Chapter 6
Summary, Conclusion and Important Derivatives for Articulation

With all the confusion surrounding the Climate warming debate, much of the public only takes from the media that climate change will harm our world. However, climate change has potential benefits as well as drawbacks. First of all, as the temperature increases, the Earth will have a longer growing season in many areas. In general, there will be less freezing weather, and the increased temperatures and carbon dioxide levels will allow more plant growth. With more plant growth and a longer growing season, there will be more food for people and livestock. The warmer weather will also positively affect transportation. Airplanes, trains, buses, and cars will stop having cold weather-related delays for ice and snow. Thus, contrary to popular belief, climate change can have some benefits. Of course, climate change also has many negative effects on the Earth. Climate change is and will continue to have dramatic effects on aquatic life and biodiversity. To compound the natural detrimental effects to ecosystems, humans may further disturb the ecosystems. For example, by trying to combat the effects of rising sea levels, man may work to maintain the coastline. In our attempts to protect the coastline habitat, other species may disappear. Increased temperatures will also negatively affect the food supply in many places, nullifying the benefits of a longer growing season. The temperature increases will bring hotter temperatures in the summer, which may cause plants to die. It could also cause weather patterns, such as more intense floods and storms. In the future, climate change could prove to be a boon and a bane to the world, but it is impossible to estimate just how much of either it could be.

When trying to determine if climate change is fact or fiction, we must take into account evidence from all sides. Plenty of evidence exists within the science community, including skeptical opinions against climate change. While the evidence points to the existence of climate change, the cause is still widely disputed. Additionally, the media reports on other sources of evidence for global warming from different political groups. Ultimately, the world still lacks a consensus on the topic of climate change: its causes, its presence, and its effects. However, armed with the proper knowledge, we can each decide for ourselves where we stand in the global warming debate.
As the results of the study indicate that climate has been changing over Uttarakhand however temperature increase is significant but on the other hand there is a decreasing trend in rainfall but this trend is insignificant and not conclusive. The study has accessed various natural as well as human agents of climate change in the study area and although there is not any striking connection between the human settlement and mobility with the climate pattern however the human hand is heavily visible in bringing the change through landuse changes in the area.

Uttarakhand is a Himalayan state and the sustainability of the Himalayan mountain ecosystem will depend on striking a balance between the fragile ecosystem components, namely forest, land, water. Sustainability of forest ecosystems is an essential component of environmental conservation efforts and any degradation of forests will have an adverse impact on various systems such as water resources, agriculture, biodiversity, environment, climate change and human health besides the subsistence and livelihood opportunities of forest dependent communities living in and around forests. Reforestation would help to mitigate global warming and also improve the sustainability of natural resources as well as provide livelihood opportunities of communities.

The conservation of the land and soil of the region requires operational land conservation and planning guidelines that will effectively regulate unplanned growth in the name of tourism and development. The Himalayan region should be considered broader than a commercial tourist destination and should be developed as a major ecotourism centre as well as for pilgrimage and adventure tourism.

The snow and glaciers of the Himalayan region, are key contributors to the sustenance of most of the glaciers fed rivers of the Himalaya. Unfortunately, the glaciers are showing signs of wear and decline, and this is of particular importance in the wake of climate change. Due to the increasing importance of water security conservation and protection measures need to be augmented to improve the natural water regimes of the Himalayan region. Establishment of an effective monitoring network for assessment and prediction of future changes of these vital resources along with conservation measures are urgently needed. The „National mission for sustaining the Himalayan ecosystem” is a step in this direction. Global warming associated with upward migration of altitudinal boundaries and consequent change in snowline position and its biota could be an issue for future research and development.
Communities in the mountain areas are well aware that the “weather” is changing. The changes in weather as experienced and perceived by local people is confirmed by analysis of weather records, such as temperature are more variable, periods of drought are longer, rainfall is erratic, reduction in the duration of winter, and sudden weather fluctuations, some plant species are flowering earlier and some are decline, there is a vertical shifting of trees and crops, some natural resources are disappearing, and new and unfamiliar pests and diseases are emerging. Changes in rainfall patterns and temperature regimes have started influencing the local water balance and disturbing the optimal cultivation period available for particular crops, thus throwing food and agricultural production out of gear. The worst brunt of climate change will be borne by farmers in dryland and hill regions where agriculture is rainfed, conditions are marginal and only one crop is grown per year. The seasonal shift has led to a decrease in productivity. The yield is also supposed to be less nutritious. This change has worsened the condition of the already cash strapped farmers who are now abandoning agricultural practices or shifting to new crops – both of which are directly affecting our food security.

Climate change is the defining issue of our times. It is perhaps, the greatest challenge to sustainable development. According to Jeffrey Sachs, a perceptive commentator, “The world’s current ecological, demographic and economic trajectory is unsustainable, meaning that if we continue with “business as usual” we will hit social and ecological crises with calamitous results”. Sustainable development based on addressing the needs of the poor and optimal harnessing of scarce resources of water, air, energy, land, and biodiversity will have to be sustained through more cooperative endeavours. Then alone, we could make some headway in saving our lone planet from the brink of climate disasters.

We cannot be blamed solely for the climate change we are now experiencing. “Correlation does not prove causation” (Carter 2010: 134), is a quote which I feel is essential in this argument. Although there is a clear correlation between our industrial activities and climate change, I do not feel we can fully blame ourselves. Temperatures and climates can be altered by many other factors such as the ENSO which dramatically alters global climates every 3 or 4 years. Actually we have overestimated our power within the earth’s climatic cycle, and possibly underestimated the complexity with which the earth’s climate functions.
“The only way to prove with 100% certainty that humans are responsible for global warming would be to run an experiment with two identical Earths – one with human influence and one without. That obviously isn't possible, and so most scientists are careful not to state human influence as an absolute certainty.

This quote sums up the overall truth about climate change: no one will ever know whether climate change is being anthropogenically caused. As a result, all of the facts and statistics collected can be used to support either side of this argument, but no causal link will ever be established. Despite many of the theories put forward to support anthropogenic climate change being false in nature, the idea that we need to address our industrial activities and sustainability is a stark truth, and although human-induced climate change cannot be proven, it is a reality that we have to deal with nonetheless.

It is almost a fact that climate change is occurring in reality. Between ice core records and data collated relating to rising sea levels, it is almost already proven that climate change is a factual process. However, as humans we can only be held accountable for aiding and abetting processes like the greenhouse effect. Despite our contribution to climate change we overestimate how far we are actually changing the climate of our earth, and although we need to address our unsustainable production and consumption patterns, I believe that it is irrational to say that we are causing climate change.

Reference