

Afforestation will hardly dent warming problem: study

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Afforestation is being encouraged under the UN's [Kyoto Protocol climate-change treaty](#) under the theory that forests are "sinks" that soak up carbon dioxide (CO₂) from the air through [photosynthesis](#).

But environmental researchers, in a new probe, said that even massive conversion of land to forestry would have only a slender benefit against the greenhouse-gas problem.

This is partly because forests take decades to mature and CO₂ is a long-lasting molecule, able to lurk for centuries in the atmosphere.

But another reason is that forests, even as they absorb greenhouse gas, are darker than [croplands](#) and thus absorb more [solar heat](#) -- and in high latitudes, this may even result in net warming.

Vivek Arora of the University of Victoria in British Columbia and Alvaro Montenegro of St. Francis Xavier University in Nova Scotia modelled five scenarios in which afforestation was carried out over 50 years, from 2011 to 2060.

They used a Canadian programme called CanESM1 that simulated the impacts on land, sea and air if Earth's surface temperature rose by some 3.0 degrees Celsius (5.4 degrees Fahrenheit) by 2100 compared to 1850.

Even if all the cropland in the world were afforested, this would reduce the warming by only 0.45 C (0.81 F) by a timescale of 2081-2100, according to the study, which appears in the journal *Nature Geoscience*.

Fifty-percent afforestation would brake it by an even tinier 0.25 C (0.45 F).

Both scenarios are, of course, wildly unrealistic because of the need to grow food.

Fifty-percent afforestation would require at least a doubling in crop yield to feed the [human population](#) because half of the crop area would be taken out of use.

The other three scenarios found that afforestation in the tropics was three times more efficient at "avoided warming" than in northerly latitudes and temperate regions.

The study said that afforestation does have other benefits, for the economy and the ecosystem.

"There's nothing wrong with afforestation, it is positive, but our findings say that it's not a response to temperature control if we are going to be emitting (greenhouse gases) this way," Montenegro told AFP.

The study said bluntly, "Afforestation is not a substitute for reduced greenhouse-gas emissions."

In forest programmes, policymakers would be advised to focus afforestation efforts in the tropics but also push hard against deforestation, which accounts for 10 to 20 percent of [greenhouse-gas](#) emissions globally.

Avoiding deforestation is under discussion for post-2012 climate action under the UN flag.

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