

A “Synthesis Report”

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All the latest that people need to know about climate change - that in essence is the latest and most concise of the reports issued by the Nobel prize winning Intergovernmental Panel on Climate Change (IPCC).

The report was launched on 17 November 2007 by the United Nations Secretary-General Ban Ki-moon in the Spanish town of Valencia after an intense week of negotiating the final text by scientists and governments.

The 23-page report is a synthesis of three other reports (on the science, the impact of and policies to mitigate climate change) totaling thousands of pages that the IPCC had issued earlier this year.

The synthesis report makes sober reading and makes one wonder how life on Earth is going to survive when such seemingly insurmountable challenges abound.

For example, the panel’s chair Rajendra Pachauri said that even if emissions were curbed and Greenhouse gases in the atmosphere remained the same as now, sea levels would rise by between 0.4m and 1.4m because sea water would continue warming up, which makes it expand.

“This is a very important finding, likely to bring major changes to coastlines, and inundating low-lying areas, with a great effect in river deltas and low-lying islands,” he said.

The report involved 2,500 scientific expert reviewers and 1,250 authors as well as policy makers from over 130 countries. That’s why it enjoys such high prestige.

The report’s main message is that warming of the climate system is “unequivocal”, and this is accompanied by increasing global air and ocean temperatures, rising global average sea level and reductions of snow and ice.

One of the alarming effects is the increasing rate in global sea level rise, from 1.8mm a year to 3.1mm a year from 1961 to 1993. Sea level rise has been due to thermal expansion and the melting of glaciers, ice caps and the polar ice sheets. The projected sea level rise at the end of the 21st Century will be 18-59cm.

Pachauri warned that warming would cause some impacts that are “abrupt or irreversible.” For example, partial loss of ice sheets on ice polar land could imply metres of sea level rise; major changes in coastlines and inundation of low-lying areas, and great effects in river deltas and low-lying islands.

The report looks at the impacts by regions. Shockingly, in Africa by 2020, between 75 million and 250 million people are projected to be exposed to increased water stress. And in some countries, yields from rain-fed agriculture would be reduced by 50%.

In Asia, the key problems are:

- BY the 2050s, freshwater availability in Central, South, East and South-East Asia, particularly in large river basins, is projected to decrease;
- COASTAL areas, especially heavily populated mega-delta regions in South, East and South-East Asia, will be at greatest risk due to increased flooding from the sea and rivers;

- ENDEMIC morbidity and mortality due to diarrhoeal disease primarily associated with floods and droughts are expected to rise in East, South and South-East Asia due to projected changes in the hydrological cycle.

The report shows that global warming is already taking place. Eleven of the last 12 years (1995-2006) rank among the 12 warmest years in the instrumental record of global surface temperature (since 1850). In the past 100 years there has been a rise of 0.74°C in temperature.

Arctic sea ice extent has shrunk by 2.7% per decade, with larger decreases in summer of 7.4% per decade. Mountain glaciers and snow cover on average have declined in both hemispheres.

The report also projects an increase of global emissions by 25%-90% between 2000 and 2030, if nothing is done.

For the next two decades a warming of about 0.2°C per decade is projected. Even if the concentrations of all greenhouse gases and aerosols had been kept constant at year 2000 levels, a further warming of about 0.1 °C per decade would be expected. Afterwards, temperature projections increasingly depend on specific emission scenarios.

The report reviews five “reasons for concern” (representing key vulnerabilities) and finds the situation worse than when the IPCC did its previous assessment report years ago :

- RISKS to unique and threatened systems: 20-30% of plant and animal species assessed so far are likely to be at increased risk of extinction if increases in global average temperature exceed 1.5°C-2.5°C over 1980-1999 levels.
- RISKS of extreme weather events, with projected increases in droughts, heat waves, and floods as well as their adverse impacts.
- DISTRIBUTION of impacts and vulnerabilities: There are sharp differences across regions and those in the weakest economic position are often the most vulnerable to climate change.
- AGGREGATE impacts: Initial net market-based benefits from climate change are projected to peak at a lower magnitude of warming, while damage would be higher for larger magnitudes of warming.
- RISKS of large-scale singularities: Global warming over many centuries will lead to a sea level rise contribution from thermal expansion alone which is projected to be much larger than observed over the 20th century, with loss of coastal area and associated impacts.

The report ends briefly on measures to be taken to address the crisis. These include mitigation (preventing the situation worsening through action on energy, transport, industry, etc); adaptation (measures to reduce impacts); finance and technology. —*TWNF*