Climate Change and Eco Friendly Development
Foreword

The Earth provides enough to satisfy every man’s needs but not every man’s greed.”
— Mahatma Gandhi

With the rise of consumerism, it has brought mankind to a stage where our needs have gone beyond the means to fulfill them. Economic development of a society is essential for the betterment of people. However, development activity also, directly or indirectly, draws upon one or more of our natural resources. More development means more exploitation of natural resources and the development at the cost of degradation of the environment has detrimental effects. The ecosystem disturbance, climate change, water and air pollution, and rising sea levels can be seen as the unintended consequences of such development processes.

Climate change is the problem we are facing today. The International political response to climate change began at the Rio Earth Summit in 1992, where the ‘Rio Convention’ included the adoption of the UN Framework on Climate Change (UNFCCC). This convention set out a framework for action aimed at stabilising atmospheric concentrations of greenhouse gases (GHGs) to avoid “dangerous anthropogenic interference with the climate system.” The UNFCCC which came into force on 21 March 1994 has a universal membership of 195 Parties. 195 Parties pledged to curb emissions, strengthen resilience and joined to take common climate action. The main objective of the annual Conference of Parties (COP) is to review the Convention’s implementation. The first COP took place in Berlin in 1995 and in 2015 COP21, also known as the 2015 Paris Climate Conference, met from 30 November to 11 December 2015 in Paris with the hope to achieve a legally binding and universal agreement on climate, and the aim of keeping global warming below 2°C.

The Paris Agreement and the outcomes of COP21 cover all the crucial areas identified as essential for a landmark conclusion: mitigation – reducing emissions fast enough to achieve the temperature goal; a transparency system and global stock-take – accounting for climate action; adaptation – strengthening ability of countries to deal with climate impacts; loss and damage – strengthening ability to recover from climate impacts; and support – including finance, for nations to build clean, resilient futures.

India had adopted the National Environment Policy 2006 which provides for several measures and policy initiatives to create awareness about climate change and help capacity building for taking adaptation measures.

In 2008 India has launched its National Action Plan on Climate Change with a view to lay down the priorities and future actions of the Government and updating India’s National programme relevant to addressing climate change. India is committed to a path of sustainable development.

The present issue covers how climate change affects people and the environment and India’s role to curb the menace of climate change. It discusses the need for Environmentally Friendly Development to tackle the effects of climate change and what role we can play to reduce emissions through simple actions.
Climate Change and its impact

The Framework Convention on Climate Change (UNFCCC), in its Article 1, defines climate change as: “a change of climate which is attributed directly or indirectly to human activity that alters the composition of the global atmosphere and which is in addition to natural climate variability observed over comparable time periods.”

Climate change is a large-scale, long-term shift in the planet’s weather patterns or average temperatures. Global average surface temperature has risen at an average rate of 0.15°F per decade since 1901. It is projected to rise another 0.5 to 8.6°F over the next hundred years. Even small changes in the average temperature of the earth can translate to large and potentially hazardous shifts in climate and weather. Rise in global temperature is accompanied by changes in weather and climate. Many areas have been facing changes in rainfall, resulting in more floods, droughts, or intense rain, as well as more frequent and severe heat waves. The oceans and glaciers have also experienced some big changes - oceans are warming and becoming more acidic, ice caps are melting, and sea levels are rising.

Global climate models referenced by the Intergovernmental Panel on Climate Change (IPCC) project that global surface temperatures are likely to increase by 1.1 to 6.4 °C (2.0 to 11.5 °F) between 1990 and 2100.

Causes of Climate Change

The earth’s climate is dynamic and changes through a natural cycle. Natural and human factors both contribute to this. A number of natural factors bring variations in the earth orbit, in continental drift, in solar activity, or volcanic eruptions. Since the Industrial Era began, humans have had an increasing effect on climate, particularly by adding billions of tons of heat-trapping greenhouse gases to the atmosphere. Most of the observed warming since
the mid-20th century is due to human-caused greenhouse gas emissions. Increases in anthropogenic emissions of gases (e.g., carbon dioxide, methane) in the Earth’s atmosphere enhance the greenhouse effect. As reported by IPCC - Climate Change 2007 these are the major driving force behind the observed trend of accelerated global warming that has taken place over the last century. Changes in land use pattern, deforestation, land clearing, agriculture, and other activities have all led to a rise in the emission of carbon dioxide. Individuals' daily lives also contribute their bit to this change in the climate. Electricity, generated from thermal power station, is responsible for the emission of huge amounts of greenhouse gases and other pollutants. A large quantity of waste generation is also responsible for climate change.

Climate change impacts

Scientists have broadly classified impacts of climate change into three areas:

- Erratic climate and weather extremes
- Altered ecosystems and habitats
- Risks to human health and society

Over the last several decades most of the warming can be attributed to human activities that release carbon dioxide (CO2) and other heat-trapping greenhouse gases (GHGs) into the atmosphere. This is mainly because of the burning of fossil fuels—coal, oil, and natural gas—for energy. Other activities like unscientific agricultural practices, forest clearing, and certain industrial activities also make significant contributions. These are significantly impacted as a result of global warming. Global warming is closely associated with a broad spectrum of other changes like increases in the frequency of rainfall, decreases in snow cover of Northern Hemisphere and Arctic sea ice, warmer and more frequent hot days and nights, rising sea levels, and widespread ocean acidification. It also adds burdens on people and society. More extreme weather means increased pressure on health, infrastructure, and economy. Climate change is a major threat to agriculture. Farmers are struggling to keep up with shifting weather and increasingly unpredictable water supplies across the world. Unexpected attacks from weeds, diseases and pests affect yield. Hot weather, flooding and other extreme weather events damage infrastructure.

As these and other changes become more pronounced in the coming decades, they will likely present challenges to our society and our environment. “Nobody on this planet is going to be untouched by the impacts of climate change,” IPCC chairman Rajendra Pachauri told journalists at a news conference in Yokohama. The sooner we act to reduce greenhouse gases, the less severe impacts will be. Now is the time to implement solutions.
Paris Agreement on Climate Change

UN Secretary General Ban Ki-moon said: “We have entered a new era of global cooperation on one of the most complex issues ever to confront humanity. For the first time, every country in the world has pledged to curb emissions, strengthen resilience and join in common cause to take common climate action. This is a resounding success for multilateralism.”

To combat climate change and unleash actions and investment towards a low-carbon, resilient and sustainable future was agreed by 195 nations during COP21 meeting in Paris. The agreement’s main aim is to keep a global temperature rise this century well below 2°C and to drive efforts to limit the temperature increase even further to 1.5 °C above pre-industrial days’ levels. This limit is a significantly safer defense line against the worst impacts of a changing climate.

The Paris Agreement and the outcomes of the UN climate conference (COP21) cover all the crucial areas identified as essential for a landmark conclusion:

- Mitigation – reducing emissions fast enough to achieve the temperature goal
- A transparency system and global stock-take – accounting for climate action
- Adaptation – strengthening ability of countries to deal with climate impacts
- Loss and damage – strengthening ability to recover from climate impacts
- Support – including finance, for nations to build clean, resilient futures

This Agreement underwrites adequate support to developing nations and establishes a global goal to significantly strengthen adaptation to climate change through support and international cooperation. All countries will submit adaptation communications, in which they may detail their adaptation priorities, support needs and plans. Developing countries will receive increased support for adaptation actions and the adequacy of this support will be assessed.

The agreement includes a robust transparency framework for both action and support. The framework will provide clarity on countries’ mitigation and adaptation actions, as well as the provision of support. At the same time, it recognises that Least Developed Countries and Small Island Developing States have special circumstances.

The agreement includes a global stock-take starting in 2023 to assess the collective progress towards the goals of the agreement. The stock-take will be done every five years. The agreement includes a compliance mechanism, overseen by a committee of experts that operates in a non-punitive way.

To reach these ambitious and important goals, appropriate financial flows will be put in place, thus making stronger action by developing countries and the most vulnerable possible, in line with their own National objectives.

“The Paris Agreement allows each delegation and group of countries to go back home with their heads held high. Our collective effort is worth more than the sum of our individual effort. Our responsibility to history is immense” said Laurent Fabius, President of the COP 21 UN Climate change conference and French Foreign Minister.

Source: https://www.edf.org/climate/climate-change-impacts
http://www3.epa.gov/climatechange/basics/
http://newsroom.unfccc.int/unfccc-newsroom/final-cop21/
https://www.edf.org/climate/climate-change-impacts
http://risinternational.org/JURISSissue1/15-17.pdf
India's Roadmap in Climate Change

India is a major greenhouse gas emitter and key player in the international climate arena. In recognition of the growing problem of Climate Change, India declared a voluntary goal of reducing the emissions intensity of its GDP by 20–25%, over 2005 levels, by 2020, despite having no binding mitigation obligations as per the United Nations Framework Convention on Climate Change (UNFCC). A range of actions have been introduced to address it. India's submission to the UN, known as its Intended Nationally Determined Contribution (INDC), focuses on clean energy, including solar power. A slew of policy measures have been launched to achieve this goal.

National Action Plan on Climate Change

Launched in 2008, India's National Action Plan on Climate Change (NAPCC) identifies a number of measures that simultaneously advance the country's development and climate change related objectives of adaptation and mitigation.

In order to achieve a sustainable development path that simultaneously advances economic and environmental objectives, NAPCC contains eight national missions, representing multi-pronged, long-term and integrated strategies for achieving key goals in the context of climate change.

- Jawaharlal Nehru National Solar Mission
- National Mission for Enhanced Energy Efficiency
- The National Mission on Sustainable Habitat
- The National Water Mission
- National Mission for Sustainable Agriculture
- The National Mission for Sustaining the Himalayan Ecosystem
- The National Mission for a Green India
- National Mission on Strategic Knowledge for Climate Change

Other National and Sub National Initiatives

In addition to the National Action Plan on Climate Change, the Government of India has taken several other measures to promote sustainable development and address the threat of climate change. These initiatives operate at the national and sub national level and span domains that include climate change research, clean technology research and development, finance, energy efficiency and renewable energy policy and deployment.

The Government of India created the National Clean Energy Fund (NCEF) in 2010 for the purpose of financing and promoting clean energy initiatives and funding research in the area of clean energy in the country.
The Finance Minister of India has allocated Rs. 100 crore (USD 16.67 million) towards a newly established National Adaptation Fund. This fund will assist national and state level activities to meet the cost of adaptation measures in areas that are particularly vulnerable to the adverse effects of climate change. This was announced on July 10, 2014.

**State Action Plan on Climate Change**

Government of India has asked State Governments to prepare their own State Action Plan on Climate Change (SAPCC) consistent with strategies in the NAPCC after the announcement of the National Action Plan on Climate Change in 2008.

A common framework for the preparation of SAPCC was developed to harmonise national and state level actions. The common framework drew largely on the principles of territorial approach to climate change which focused on sub national planning, building capacities for vulnerability assessment and identifying investment opportunities based on the state's priorities.

The framework provided broad, systematic and stepwise process for the preparation of SAPCC and advocated a participatory approach so that states have enough ownership for the process and the final Plan. The recommended approach retained a level of flexibility in order to integrate state level variations in ecosystems, geographic conditions, socio-economic scenario, and other factors.

**NABARD: Progressing Adaptation Actions**

India's National Bank for Agriculture and Rural Development (NABARD) has been accredited as a National Implementing Entity (NIE) for India for the Adaptation Fund created under the United Nations Framework Convention on Climate Change (UNFCCC). At present, NABARD is the only NIE in the Asia-Pacific Region. NABARD is developing quality projects to create a pipeline of feasible projects that will help communities in India take measures to adapt to the impacts of climate change.

**Auto Fuel Vision and Policy 2025**

The Government of India constituted an Expert Committee for drafting the Auto Fuel Vision and Policy-2025 for the country in December 2012. The mandate of the Expert Committee was to recommend a roadmap for improving auto fuel quality in India till 2025, as well as provide recommendations on other issues, including suitable mix of auto fuels, vehicular emission norms for various categories of vehicles, use of alternate fuels and fiscal measures for funding requisite technology upgrades.

The Government of India issued average fuel consumption standards for cars in January 2014. The standards will require Corporate Average Fuel Consumption of cars to be less than or equal to 5.49 litres/100 km from 2016-17 and less than or equal to 4.77 litres/100 km from 2021-22. Introduction of these standards is expected to lead to a reduction of 22.97 million tonnes of fuel consumption by 2025.

**Indian Network for Climate Change Assessment**

To enhance knowledge about the impacts of climate change at the national and sub national level, Indian Network for Climate Change Assessment (INCCA) was launched on October 14, 2009. The programmes envisaged under the aegis of INCCA include those on Black Carbon, Ecosystem Monitoring, the Centre for Advance Studies, Impact Assessments, Greenhouse Gas Inventory Programme, Integrated Vulnerability & Adaptation (V&A) Assessments and Developing Scenarios.
A new National Institute for Climate Change Studies and Actions (NICCSA) is being set up by the Government of India under the Climate Change Action Programme (CCAP) of the Ministry of Environment, Forests and Climate Change. The Institute will conduct analytical studies on scientific, environmental, economic development and technological issues related to climate change.

The Planning commission, Government of India had set up the Expert Group on Low Carbon Strategies for Inclusive Growth in 2010 to suggest low carbon pathways consistent with inclusive growth in India. The high level Expert Group was composed of representatives from relevant government ministries, industry, think tanks and research institutions.

India has been successful in establishing bilateral relations with several countries on key areas of development and growth. One such area that has gained prominence in last few decades is environment and clean technology.

India is extremely vulnerable to the impacts of climate change and significant measures are needed to build climate resilience and assist communities with adaptation. Several programmes are already underway in many parts of India, often in partnership with local financial institutions and grassroots non-governmental organisations that are working with local communities on project implementation. Through its corporate social responsibility programmes and other initiatives, Indian industry is also promoting sustainable livelihoods and infrastructure development across the country. Additionally, there are measures that India can take to promote sustainable and inclusive growth in a less carbon-intensive manner. Many of these actions will have to be designed and implemented by industry and civil society organisations. Recognising the important role that non-state actors must play in shaping India’s response to climate change, the Government of India is taking steps to make this an inclusive and consultative process and invites the participation of all communities, non-governmental organisations and industry.

http://www4.unfccc.int/submissions/INDC/Published%20Documents/India/1/INDIA%20INDC%20TO%20UNFCCC.pdf
http://www.nrdc.org/international/india/

Climate Change and the Need for Environmentally Friendly Development

All development is now taking place in the world shaped by climate. Climate change is happening now and impacting countries and people. The risk of serious climate change impacts suggests that urgent action is needed to significantly reduce GHG emissions in the coming decades. There is increasing evidence that the overall benefits of strong and early action to reduce GHG emissions outweigh the costs. But we need to reduce emissions at the lowest possible cost if we are to have a realistic chance of limiting further climate change.

A growing population also puts additional strain on climate because of non-renewable and agricultural
resources. Rising demand for food, water, and modern energy also puts pressure on scarce natural resources. This is likely to further increase the prices of food and energy, with particularly dire effects on poor people.

Provision of food, water, and energy becomes more difficult when natural resources are not properly managed or when external conditions deteriorate as a result of global environmental changes. For example, climate change modifies rainfall and temperature patterns.

Climate change mitigation is an imperative and these challenges require restructuring of a society in which growth and development take place within environment’s tolerance limits. The restructuring encompasses all areas of society and participants. Innovation and technological development are solutions to the green economy, and businesses are a vital force. The government must ensure that there are the right framework conditions, a future-oriented infrastructure, sustainable natural resource and land management and must contribute to the development of markets through its own investments and use of its own market power.

A Green Economy Initiative was launched by UN Environment Programme (UNEP) which seeks to respond to the global economic downturn by focusing economic growth and job creation in environmental industries. Green Economy Initiative looks to clean and rural energy and technologies, sustainable agriculture, ecosystem infrastructure, reduced emissions from deforestation and forest degradation, and sustainable cities to promote its priorities, which include valuing and mainstreaming nature’s services, generating employment through green jobs and policy, and accelerating the transition to a Green Economy via instruments and market signals.

Thus green economies are not based on the demand for sacrifice, but on the idea of qualitative growth, where low-carbon and environmentally friendly technologies, as well as international cooperation in this area play a key role. With the emergence of worldwide markets of green technology and eco products, it motivates policymakers in all countries to give green investments sufficient space in their counter-cyclical policies.

Investments in the resources — energy, food, and water — that are bound to grow more in demand as there is a rise in global population levels. The Green technology involves shifting energy supply from fossil fuels to less-polluting alternatives—either as sources of electricity generation like as wind, solar, nuclear, hydropower or as direct sources of energy like a biofuel e.g. ethanol made from corn or sugarcane. It also includes technologies that reduce the amount of energy required to provide goods and services, which increases energy efficiency.

For example in the electricity sector, there is room to improve efficiency in power generation by highly efficient electricity plants that burn less coal and in transmission and distribution by using more efficient grids. There is also potential for efficiency gains in transportation—by using more fuel-efficient and hybrid cars and by increasing use of mass transit. In industrial equipment, efficiency gains can be achieved through energy-saving appliances and improved waste management. In construction, efficiency can be enhanced through improved insulation and cooling systems.

Investment in environmentally friendly technologies is growing globally. Investment is necessary to reduce greenhouse gas and air pollutant emissions significantly. There are several ways to reduce gas emissions. Investment should be there where due to technology, generation of energy causes less pollution and reduces energy consumption. Green investment involves operations aimed at improving the environment. This can range from companies that are developing alternative energy technology to companies that have the best environmental
Climate change is one of the world’s most critical challenges and an immediate risk to our communities, economies, and to our conservation mission. We should act—as individuals, in our communities, as business leaders, and as policymakers. Each has complementary and differentiated roles in adapting to the impacts of climate change. Climate change is a collective responsibility that reaches far beyond the mandate of any one government.

The Intergovernmental Panel on Climate Change’s 2007 report states that consumers can play a critical role in lowering their carbon footprint. Carbon footprint is a measure of all GHG emissions. Everything we do and everything we consume has a carbon footprint associated with it.

Changing consumer understanding and behaviour worldwide is a crucial task in responding to climate change. There has been a shift in consumer consciousness at a global level in response to increased understanding and awareness of climate impact as well as to efforts by civil societies, governments and businesses. Equipping consumer with knowledge, skills and values to cope with climate change and ensuring safe, inclusive and eco-friendly learning environments are vital part of facing the challenge of sustainable development.

The responsibilities of civil society organisations

Civil society organisations have a key role to play in ensuring consumer interests in relation to climate change. They should make sustainable production and consumption an integral and prioritised part of their work, as well as working in partnership with other organisations from other countries to align strategies and share information.

Their major role is to increase information and action for basic needs and services. Educate consumers about their consumption behaviour. Every consumption choice has different contributions to climate change. They should embark on awareness-raising campaigns to draw consumer attention to the climate change impacts of their actions and inactions. Empowering and mobilising consumers into action to reduce energy intensive patterns of consumption. They also have an important role to play as watchdogs to ensure that business claims about their environmental impact are accurate.
The responsibilities of businesses

Businesses should have an inclusive economy to support good jobs, access to critical goods and services, and sustainable communities—creating short and long-term benefits to business and society alike. By supporting and participating in the development of robust and accountable standards, businesses can implement the appropriate international, national, and sector-wide standards in the design, implementation and evaluation of their corporate social responsibility (CSR) and climate change mitigation policies. With the help of third-party certification, businesses should make information publicly and readily available to consumers on their impact on climate change. They should play a proactive role in removing from the market those products and services which have a high negative impact on climate change.

The responsibilities of governments

Government is seen as most responsible for addressing climate change because it has the power to set regulations and lead corporations and citizens toward pro-environmental behavior. They should work to foresee the short and medium-term effects of climate change on consumer access to basic goods and services such as water, food, and energy. There is a need for much increased investment in research to strengthen the knowledge base with better data. Governments should play a role of facilitator to educate consumer about the impact on climate change and create sector-wide solutions at the level of industries, cities and spheres of activity, to find workable solutions that promote sustainable consumption.

The responsibilities of consumers

Individual awareness and concern about global unfairness and environmental degradation is a prerequisite for behavioural changes towards equity and sustainability. Individuals can contribute either through making lifestyle changes, or through applying pressure to government and businesses both as citizens and as consumers. Researchers have found that a significant reduction in CO₂ emissions can be observed in conjunction with lifestyle changes such as the reduction of car use and household heating.

According to the report ‘Consumers, brands and climate change 2008 & 2007’ published by the Climate Group, an international non-profit organisation, a survey conducted by them places private individuals second behind non-governmental organisations (NGOs) as the major player in helping to reduce climate change impacts, followed by governments and business. This survey also reveals that consumers’ own involvement tends to be limited to obvious and easy commitments without additional cost, for example through actions such as turning lights off and washing clothes at lower temperatures. Cost-saving seems in fact to be the main incentive for consumers to buy climate-friendly products such as electricity from renewable sources, hybrid cars or energy efficient homes.

Based on available studies, the Ethical Investment Research Services (EIRIS), UK has identified the five drivers in consumer-facing sectors that could improve the interface between companies and consumers:

1. Regulation and standards
2. Communication and engagement
3. Labelling schemes
4. Independent assurance and verification and
5. Product innovation and marketing strategies

Raising consumer awareness remains a key challenge across all sectors. Companies, governments, consumer groups, NGOs and consumers all have a role to play in this.

Source: http://www.consumersinternational.org/media/397091/ci%20policy%20framework%20for%20climate%20change.pdf
The Environmental Information System acronymed as ENVIS was implemented by the Ministry of Environment & Forests by end of 6th Five Year Plan as a Plan Scheme for environmental information collection, collation, storage, retrieval and dissemination to policy planners, decision makers, scientists and environmentalists, researchers, academicians and other stakeholders.

The Ministry of Environment and Forests has identified Consumer Education and Research Centre (CERC), Ahmedabad, as one of the centers to collect and disseminate information on “Eco-labelling and Promotion of Eco-friendly Products”. The main objective of this ENVIS Centre is to disseminate information on Eco products, International, and National Eco labeling programs.