

I. Background Information

Name(s): Dr, Madhav Khandekar

Organization(s): Retired Meteorologist, formerly with Environment Canada (over 50 years in weather & climate science)

Mailing Address(es): 52 Montrose Crescent Markham ON Canada L3R 7Z5

Phone(s): 905-940-0105

E-mail(s): mkhandekar@rogers.com

Area of Expertise: Meteorology, Climatology, Climate Extremes

BIAS TOWARDS NEGATIVE EFFECTS WHILE IGNORING BENEFITS OF SLIGHT WARMING AND INCREASED CO₂

This comment relates to the fact that most all references to benefits in the CCSP were to be the result of proposed mitigation or adaption or alternative energy solutions. The only global warming benefits discussed were from decreasing extreme cold (pages 8 and 78) and a longer growing season in Alaska (page 144). There was a mention of undefined short term benefits of warming (on page 4).

THE BENEFITS OF GLOBAL WARMING (GW) MUST BE ARTICULATED

1. GW benefits specifically to humans: more livable winter season, especially for high-latitude countries (Canada , Russia , Siberia) especially for seniors in terms of less stress due to extreme cold, more mobility outside of enclosed homes and buildings, this providing direct health benefits. Economic benefits: less house/building heating costs, less hazardous transportation (snow covered roads, icy roads etc) and also less cost of transportation, compared to extreme hot climate driving and transportation. This is why so many seniors travel to warmer climes in the coldest months.

2. Human health in general: extreme cold climate is definitely more hazardous to human health than extreme hot climate; relatively greater health problems for people living in extreme cold climates versus those living in extreme hot climates (I can use my personal experience here, having lived in extreme cold climate of Edmonton Alberta for 4 years temp -25 to -45C sometimes for weeks, versus extreme hot climate of Qatar Arabian Gulf, temp +30 to +45C for four to five months of the year, where I spent over 2 years as a United Nations Expert). Besides my personal experience, health statistics will amply demonstrate fewer health problems in hot developed countries of Middle East versus those in Siberia and extreme north Canadian and European subarctic regions. The claim that warming increases morbidity rates is a myth. This isn't the case, according to Dr. Robert Mendelsohn, an environmental economist from Yale University . Mendelsohn argues that heat-stress deaths are caused by temperature variability and not warming. Those deaths grow in number not as climates warm but as the variability in climate increases.

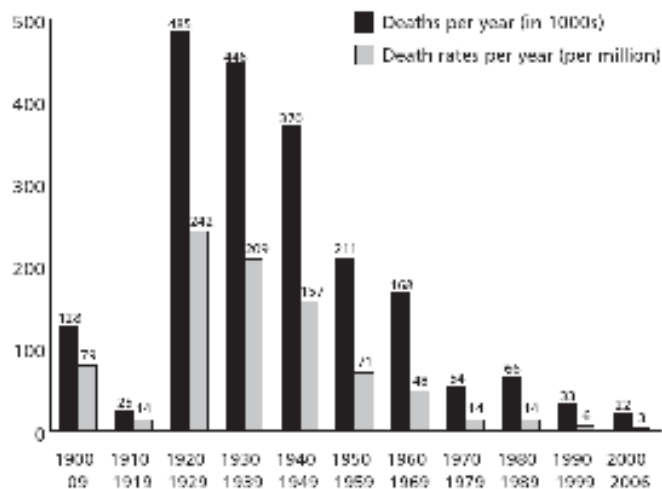
Indur Glokany in [Death and Death Rates Due to Extreme Weather Events](#), in 2007 showed deaths from all extremes for 1979-2002. It showed death from extreme cold continues to exceed death from extreme heat.

Table 3 US deaths due to weather-related events, 1979–2002. Sources: for extreme events, see text; for total all-cause mortality, USCB (2004).

	Cumulative deaths	Deaths per year	Percent of annual all-cause deaths
Extreme cold (XC)	16,313	680	0.031%
Extreme heat (XH)	8,589	358	0.016%
Flood (F)	2,395	100	0.005%
Lightning (L)	1,512	63	0.003%
Tornado (T)	1,321	55	0.003%
Hurricane (Hu)	460	19	0.001%
Sum	30,590	1,275	0.058%
Total deaths, all causes, 1979–2002 average		2,189,000	100.000%

Furthermore he has shown globally death and death rates due to extreme weather have declined in the last century (referenced sources listed in the [document](#)).

Figure 1 Global death and death rates due to extreme events, 1900–2006



Note that in figures 1 through 4, data for the last period are averaged over seven years worth of data.
Sources: BMJ (2007); McEvoy and Jones (1978); WHO (2006, 2007)

3. GW benefits on agriculture, forestry etc are well documented. On forestry and especially on tropical forests I provide two references here A. Lewis et al "Fingerprinting the impact on global change on tropical forests" & Phillips et al 2004 "Patterns & processes in Amazon tree turnover 1976-2001", both these references from 'Proc Royal Soc London series B V 359 2004 pp.381-462. Benefits to agriculture and grain yields; I think these benefits are well documented as well, improved grain & food (fruits, vegetables etc) growing in a warmer climate vs in colder climates (warmer climate benefits stem from two factors, a slightly warmer mean temp does NOT harm grain yields as long as there is enough moisture supply, rains have increased due to a warmer world in general). CO2 is not a pollutant but a plant fertilizer.

In fact the average crop, according to [Dr. John Reilly](#) et al., of the MIT Joint Program on the Science and Policy of Global Change, is 30 percent higher in a CO2 enhanced world by 2050 where ozone is not an issue. This is not just a matter of opinion, but a well-established phenomenon. The combination of minor rises in temperatures and increased CO2 has benefited plant growth and the more vigorous growth results in modification of the local climate with a positive feedback through the hydrological cycle. Furthermore, CO2 enriched plants are more drought resistant.

CORRECTIONS

Elaboration of the benefits of global warming and continued carbon dioxide rises must be added to provide balance on this issue. The benefits are more than just short term and not all related to mitigation and adaptation. Further, when carefully evaluated, warmer(hotter) climate has fewer adverse impacts than a cold (very cold) climate. It must be noted that more than 60% of world's humanity lives in a 'hot' climate where mean temperature ranges from +25C to +35C almost year round (with only marginal increase in mean temperature in the last 25 years) and most of these people, living especially in south Asia, have made significant gains in human health and in growing more food (grains & vegetables/fruits etc).

Dr M L Khandekar
Markham Ontario L3R 7Z5
CANADA