

The Climate Change-A Global Challenge

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What is Climate?

It is the average weather in a place over more than thirty years. The climate where you live is called regional climate. To describe the regional climate of a place we should consider, what the temperatures are like over the season, how windily it is, and how much rain or snow falls. The factors in which the climate change depends are- The amount of sunlight it receives, the sea level height, the shape of the land, and how close it is to ocean.

However, we can also think about the climate change of an entire planet. Global climate depends on the amount of energy received by the sun and the amount of energy that is trapped in the system. These amounts are different for different planets.

Weather can change in a few hours, climate changes over longer time frames. Climate events happen over several years, small-scale fluctuations happen over decades, and larger climate changes happen over hundreds and thousands of years. Today, climates are changing our Earth is warming more quickly than it has in the past. Global warming is causing Earth's average global temperature to increase.

What Controls the Climate?

The factors that affect the climate, some are natural and some are caused by human. Some of the main ones are listed below:

- 1) The sun affects climate
- 2) Volcanic Eruptions affect climate
- 3) Green house gases affect climate
- 4) Snow and ice affect climate

Beside these factors, there are also other aspects of our planet that have an impact on climate too. Scientists are studying the impact of clouds and the impact of aerosols on climate.

Changes Occurred due to the Effects of Climate Change

Over 100 years ago, people worldwide began burning more coal and oil for homes, factories, and transportation. Burning these fossil fuels releases carbon dioxide (CO₂) and other greenhouse gasses into the atmosphere. These added greenhouse gasses have caused Earth to warm more quickly than it has in the past.

Scientists from around the world with the Intergovernmental Panel on Climate Change (IPCC) tells us that during the past 100 years, the world's surface air temperature increased an average of 0.6°C (1.1°F). This may not sound like very much change, but even one degree can affect the Earth. Some effects of climate change that we see happening now are:

- 1) **Sea Level is rising**
Due to melting glacier ice and expansion of warmer seawater, the level of sea rose about 15 cm (6 in). Prediction has made that sea level may rise as much as 59 cm (23 in) during the 21st Century.
- 2) **Arctic Sea Ice is melting**
The summer thickness of ice is about half of what it was in 1950
- 3) **Glaciers and Permafrost are melting**
Over the past 100 years, mountain glaciers in all areas of the world have decreased in size and so has the amount of permafrost in the Arctic.
- 4) **Sea-Surface Temperatures are Warming**
Warmer waters in the shallow oceans have contributed to the death of about a quarter of the world's coral reefs.
- 5) **Heavier Rainfall Caused Flooding in Many Regions**
Warmer temperatures have led to more intense rainfall events in some areas. This can cause flooding.
- 6) **Extreme Drought is Increasing**
Higher temperatures cause a higher rate of evaporation and more droughts in some areas of the world.
- 7) **Ecosystems are Changing**
As temperatures warm, species may either move to a cooler habitat or die.
- 8) **Hurricanes have changed in Frequency and Strength**
There is evidence that the number of intense hurricanes has increased in the Atlantic since 1970
- 9) **Heat waves more frequent**
It is likely that heat waves have become more common in more areas of the world.
- 10) **Warmer Temperatures affects human health**
There have been more deaths due to heat waves and more allergy attacks, as the pollen season grows longer. There have also been some changes in the ranges of animals that carry diseases like mosquitoes.
- 11) **Sea Water is Becoming More Acidic**
Carbon dioxide dissolving into the oceans is making seawater more acidic.

Impact of Climate Change in Nepalese Context

Although Nepal does not emit much and industrialized economics, it has been facing several consequences of climate changes. Such changes are raising temperature in the country's sky too. Exploitation of natural resources associated with growing population

has led to increasing pollution, declining water quality, land degradation and other environmental problems. With such circumstances climate change represents an additional stress, which has multiple consequences such as extreme climate events including flood, droughts, heat wave, glacial stream, melting of Himalayan glaciers and so forth. Due to such events, agricultural productivity is suffering from several losses and attainment of food security is under tremendous threats. If this time is not utilized properly, it may be too late to avoid many foreseen bitter consequences. At the same time, Nepal should promote mechanisms, including carbon trade, to utilize benefits offered by the developed countries in the name of clean energy transfers. Though, Nepal is one of the countries, which emits negligible amount of greenhouse gases; it is not immune to the impact of global warming. The rate of annual increase of temperature in Nepal is about 0.06 degree Celsius.

Climate Thinkers

"Now is the time for action"

Actually, there are two global crises in tandem. Leaders in politics and business are facing the challenge of meeting the immediate financial crisis while at the same time maintaining focus on the long-term needs of addressing the climate challenges in an effective and serious manner. The costs of inaction are likely to far outweigh the costs of taking action now.

All countries and all parts of our global community will be affected by climate change. Climate change is man made, and mankind can solve it. For the global transport industry two key figures illustrate and underline the urgency of taking actions

- (1) Trend in global transportation indicates an increase in global energy consumption at approximately 50% from now until 2050.
 - (2) In the same time span, global emissions of CO₂ and other greenhouse gases will have to be reduced with at least 50%.
- Global challenges must be met by global measures. With courage and conviction, we must lead the way towards an ambitious global agreement on climate change. To succeed, we need a global climate agreement that is broad, ambitious, fair, and cost effective. It should be based on the principle of common but differentiated responsibilities.
 - We must recognize that actions are needed. We must recognize that they are possible. And we must recognize that bold ambitions in meeting higher environmental standards are the only route to success as a business in an increased international competition.

Climate Change and Cooperatives

ICA is committed to promoting sustainable development in accordance with the 7th principle "Concern for Community". In recognition of the urgency of the problem and the need to make a significant and appropriate contribution to the cause of reducing future climate change impact, ICA has taken the following actions:

Resolution adopted by the ICA General Assembly 19 October 2007, Singapore
"Climate Change: Our Cooperative Commitment"

Commits: As a part of international Cooperative Movement and members of the International Cooperative Alliance, cooperative to:

- 1) Measure and reduce the greenhouse gas emissions that arise as a result of our activities.
- 2) Communicate with, inform and motivate members towards a lower carbon lifestyle.
- 3) Use political influence and that of cooperative members to encourage our government to play a constructive part in the Kyoto Negotiations now taking place, one that recognizes the need for global emissions to reduce significantly and quickly.

Strategy to Address Climate Change

Adopted 2 April, 2008, Washington DC (USA)

- 1) Measure and reduce the greenhouse gas emissions.
- 2) Communicate with, inform and motivate members towards a lower carbon style.
- 3) Use political influence play a constructive part in the Kyoto Negotiations.

How Cooperatives contribute to Meeting Today's Challenges

Ranging from small scale to multi-million dollar business, cooperatives employ today some 100 million women and men in both industrialized and developing countries, and have more than 800 million individual members across the globe. "Concern for Community" is one of the cooperative principles, which guides the work of cooperatives around the world. Celebrated annually on the first Saturday of July the 14th UN International day of Cooperatives and 86th International day of Cooperatives, focuses on the significant contribution that cooperatives can make to mitigating climate change. In the context of climate change and food price rises, cooperatives do play a role in rural areas around the world.

Climate change brings sharply into focus the critical necessity of global cooperation. There is no doubt that climate change is occurring, and that it is primarily the result of human-caused emissions. The question is what we are willing to do about it. Every effort, no matter how small, can contribute to and form a larger, more powerful response. As cooperatives have long fostered inclusive and sustainable approaches to economic and social development at the local levels. It is in keeping with this focus that cooperatives are expanding their development efforts creatively, into areas such as environmental sustainability and carbon neutrality, as communities around the world are struggling to adopt to climate change and strengthen their resilience against its impacts. So, cooperatives are the potential enterprise in contribution effectively to confront climate change.