

**Universidade Federal de Alfenas**  
**Programa de Pós-Graduação em Estatística Aplicada e Biometria**  
English Proficiency Exam

**Registration number:** \_\_\_\_\_

Read the text carefully and answer the questions. Don't forget, you must answer only in Portuguese! Answers in English will not be considered.

Reference: FISCHETT, M. Massive forest restoration could greatly slow global warming. **Scientific American**. 2019. Access July 12, 2019. Available in: <https://bit.ly/2YGzxe1>

**Massive forest restoration could greatly slow global warming**

We have heard for years that planting trees can help save the world from global warming. That mantra was mostly a statement of faith, however. Now the data finally exist to show that if the right species of trees are planted in the right soil types across the planet, the emerging forests could capture 205 gigatons of carbon dioxide in the next 40 to 100 years. That's two thirds of all the CO<sub>2</sub> humans have generated since the industrial revolution. "Forest restoration is by far our most powerful planetary solution today," says Tom Crowther, a professor of global ecosystem ecology at the Swiss Federal Institute of Technology in Zurich, and an author of a study published Thursday in *Science* that generated the eye-opening number.

The study team analyzed almost 80,000 satellite photo measurements of tree cover worldwide and combined them with enormous global databases about soil and climate conditions, evaluating one hectare at a time. The exercise generated a detailed map of how many trees the earth could naturally support—where forests grow now and where they could grow, outside of areas such as deserts and savannahs that support very few or no trees. The team then subtracted existing forests and also urban areas and land used for agriculture. That left 0.9 billion hectares that could be forested but have not been. If those spaces were filled with trees that already flourish nearby, the new growth could store 205 gigatons of carbon by the time the forests mature.

After 40 to 100 years, of course, the storage rate would flatten as forest growth levels off—but the researchers say the 205 gigatons would be maintained as old trees die and new ones grow. There would be "a bank of excess carbon that is no longer in the atmosphere," Crowther says.

The team has also created a planning tool linked to the map that will be open to the public starting July 5. Individuals and organizations can zoom in to any location to see where new forests could be started.

Crowther has not studied other carbon sequestration techniques that have been discussed a lot lately, such as ocean fertilization (growing algae to soak up carbon) or direct air capture (machines that pull CO<sub>2</sub> from the atmosphere), but he thinks they would be much more expensive than growing trees. He estimates it might cost the world \$300 billion to plant the 0.9 billion hectares. And new forests provide another strong benefit: they restore biodiversity, which is crucial because so many plant and animal species are disappearing. Crowther says he began to study reforestation because he was really looking for ways to stop species loss. "Tremendous benefits beyond carbon sequestration come from biodiversity—providing food, medicines, clean water and all sorts of things for humans," he says.

**Question 1:** How would you translate the title of the text? \_\_\_\_\_

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**Question 2:** What is the main topic of the text? \_\_\_\_\_

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**Question 3:** How much carbon dioxide the emerging forests can capture if planted in the right conditions? \_\_\_\_\_

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**Question 4:** Who is Tom Crowther and what is his role in this study? \_\_\_\_\_

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**Question 5:** What the researchers analyzed and what was generated from this analysis? \_\_\_\_\_

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**Question 6:** What is the function of the planning tool? Since when it is available to the public? \_\_\_\_\_

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**Question 7:** What will probably happen after 40 to 100 years? \_\_\_\_\_

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**Question 8:** What are other carbon sequestration techniques mentioned in the text? What Tom Crowther think about them? \_\_\_\_\_

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**Question 9:** What can be an additional benefit of growing new forests? \_\_\_\_\_

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**Question 10:** Why Tom started to study reforestation? \_\_\_\_\_

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