

IELTS LISTENING – The use of soil to reduce carbon dioxide in the atmosphere S4T4



IELTS LISTENING

The use of soil to reduce carbon dioxide in the atmosphere

As we saw in the last lecture, a major cause of climate changes is the rapid rise in the level of carbon dioxide in the atmosphere over the last century. If we could reduce the amount of CO2, perhaps the rate of climate change could also be slowed down.



Attempt Test

One potential method involves enhancing the role of the soil that plants grown in, with regard to absorbing CO2. Rattan Lal, a soil scientist from Ohio State University, in the USA, claims that the world’s agricultural soils could potentially absorb 13 percent of the carbon dioxide in the atmosphere – the equivalent of the amount released in the 30 years. And research is going on into how this might be achieved.

Lal first came to he idea that soil might be valuable in this way not through an internet in climate change, but rather, out of concern for the land itself and the people dependent on it. Carbon-rich soil is dark, crumbly, and fertile, and retains some water. But erosion can occur if soil is Q31 dry, which is a likely effect if it contains inadequate amount of carbon. Erosion is of course bad for people trying to grow crops or breed animals on that terrain. In the 1970s and 80s, Lal was studying soils in Africa so devoid of organic matter than the ground had become extremely Q32 hard, like cement. There he met a pioneer in the study of global warming, who suggested that carbon from the soil had moved into the atmosphere. This is now looking increasingly likely.

Let me explain. For millions of years, carbon dioxide levels in the atmosphere have been regulated in part, by natural partnership between plants and microbes- tiny organism in the soil. Plants absorb CO2 from the air and transform it into Q33 sugar and other carbon-based substances. While a proportion of these carbon remain in the plant, some transfer from the Q34 roots to fungi and soil microbes, which store the carbon in the soil.

The invention of agriculture some 10,000 years ago disrupted these ancient soil-building processes and led to the carbon from the soil. When humans started draining the natural topsoil and ploughing it up for planting, they exposed the buried carbon to oxygen. This created carbon dioxide and realized it into the air. And in some places, grazing by domesticated animals has removed all vegetation, releasing carbon into the air. Tons of carbon have been stripped from the world’s soils- where it’s needed- and pumped into the atmosphere.

So what can be done? Researchers are now coming up with evidence that even modest changes to farming can significantly help to reduce the amount of carbon in the atmosphere.

Some growers have already started using an approach known as regenerative agriculture. The aim is to boost the fertility of soil and keep it Q35 moist through established practices.These include keeping fields planted all years round, and increasing the Q36 variety of plants being grown. Strategies like these can significantly increase the amount of carbon stored in the soil, so agricultural researchers are now building a case for their use in combating climate change.

One American investigation into the potential for storing CO2 on agricultural lands is taking place in California. Soil scientist Whendee Silver of the University of California, Berkeley, is conducting a first-of-its-kind study on a large Q37 cattle farm in the state. She and her students are testing the effects on carbon storage of the compost that is created from waste- both agricultural, including manure and cornstalks, and waste produced from waste product in Q38 gardens such as leaves, branches and lawn trimmings.

In Australia, soil ecologist Christine Jones is testing another promising soil-enrichment strategy. Jones and 12 farmers are working to build up soil carbon by cultivating Q39 grasses that stay green all year round. Like composting, the approach has already been proved experimentally; Jones now hopes to show that it can be applied on working farms and that the resulting carbon capture can be accurately measured.

It’s hoped in the future that projects such as these will demonstrate the role that farmer and other land managers can play in reducing the harmful effects of greenhouse gases.For example, in countries like the United States, were most farming operations use large applications of fertilizer,changing such long-standing habits will required a change of system. Rattan Lal argues that farmers should receive Q10 payment not just for the corn or beef they produce, but also for the carbon they can store in their soil.

Another study being carried out...

Attempt Test



IELTS LISTENING – Global Design Competition S14T3
November 12, 2022
In "IELTS Listening"



IELTS LISTENING – The Underground House S47T4
March 31, 2023
In "IELTS Listening"



IELTS LISTENING – Food Waste S8T3
November 11, 2022
In "IELTS Listening"

Tagged [easy demo](#), [IELTS Listening](#)

Leave a Reply

You must be [logged in](#) to post a comment.



