



LOCATION OF PLANTING TREES CRITICAL IN BATTLE AGAINST GLOBAL WARMING

Reprinted from *Zee News*, zeenews.com

Washington, Dec. 13 – A new study by a team of researchers from the Lawrence Livermore National Laboratory, Carnegie Institution and Université Montpellier 2 has found that while planting trees at certain places can stem global warming, planting them just about anywhere could actually end up having an adverse effect.

According to the study, while planting trees can stop sea levels from rising, ice caps from melting, and hurricanes from intensifying, the important aspect is to see where they are planted.

Planting trees in mid- to high-latitude locations could actually create a net warming, while a forestation drive in tropical rain forests could help slow global warming worldwide.

"This is the first comprehensive assessment of the deforestation problem. It provides a holistic view of the deforestation issue," said Govindasamy Bala, lead author of the research to be presented on Dec. 15 at the American Geophysical Society annual meeting in San Francisco.

For their research, the team constructed models that calculated the carbon/climate interactions and took into account the physical climate effect and the partitioning of the carbon dioxide release from deforestation among land, atmosphere and ocean.

Prof. Bala said forests affected climate in three different ways.

"They absorb the greenhouse gas carbon dioxide from the atmosphere and help keep the planet cool; they evaporate water to the atmosphere and increase cloudiness, which also helps keep the planet cool; and they are dark and absorb a lot of sunlight, warming the Earth," he said.

"Till now, climate change mitigation strategies that promote planting trees have taken only the first effect into account. Our study shows that tropical forests are very beneficial to the climate because they take up carbon and increase cloudiness, which in turn helps cool the planet" he added.

The study, however, revealed that by the year 2100, forests in mid and high latitudes would make some places up to 10 degrees Fahrenheit warmer than would have occurred if the forests did not exist.

"The darkening of the surface by new forest canopies in the high-latitude boreal regions allows absorption of more sunlight that helps to warm the surface. In fact, planting more trees in high latitudes could be counterproductive from a climate perspective," Prof. Bala said.

"The study finds little or no climate benefit when trees are planted in temperate regions," he said, adding, "Our integrated systems approach allowed us for the first time to estimate the total effects of land cover change in different regions of the world."

"Our study shows that preserving and restoring forests is likely to be climatically ineffective as an approach to slow global warming. To prevent climate change, we need to transform our energy system. It is only by transforming our energy system and preserving natural habitat, such as forests, that we can maintain a healthy environment. To prevent climate change, we must focus on effective strategies and not just 'feel-good' strategies," added Ken Caldeira, a co-author of the study from the Carnegie Institution.