EuroSciCon

3rd World Summit on

Climate Change and Global Warming

February 27-28, 2019
Prague, Czech Republic

Expert Opin Environ Biol 2019, Volume: 8
DOI: 10.4172/2325-9655-C1-045

SOURCE IDENTIFICATION OF ATMOSPHERIC CO2 OVER INDIA

Tania Guha
Indian Institute of Tropical Meteorology, India

India has ratified the Paris Agreement with a target to reduce CO_2 emission intensity. To achieve this target, it is of utmost priority to quantitatively understand the processes behind the CO_2 emissions over India. This can be achieved through simultaneous measurement of mixing ratio and stable isotope ratio of atmospheric CO_2. Few efforts have been taken in India to observe CO^2 mixing ratio, but efforts towards monitoring of stable isotope ratio of atmospheric CO_2 is very rare. Bhattacharya et al., 2009 and Tiwari et al, 2011 have revealed direct impact of the large-scale monsoon circulation, characterized by biannual reversal in surface-level winds on the variability of CO_2 mixing ratio over Indian subcontinent. Tania et al, 2010-2015, discussed about mixing ratio and stable isotope observations of CO_2 at Bangalore India. They have identified fossil fuel, biomass burning and cement industry emission as the prominent sources for the station. Single site monitoring can lead to a spatial limitation of data and dependencies of the features of the particular site. In addition, large spatial-temporal heterogeneity of sources in India and local emissions may produces large uncertainty in source estimation based on single site measurement. Thus multiple monitoring stations within a well defined network are in immediate need to develop in India. In summary, Indian monsoon dynamic and the enhancement in investing in renewable technology will have a prominent effect on the future per capita emission of CO_2 from India. In order to design strategies for emission reduction, possible source identification as well as quantitative estimation of their contribution to CO_2 variability are primary important. This highlights the immediate requirement of establishing a monitoring network of multiple stations where high-precision, high-frequency measurement mixing ratio and stable isotope ratio of atmospheric CO_2 as well as other GHGs will be conducted.

tania.guha@tropmet.res.in
guha.tania@gmail.com