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# Socio- Economic Impact of Climate Change

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**ABSTRACT** *Change is a continuous process and positive change add to betterment of human beings. However, climate change has posed a series of serious problems world over directly or indirectly challenging the very existence of human beings, animals and caused the destruction of natural resources. The research studies have pointed towards ever increasing temperature impacting fertility of human beings, recurrence of diseases such as, Dengue, Flue, Malaria and Diarrhoea etc. Climate change has multidimensional adverse effects on natural resources, production and productivity of food grains, vegetables and fruits. As the yields of staple foods like wheat, rice and maize have come down drastically, the price rise and shortages are bound to result in to malnutrition, food insecurity and hunger deaths. As per the projections of the Intergovernmental Panel on Climate Change Report, the climate change is threatening food and water security, human health and the livelihood of the poorer sections. The implications of climate change on the developing and underdeveloped countries having large population living below poverty line are serious. Increasing green house gas emissions and other hazardous pollutants because of industrialization are impacting natural resources badly. If climate change is not checked and managed properly, it may drop water yields by 20 per cent in Bengal, Orissa and coastal states as per estimation. On the other hand there may be fierce storms and heavy rains because of ecological imbalances.*

*Climate change has multidimensional effects on human beings and economy. For developing economies like India there is need of introducing highly effective forecasting system, crisis management system and awareness programmes in collaboration with advanced countries working in the area of climate change management.*

**Introduction:**

Climate change and its effects has got significance in development agenda world over because of multidimensional impacts on economies in general and human beings in particular. Human Development Report (2008) observed "Climate change is global issue impacting growth and development of people, specially poor people. Ill effects of Global warming can be seen on health, nutrition, education and basic services." Climate change is not solely the outcome of natural changes but human activities i.e. industrialization, deforestation, rapid urbanization etc. are also responsible for this to a great extent. Emergence of Global warming could be attributed to the process of industrialization since the middle of 20th Century. Since then Green house gases emissions are contributing to climate changes. Green House Gases (GHGs) viz., water vapour, carbon dioxide and methane absorb the energy released by sun making the surface of earth warmer. Carbon dioxide is absorbed and emitted through plant and animal respiration, eruptions of volcanoes, burning of fossil fuels and changes in land uses. Some research studies observed that carbon dioxide concentration in atmosphere has increased to the extent of 40 per cent and human activities release around 30 billions tons of carbon dioxide in to the atmosphere (US Geological survey, 2010).

**Impact of climate changes:**

Impact of climate change can be seen on development process, human beings and other living creatures, water resources, agriculture, ecosystems. In recent years, India has been experiencing warm climate throughout the year. In summer, the surface temperature in India is observed between 40-47 degrees Celsius. Uncertain and unprecedented spells of hot weather have adverse impacts on agriculture production and productivity. Indian monsoon rainfall has shown variations due to climatic changes. The reports of Meteorological Surveys have indicated that monsoon climate in future may have drastic changes in wet and dry spells causing uncertainty risk in agriculture sector. Weather shocks during 2009-10 to 2013-14 led to deficient monsoon in some parts of the country causing dry drought. The same period saw excess rains in some parts of country causing a huge loss of national assets. Deficit or excess rainfall impacts adversely on production and productivity of food grains, vegetables, fruits and feed-fodder. The government has to incur huge expenditure on providing food grains and fodder. Climate change and its outcome as cyclones, Storms and Hailstorms, heavy rains bring irreparable loss to the farmers and food and nutritional security to people, particularly poor people. Recent hailstorm (April, 2014) in Maharashtra destroyed the crops occurring loss to the tune of Rs. 10,000 crore! As a result of this shock, more than 1200 farmers resorted to suicides in Marathwada and Vidarbha (Economic Survey of Maharashtra, 2014). Climatic changes are responsible for adverse socio-economic impacts on small farmers and poor in rural areas.

Rainfall pattern has changed drastically and the frequency of heavy rainfall in some parts of the country has increased because of a 2 Degree Celsius rise in the average temperature world over. If the trend of increasing warming continues, there will be too heavy rains causing wet drought in some parts India and completely dry monsoon in some parts of the country in the decades to come. Uncertain rainfall is the matter of serious concern in India as it has just 33 per cent irrigated land and has to rely on monsoon rainfall for irrigation. Shortage of Food grains, vegetables, fruits and milk in drought prone areas lead to rising price levels, malnutrition hunger deaths.

Because of frequent droughts and exploitation of ground water in Maharashtra, ground water level has deepened to

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an alarming situation. Even in rainy season, drinking water is to be supplied through Water tankers to one third villages in Maharashtra. There is high exploitation of ground water in India for cash crops like sugarcane growing. The available water reservoirs are also used for cash crops. Obviously, there is shortage of drinking water in many parts of the country. Water has become costly commodity and posing the problem of water insecurity for billions of poor world over. As a result of Climate change, many parts of India (Central India, Western Ghats and North Eastern States) are experiencing acute shortfall of water. Water crisis, in future, would certainly lead to slow process of development i.e. industrialisation, irrigation, urbanization and conflict between states and nations!

Climate change has been causing serious health problems world over. Heat waves experienced in many parts of India, caused sunstroke deaths and injuries. Research studies have shown that the fertility of human beings is adversely affected due to too hot and too cold waves. In India, the spread of malaria, dengue and diarrhoeal infections are causing child deaths.

Climate change has deep impact on food grains production, water availability and other resources of livelihood and those who are affected have to migrate to other areas. This enforced migration of people is leading to tensions and conflicts between states and nations.

Frequent occurrence of cyclones and storms because of climate changes has dangerous implications on environment and human life. As per the reports of Indian Meteorological Department (IMD, Nov., 2013), Helen had affected Indian coastal areas of Orissa, Andhra damaging public and private property worth $800 million and 11 casualties. The implications of Cyclones and storms can be seen on public health in the forms of shortage of clean drinking water, food scarcity, malnutrition, sanitation and loss of shelter. According to National Cyclone Risk Mitigation Project (NCRMP) Report, 2014, India is highly vulnerable to natural hazards specially earthquakes, floods, drought, cyclones and landslides. Research studies have estimated that such disasters cost country's gross domestic product more than 2 per cent. On an average 370 million people living in coastal areas (i.e. 7,516 kms.) are always at risk. Recurring cyclones cause number of deaths, loss of livelihood, loss of public and private property and infrastructure. Recent floods in Uttarakhand (2013) and Jammu and Kashmir (2014) states had brought the loss of property and infrastructure to the tune of Rs. 1 lakh crore and innumerable loss of human deaths! Such damages and losses reverse the process of development. Phalanx occurred on Oct.4 , 2013 affected the areas of India, Myanmar and Thailand. Recent cyclone Hudhud (12 Oct. 2014)destroyed houses, roads, railway tracks and airport infrastructure worth Rs. 70,000 crore in Andhra Pradesh and Orissa as per primary estimation.

Climate change has also influence on biological system on earth. In recent years, the infectious diseases such as Dengue, Chikunguniya and Malaria are spreading rapidly putting a large section of population at risk and causing deaths (The IPCC, Report, 2014). Warmer climate causes waterborne diseases like cholera and diarrhoea in India, Pakistan and Bangladesh. A research study inferred that severe droughts and longer dry conditions in rural areas are responsible for depression and suicides. Extreme heat and dust increases illness and deaths in drought prone areas. As there is acute shortage of water in low rainfall regions, hygiene of people is adversely affected. Viral infection has become common phenomena now days affecting the day to day routine of productive workforce adding to health cost.

The observations made by the IPCC (2014) are worrisome. The study reveals that climate change would cause in reduction of yields of the staple crops i.e. rice, maize and wheat in tropical and temperate regions like India and other countries. Obviously, the shortage of food grains would increase the prices unaffordable to weaker sections. Sea level rise along Indian coast at an average of 1.3 mm per annum will cause damage to infrastructure and displacement of huge population in the coastal cities like Mumbai, Kolkata, Vishakhapatnam and Pondicherry.

Climate change is the outcome of natural activities and human activities. As far as natural activities are concerned we have no control but human activities can be directed towards mitigating Green house gases, preserving and using natural resources properly, encouraging clean energy and managing the disasters effectively.

Mahatma Gandhi had aptly warned about adverse impact of industrialization exclaiming how many planets would India require to follow the industrialization pattern of Britain! Green House Gases is the outcome of rapid industrialization and changing lifestyles. According to Prof. Stern, if the crisis is not managed properly it will cost heavily to the world economy to the extent of 5 per cent of global GDP per year! Naturally the is need of stern action by all countries to cut the GHGs emissions to the tolerable level of 50 per cent by 2025. The blame game should be stopped and carbon equity be based on actual GHG emission by the developed and developing countries. India, having 17 per cent of the world population has just 4 per cent in total GHG emissions.

Considering the serious implications of Climate changes the need of hour is to reduce GHG emissions to acceptable levels, use of clean energy, preservation and proper use of natural resources, eco-friendly human activities with the active support of all people in developed and developing countries. Global warming is environmental crisis and can be resolved only by preserving nature in natural way. Green belts and forests must be preserved. Non-conventional sources of energy such as wind energy, solar energy should be tapped and made available at affordable price. Only Gandhian concept of development can assure the betterment of all human beings in future.

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