

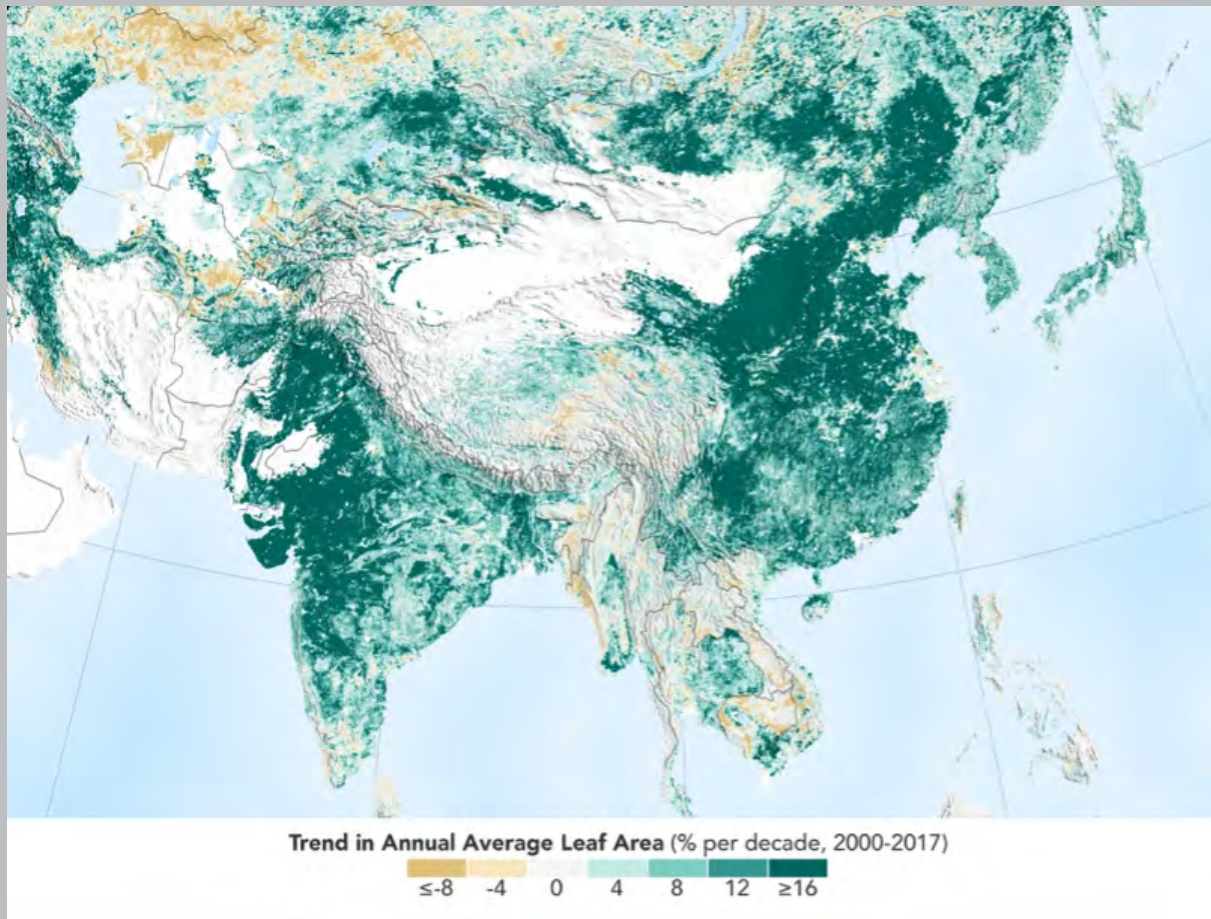


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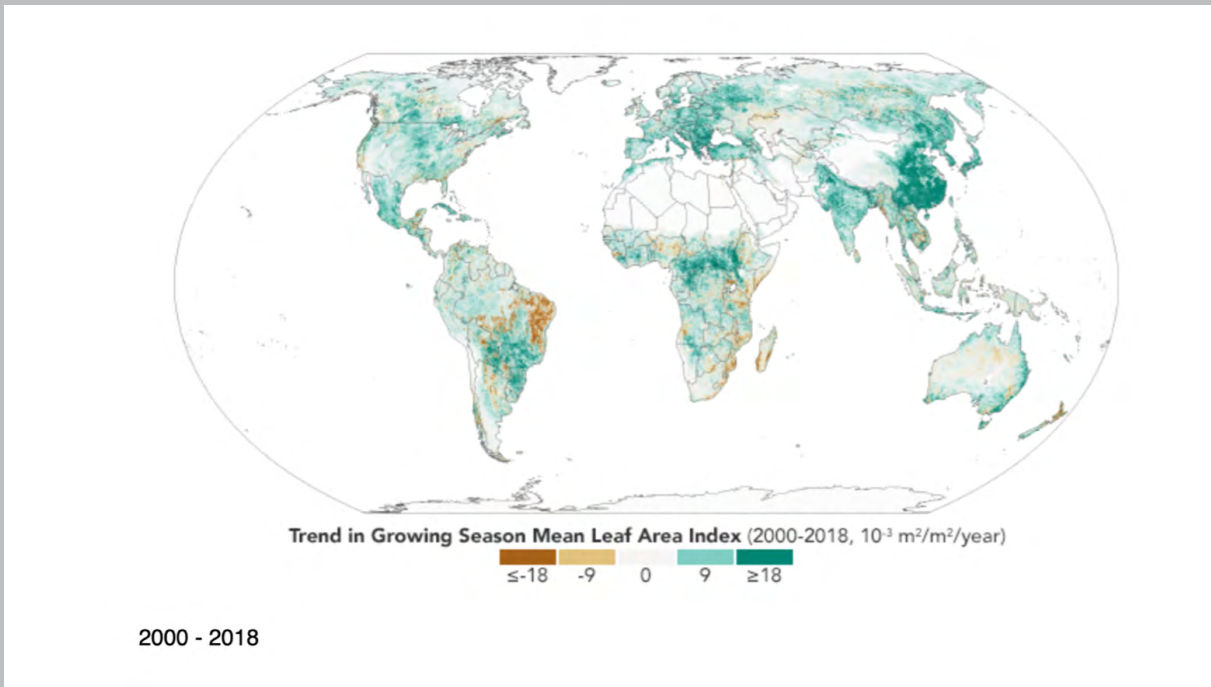
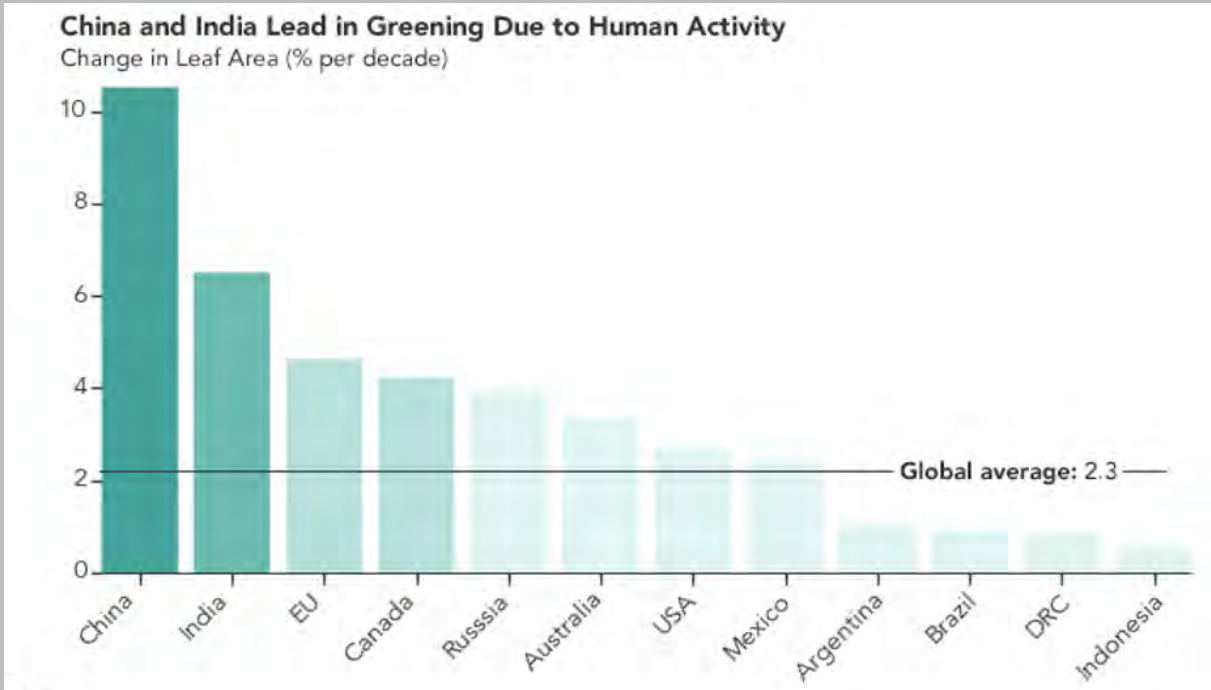
Encouraging News of Greening Earth Data

ENCOURAGING NEWS OF GREENING EARTH DATA

Satellite data from NASA Earth Observatory shows that Earth is greener now than it was 20 years ago. The data was collected for 20 years using a NASA instrument that orbited the planet aboard two satellites. This instrument is known as the Moderate Resolution Imaging Spectroradiometer, or MODIS. It specifically shows that there has been a 5% increase in foliage. Tree planting projects in China and India are mainly credited with the increase in green space. When we evaluate this increase per decade, it shows that the green area has increased by an average of 2.3 percent per decade, with China (11%) and India (7%) at the forefront. The EU (5%), Canada (4%), Russia (4%), Australia (3%), the United States (3%) and Mexico (2.5%) are all above average. In total, the increase in leaf area over the past 20 years is about as large as the entire Amazon rainforest. Overall, this is good news, but it is important to note that while this surge in plant growth helps keep the Earth cooler, it does not eliminate all climate change issues.

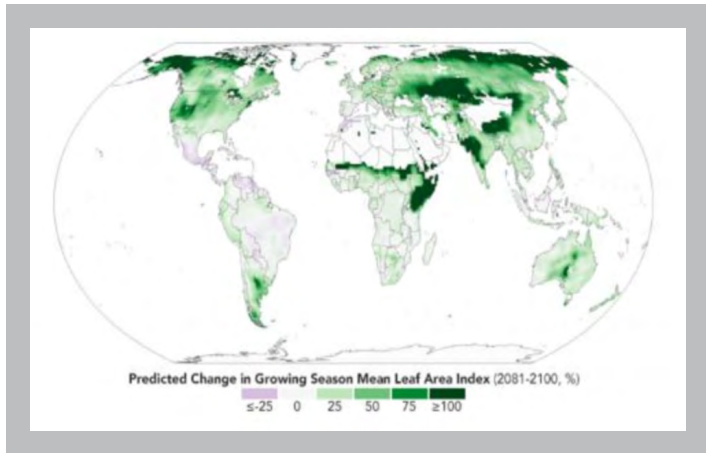


Source: NASA Earth Observatory



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An updated map (directly above) released by NASA showed how greenness increased between 2000 and 2018 globally. The areas where greenness increased were marked in green and areas where it decreased were marked in brown.



Source: NASA Earth Observatory

In addition, another map released by NASA (above) shows the predicted trend in the “leaf area index” (LAI)— the amount of leaf area relative to ground area — during the growing season. This map shows the predicted change in the growing season’s LAI from 2081-2100 relative to 1981-2000. It predicts that there will be a significant increase in green coverage.

References:

- <https://www.science.org/doi/10.1126/sciadv.abb1981>
- <https://www.warpnews.org/human-progress/nasa-the-earth-is-greener-now-than-it-was-20-years-ago/>
- <https://earthobservatory.nasa.gov/images/146296/global-green-up-slows-warming>
- <https://modis.gsfc.nasa.gov>

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The increase in LAI and vegetation growth can aid in reducing the rate of warming. A 2020 study from NASA, which also used MODIS to capture data, reported that an increase in vegetation growth in recent decades had a strong cooling effect on the land due to increased efficiency of heat and water vapor transfer to the atmosphere. Vegetation transpires water to cool itself from solar heating. Professor Pierre Gentine at Columbia University commented, “Increased amount of leaves adds roughness which breaks the stillness of the air. More water vapor is thus transpired which leads to a cooler land surface.” This is known as the “Greening Earth”, and it shows that green coverage is imperative for cooling effects. NASA satellites have also shown that an increase in green land is enhancing carbon storage.

Research like this is very important because vegetation loss has been directly correlated to an increase in air pollution, poor environmental quality, lower quality of life and health, disasters, land degradation, climate change and its subsequent effects. In conclusion, looking at the data, researchers can say that humans and our geological landscapes are incredibly resilient, even if climate change mitigation steps take place slowly over the years, they are bound to have some results.