

Climate Change Research in India: Retrospect & Prospects- A talk by Dr Akhilesh Gupta, Advisor & Head, DST

A talk on 'Climate Change Research in India: Retrospect and Prospects' was delivered by Dr Akhilesh Gupta; Advisor, DST and Head, SPLICE and Climate Change Programme, DST on 11 November 2019. The director



and scientists of the institute participated in the programme. Dr Gupta gave brief introduction about global climate change observations and projections. He highlighted that there were three unambiguous conclusions in 5th Assessment Report of IPCC (Intergovernmental Panel on Climate Change) namely increasing trend of global temperature, sea level rise and increase in extreme weather events. He elaborated that mean global temperature has increased by 1.02°C over 1951-1980 mean temperature and this temperature rise is directly related to anthropogenic emissions. Sea level is rising

mainly due to increase in volume of sea water with increasing temperatures and due to glacial ice melt to some extent. Extreme weather events are increasing as is evident from increasing number of hydro-meteorological disasters globally, particularly during past three decades. Heavy and very heavy precipitation events are increasing leading to increase in flood frequency, while low rainfall events are decreasing resulting in less number of rainy days.

At country level, the temperature rise is about 0.8°C compared to over 1.0°C at global level, but the increase in temperature is not uniform throughout the country. Temperature has increased by 1.2-1.3°C in Himalayas and the rise is more pronounced in high altitudes, while in some parts of north India there are negligible changes in temperatures. Heat waves are increasing across the country. All the coastal areas are facing sea level rise threatening the livelihood of millions of people living in coastal cities and rural areas. No change in annual or monsoon rainfall has been observed at the country



level, but clear increasing or decreasing trends have been recorded at meteorological sub-divisions level. Similar to the global trend, heavy rainfall and flood events are increasing in India while low rainfall events and number of total rainy are decreasing. Most urban cities are experiencing intense rains which may be a result of heat island effect. Current estimates show that agriculture in Rajasthan is most vulnerable which is likely to become even more vulnerable in future.

He highlighted that India has made very significant progress in the field of climate change science as well as in climate change adaptation and mitigation efforts in recent years. India is making best efforts to reduce emissions of greenhouse gases and it is among top five countries in solar energy production. However, mitigation efforts can only be successful if seriously implemented at global level. The director and scientists of the institute appreciated Dr Gupta for delivering an informative and thought-provoking lecture.