

## Summit on Climate Change, 22 September 2009

STATEMENT OF DR. R. K. PACHAURI

Chairman, IPCC

Director General, The Energy and Resources Institute

Director, Yale Climate and Energy Institute

Excellencies, members of the media, distinguished ladies and gentlemen! I speak to you in the voice of the world's scientific community, which in November 2007 completed IPCC's Fourth Assessment Report (AR4), the collective effort of almost four thousand of the world's best specialists working tirelessly over five years. The uniqueness of this mammoth exercise lies in the fact that all the governments of the world – your own governments – approved of this report, and therefore have full ownership of its contents, some salient features of which I mention now.

We stated, "Warming of the climate system is unequivocal as is now evident from observations of increases in global average air and ocean temperatures, widespread melting of snow and ice and rising global sea level", and that "Most of the observed increase in temperatures since the mid-20th century is very likely due to the observed increase in anthropogenic GHG concentrations". In the twentieth century average global temperature increased by 0.740 C while sea level rise resulting from thermal expansion of the ocean and melting of ice across the globe amounted to 17 cms. In the Maldivé Islands where most of the land surface is barely a metre or two above sea level every storm surge and major upwelling of the seas represents a major danger to life and property. But this is

not all. Climate change is already resulting in an increase in the frequency, intensity and duration of floods, droughts and heat waves. Precipitation has increased significantly in eastern parts of North and South America, northern Europe and northern and central Asia, whereas it declined in the Sahel, the Mediterranean, southern Africa and parts of south Asia. Globally the area affected by drought has increased since the 1970s. The frequency of heavy precipitation events (or proportion of total rainfall from heavy falls) has increased over most areas.

If we take no action to stabilize the concentration of greenhouse gases in the atmosphere, then average temperature by the end of this century would increase anywhere from 1.1 degrees to 6.4 degrees C, with a best estimate at the lower end of 1.8 degrees and at the upper end of 4 degrees C. The world is increasing its emissions at a rate that may take us to the upper end of the range projected, which implies a total increase in these two centuries of over 7 degrees C, that is, over 12 degrees Fahrenheit. Yet between 1970 and 2004 global GHG emissions increased by 70% and carbon dioxide by 80%. We must halt this unacceptable trend.

Climate change, in the absence of mitigation policies would in all likelihood lead to:

- 1 Possible disappearance of sea ice by the latter part of the 21<sup>st</sup> century
- 2 Increase in frequency of hot extremes, heat waves and heavy precipitation

3 Increase in tropical cyclone intensity

4 Decrease in water resources due to climate change in many semi-arid areas, such as the Mediterranean Basin, western United States, southern Africa and north-eastern Brazil.

5 Possible elimination of the Greenland ice sheet and a resulting contribution to sea level rise of about 7 metres. Without mitigation future temperatures in Greenland would compare with levels estimated for 125,000 years ago when palaeoclimate information suggests 4 to 6 m of sea level rise.

6 Approximately 20 to 30% of species assessed so far are likely to be at increased risk of extinction if increases in global average warming exceed 1.5 to 2.5 degrees.

In Africa, by 2020, between 75 and 250 million people are projected to be exposed to water stress due to climate change. By the same year in some countries of Africa yields from rainfed agriculture could be reduced by up to 50%.

The impacts of climate change would be disproportionately severe on some of the poorest regions and communities of the world. My own analysis suggests that at least 12 countries are likely to tend towards becoming failed states and communities in several other states would show potential for serious conflict due to scarcity of food, water stress and soil degradation.

Mitigation of emissions is essential, and the IPCC has assessed mitigation costs as modest. To limit average temperature increase at 2.0 and 2.4 degrees C, the

cost of mitigation by 2030 would not exceed 3% of the global GDP. In other words, the so-called prosperity expected in 2030 would be postponed by a few months. Further, mitigation carries many co-benefits, such as lower levels of air pollution and associated health benefits, higher energy security, larger employment and stable agricultural production, ensuring greater food security. A portfolio of technologies, currently available or expected to be commercialized, enable stringent mitigation efforts being mounted today.

It is heartening that the G8 leaders during the L'Aquila Summit recognized the broad scientific view of limiting increase in global average temperature to 2° C. The IPCC has clearly specified that if temperature increase is to be limited to between 2.0 and 2.4° C, global emissions must peak no later than 2015. That is only six years from now. But the 2.0° ceiling too would lead to sea-level rise on account of thermal expansion alone of 0.4 to 1.4 meters. This increase added to the effect melting of snow and ice across the globe, could submerge several small island states in the Caribbean, those in the South Pacific and the Maldivian islands.

Avoiding the impacts of climate change through mitigation of emissions would provide incalculable benefits including economic expansion and employment. If those in this August gathering do not act on time, all of us would become leaders and citizens of failed states, because we would be failing in our sacred duty to protect this planet on which we all live. Science leaves us with no choice for inaction now.