

# 'India, China global leaders in increasing greenery'

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**Panaji:** India and China are expected to dominate the global economy by 2030 but the two neighbouring nations, which are also the two most populous economies, have also emerged as world leaders in making Earth a greener place. China alone accounted for 25% of the global increase in greenery, while India accounted for 6.8%, satellite data showed.

As counter-intuitive as it may sound, China and India account for one-third of global greening despite comprising only 9% of the global vegetated land area. The sur-

## LEAF AREA

➤ Greening and browning are defined as significant increase or decrease in the green cover at a location over a period of several years

➤ According to NASA's satellite data, 33.3% of the global vegetated area is greening and 5% is browning

prising development has been recorded in a joint international study by researchers, including Rajiv Kumar Chaturvedi of BITS Pilani, Goa Campus, and G Balala of IISc Bangalore.

"It is important to note that we report an overall gre-

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**Rajiv Kumar Chaturvedi |**  
BITS PILANI, GOA CAMPUS

ening trend in forests in India, unlike some recent studies reporting a browning trend" said Chaturvedi.

While an equal increase in agriculture and forestation defines China's contribution, for India that was not the case. "The greening in-

➤ Human land use is a major factor for increase in greenery

➤ Five and a half million square kilometres of extra green leaf area every year compared to the early 2000s

➤ Forest growth is considered as the ideal form of green cover since croplands don't act as long-term carbon sinks

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This, however, may not spell good news for India. Every year, about one-half of the 10-11 billion tonnes of carbon emitted from burning of fossil fuels and tropical deforestation remains temporarily stored in the oceans and land plants and soils, which are called carbon sinks.

"Unlike greening due to largescale tree plantations in China, sustainable forestry practices in western Europe and tree re-growth on abandoned lands in eastern Europe, greening due to intensive agriculture does not enhance the land sink," said co-author Victor Brovkin.

➤ **Amazon forest, P 7**

# Increase in green cover equal to Amazon rainforests

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Explaining the fallout of intensive agriculture, Victor Brovkin of Max Planck Institute for Meteorology, Germany, and a lead author of several chapters in past and upcoming IPCC Assessment Reports said, "Crop carbon quickly returns to the atmosphere."

The new study—'China and India lead in greening of the World through land-use management'—to be published in journal 'Nature Sustainability' shows that there is now about five and a half million sq km of extra green leaf area every year compared to the early 2000s, a 5% increase, but that this is mostly due to intensive land-use in China and India.

The study said that the increase in green cover over the past two decades repre-

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sents an area equivalent to the size of the entire Amazonian rainforests.

Chen and Ranga Myeni of Boston University led the global study, which bucks the general notion of land degradation in populous countries because of over-exploitation by their economies. The research authors said the study offered a surprising twist since a previous study by some of the same researchers found carbon dioxide (CO<sub>2</sub>) fertilisation as the main rea-

son for greening of Earth's lands. The current study used high quality satellite data from NASA's MODIS sensors that view the entire Earth twice a day at 500m resolution to arrive at the conclusion that one-third of the global vegetated area is becoming green and 5% is browning.

Land area under crops in China and India is comparable, about 2 million sq km, and has not changed much since the early 2000s, but total food production of grains, vegetables and fruits has increased by about 35-40% since then.

"Increased food production in China and India is due to increased harvest area accomplished through multiple cropping in a year and facilitated by heavy fertilizer use and surface and ground-water irrigation" said co-author Rama Nemani of NASA's Ames Research Center, US.