

Scientists call for better greenhouse gas monitoring system



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Washington, April 25 (ANI): Researchers at the University of Colorado and NOAA have called for a 10-fold increase in global CO2 monitoring efforts to measure reduction trends in regions.

CU-Boulder Research Associate Melinda Marquis and National Oceanic and Atmospheric Administration scientist Pieter Tans, said that the need for improved regional greenhouse gas measurements is critical with atmospheric carbon dioxide concentrations now at 385 parts per million and rising.

They said while the present observation network can measure CO2 fluxes on a continental scale, charting regional emissions where significant mitigation efforts are underway needs a more densely populated network.

"The question is whether scientists in the United States and around the world have what they need to monitor regional fluxes in atmospheric carbon dioxide. Right now, they don't," said Marquis, a scientist at the Cooperative Institute for Research in Environmental Sciences, a joint institute of CU-Boulder and NOAA.

She said while CO2 levels are climbing by 2 parts per million annually, a rate expected to increase as China and India continue to industrialize, effective regional CO2 monitoring strategies are virtually nonexistent.

Scientists are limited in their ability to distinguish between distant and nearby carbon sources and 'sinks,' or storage areas, for example, by the accuracy of atmospheric transport models that reflect details of terrain, winds and the mixing of gases near observation sites.

"We are in uncharted territory as far as knowing how safe these high CO2 levels are for the Earth. Instead of tackling a very complex challenge with the equivalent of Magellan's maps, we need to use the equivalent of Google Earth," she said.

The researchers have proposed the idea of increasing the number of global carbon measurement sites from about 100 to 1,000, which would decrease the uncertainty in computer models and help scientists better quantify changes.

"With existing tools we could gather large amounts of additional CO2 data for a relatively small investment. The next step is to muster the political

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will to fund these efforts," Marquis said.

Presently, researchers sample CO2 using air flasks, in-situ measurements from transmitter towers up to 2,000 feet high and via aircraft sensors.

Now, Marquis and Tans have proposed putting additional CO2 sensors on existing and new transmitter towers that can gather large volumes of climate data.

The study is published in the April 25 issue of Science. (ANI)

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