DAILY PT POINTERS

7th May, 2024

HEADLINES OF THE DAY

The Hindu-Environment(GSIII)-Page 8

What is carbon farming?

What are some techniques within carbon farming which can reduce greenhouse gas emissions? What are the challenges in implementing such techniques, especially in developing countries such as India? What are some of the global initiatives?

EXPLAINER

Vinaya Kumar H.M.

Carbon is found in all living organisms and many minerals. It is fundamental to life on earth and plays a crucial role in various processes, including photosynthesis, respiration, and the carbon cycle. Farming is the practice of cultivating land, raising crops, and/or livestock for food, fibre, fuel, or other resources. It encompasses a wide range of activities, from planting and harvesting crops to managing livestock and maintaining agricultural infrastructure.

Carbon farming combines these two concepts by implementing regenerative agricultural practices that restore ecosystem health while improving agricultural productivity and soil health, and mitigating climate change by enhancing carbon storage in agricultural landscapes and reducing greenhouse gas emissions. The practice is easy to adopt across various agro-climatic zones. It can also help ameliorate soil degradation, water scarcity, and challenges related to climate variability.

How can carbon farming help?

A simple implementation of carbon farming is rotational grazing. Others include agroforestry, conservation agriculture, integrated nutrient management, agro-ecology, livestock

New ways of farming: A worker loads fertilizer into a tank attached to a large drone, preparing to spray it over the rice fields in the Long An province in southern Vietnam's Mekong Delta, on January 23. AP

The process of emitting and removing greenhouse gas emissions in managed farmland

the remaining carbon budget of 390 billion tonnes or so wisely.

What are the opportunities in India?

As climate change intensifies,

THE GIST

Implementing regenerative agricultural practices that restore ecosystem health while improving agricultural productivity and soil health, and mitigating climate change by enhancing carbon storage in agricultural landscapes and reducing greenhouse gas emissions is carbon farming.

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In recent years, the practice of carbon trading in the agriculture sector has become important around the world, but especially in the U.S., Australia, New Zealand, and Canada.

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How can carbon farming help?

- A simple implementation of carbon farming is rotational grazing. Others include agroforestry, conservation agriculture, integrated nutrient management, agro-ecology, livestock management, and land restoration.
- Regions with extensive agricultural land, such as the Indo-Gangetic plains and the Deccan Plateau, are well suited to adopt carbon farming whereas the mountainous terrain of the Himalayan region is less so. Coastal areas are prone to salinisation and have limited access to resources, thus limited the adoption of traditional farming practices.

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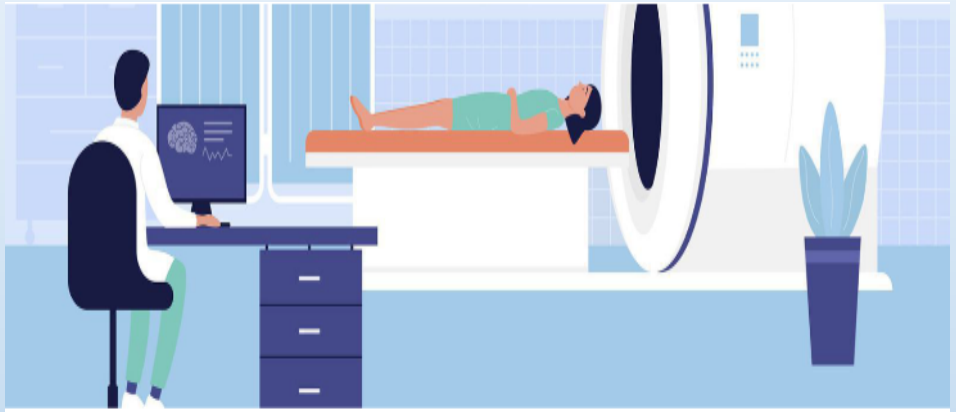

GETTY IMAGE

Understanding the science behind magnetic resonance imaging

MRI scans are used to obtain images of soft tissues within the body. It is a non-invasive diagnostic procedure widely used to image the brain, the cardiovascular system, the spinal cord and joints, various muscles, the liver, arteries, etc

Vasudevan Mukunth

The story so far:

For those trying to look inside the human body without surgery, magnetic resonance imaging is an indispensable tool. The underlying techniques were worked out in the early 1970s and later in the same decade, Paul Lauterbur and Peter Mansfield refined them to pave the way for their commercial use. For these efforts, they were awarded the Nobel Prize in medicine in 2003, speaking to the

that part. A hydrogen atom is simply one proton with one electron around it. These atoms are all spinning, with axes pointing in random directions. Hydrogen atoms are abundant in fat and water, which are present almost throughout the body.

An MRI machine has four essential components. The machine itself looks like a giant doughnut. The hole in the centre, called the bore, is where the person whose body is to be scanned is inserted. Inside the doughnut is a powerful superconducting magnet whose job is to produce a powerful and stable magnetic

part of the body.

What are the pros of MRI?

After the big, powerful magnetic field comes on, the MRI machine activates three magnets that produce smaller magnetic fields that are weaker than the main field by about 80-times, if not more. These fields also have a gradient, that is, they are not uniform. These fields interfere with the main field at the part to be scanned such that the resulting field highlights very specific portions, which can be the focus of the scan.

scanning facilities simply refuse such appointments.

What are the cons of MRI?

MRI machines are expensive: depending on the specifications, including the strength of the magnetic fields and the imaging quality, they cost from a few tens of lakh rupees to a few crores. Diagnostic facilities pass this cost on to its patients. Based on the clinical requirements, scans often cost ₹10,000 or more each – a sizeable sum in India, especially for those without insurance, and more so for those

What is magnetic resonance imaging?

- Magnetic Resonance Imaging (MRI) is used to obtain images of soft tissues within the body. Soft tissue is any tissue that hasn't become harder through calcification. It is a non-invasive diagnostic procedure widely used to image the brain, the cardiovascular system, the spinal cord and joints, various muscles, the liver, arteries, etc.
- Its use is particularly important in the observation and treatment of certain cancers, including prostate and rectal cancer, and to track neurological conditions including Alzheimer's, dementia, epilepsy, and stroke. Researchers have also used MRI scans of changes in blood flow to infer the way the activity of neurons is changing in the brain; in this form, the technique is called functional MRI.
- Because of the MRI technique's use of strong magnetic fields, individuals with embedded metallic objects (like shrapnel) and metallic implants, including pacemakers, may not be able to undergo MRI scans. In fact, if they have a credit card in their pocket, the magnetic fields will wipe its magnetic strip!

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A male Sumatran orangutan named Rakus is see two months after self-treating a wound with a medicinal plant in the Suaq Balimbing research site, August 25, 2022. REUTERS

Orangutan used plant to treat wound, scientists say

Associated Press

An orangutan appeared to treat a wound with medicine from a tropical plant— the

- Known for their distinctive red fur, orangutans are the largest arboreal mammal, spending most of their time in trees.
- Long, powerful arms and grasping hands and feet allow them to move through the branches. These great apes share 96.4% of our genes and are highly intelligent creatures.
- The name orangutan means "man of the forest" in the Malay language. In the lowland forests in which they reside, orangutans live solitary existences.
- found in rainforests on the Southeast Asian islands of Sumatra and Borneo.
- Critically Endangered

HEADLINES OF THE DAY

Indian Express-S&T(GSIII)-Page 13

WITH VETERAN SUNITA WILLIAMS ON BOARD, BOEING'S STARLINER SET TO LAUNCH: WHAT IS ITS SIGNIFICANCE?

ALIND CHAUHAN
NEW DELHI, MAY 6

Boeing's Starliner spacecraft, carrying two NASA astronauts, will be launched by an Atlas V rocket from Kennedy Space Center in Cape Canaveral, Florida, to the International Space Station (ISS) on Tuesday.

This will be Starliner's first crewed test flight. If the mission is successful, Boeing will become the second private firm to be able to provide NASA crew transport to and from the ISS, alongside Elon Musk's SpaceX.

What is Boeing's Starliner?

Starliner is a partially reusable crew capsule, officially known as CST-100 (crew space transportation). The capsule, which is 5 m tall and 4.6 m wide, consists of two modules. One is the crew module, which can accommodate seven astronauts — although, for trips to the ISS, it will be modified for four astronauts and cargo. The crew module can be reused up to 10 times, with a six-month turnaround.

The other is the service module — the powerhouse of the spacecraft — which supplies electricity, propulsion, thermal control, air, and water in space. This module is not reusable.

What is the mission objective?

The main objective of the mission is to see how Starliner fares in space with a crew on board. It is supposed to dock with the ISS a day after the launch, and return sules, Starliner will land on the ground and not in the sea.

How has Boeing's journey been?

After NASA retired its space shuttle fleet in 2011, it invited commercial space companies to help it transport astronauts and cargo to the ISS. Two companies got the contracts: SpaceX and Boeing. While SpaceX has been ferrying astronauts to and from the ISS since 2020, Tuesday's launch will be Boeing's first crewed flight.

Starliner's first uncrewed flight had come after four years of delay. Although it was set to take off in 2015, the company postponed it to 2019. When it did finally happen, a series of software and hardware failures thwarted the spacecraft from getting into its planned orbit and docking with the ISS.

It took more than 80 fixes for Starliner to make its first successful uncrewed flight. Even after achieving the goal, there were concerns about the performance of some thrusters and the spacecraft's cooling system. Additional problems were found subsequently — there were issues with the safety of wiring and parachutes. As a result, Boeing delayed the launch of Starliner's first crewed flight from 2023.

Why is the mission significant?

The mission's success is crucial for both NASA and Boeing. Currently, NASA has only one private company, SpaceX, which can take its astronauts and cargo to the ISS. Starliner getting approval for

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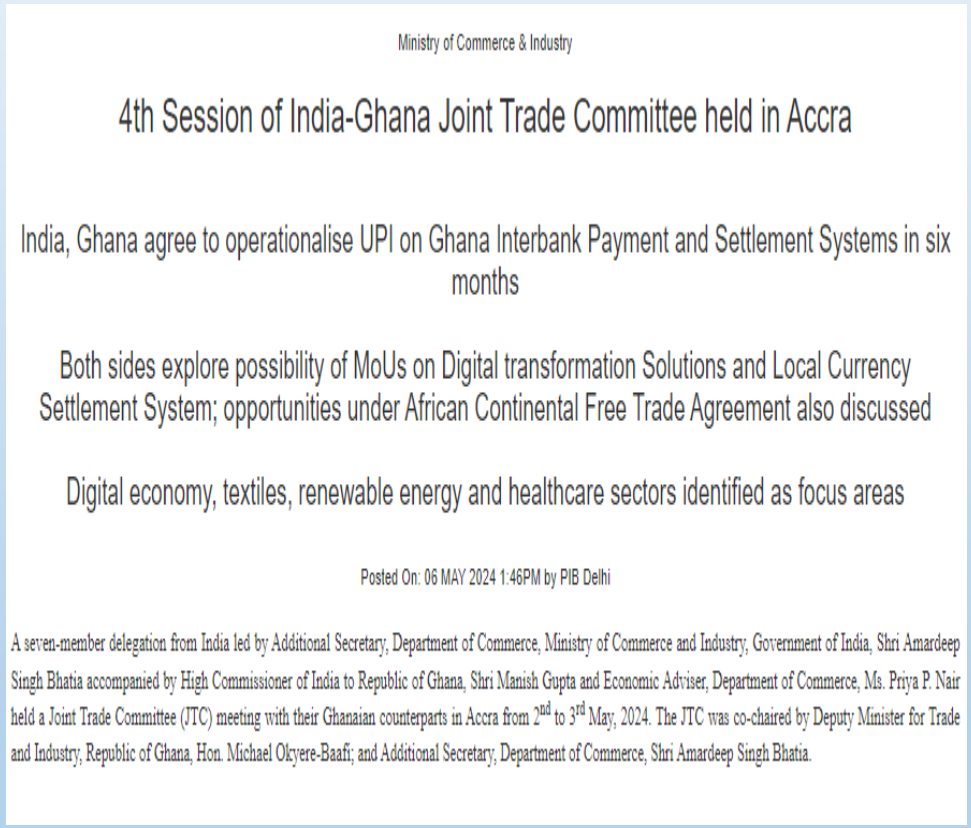
PIB:IR(GSII)



Ministry of Commerce & Industry

4th Session of India-Ghana Joint Trade Committee held in Accra

India, Ghana agree to operationalise UPI on Ghana Interbank Payment and Settlement Systems in six months

Both sides explore possibility of MoUs on Digital transformation Solutions and Local Currency Settlement System; opportunities under African Continental Free Trade Agreement also discussed

Digital economy, textiles, renewable energy and healthcare sectors identified as focus areas

Posted On: 06 MAY 2024 1:46PM by PIB Delhi

A seven-member delegation from India led by Additional Secretary, Department of Commerce, Ministry of Commerce and Industry, Government of India, Shri Amardeep Singh Bhatia accompanied by High Commissioner of India to Republic of Ghana, Shri Manish Gupta and Economic Adviser, Department of Commerce, Ms. Priya P. Nair held a Joint Trade Committee (JTC) meeting with their Ghanaian counterparts in Accra from 2nd to 3rd May, 2024. The JTC was co-chaired by Deputy Minister for Trade and Industry, Republic of Ghana, Hon. Michael Okyere-Baafi; and Additional Secretary, Department of Commerce, Shri Amardeep Singh Bhatia.

- Both sides identified several areas of focus for enhancing both bilateral trade as well as mutually beneficial investments. These include cooperation in pharmaceuticals, healthcare, information and communication technology, agriculture and food processing, renewable energy, power sector, digital economy and digital infrastructure, critical minerals, textiles and garments, etc.
- Ghana is an important trading partner of India in Africa region. Bilateral trade between India and Ghana stood at USD 2.87 billion in 2022-23. India stands as a leading investor in Ghana and emerged as the third-largest investor. These investments traverse diverse sectors, encompassing pharmaceuticals, construction, manufacturing, trade services, agriculture, tourism, and more.

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PIB-Economy(GSIII)

Ministry of Finance

Union Finance Minister Smt. Nirmala Sitharaman administers Oath of Office to Justice (Retd.) Sanjaya Kumar Mishra as the first President of GST Appellate Tribunal in New Delhi

Posted On: 06 MAY 2024 5:43PM by PIB Delhi

Union Minister for Finance and Corporate Affairs Smt. Nirmala Sitharaman administered the oath of integrity and secrecy to Justice (Retd.) Sanjaya Kumar Mishra as the President of the GST Appellate Tribunal (GSTAT), in New Delhi, today. Justice (Retd.) Mishra's appointment marks the beginning of the operationalisation of the GSTAT, a crucial body for resolving GST-related disputes.

- The GSTAT is the Appellate Authority established under the Central Goods and Services Tax Act, 2017, to hear various appeals under the said Act and the respective State/Union Territories GST Acts against the orders of the first appellate authority.
- It consists of a Principal Bench and various State Benches.
- As per the approval of the GST Council, the Government has notified the Principal Bench, to be located at New Delhi, and 31 State Benches at various locations across the country.
- Process for appointment of Judicial Members and Technical Members is already in progress.

The Tribunal will ensure swift, fair, judicious and effective resolution to GST disputes, besides significantly reducing the burden on higher courts. The establishment of the GSTAT would further enhance the effectiveness of the GST system in India and foster a more transparent and efficient tax environment in the country.