

- Increase in occurrence of asthma, allergies and respiratory disorders and resultant deaths due to increased levels of air pollution.

Socio-economic conditions

- Malnutrition, hunger and consequent impairment of child growth and development due to altered food supply.
- Population displacement and damage to infrastructure due to sea-level rise.
- Social, economic and demographic dislocations due to effects on economy, infrastructure and resource supply
- Negative impacts on some industries dependent on natural resources, for example tourism (in particular for small island states like Jamaica).
- Negative impacts on mental health, psychological disorders and, possibly, even civil strife because of heightened stress levels resulting from all of the above impacts.

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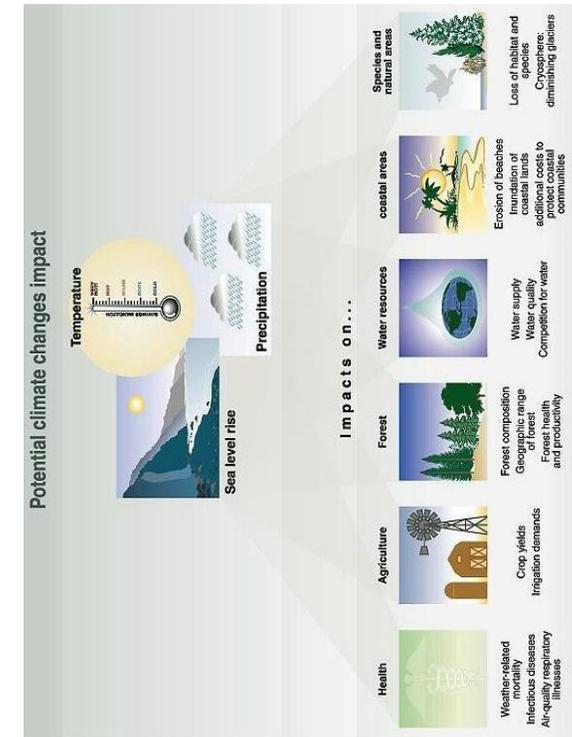
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IMPACTS OF



**GLOBAL CLIMATE
 CHANGE**

IMPACTS OF GLOBAL CLIMATE CHANGE

There is growing concern that by the middle or the end of the twenty-first century, there will be a change in the basic conditions that have allowed life to thrive on earth. Human activities have led to an increase in the concentration of greenhouse gases in the atmosphere. These changes have been observed since 1860 and have led to an increase in the surface temperature of the earth since the middle of the twentieth century.

If greenhouse gas emissions are reduced now, we will be able to stabilize the concentrations of these gases in the atmosphere by the middle of the 21st century. With this kind of mitigation the expected impacts of climate change can be abated or may even be avoided. If, however, a “business as usual” scenario (that is, unmitigated emissions) is maintained, the models predict the following changes.

1. Global average temperature is predicted to increase by 3 degrees Celsius by the 2080's.
2. Large changes in precipitation (rainfall) patterns (both negative and positive) are expected as global warming enhances the hydrological cycle.
3. Changes in wind patterns because of changes in atmospheric circulation.
4. Increased frequency and/or intensity of extreme weather and/or climate events (such as floods, storms, droughts, El Nino).

5. A global rise in sea level of 40 centimetres is expected by the 2080's.

These predictions have been used to make an assessment of possible global impacts in some critical areas such as water resources, food supply, bio-diversity, coastal zones, human and animal health and socio-economic conditions.

Water Resources

- Large changes (both negative and positive) in the availability of water from rivers
- Increased sedimentation
- Seawater intrusion: saline encroachment
- Water contamination as a result of increased flooding.

Food Supply

- Shifting of agricultural zones (crops, livestock, fish)
- Changes in agricultural yield (marked reductions in some regions), declining fish populations.
- Famine (in extreme cases) due to increased population and stress on food and water supplies.

Bio-diversity

- Die-back of tropical forests and tropical grasslands in some regions versus considerable growth of forests in other regions
- Disturbance of natural ecological systems

- Decline of fish and other marine populations as a result of changes in or destruction of natural habitat (mangroves, swamps, wetland areas, sea grass beds, coral reefs).

Coastal Zones

- Flooding of coastal plains; increased storm surge frequency.
- Damage to infrastructure due to removal of natural coastal barriers (coastal reefs).
- Changes in coastline; shoreline Retreat.
- Inundation and erosion of breaches.

Health

- Altered rates of heat and cold related illnesses as a result of exposure to thermal extremes.
- Deaths, injuries, psychological disorders and damage to public health infrastructure due to increased frequency of extreme weather and climate events.
- Changes in geographic ranges and incidence of vector-borne diseases and Infections.