



# WEEKLY EPIDEMIOLOGICAL REPORT

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## Global climate change and health Part I

This is the first of a series of 2 articles

Climate change poses a major, and largely unfamiliar, challenge. This article describes the process of global climate change, its impacts on human health, and how our societies can lessen those adverse impacts, via adaptation strategies. In 1969, the Apollo moon shot provided extraordinary photographs of this planet, suspended in space. This transformed how we thought about the biosphere and its limits. Our increasing understanding of climate change is transforming how we view the boundaries and determinants of human health. While our health may seem to relate mostly to prudent behaviour, heredity, occupation, local environmental exposures, and health-care access, sustained population health requires the life-supporting "services" of the biosphere. Populations of all animal species depend on supplies of food and water, freedom from excess infectious disease, and the physical safety and comfort conferred by climatic stability. The world's climate system is fundamental to this life-support. Today, humankind's activities are altering the world's climate. We are increasing the atmospheric concentration of energy trapping gases, thereby amplifying the natural "greenhouse effect" that makes

the Earth habitable. These greenhouse gases (GHGs) comprise, principally, carbon dioxide (mostly from fossil fuel combustion and forest burning), plus other heat-trapping gases such as methane (from irrigated agriculture, animal husbandry and oil extraction), nitrous oxide and various human-made halocarbons. The United Nations' Intergovernmental Panel on Climate Change (IPCC) stated: "There is new and stronger evidence that most of the warming observed over the last 50 years is attributable to human activities." During the twentieth century, the world average surface temperature increased by approximately 0.6°C, and approximately two-thirds of that warming has occurred since 1975. Climatologists forecast further warming, along with changes in precipitation and climatic variability, during the coming century and beyond. Their forecasts are based on increasingly sophisticated global climate models, applied to plausible future scenarios of global greenhouse gas emissions that take into account alternative trajectories for demographic, economic and technological changes and evolving patterns of governance. The global scale of climate change differs fundamentally from the many other familiar environmental concerns that refer to localized toxicological or microbiological

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hazards. Indeed, climate change signifies that today, we are altering Earth's biophysical and ecological systems at the planetary scale – as is also evidenced by ozone depletion, accelerating biodiversity losses, stresses on terrestrial and marine food-producing systems, depletion of freshwater supplies, and the global dissemination of persistent organic pollutants.

Ancient Egyptians, Mesopotamians, Mayans, and European populations (during the four centuries of the Little Ice Age) were all affected by nature's great climatic cycles. More acutely, disasters and disease outbreaks have occurred often in response to the extremes of regional climatic cycles such as the El Niño Southern Oscillation (ENSO) cycle.

### **Potential health impacts of climate change**

Changes in world climate would influence the functioning of many ecosystems and their member species. Likewise, there would be impacts on human health. Some of these health impacts would be beneficial. For example, milder winters would reduce the seasonal winter-time peak in deaths that occur in temperate countries, while in currently hot regions a further increase in temperatures might reduce the viability of disease-transmitting mosquito populations. Overall, however, scientists consider that most of the health impacts of climate change would be adverse. Climatic changes over recent decades have probably already affected some health outcomes. Indeed, the World Health Organization estimated, in its "World Health Report 2002", that climate change was estimated to be responsible in 2000 for approximately 2.4% of worldwide diarrhoea, and 6% of malaria in some middle-income countries. However, small changes, against a noisy background of ongoing changes in other causal factors, are hard to identify. Once spotted, causal attribution is strengthened if there are similar observations in different population settings. The first detectable changes in human health may well be alterations in the geographic range (latitude and altitude) and seasonality of certain infectious diseases – including vector-borne infections such as malaria and dengue fever, and foodborne infections (e.g., salmonellosis) which

peak in the warmer months. Warmer average temperatures combined with increased climatic variability would alter the pattern of exposure to thermal extremes and resultant health impacts, in both summer and winter. By contrast, the public health consequences of the disturbance of natural and managed food-producing ecosystems, rising sea levels and population displacement for reasons of physical hazard, land loss, economic disruption and civil strife, may not become evident for up to several decades.

### **Compiled by**

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Table 1: Selected notifiable diseases reported by Medical Officers of Health 31st - 06th Aug 2021 (32nd Week)

RDHS	Dengue Fever		Dysentery		Encephaliti		Enteric Fever		Food Poi-		Leptospirosis		Typhus		Viral Hep-		Human		Chickenpox		Meningitis		Leishmania-		WRCD	
	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	A	B	T*	C**
Colombo	10	3179	0	10	0	1	0	4	0	3	2	136	0	1	0	2	0	2	0	22	0	7	0	1	47	100
Gampaha	53	1666	0	1	1	4	0	1	0	0	4	157	1	5	0	4	0	5	1	19	0	12	0	12	46	75
Kalutara	34	916	0	11	0	2	1	2	0	0	7	377	0	3	0	1	0	1	0	66	1	16	0	0	23	100
Kandy	20	482	1	18	0	1	0	2	0	2	4	98	0	28	0	1	0	0	1	30	0	13	0	20	35	100
Matale	12	130	0	12	0	4	0	0	0	0	1	62	0	5	0	1	0	0	0	12	1	4	11	171	58	100
NuwaraEliya	0	35	0	11	0	2	0	2	0	0	2	44	0	34	0	3	0	0	0	24	0	7	0	1	53	100
Galle	13	257	0	5	0	1	0	5	0	5	16	510	0	23	0	2	0	0	1	44	2	25	0	1	27	100
Hambantota	7	258	1	9	0	2	0	2	0	4	8	203	2	55	0	7	0	0	3	41	1	30	11	348	40	100
Matara	13	379	0	3	0	1	0	1	0	0	5	193	1	15	0	2	0	0	1	47	1	9	0	200	72	100
Jaffna	1	121	1	36	0	3	0	14	0	27	0	16	0	438	0	0	0	3	0	26	0	3	0	2	42	88
Kilinochchi	0	23	1	23	0	0	0	2	0	10	0	50	1	71	0	0	0	0	0	10	0	0	0	1	22	100
Mannar	0	24	0	2	0	0	0	4	0	0	0	26	0	2	0	0	0	0	0	3	0	15	0	1	52	100
Vavuniya	0	35	0	2	0	1	0	1	0	1	0	23	0	2	0	1	0	0	0	6	0	1	0	1	40	100
Mullaitivu	0	5	0	3	0	0	0	0	0	1	0	29	0	8	0	0	0	0	0	9	0	6	0	0	40	100
Batticaloa	1	2987	4	27	0	3	0	2	0	15	0	39	0	0	0	1	0	0	0	11	0	22	0	0	23	100
Ampara	2	33	0	7	0	0	0	1	0	7	0	47	0	0	0	2	0	0	0	37	0	11	0	7	46	100
Trincomalee	0	119	0	0	0	0	0	0	0	2	0	4	0	0	0	2	0	0	0	16	0	2	0	0	60	100
Kurunegala	46	838	1	17	0	4	0	0	0	3	10	234	3	23	0	2	0	2	0	41	1	77	10	273	27	100
Puttalam	10	275	0	2	0	1	0	0	0	0	1	21	0	15	1	1	0	1	0	16	1	32	0	9	38	98
Anuradhapur	3	168	0	10	0	0	0	1	0	3	0	217	0	23	0	4	0	0	0	29	0	31	4	176	41	91
Polonnaruwa	3	57	0	3	0	0	0	3	0	2	3	103	0	3	0	3	0	0	1	25	0	2	11	304	26	100
Badulla	6	178	0	9	0	0	0	1	0	0	2	253	0	36	0	26	0	0	0	32	0	14	1	16	38	100
Monaragala	2	93	0	6	0	0	0	3	0	5	16	295	2	26	2	63	0	0	1	24	1	48	0	20	44	100
Ratnapura	12	391	1	25	0	6	0	0	1	5	7	585	0	18	0	8	0	1	3	44	3	63	8	81	51	95
Kegalle	11	345	0	4	2	11	0	0	0	2	4	215	0	11	0	1	0	0	1	78	0	24	0	13	35	100
Kalmune	1	267	0	11	0	2	0	1	0	1	0	16	0	1	0	2	0	2	0	14	0	7	0	2	41	100
<b>SRILANKA</b>	<b>35</b>	<b>13261</b>	<b>10</b>	<b>267</b>	<b>3</b>	<b>49</b>	<b>1</b>	<b>52</b>	<b>1</b>	<b>98</b>	<b>92</b>	<b>3953</b>	<b>10</b>	<b>846</b>	<b>3</b>	<b>13</b>	<b>0</b>	<b>17</b>	<b>13</b>	<b>726</b>	<b>12</b>	<b>481</b>	<b>56</b>	<b>1660</b>	<b>45</b>	<b>97</b>

Source: Weekly Returns of Communicable Diseases (esurveillance.epid.gov.lk). T=Timeliness refers to returns received on or before 06th Aug, 2021 Total number of reporting units 361 Number of reporting units data provided for the current week: 351 C\*\*-Completeness 4.1

**Table 2: Vaccine-Preventable Diseases & AFP**

31<sup>st</sup> – 06<sup>th</sup> Aug 2021 (32<sup>nd</sup> Week)

Disease	No. of Cases by Province									Number of cases during current week in 2021	Number of cases during same week in 2020	Total number of cases to date in 2021	Total number of cases to date in 2020	Difference between the number of cases to date in 2021 & 2020
	W	C	S	N	E	NW	NC	U	Sab					
AFP*	02	00	00	00	00	00	01	00	00	03	01	35	26	34.6 %
Diphtheria	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
Mumps	00	00	00	00	01	00	00	00	00	01	00	54	116	-53.4 %
Measles	00	00	00	00	00	00	00	00	00	00	00	11	35	- 68.5 %
Rubella	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
CRS**	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
Tetanus	00	00	00	00	00	00	00	00	00	00	00	02	03	-33.33%
Neonatal Tetanus	00	00	00	00	00	00	00	00	00	00	00	00	00	0%
Japanese Encephalitis	00	00	00	00	00	00	00	00	00	00	00	03	31	- 90.3 %
Whooping Cough	00	00	00	00	00	00	00	00	00	00	00	00	05	-100%
Tuberculosis	00	04	06	08	04	10	28	03	06	69	71	3301	3681	-10.3 %

**Key to Table 1 & 2**

**Provinces:** W: Western, C: Central, S: Southern, N: North, E: East, NC: North Central, NW: North Western, U: Uva, Sab: Sabaragamuwa.  
**RDHS Divisions:** CB: Colombo, GM: Gampaha, KL: Kalutara, KD: Kandy, ML: Matale, NE: Nuwara Eliya, GL: Galle, HB: Hambantota, MT: Matara, JF: Jaffna, KN: Killinochchi, MN: Mannar, VA: Vavuniya, MU: Mullaitivu, BT: Batticaloa, AM: Ampara, TR: Trincomalee, KM: Kalmunai, KR: Kurunegala, PU: Puttalam, AP: Anuradhapura, PO: Polonnaruwa, BD: Badulla, MO: Moneragala, RP: Ratnapura, KG: Kegalle.  
**Data Sources:** Weekly Return of Communicable Diseases: Diphtheria, Measles, Tetanus, Neonatal Tetanus, Whooping Cough, Chickenpox, Meningitis, Mumps., Rubella, CRS, Special Surveillance: AFP\* (Acute Flaccid Paralysis), Japanese Encephalitis  
**CRS\*\*** =Congenital Rubella Syndrome  
**NA** = Not Available

**Covid-19 Prevention & Control**

**For everyone's health & safety, maintain physical distance, often wash hands, wear a face mask and stay home.**

Comments and contributions for publication in the WER Sri Lanka are welcome. However, the editor reserves the right to accept or reject items for publication. All correspondence should be mailed to The Editor, WER Sri Lanka, Epidemiological Unit, P.O. Box 1567, Colombo or sent by E-mail to [chepid@slt.net.lk](mailto:chepid@slt.net.lk). **Prior approval should be obtained from the Epidemiology Unit before publishing data in this publication**

**ON STATE SERVICE**

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