

Climate Change and Impacts – Role of younger Generation.

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Abstract

Climate Change is the latest topic that is being discussed world over. Though climate change is a global level issue, the solution remains local. Though the Earth is divided as states, nation and countries the sky and atmosphere is common to allie., under one roof. So pollution from any remote corner can affect one and all. Hence, we need to come together to face this issue. This article discusses in detail the differences between weather and climate, climate change, mitigation and adaptation, available funding mechanism projects sanctioned, and latest developments. The important role to be played by all are also highlighted.

Key words

Climate Change, Mitigation, Adaptation, Green Climate Fund, Greenhouse gases, National Implementing Entity

Introduction

Our country which occupies only 2 percent of world land area has 17.50 percent of world's population. We are proud to be World's number one in milk production, cotton, fruits, second in production of wheat, fish culture, and vegetables. At the same time, we are world's third largest emitter of greenhouse gases causing climate change. Though animal population (17 percent of world) and agriculture contribute greatly to this, all will agree that the time is ripe to start action on damage control. The climate is fast changing. We have already started undergoing the ill effects of climate change like tsunami, change in rain fall pattern, increasing temperature, recurrence of drought, melting of Himalayan glaciers, increase in sea level, cloud bust in Uttarakhand, floods in Chennai etc. We need to do something jointly to save the earth. Let us understand the subject little deeper.

What is Climate

To understand climate change, first we should know what is climate and the difference between weather and climate. What we see on

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daily basis is weather. Cool in the morning, hot in afternoon, windy in the evening and after sun set we feel better and cool again. You must have heard “The weather is expected to remain clear for the next three days.” “The cricket match has been cancelled due to adverse weather conditions.” Climate is the average weather in a place over many years. While the weather can change in just a few hours, climate takes hundreds, thousands, even millions of years to change. The difference between weather and climate is a measure of time. Weather is what conditions of the atmosphere are over a short period of time, and climate is how the atmosphere "behaves" over relatively long periods of time. In other words, weather is what we get and climate is what we expect.

Climate Change

Global Warming is another concept which is the increase of Earth's average surface temperature due to effect of greenhouse gases, such as carbon dioxide, methane and nitrous oxide, which trap the heat that would otherwise escape from Earth. According to NASA "Climate change" refers to any long-term change in Earth's climate, or in the climate of a region or city and Global warming" refers to the long-term increase in Earth's average temperature. Climate change includes warming, cooling and changes besides temperature. Human causes to climate change includes release of Greenhouse gases, coal mining deforestation, burning of fossil fuels, industrial processes, agriculture including animal husbandry.

There are three options/ways to deal with this issue. They are

- 1) We can reduce / stop the amount of greenhouse gases in the atmosphere. This is called mitigation i.e, any activities that reduce the overall concentration of greenhouse gases in the atmosphere. It means avoiding the unmanageable. It includes tree planting and protection of existing forests, switching from fossil fuels to renewable energy sources, such as wind and solar, improving energy efficiency and capturing carbon emissions and preventing them from reaching the atmosphere.
- 2) The second one is we can invent ways to reduce the vulnerability of people, ecosystems and infrastructure to the impacts of climate

change. It is called adaptation meaning managing the uncontrollable. This includes things like building defenses to protect coastal areas from rising seas, switching to drought or flood resistant crop varieties, climate smart agriculture, weather proofing, improving early warning systems to warn of heat-waves, disease outbreaks and climate-related disasters such as flood and cyclones.

3) The third option is doing the combination of both.

Though climate change is a global level issue / problem, the solution remains local. Though the earth is divided as states, nation and countries the sky and atmosphere is common to all i.e., we all are under one roof. So pollution from any remote corner can affect one and all. Hence, we need to come together to solve / face this issue.

Developments world over

The United Nations Framework Convention on Climate Change (UNFCCC) is an intergovernmental treaty developed to address the problem of climate change all over the world. It was established on 21st March 1994, and now has 196 country representatives i.e., parties. The parties are to meet regularly to take stock of progress in implementing their obligations under the treaty, and to consider further actions to address the climate change threat. First such meet was held in Kyoto, Japan in December 1997 and popularly known as Kyoto Protocol. Due to various issues, the Protocol finally entered into force as a legally-binding document on 16 February 2005. The first commitment period of Kyoto protocol came to end in December 2012.

India has signed the UNFCCC and has acceded to the Kyoto Protocol in 2002 itself and the Government of India has also formulated the National Action Plan on Climate Change (NAPCC) with 08 Missions to help the country adapt to the effects of climate variability and change. They are given below:

1. Jawaharlal Nehru National Solar Mission.
2. National Mission for Enhanced Energy Efficiency
3. National Mission on Sustainable Habitat

4. National Water Mission
5. National Mission for Sustainable Agriculture
6. National Mission for Sustaining the Himalayan Ecosystem
7. National Mission for a Green India
8. National Mission on Strategic Knowledge for Climate Change

Based on NAPCC, State Governments have prepared State Action on Climate Change (SAPCC). They could be seen from the respective State government's websites.

In December 2015 the COP (Conference of Parties) 21 was held at Paris which was attended by countries including India. As per the provisions of the Paris Agreement, the treaty will come into force as and when 55 countries contributing to 55 percent of total global emission ratify the agreement. India ratified the Paris Agreement (on Climate Change) on 2nd October 2016, the day of birth anniversary of Mahatma Gandhi and was 62nd country to do so. This has pushed the cumulative level of emission of countries that have ratified the agreement as on 2nd October 2016 to 51.89 percent. (Ministry of EF&CC). Few more countries are yet to ratify to meet the bench mark of 55 percent of global emission (short fall is 3.11 percent). This is expected to be achieved at the earliest, so that the agreement become a legally binding one by all countries. Next meeting i.e., COP 22 was planned to be conducted in Morocco, North Africa in November 2016.

Consequent to Paris agreement India is committed to do the following.

- reduce carbon intensity of growth by 33-35 percent over 2005 levels,
- raise the share of non-fossil fuel power to 40 percent by 2030, and to produce 175 GW (Gigga watts) of renewable power by 2022.
- forest cover would be expanded to absorb 2.5 billion tonnes worth of carbon dioxide

- fossil fuel dependence would be reduced by levying taxes as well as cutting subsidies.
- Cities would be transformed through improvements to their efficiency and improving public transport.

According to scientific assessments, in 2014, US occupied first position with 15 percent emission of atmosphere-warming greenhouse gases followed by China with 25 percent and India with 7 percent. (The Hindu).

Financial Support for Mitigation and adaptation

In order to support the mitigation and adaptation initiatives / activities all over the world, various funding mechanisms such as Adaptation Fund (AF) and Green Climate Fund (GCF) have been constituted under UNFCCC.

In India, National Bank for Agriculture and Rural Development (NABARD), an apex Developmental Financial Institution, owned by Government of India and Reserve Bank of India, has been designated as National Implementing Entity (NIE).NABARD would perform roles in facilitating identification of project ideas/concepts from State Action Plan for Climate Change, project formulation, appraisal, sanction, disbursement of fund, monitoring & evaluation and above all capacity building of stakeholders.

Consequent up on the announcement by Hon'ble Union Finance Minister in his interim budget speech on 10 July 2014, another fund called “National Adaptation Fund for Climate Change”(NAFCC) was established in August 2015 by Ministry of Environment, Forest and Climate Change (MEFCC) to meet the cost of adaptation to climate change for the State and Union Territories of India, vulnerable to climate change. For this fund also NABARD is designated as NIE. The following are the projects sanctioned under Adaptation fund of UNFCCC as of March 2016.

Sr. No.	Name of project State	State	Project outlay (US\$ million)
1	Conservation and Management of Coastal Resources as a Potential Adaptation Strategy for Sea Level Rise	Andhra Pradesh	0.69

2	Enhancing Adaptive Capacity and increasing Resilience of Small and Marginal Farmers	West Bengal	2.51
3	Building Adaptive Capacities of Small Inland Fishermen Community for Climate Resilience and Livelihood	Madhya Pradesh	1.79
4	Climate Proofing of Watershed Development Projects.	Tamil Nadu and Rajasthan	1.34
5	Climate Smart Actions and Strategies in North Western Himalayan Region for Sustainable Livelihoods of Agriculture-Dependent Hill Communities	Uttarakhand	0.97
		Total	7.30

(Source : 'Annual report NABARD, 2016)

All these projects are under various stages on implementation. Once completed these projects will contribute a lot towards mitigation and adaptation efforts against the effects of climate change in our country.

Action Required

From the above paragraphs, one can understand that Climate change is real. It has significant impact on our daily routine, agriculture and rural development. The major causes for climate change have been found to be man-made. We need to do something about this. The elders should take an oath to pass on this universe to the next generation in a liveable condition or at least the same condition as we received. The younger generation should act immediately to avoid further damages and for their better future. The following may appear as small things but is can do wonders for our present and future generations, in mitigation and adaptation of climate change.

- There is an urgent need for creating awareness among all, on this important topic. Colleges and Universities may arrange special lectures in this topic through innovation clubs / quality circles and make awareness among the younger generations.
- Change the existing electric bulbs to compact fluorescent

light (CFL) bulbs or light-emitting diode (LED) bulbs. This will save energy thereby reduce the need for burning coal for production of electricity.

- Switch off power (lights and fan) when not required. Conserve electricity. Unplug the mobile once the charge is complete. Never put mobile on charging overnight.
- Promote and encourage renewable energy sources like solar lighting, solar water heater, solar pumps, wind mills, hydroelectric projects etc.,
- Save water and use it efficiently. We need to avoid wastage of this important and scarce source. Encourage rain water harvest, recycling of water and micro irrigation systems etc.,
- Avoid burning of fossil fuels.
- Adapt Solid waste Management. Restrain from use of plastic/polythene bags
- Go paperless as far as possible. Print only when required that too only required number of copies. Saving paper also mean reduced afforestation. Forest cover helps carbon sink i.e., removal of carbon di oxide (CO₂) from our environment.
- Plant more trees. Avoid cutting trees.
- Use public transportation facilities instead of cars, bikes etc. This will not only save your pocket but also reduce emission of nitrous oxide, one of the greenhouse gases. Car pool is an excellent idea.
- Avoid wastages of all resources.

Conclusion

Father of nation Mahatma Gandhi said” “The earth provides enough to satisfy every person's need, but not every person's greed.” This is applicable even today. Climate change is a global problem, affecting every one. But the solution is local. Everyone has to contribute to mitigate or adapt the effects of climate change. Government of India is implementing various initiatives like world's first solar powered airport at Kochi, Solar powered toll plazas, Reduction in fossil fuel

subsidies, increasing Coal Cess from Rs 50 to Rs 200 per ton, Swachh Bharat Mission, 100 smart cities, Paramparagat Krishi Vikas Yojana (organic farming) Pradhan Mantri Krishi Sinchayee Yojana (efficient irrigation) Pradhan Mantri Fasal Bima Yojana (Crop insurance) Neeranchal (watershed development) etc. In addition to create mass level awareness creation, everyone especially, our younger generation needs to play a lead and vital role in mitigation and adaptation of climate change for a better future. We should not forget that the Earth is only a gift to us. This has to be passed on to the future generations in good and liveable conditions. It is moral responsibility of all of us.

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