAL SUSTAINABILITY**Number of Households by Type of Sanitation facilities****Proportion of population with access to improved sanitation, urban and rural**

DK

Target 10: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation**Concepts and Definitions**

The household is defined as follows: (a) a one-person household, defined as an arrangement in which one person makes provisions for his or her own food or other essentials for living without combining with any other person to form part of a multi-person household; and (b) a multi-person household, defined as a group of two or more persons living together who make common provisions for food or other essentials for living. The persons in the group may pool their incomes and have a common budget. They may be related or unrelated or a combination of both related and unrelated. (Please refer to the United Nations Principles and Recommendations for Population and Housing Censuses, Revision 1 (1997))

A *sanitary facility* is a unit for disposal of human excreta which isolates faeces from contact with people, animals, crops and water sources.

The number of households by sanitation facilities describes the types of toilet facilities available to households.

Types of Sanitation Facilities

W.C. Linked to Sewer: This is a flush toilet or water closet (W.C.), which fills from a piped water supply and empties into a sewerage disposal system.

W.C. Cesspit/Septic Tank is a waterborne toilet facility and empties into a cesspit or septic tank (a tank in which sewage is decomposed by the action of bacteria).

A *pit latrine* is a type of toilet facility that is available to the household outside of the dwelling. It is not waterborne.

None refers to households that are without sanitary facilities.

Other refers to all other sanitary facilities not so far mentioned.

Method of Computation

The number of households by sanitation facilities is classified from data obtained from Member States/Associate Members according to the categories: W.C. Linked to Sewer, W.C. Cesspit/Septic Tank, Pit latrine, None, Other and Not Stated as defined under the concepts and definition.

Indicator Relevance

The number of households by type of sanitation facilities is a basic indicator useful for assessing human health as it is a measure of the number of households that have access to basic/improved sanitary facilities. Accessibility to adequate excreta disposal facilities is fundamental to decreasing the faecal risk and the frequency of associated environmental diseases.

Data Assessment

Definitions for this indicator were not provided by Member States/Associate Members and therefore the degree of harmonisation is impossible to assess.

Data Sources

Please refer to **Appendix 1.3.2 (a)** for the sources of the data on the number of households by type of sanitation facilities of Member States and Associate Members.

Evaluation

The data presented in *Tables 3.2 (a) and (b)* shows that the *W.C. Cesspit/Septic Tank* was the most commonly used sanitation facility in the Region with 44.6 per cent of all households followed by the *Pit Latrine* with 33.6 per cent. 2.3 per cent of households in the Region reported no sanitation facility. Among Member States, Barbados reported the highest percentage of households using the *W.C. Cesspit/Septic Tank* as the most commonly used sanitation facility at 81.3 per cent followed by St. Kitts and Nevis with 78.1 per cent of households. Bermuda reported 90 per cent of households using the *W.C. Cesspit/Septic Tank* as the most used sanitation facility among Associated Members and this was the highest reported percentage in the Region.

In the Region only 17 per cent of households were linked to a *sewerage disposal system* and this was highest in Anguilla (89.9 per cent) followed by Antigua and Barbuda (72.7 per cent).

The *Pit Latrine* was most common in Guyana where more than 57.6 per cent of households reportedly used this method of sanitation followed by St. Vincent and the Grenadines (44.3 per cent) and Belize (44 per cent).

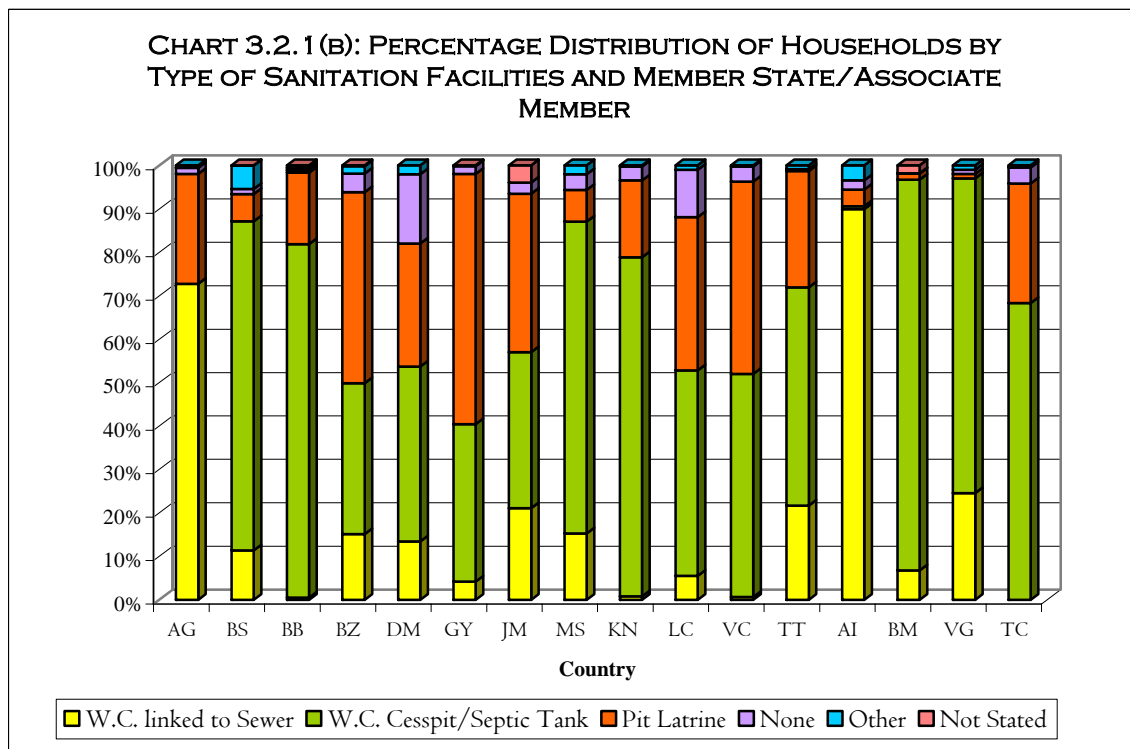
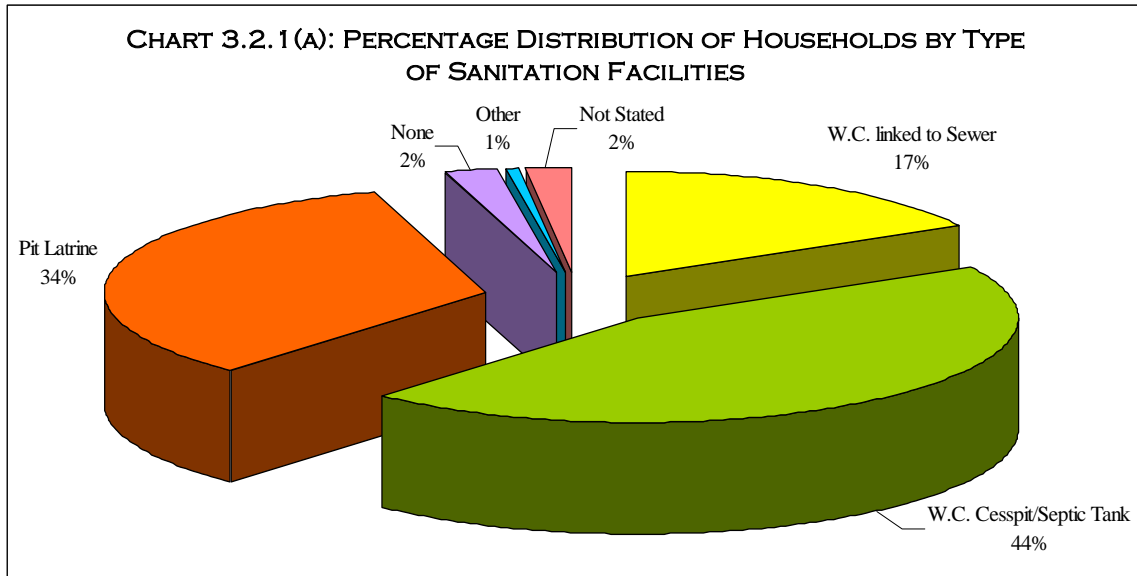
In Dominica, 16 per cent of households reported no sanitation facility followed by Saint Lucia where 10.9 per cent of households reported no sanitation facility.

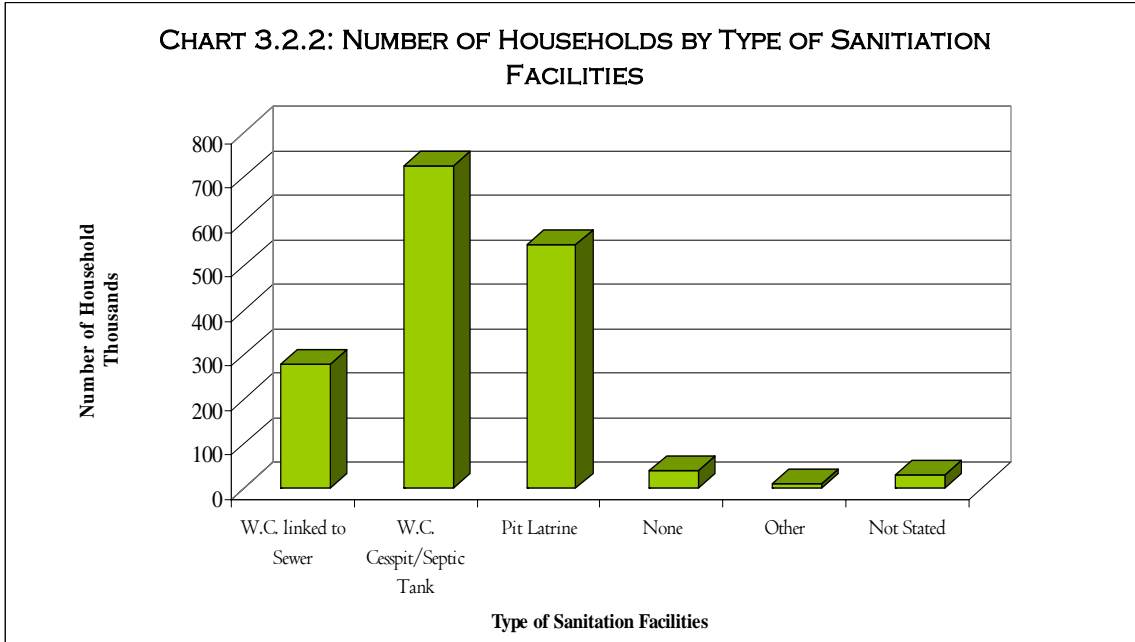
Table 3.2 (a) – Number of Households by Type of Sanitation facilities: 2000 Round of Census

Country	Year	W.C. Linked to sewer	W.C. Cesspit / Septic Tank	Pit Latrine	None	Other	Not Stated	Total all Households
AG	2001	14,868	0	5,176	293	113	0	20,450
BS	2000	9,978	66,507	5,445	1,054	4,703	55	87,742
BB	2000	428	67,511	13,684	487	453	463	83,026
BZ	2000	7,851	18,049	22,864	2,222	847	112	51,945
DM	2001	3,010	8,991	6,332	3,572	454	0	22,359
GY	2002	7,630	66,182	105,223	3,292	202	80	182,609
JM	2001	157,851	268,783	273,086	18,978	0	29,628	748,326
MS	2001	355	1,673	170	84	47	0	2,329
KN	2001	124	12,239	2,774	499	44	0	15,680
LC	2001	2,333	20,224	15,072	4,652	417	0	42,698
VC	2001	189	15,549	13,408	1,046	70	0	30,262
TT	2000	65,851	152,713	81,318	1,320	2,669	0	303,871
TOTAL MEMBER STATES		270,468	698,421	544,552	37,499	10,019	30,338	1,591,297
ASSOCIATE MEMBERS								
AI	2001	3,354	25	144	78	129	0	3,730
VG	2001	2,056	6,079	88	77	86	0	8,386
TC	2001	0	4,954	2,000	267	33	0	7,254
TOTAL ASSOCIATE MEMBERS		6,648	27,669	2,481	422	270	329	37,819
TOTAL MEMBER STATES AND ASSOCIATE MEMBERS		277,116	726,090	547,033	37,921	10,289	30,667	1,629,116

Table 3.2 (b) – Percentage distribution of Households by Type of Sanitation facilities: 2000 Round of Census

Country	Year	W.C. Linked to sewer	W.C. Cesspit / Septic Tank	Pit Latrine	None	Other	Not Stated	Total all Households
AG	2001	72.7	0.0	25.3	1.4	0.6	0.0	100.0
BS	2000	11.4	75.8	6.2	1.2	5.4	0.1	100.0
BB	2000	0.5	81.3	16.5	0.6	0.5	0.6	100.0
BZ	2000	15.1	34.7	44.0	4.3	1.6	0.2	100.0
DM	2001	13.5	40.2	28.3	16.0	2.0	0.0	100.0
GY	2002	4.2	36.2	57.6	1.8	0.1	0.0	100.0
JM	2001	21.1	35.9	36.5	2.5	0.0	4.0	100.0
MS	2001	15.2	71.8	7.3	3.6	2.0	0.0	100.0
KN	2001	0.8	78.1	17.7	3.2	0.3	0.0	100.0
LC	2001	5.5	47.4	35.3	10.9	1.0	0.0	100.0
VC	2001	0.6	51.4	44.3	3.5	0.2	0.0	100.0
TT	2000	21.7	50.3	26.8	0.4	0.9	0.0	100.0
TOTAL MEMBER STATES		17.0	43.9	34.2	2.4	0.6	1.9	100.0
ASSOCIATE MEMBERS								
AI	2001	89.9	0.7	3.9	2.1	3.5	0.0	100.0
VG	2001	24.5	72.5	1.0	0.9	1.0	0.0	100.0
TC	2001	0.0	68.3	27.6	3.7	0.5	0.0	100.0
TOTAL ASSOCIATE MEMBERS		17.6	73.2	6.6	1.1	0.7	0.9	100.0
TOTAL MEMBER STATES AND ASSOCIATE MEMBERS		17.0	44.6	33.6	2.3	0.6	1.9	100.0





EH3: MDG 8: ENSURE ENVIRONMENTAL SUSTAINABILITY

Number of Households by Type of Water Supply
Proportion of population with sustainable access to an improved water source, urban and rural

H

Target 10: Halve, by 2015, the proportion of people without sustainable access to safe drinking water and basic sanitation

Concept and Definition

The household is defined as follows: (a) a one-person household, defined as an arrangement in which one person makes provisions for his or her own food or other essentials for living without combining with any other person to form part of a multi-person household; and (b) a multi-person household, defined as a group of two or more persons living together who make common provisions for food or other essentials for living. The persons in the group may pool their incomes and have a common budget. They may be related or unrelated or a combination of both related and unrelated. (Please refer to the United Nations Principles and Recommendations for Population and Housing Censuses, Revision 1 (1998))

Water Supply refers to the water available to a community or region and the source and delivery system of that water.

The number of households by type of water supply describes the main source of water available to households.

Types of Water Supply

Piped into dwelling refers to the water supply received by a household from a private source that is piped into the dwelling unit through water pipes within the walls that constitute a dwelling.

Piped into yard describes a situation where the household receives running water from a public source through a pipe in the yard or compound on which the dwelling stands.

Public piped into dwelling describes a situation where running water from a public source is piped directly into the dwelling unit.

Private catchments: not piped occurs where the water supply to the household is from a private source within the premises and is not piped into the dwelling.

Private catchments: piped occurs where the water supply to the household is from a private source piped into the dwelling unit.

Public standpipe: This describes a situation where water is available to the household from a standpipe in the street or elsewhere, but not in the compound on which the dwelling stands.

Public well or tank applies when the water available to the dwelling unit is from a protected well or tank built by the public authorities or community-based, non-governmental organizations.

Other refers to any source other than those listed above (e.g. river, stream, spring, creek, etc).

Method of Computation

The number of households by type of water supply is classified from data obtained from Member States/Associate Members according to the categories: Piped into dwelling, Piped into yard, Public piped into dwelling, Private catchments: not piped, Private catchments: piped, Public catchments: piped, Public standpipe, Public well or tank and Other as defined above.

Indicator Relevance

The number of households by type of water supply provides a measure of the number of households that have access to safe water. Accessibility to safe water is of fundamental significance to reducing the risk and frequency of the spread of environmental diseases, especially in infants and the elderly who are more prone to picking up these diseases.

Data Assessment

It was assumed that the concepts of a household and of water supply are in accordance with the international definition and is harmonized across the region since no definitions were provided by the reporting Member States/Associate Members.

The degree of harmonisation for this indicator is difficult to assess since definitions were not provided by reporting Member States and Associate Members.

Data Sources

Please refer to **Appendix 1.3.3 (a)** for the sources of the data on the number of households by type of water supply of Member States and Associate Members.

Evaluation

Table 3.3 (a) indicated that 607,530 households (37.3 per cent) of the total of 1,629,116 households in the Region had public water supply which was *pipied into dwelling*. When added to households with private

water supply *piped into dwelling* (303,913 households) this represented a combined percentage of 56 per cent. Among Member States, St. Kitts and Nevis and Barbados reported the highest number of households at 91.7 per cent and 90.9 per cent with water supply *piped into dwelling*. Among Associate Members, Bermuda recorded 95.9 per cent of households which had water supply *piped into dwelling*.

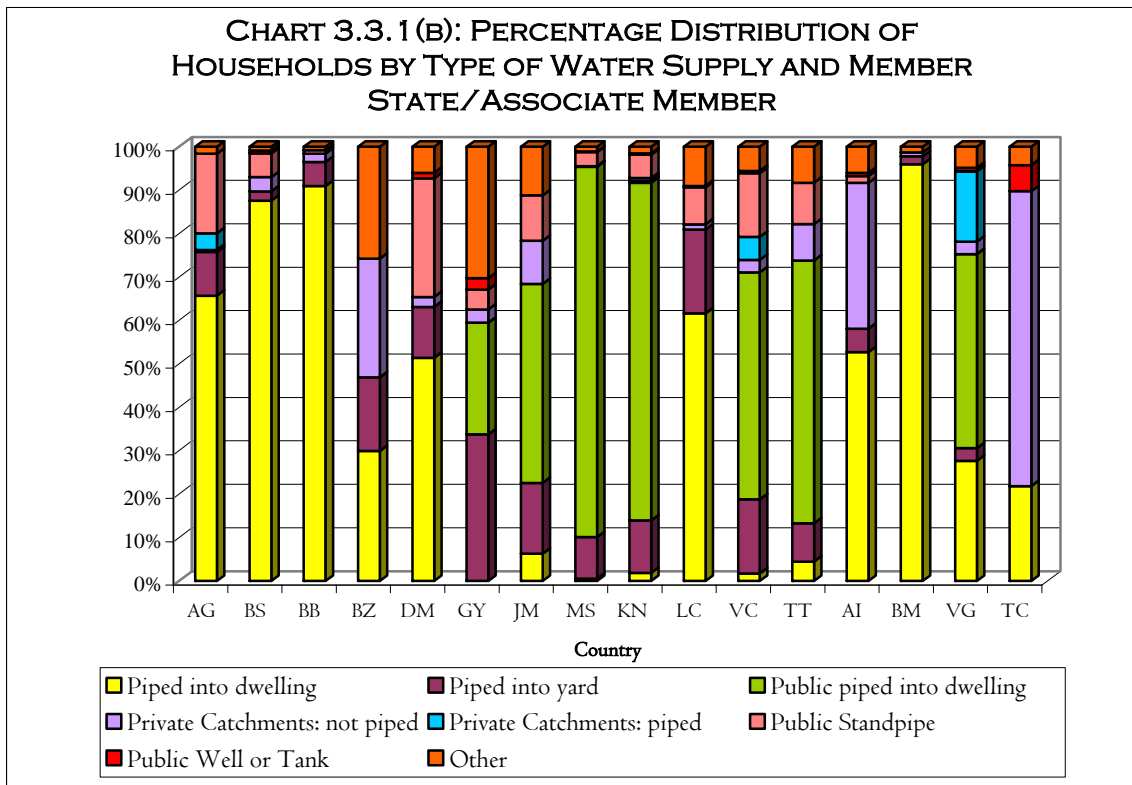
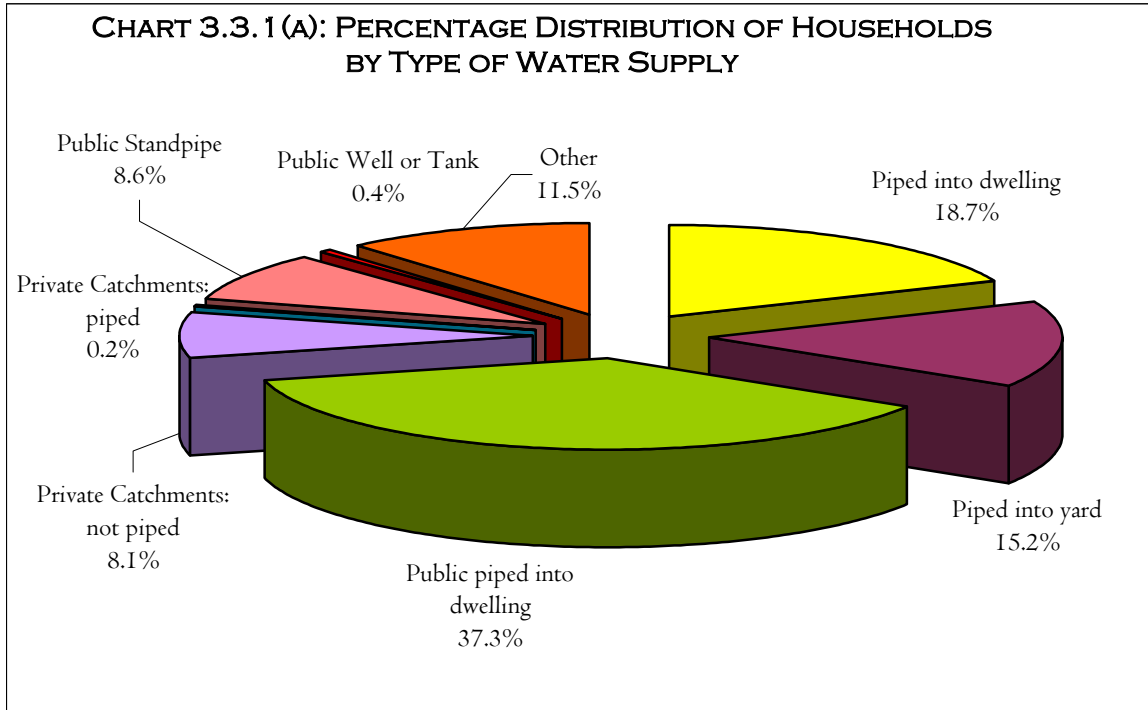
Improved drinking water sources as defined by the United Nations include household connection, public standpipe, borehole, protected dug well, protected spring and rainwater collection. Unimproved drinking water sources include unprotected well, unprotected spring, rivers or ponds, vendor-provided water, bottled water and tanker/truck water. Guyana and Belize recorded percentages of unimproved drinking water sources above 25 per cent.

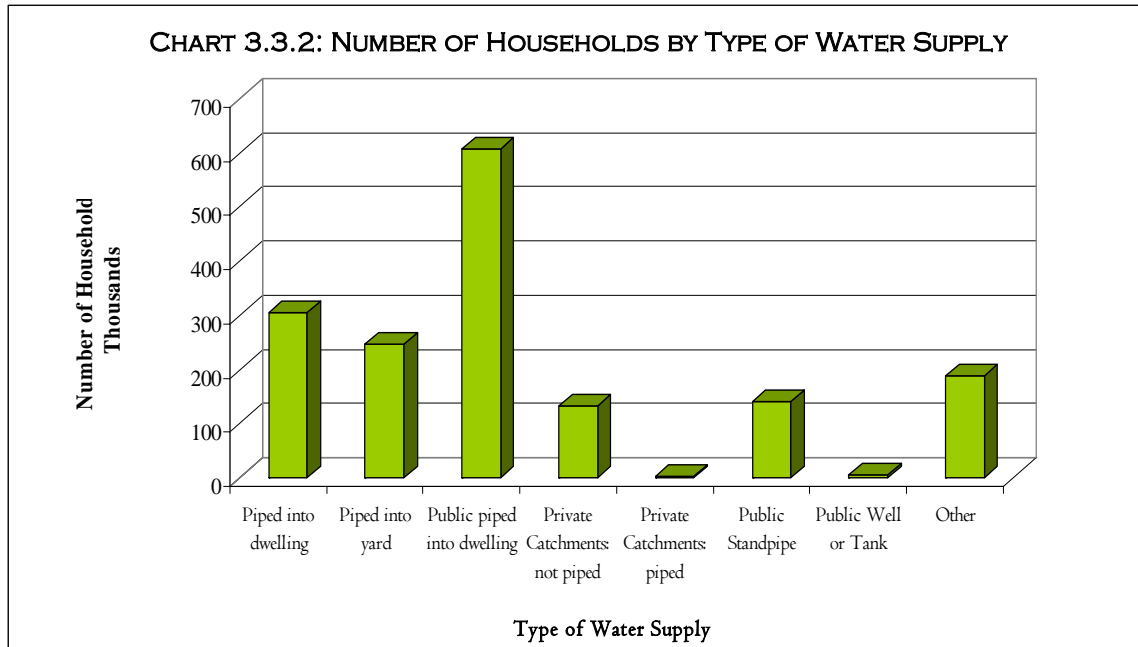
**Table 3.3(a) Number of Households by Type of Water Supply:
2000 Round of Census**

Country	Year	Piped into dwelling	Piped into yard	Public Piped into dwelling	Private catchments		Public standpipe	Public well or tank	Other	Total
					Not piped	Piped				
AG	2001	13,438	2,054	98	0	780	3,750	0	330	20,450
BS	2000	76,841	1,866	0	2,877	0	4,794	589	775	87,742
BB	2000	75,494	4,636	0	1,592	0	614	8	682	83,026
BZ	2000	15,548	8,828	0	14,190	0	0	0	13,379	51,945
DM	2001	11,495	2,615	0	516	0	6,109	277	1,347	22,359
GY	2000	0	61,638	46,984	5,549	0	8,331	4,792	55,315	182,609
JM	2001	46,830	122,133	342,723	74,445	0	78,467	0	83,728	748,326
MS	2001	13	222	1,987	1	2	75	3	26	2,329
KN	2001	295	1,887	12,196	70	98	843	48	243	15,680
LC	2001	26,308	8,259	0	508	0	3,636	140	3,847	42,698
VC	2001	521	5,167	15,826	864	1,599	4,438	158	1,689	30,262
TT	2000	13,561	26,777	183,966	25,341	0	29,057	0	25,169	303,871
TOTAL MEMBER STATES		280,344	246,082	603,780	125,953	2,479	140,114	6,015	186,530	1,591,297
ASSOCIATE MEMBERS										
AI	2001	1,965	203	0	1,251	0	59	26	226	3,730
VG	2001	2,320	244	3,750	241	1,356	8	60	407	8,386
TC	2001	1,584	n.a.	0	4,927	0	...	434	309	7,254
TOTAL ASSOCIATE MEMBERS		23,568	790	3,750	6,578	1,356	67	520	1,190	37,819
TOTAL MEMBER STATES AND ASSOCIATE MEMBERS		303,912	246,872	607,530	132,531	3,835	140,181	6,535	187,720	1,629,116

Table 3.3 (b) Percentage distribution of Households by Type of Water Supply: 2000 Round of Census

Country	Year	Piped into dwelling	Piped into yard	Public Piped into dwelling	Private catchments		Public standpipe	Public well or tank	Other	Total
					Not piped	Piped				
AG	2001	65.7	10.0	0.5	0.0	3.8	18.3	0.0	1.6	100.0
BS	2000	87.6	2.1	0.0	3.3	0.0	5.5	0.7	0.9	100.0
BB	2000	90.9	5.6	0.0	1.9	0.0	0.7	0.0	0.8	100.0
BZ	2000	29.9	17.0	0.0	27.3	0.0	0.0	0.0	25.8	100.0
DM	2001	51.4	11.7	0.0	2.3	0.0	27.3	1.2	6.0	100.0
GY	2000	0.0	33.8	25.7	3.0	0.0	4.6	2.6	30.3	100.0
JM	2001	6.3	16.3	45.8	9.9	0.0	10.5	0.0	11.2	100.0
MS	2001	0.6	9.5	85.3	0.0	0.1	3.2	0.1	1.1	100.0
KN	2001	1.9	12.0	77.8	0.4	0.6	5.4	0.3	1.5	100.0
LC	2001	61.6	19.3	0.0	1.2	0.0	8.5	0.3	9.0	100.0
VC	2001	1.7	17.1	52.3	2.9	5.3	14.7	0.5	5.6	100.0
TT	2000	4.5	8.8	60.5	8.3	0.0	9.6	0.0	8.3	100.0
TOTAL MEMBER STATES		17.6	15.5	37.9	7.9	0.2	8.8	0.4	11.7	100.0
ASSOCIATE MEMBERS										
AI	2001	52.7	5.4	0.0	33.5	0.0	1.6	0.7	6.1	100.0
VG	2001	27.7	2.9	44.7	2.9	16.2	0.1	0.7	4.9	100.0
TC	2001	21.8	n.a.	0.0	67.9	0.0	...	6.0	4.3	100.0
TOTAL ASSOCIATE MEMBERS		62.3	2.1	9.9	17.4	3.6	0.2	1.4	3.1	100.0
TOTAL MEMBER STATES AND ASSOCIATE MEMBERS		18.7	15.2	37.3	8.1	0.2	8.6	0.4	11.5	100.0





Appendix 1.3

1.3.1 (a): Sources of Data for Table 3.1 - Number of Reported Cases and Incidence of Environmentally Related Diseases: 1998 - 2004

Country	Data Source
THE BAHAMAS	Items 1-5, 10: Department of Public Health; Items 6-9: Public Hospitals Authority- Kean Information System (Princess Margaret Hospital and Rand Memorial Hospital discharge data)
BELIZE	The Epidemiology Unit, Ministry of Health
DOMINICA	Ministry of Health
GRENADA	Central Statistical Office
ST VINCENT AND THE GRENADINES	Statistical Office
SURINAME	Bureau of Public Health
TRINIDAD AND TOBAGO	Central Statistics Office
BERMUDA	Inpatient discharges
THE TURKS AND CAICOS ISLANDS	Primary Health Care Department and Medical Department, Ministry of Health

1.3.1 (b): Notes for Table 3.1 - Number of Reported Cases and Incidence of Environmentally Related Diseases: 1998 - 2004

Country	Notes
GRENADA	Total: Total amount of cases for that given year
BERMUDA	ICN-9-CM classification was used. In order to provide accurate data, a detailed description of the diagnosis must be provided.
SURINAME	(a) Telephone calls. (b) Hospital surveillance (confirmed). (c) Hospital. (d) Confirmed cases. (e) Suspected cases.
THE TURKS AND CAICOS ISLANDS	Malaria refers to imported cases of malaria. Poisoning refers to cases of poisoning from food borne diseases. Diarrhoea is included in gastroenteritis. Respiratory diseases refers to acute infections <5 yrs. Data not collected at the source by sex.

1.3.2 (a): Source of Data for Table 3.2 - Number of Households by Type of Sanitation: 2000 Round of Census

Country	Data Source
ANTIGUA AND BARBUDA	Basic Table Volumes
THE BAHAMAS	Population and Housing Census, 2000 Round
BARBADOS	2000 Population and Housing Census, Volume1, Barbados Statistical Service
BELIZE	Population and Housing Census, 2000 Round
DOMINICA	Central Statistical Office and 2001 Population and Housing Census
GUYANA	Basic Table Volumes
JAMAICA	Population Census Country Report 2001. Volume 1. Statistical Institute of Jamaica
MONTserrat	Basic Table Volumes
ST. KITTS AND NEVIS	Basic Table Volumes
SAINT LUCIA	Population and Housing Census 2001
ST VINCENT AND THE GRENADINES	Basic Table Volumes
TRINIDAD AND TOBAGO	Population and Housing Census 2000 Round
ANGUILLA	Population and Housing Census 2000 Round
BRITISH VIRGIN ISLANDS	Basic Table Volumes
THE TURKS AND CAICOS ISLANDS	TCI Standard of Living Assessment Report, 1999; Preliminary Population and Housing Census Report 2001

1.3.2 (b): Notes for Table 3.2 - Number of Households by Type of Sanitation: 2000 Round of Census

Country	Notes
BELIZE	Don't Know is included in Not Stated
JAMAICA	Not Stated includes "availability and type not reported". For each category of sanitation facility, "shared" and "not shared" were combined
TRINIDAD AND TOBAGO	Other includes not stated

1.3.3 (a): Sources of Data for Table 3.3 - Number of Households by Type of Water Supply: 2000 Round of Census

Country	Data Source
ANTIGUA AND BARBUDA	Basic Table Volumes
THE BAHAMAS	Population and Housing Census, 2000 Round
BARBADOS	2000 Population and Housing Census, Volume1, Barbados Statistical Service
BELIZE	Central Statistical Office
DOMINICA	Central Statistical Office and 2001 Population and Housing Census
GUYANA	Basic Table Volumes
JAMAICA	Population Census Country Report. Volume 1. Statistical Institute of Jamaica
MONTSERRAT	Basic Table Volumes
ST. KITTS AND NEVIS	Basic Table Volumes
SAINT LUCIA	Population and Housing Census 2001
ST VINCENT AND THE GRENADINES	Basic Table Volumes
TRINIDAD AND TOBAGO	Population and Housing Census, 2000 Round
ANGUILLA	Population and Housing Census, 2000 Round
BRITISH VIRGIN ISLANDS	Basic Table Volumes
THE TURKS AND CAICOS ISLANDS	TCI Standard of Living Assessment Report, 1999; Preliminary Population and Housing Census Report 2001

1.3.3 (b): Notes for Table 3.3 - Number of Households by Type of Water Supply: 2000 Round of Census

Country	Notes
THE BAHAMAS	Other includes not stated. Rain water is included in piped into dwelling, but can be either piped into dwelling or into yard.
BARBADOS	Other includes not stated. Private catchments, not piped refer to friend/relative's pipe. Piped into dwelling is disaggregated by Public or Private Piped into dwelling. Public piped is the government water system and private piped is the individual household private water system. Public Piped = 48962 and private piped = 26796. The cumulative is given.
BELIZE	Other includes not stated
DOMINICA	Other includes not stated. Urban connections (Roseau + Environs) = 8977
GUYANA	Public Piped into Dwelling = public piped into dwelling + private piped into dwelling
SAINT LUCIA	Other includes not stated
ST VINCENT AND THE GRENADINES	Other includes private catchment piped
TRINIDAD AND TOBAGO	Other includes truck borne and not stated
ANGUILLA	Other includes not stated
BERMUDA	This question was discontinued after the 1980 Population and Housing Census as 96% of private dwelling units had piped water. Other includes not stated.
THE TURKS AND CAICOS ISLANDS	Other includes not stated.