Chapter 9
Impact of Climatic Changes on Earth's Survival:
An Analysis of Changing Environment and Its Consequences at a Global Level

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ABSTRACT

Every species' survival on earth is dependent on each other for their demand and dependent on the environment and various other sources. These resources include fresh food, clean drinking water, timber for construction, natural gas and coal for industries, fibers for clothing. All the human activity affects the environment severely in different ways. The biggest threats to the environment are climatic changes. Climate is an important factor that affects all survival on earth. The different pollutants, transport, dispersion, chemical transformation, as well as the deposition can be affected by meteorological variable such as humidity, wind, temperature. Climatic changes are expected to worsen the quality of air and water by changing the atmospheric processes and chemistry. Not only human beings but every aspect of the ecosystem is affected due to the changing climate. This chapter will explore the impacts of climatic changes on biodiversity by various activities of humans. Additionally, it will sketch how the impacts can be reduced by plants.

INTRODUCTION

Climate is one of the most important determinants of environment which affects whole components of ecosystem on earth. Atmospheric emission and their dispersion as well as the chemical transformation band deposition can be influenced by different meteorological variables such as temperature, wind, humidity (Kinney, 2008). Change in the climate is expected to worsen the quality of air in densely

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populated regions of world by changing the atmospheric ventilation and dilution, precipitation band into atmospheric chemistry (Fiore *et al.,* 20015). The changes in environment lead to various problems on earth. Every organism on earth gets affected due to the changes in environment. Reduction in the quality of air due to the air contaminants directly affect ecosystem in that ways which also could affect human as well as the health of other organism on earth by inhaling the air contaminants (Haase *et al.,* 2014 and Who, 2013). Different types of study reveals that climate change has already affected the quality of air. Study from Fang *et al.,* 2013 observed that from 1860 -2000, the global population-weighted fine particle (PM2.5) concentration has been increased by 5% and near-surface ozone concentrations by 2% due to the different changes in environment and climatic changes. The another study from Silva et al., 2013 revels that the change from different industrial revolution resulted in up to 111,000 and 21,400 additional premature fine particle- and ozone-related deaths due to climate change. As the climate changes continues in future these impacts would be more drastic in future on earth. The global warming induced by different types of anthropogenic activity has adverse impact on the earth and its various components (Uysal *et al.,* 2003 and Health and Environment Alliance, 2009). Global greenhouse gas emissions due to the various anthropogenic activity has been growing with an increase of 70% between 1970 and 2004 and would be continue in the next coming years. According to the Intergovernmental Panel on Climate Change 2007 document "rise in globally averaged temperatures on earth since the mid-20th century is very likely due to the recorded increase in anthropogenic greenhouse gas concentrations" (Trenberth *et al.,*2007). The most important green house gas is Carbon dioxide which is continuing increasing on the earth surface. A number of different types of diseases have evolved from climatic changes on earth. Various respiratory tract disease like asthma and other bronchial diseases are results from different types of climatic changes and reduction in the quality of air. A dramatic increase in the prevalence of respiratory diseases such as bronchial asthma, rhino sinusitis has been arises in different countries during the last 3 decades by various anthropogenic activity by human and bad quality of air. The main feature of different respiratory disease is the development of airway inflammation and bronchial hyper responsiveness in the form of a heightened bronchoconstrictor response not only to allergens to which an individual is sensitized, but also to a range of different stimuli, such as cold air and pollutants. On the other way rising trend in allergic respiratory diseases indicates that the higher level of emission comes from vehicles. The adverse effect of air pollution on human health has a quantifiable impact, not only in way of morbidity but also on the mortality of respiratory diseases in the world.

Due to the recent increase in morbidity associated with respiratory diseases is the continuous degradation on the quality of air, as a result of increasing outdoor air pollutants levels by vehicle emissions. Majority of the pollutants are toxic to human health causing serious disease in the human and and at the same time these toxic pollutants also effects the flora and fauna on earth. Sulphur dioxide, Nitrogen dioxide, and particulate matter are toxic air pollutants in the environment. Other are aeroallergens which arises from pollen grains, lead to bronchial obstruction in human. The pollen allergy includes a models that study the relationship between air pollution and respiratory allergic disease (Grinsven *et al*., 2013; Kuo *et al.,* 2006 and Nawrot *et al.,* 2006).

Different Types of Pollutant

Changes in environment is mainly due to the excessive use for the generation of energy, combustion of fossil fuels as well as the transportation. Different types of air pollutants have been recognized due to the different types of anthropogenic activity. They may exists in different form affects severely to the