

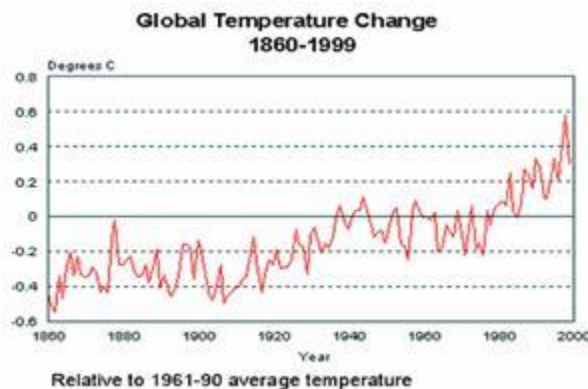
Climate change: In Pakistan and world over; its measures and prevention and latest report on climatic changes.

What is climate change?

A change of climate that is directly or indirectly related to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability over comparable time periods.

What changes will occur in the temperature?

The most recent scientific assessment by the Intergovernmental Panel on Climate Change (IPCC) estimates that the global averaged surface temperature on Earth will increase by 1 to 3.5°C (about 2 to 6°F) by the year 2100, with an associated rise in sea level of 15 to 95 cm (about 6 to 37 inches).



A small example about climate change:

What would you choose if you were given the choice between a 30 carat diamond and cylinder of air that can add next 10 minutes to your life on earth? It's not a million dollar question because the answer is simple.

Why is it that we presently don't feel that the air is worth more than all the diamonds on earth? It's a distortion of the market mechanism. Free market economy values the rarest of the resources and not the most valuable. Many a times in the past we have relied on pricing mechanisms to adjust demand to available supply. At times cheaper alternatives were developed because of formidable costs. In all such cases mankind survived because they had alternatives and their survival didn't depend on either of them.

What if their survival did depend on one of such commodities and there was no alternative? This is a situation we foresee when we ignore the most valued natural resources that human beings survive on (air, water, soil). These resources are depleting fast and more so because of the effects of Climate Change.

What are the effects and impacts of climate change?

There is growing global consensus that climate change is humankind's greatest threat in modern times and is likely to have profound consequences for socio-economic sectors such as health, food production, energy consumption and security and natural resource management.

The harmful impacts of this global warming effect are already manifesting themselves around the world in the form of extreme weather events like storms, tornadoes, floods and droughts, all of which have been mounting in frequency and intensity. As a result, the world today suffers around 400-500 natural disasters on average in a year, up from 125 in the 1980s (Disaster Risk Reduction: Global Review 2007).

According to the Fourth IPCC Assessment Report, the evidence of predicted impacts of climate change is slowly unfolding. Crop yield growth rates are declining in most parts of the world, partially as a consequence of rising temperatures, while increases in prevalence of climate-induced diseases have also been recorded. There is also evidence of accelerating recession of most glaciers on Earth, rainfall variability and changes in marine ecosystems. Another serious threat arising from climate change is to freshwater availability which is projected to decline especially in large river basins and adversely affect more than a billion people by the 2050s

Climate change is also likely to have wide-ranging and mostly adverse impacts on human health. The projected increase in the duration and frequency of heat waves is expected to increase mortality rates as a result of heat stress, especially in areas where people are not equipped to deal with warmer temperatures. To a lesser extent, increases in winter temperatures in high latitudes could lead to decreases in mortality rates. Climate change is also expected to lead to increases in the potential transmission of vector borne diseases, including malaria, dengue, and yellow fever, extending the range of organisms such as insects that carry these diseases into the temperate zone, including parts of the United States, Europe, and Asia.

The observed effects of global warming so far are:

1. Increase in the mean global sea level (1-2mm per year over the last century);
2. Worldwide retreat of glaciers;
3. Decrease in snow cover and thawing of permafrost;
4. Shifts of plant and animal ranges;
5. Earlier flowering of plants;
6. Birds breeding seasons and emergence of insects;
7. Increased events of coral bleaching.

What does adaptation to climate change mean?

Adaptation refers to actions intended to safeguard, people, communities, businesses and a country against the vulnerabilities and effects of anticipated or actual climate change. Adaptation aims to allow vulnerable groups to adjust and live with the changes in the environment and economy that will be caused due to climate change.

What does mitigating climate change mean?

Mitigation means taking actions to tackle the causes of climate change. In other words, it means taking measures to reduce the emission of Greenhouse Gases (GHGs) into the atmosphere and halting the global warming trend.

How is Pakistan affected by climate change?

Pakistan contributes very little to the overall Greenhouse Gas (GHG) emissions, but remains severely impacted by the negative effects of climate change by the following ways:

1. Glacier melt in the Himalayas is projected to increase flooding will affect water resources within the next two to three decades. This will be followed by decreased river flows over time as glaciers recede.
2. Freshwater availability is also projected to decrease which will lead to biodiversity loss and reduce availability of freshwater for the population.
3. Coastal areas bordering the Arabian Sea in the south of Pakistan will be at greatest risk due to increased flooding from the sea and in some cases, the rivers.
4. Being a predominantly agriculture economy, climate change is estimated to decrease crop yields in Pakistan which in turn will affect livelihoods and food production. Combining the decreased yields with the current rapid population growth and urbanization in the country, the risk of hunger and food security will remain high.
5. Endemic morbidity and mortality due to diseases primarily associated with floods and droughts are expected to rise. Increases in coastal water temperatures would exacerbate the abundance of cholera.

6. The impact of climate change will also aggravate the existing social inequalities of resource use and intensify social factors leading to instability, conflicts, displacement of people and changes in migration patterns.

Why can't ecosystems just adapt?

Climate change is not a new influence on the biosphere, so why can't ecosystems just adapt without significant effects on their form or productivity? There are three basic reasons.

First, the rate of global climate change is projected to be more rapid than any to have occurred in the last 10,000 years.

Second, humans have altered the structure of many of the world's ecosystems. They have cut down forests, plowed soils, used rangelands to graze their domesticated animals, introduced non-native species to many regions and intensively fished lakes, rivers and oceans. These relatively changes in the structure of the world's ecosystems have made them less resilient to automatically adapt to climate change.

Third, pollution, as well as other indirect effects of the utilization of natural resources, has also increased since the beginning of the industrial revolution.

Climate change and developing countries:

Developing countries are the least responsible for climate change: The world's least developed countries contribute only 10 percent of annual global carbon dioxide emissions. However, the geographical location and socio-economic fragility of most of the developing makes them more vulnerable to the environmental, social and economic ramifications of climate change and the lack of resources and capabilities to adapt to the changes will worsen the situation.

Moreover, people who live in poverty around the world will be hardest hit by climate change. This is because the poor are more dependent on natural resources and have less of an ability to adapt to a changing climate.

What countries are most at risk from climate related threats

Table A1: 1 Countries most at risk from climate-related threats

<i>Drought</i>	<i>Flood</i>	<i>Storm</i>	<i>Coastal 1m^a</i>	<i>Coastal 5m^a</i>	<i>Agriculture</i>
Malawi	Bangladesh	Philippines	All low-lying Island States	All low-lying Island States	Sudan
Ethiopia	China	Bangladesh	Viet Nam	Netherlands	Senegal
Zimbabwe	India	Madagascar	Egypt	Japan	Zimbabwe
India	Cambodia	Viet Nam	Tunisia	Bangladesh	Mali
Mozambique	Mozambique	Moldova ^b	Indonesia	Philippines	Zambia
Niger	Laos	Mongolia ^b	Mauritania	Egypt	Morocco
Mauritania	Pakistan	Haiti	China	Brazil	Niger
Eritrea	Sri Lanka	Samoa	Mexico	Venezuela	India
Sudan	Thailand	Tonga	Myanmar	Senegal	Malawi
Chad	Viet Nam	China	Bangladesh	Fiji	Algeria
Kenya	Benin	Honduras	Senegal	Viet Nam	Ethiopia
Iran	Rwanda	Fiji	Libya	Denmark	Pakistan

Note: Light Grey = IDA and blend countries. Dark grey = IBRD. Bolded = developed countries. The typology is based on both absolute effects (e.g., total number of people affected) and relative effects (e.g., number affected as a share of GDP). See Annex C for more detail on the indices used.

a. Meters above the sea level. b. Winter storms.

What measures can be taken to cope with climate change?

1. Increasing access to high quality information about the impacts of climate change
2. Improving technological responses by setting in place early warning systems and information systems to enhance disaster preparedness
3. Practicing energy efficiency through changes in individual lifestyles and businesses
4. Reducing the vulnerability to livelihoods to climate change through infra-structural changes
5. Promoting good governance and responsible policy by integrating risk management and adaptation
6. Developing new and innovative farm production practices, including new crop varieties and irrigation techniques
7. Improving forest management and biodiversity conservation
8. Empowering communities and local stakeholders so that they participate actively in vulnerability assessment and implementation of adaptation
9. Mainstreaming climate change into development planning at all scales, levels and sectors

Policies that tackle the issues of global climate change

The world's countries need to take significant steps to mitigate climate change. In particular, we must transition from the use of fossil fuels to non-polluting forms of energy such as solar and wind energy, and learn to use energy more wisely. To minimize the adverse impacts of climate change, we need to enact regulatory tools and financial incentives that will encourage both businesses and citizens to reduce emissions of carbon dioxide and other greenhouse gases.

We look at the most likely including:

greater energy efficiencies

carbon cap-and-trade systems,

A cap-and-trade system uses financial incentives to encourage companies to reduce the amount of carbon dioxide they emit.

carbon taxes,

A carbon tax is a tax on emissions of carbon dioxide and other greenhouse gases. The purpose of a carbon tax is to reduce emissions of carbon dioxide by making it more expensive to pollute.

new fuel economy standards and

renewable energy technologies such as wind, solar power and bio-fuels. But until these mitigation measures are enacted, we need to look at practical adaptations as well, including zoning requirements, appropriate land use regulations and a new structure for insurance rates.

Climate change 2014: impacts, adaptation, and vulnerability

Overview

The latest report on climate change from the Intergovernmental Panel on Climate Change (IPCC), released on March 31, documents the evidence on the scale and nature of the health risks arising from climate change, as well as the potential benefits that could be achieved by measures to cut greenhouse gas emissions.

The IPCC constitutes arguably the largest scientific assessment exercise in human history. The five assessment reports it has released since 1988 have been assembled by several thousand authors, and document the now overwhelming evidence that human activities have been the major driver of recent warming of the earth's surface, and that both climate change, and its consequences, will continue into the future.

This latest report covers evidence on the impacts of climate change and adaptation measures for different regions, natural and human systems – including health.

Health problems exacerbated

The health assessment, firstly, confirms and expands the evidence base on the health risks presented in the previous assessment report, in 2007.

This includes the much stronger evidence that negative health impacts will outweigh positive effects. It concludes that climate change will act mainly, at least until the middle of this century, by exacerbating health problems that already exist, and the largest risks will apply in populations that are currently most affected by climate-related diseases.

It supports the case that under-nutrition resulting from reductions in food production, injury and disease due to intense heat waves and fires, and shifts in the timing and spatial distribution of infectious diseases are likely to present the greatest risks.

Additional health risks: heat exposure

Secondly, the report documents evidence on an additional set of risks. Notably, the report reflects recent research on the significant possibility of “high end” climate scenarios, with some projecting warming of 4-7 degrees over much of the globe.

Under these conditions, human capacity to deal with heat will be exceeded in the hottest parts of the year in some regions, and it will no longer be possible to undertake unprotected outdoor labour or recreational activity.

Investment in preventative health

Thirdly, the latest report presents evidence that can guide the response to this challenge. It drew on studies that modelled for the first time the potential consequences of changes in climate alongside projected social and economic changes.

This research illustrates how climate change opposes the health gains achieved by social development, and may hold back progress in the poorest countries – but also shows how investment in preventive health programmes, in the context of strong and equitable socioeconomic development can also greatly decrease vulnerability, and potentially over-ride at least some of the health risks, in the short- to medium-term.

Improving health while cutting carbon emissions

Perhaps the largest advance is in documenting the rapidly growing evidence that well-planned actions to reduce greenhouse gas emissions can also bring very large health gains. The most obvious gains would come through reductions in air pollution, recently identified as the cause of approximately seven million deaths a year, or one in every eight deaths in the world.

The report documents the evidence that reducing emissions of short-lived climate pollutants such as methane and black carbon would not only slow warming, but could avoid 2-2.5 million deaths per year, globally. If converted into economic terms, the health gains associated with mitigation could offset much of the early cost of greenhouse gas mitigation.

This supports the conclusion that both climate-sensitive health risks, and the health benefits of cutting greenhouse gas emissions, should be central to any discussion on climate change.

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