Climatic Stabilization (Study Materials of 2nd Sem.,Paper -ANTACOR 03T)

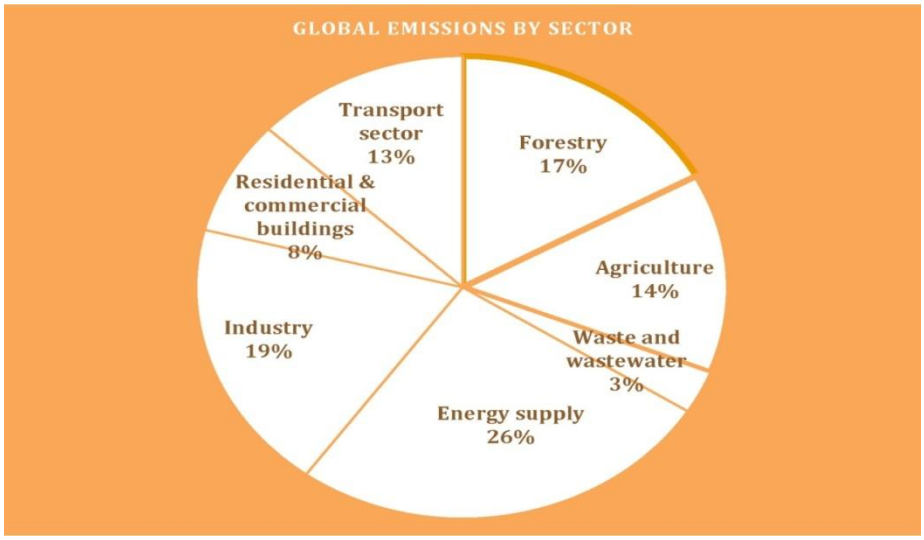
Climate stabilization is important for the safety and security of Earth's species. Ecosystem protection, management, and carbon sequestration strategies help slow the current rate of changing **climate** averages and variability, buffering humans from the negative aspects of such change.

The world's best science concludes that our climate is changing through human activities that release CO^2 and other greenhouse gases to the atmosphere. Farming, forestry, and livestock production emit nearly one third of the global total. These emissions are likely to increase as farmers and livestock producers around the world race to keep up with growth in demand.

- Good soil management could absorb **10% of the world's CO_2 emissions**.

- The world has seen an increase of atmospheric CO_2 concentration **(278ppm in 1750 vs 390.5ppm in 2011)**.

- The IPCC estimates that the world's oceans have absorbed about **30% of human CO2 emissions**.



Principal sources of global greenhouse gas emissions to the atmosphere (2004).

In the near term, climate change means more extreme weather; extreme droughts, floods, and temperature extremes may exacerbate increasing land and food security challenges by restricting global production of food, fiber, fuel, and feed. The poor will be the hardest hit by climate change. Land use could also become a solution to climate change. If humanity succeeds in slowing then reversing tropical deforestation and forest degradation, managing agricultural systems and grazing lands to accumulate more organic matter in the soil, and reducing the emissions associated with crop and livestock production, then land use could remove more CO_2 from the atmosphere then it releases. The decline in deforestation in the Brazilian Amazon demonstrates that rapid reductions in global emissions are feasible.

Climate Stabilization targets emissions of carbon dioxide from the burning of fossil fuels have ushered in a new epoch where human activities will largely determine the evolution of Earth's climate. Because carbon dioxide in the atmosphere is long lived, it can effectively lock the Earth and future generations into a range of impacts, some of which could become very severe. Therefore, emissions reductions choices made today matter in determining impacts experienced not just over the next few

decades, but in the coming centuries and millennia. Policy choices can be informed by recent advances in climate science that quantify the relationships between increases in carbon dioxide and global warming, related climate changes, and resulting impacts, such as changes in stream flow, wildfires, crop productivity, extreme hot summers, and sea level rise.