

IPCC Fourth Assessment Report

Summary

The Fourth Assessment Report (AR4) of the United Nations Intergovernmental Panel on Climate Change (IPCC), is the fourth in a series of such reports. It was launched in February 2007. It has four sections:

1. *Working Group I Report: The Physical Science Basis.*
2. *Working Group II Report: Impacts, Adaptation and Vulnerability*
3. *Working Group III Report: Mitigation of Climate Change*
4. *The Synthesis Report (SYR): To be release in November.*

The report shows that the warming of the climate system is unequivocal and accelerating.

Some of the most relevant statements on the reports are the followings:

- **The average global temperature rose** by 0.74°C during last century (most rapidly over the last 50 years and Arctic temperatures have increased at almost twice this rate). This is the largest and fastest warming trend in the history of the Earth that scientists have been able to discern. Current projections show that trend will continue and will accelerate. An average temperature rise of around 3°C is expected this century (the difference between the present average global temperature and an ice age is 5 °C).
- **Scientists are now certain that most of the change is due to human activities that emit greenhouse gases** (of which CO₂ is the most important). At present total annual emissions of greenhouse gases are rising. Over the last three decades, emissions increased by an average of 1.6 per cent per year with CO₂ emissions from fossil fuels use growing at 1.9 per cent per year. For the period 1970 - 2004, the largest growth in greenhouse gas emissions has come from energy supply and consumption, and road transport.
- **More precipitation** has been observed in the eastern parts of North and South America, northern Europe and northern and central Asia in recent decades. But the Sahel, the Mediterranean, southern Africa and parts of southern Asia have experienced drying. More intense and longer droughts have been observed over wider areas since the 1970s.
- **Sea level rise increased** from the 19th to 20th century, and the total 20th century rise is estimated to be 0.17 metre. Geological observations indicate that sea level rise over the previous 2,000 years was far less.
- **Snow cover is decreasing** in most regions, particularly in spring. The maximum extent of frozen ground in the winter/spring season has decreased by about 7 per cent in the Northern Hemisphere since 1900.
- **Mountain glaciers and snow cover have declined**, on average, in both hemispheres, and have contributed to sea level rise by 0.77 millimetres a year

from 1993 to 2003. Shrinkage of the ice sheets of Greenland and Antarctica have contributed to a sea level rise of 0.4 millimetres a year between 1993 and 2003.

- **Average Arctic temperatures increased** at almost twice the global average rate in the past 100 years. Satellite data since 1978 show that the average Arctic sea ice extent has shrunk by 2.7 per cent per decade.
- **Climate change is already having significant impacts** in certain regions, particularly in developing countries, and on most ecosystems. It will affect developing countries' ability to achieve the Millennium Development Goals (MDGs).
- **Impacts of climate change will vary regionally**, with the most significant impacts expected in the Arctic, the Asian mega-deltas, Small Island Developing States (SIDS) and sub-Saharan Africa. Climate change will further constrain water resources, already stretched by growing demand from agriculture, industry and cities. Rising temperatures will further diminish the mountain snow pack and increase evaporation, thus altering the seasonal availability of water.
- **With current climate change mitigation policies** and related sustainable development practices, global greenhouse gases emissions will continue to grow over the next few decades.
- **The problem can be addressed** and that affordable mitigation solutions exist. Economic assessments indicate that the cost of inaction will exceed the cost of taking early action, probably by several orders of magnitude.
- **There is significant potential for mitigation**, including increasing the use of clean technologies and improving end-use efficiency. There are significant economic potential for all sectors involved in mitigating global greenhouse gas emissions over the coming decades. This potential is sufficient to offset the projected growth of global emissions or even to reduce emissions below current levels.

Sustainable development can reduce vulnerability to climate change, and climate change could impede nations' abilities to achieve sustainable development pathways.

Changes in lifestyle and behavior patterns can contribute to climate change mitigation across all sectors. Management practices can also have a positive role.

For further information:

- United Nations Intergovernmental Panel on Climate Change (IPCC)
www.ipcc.ch
- Gateway to UN System's Work on Climate Change – Background Information
<http://www.un.org/climatechange/bg.shtml>