

NEWSPAPER HIGHLIGHT

Sand dunes form in the deserts, but these are found not only on Earth but in other planets and comets, too. Scientists have found a way to predict the way winds blow on planets by observing shapes of dunes formed on these surfaces, for example, on Mars or Venus. The work, published in the journal *Geology*, found that when dunes collide, patterns called mega ripples, which are observed on Mars now, form, which can be used to understand wind patterns on Mars.

Remnants of solidified lava brought back by a Chinese lunar mission were 1 billion years younger than material acquired by other missions decades ago, according to an article in *Science*, suggesting the moon cooled down later than thought. Samples brought back by U.S. and Soviet missions were more than 2.9 billion years old. The samples acquired on China's Chang'e 5 mission late last year were around 1.96 billion years old suggesting volcanic activity persisted longer than believed. Last December, the uncrewed Chinese probe touched down on a previously unvisited part of a massive lava plain, the Oceanus Procellarum or "Oceans of Storms," bringing back lunar samples.

A comprehensive atlas of the motor cortex cells of the brains of mice, marmosets and humans was published by a consortium of researchers supported by the U.S. National Institutes of Health's BRAIN mission. The 17 studies, published in *Nature*, are the first in a series meant to make an atlas of the entire brain. The studies aim to understand the role of neural networks in controlling our minds and bodies. The studies will map the 160 billion neurons and glia in the brain.

The U.S. Nuclear Regulatory Commission (NRC) decisively upheld the Linear NoThreshold model to prescribe radiation safety standards, ending the protracted controversy on the topic. The LNT model states that biological effects such as cancer and hereditary effects due to exposure to ionising radiation increase as a linear function of dose, without threshold. "The NRC has determined that the LNT model continues to provide a sound regulatory basis for minimizing the risk of unnecessary radiation

GREEN TERM LOAN

1. NTPC Renewable Energy Ltd (REL) has signed its first Green Term Loan agreement of Rs. 500 crores with a tenor of 15 years with Bank of India for its 470 MW Solar Projects in Rajasthan & 200 MW Solar Project in Gujarat. Green loans are any type of loan instrument made available exclusively to finance or re-finance new and/or existing eligible Green Projects. Other similar instruments include ESG ratings and Green bonds.

2. Green Financing Green finance is any structured financial activity that's been created to ensure a sustainable environmental outcome. Green finance includes climate finance but is not limited to it. It includes the financing of public and private green investments (including preparatory and capital costs) in the following areas.

3. **Environmental goods and services* (such as water management or protection of biodiversity and landscapes) Prevention, minimization and compensation of damages to the environment and to the climate (such as energy efficiency or dams).** It includes the financing of public policies (including operational costs) that encourage the implementation of environmental and environmental-damage mitigation or adaptation projects and initiatives.

DIGI SAKSHAM

1. Ministry of Labour & Employment has launched DigiSaksham programme. DigiSaksham is digital skills programme, which is a joint initiative of Ministry of Labour & Employment with Microsoft India. It aims to enhance the employability of youth by providing free of cost training in digital skills - basic skills and advance computing - through the National Career Service (NCS) Portal.

2. It will provide digital skills to more than 3 lakh youths in the first year. The initiative gives priority to the job-seekers of semi urban areas from disadvantaged communities, including those who have lost their jobs due to Covid-19 pandemic.

3. **Under DigiSaksham initiative, there will be basically 3 types of training Self paced learning, VILT mode training (Virtual Instructor led) and ILT mode training (Instructor led)** at the Model Career Centres (MCCs) and National Career Service Centres (NCSC) for SCs/STs Implementation - DigiSaksham will be implemented in the field by Aga Khan Rural Support Programme India (AKRSP-I).

REFLECTION ON THE QUASI-FEDERAL DEMOCRACY

1. Since recent events have underscored the federal democratic structure, Indian federalism needs an institutional amendment despite being a basic structure.

2. What are the recent faultlines in the federal structure? K.C. Wheare analyses India's "centralized state with some federal features" as "quasi-federal". Legislative disruptions - The Rajya Sabha passed a record number of Bills amidst a number of adjournments. Whenever any party with a massive majority in any state finds itself marginalised in the central legislature, it disrupts proceedings. Colonial legacy - India's federal structure underpinned on the colonial 1935 Act. Nothing about States' rights and their territorial boundaries were talked enabling the Centre to unilaterally alter State boundaries and create new States. The Indian Constitution itself has been amended 105 times in 70 years compared with 27 times in over 250 years in the United States.

3. Division of power - **The constitutional division of power and resources remains heavily skewed in favour of Centre along with residual, concurrent and implied powers.** The higher judicial appointment, promotion and transfer becoming a central prerogative hampers the role of judiciary. All India Services - All India Service personnels are recruited and trained by the Centre which they work under various states affecting the separation of powers. Role of Governor - Governor appointed by the Centre is a constitutional authority which at recent times are transforming federal "link" to one of a central "agent" in the States.

4. Division of subjects - **The critical instruments of national governance are assigned or appropriated by the Centre but**

exposure to both members of the public and radiation workers. Therefore, the NRC will maintain the current dose limit requirements.”

Ethiopian troops and their allies are launching air and ground strikes against Tigray rebels in the northern region of Amhara, humanitarian and rebel sources said, amid growing speculation of a major offensive. A spokesman for the Tigray People's Liberation Front (TPLF), which has been locked in a brutal conflict with pro government forces in northern Ethiopia for 11 months, said Saturday there was a “massive move” against the rebels.

China's President Xi Jinping said “national reunification by peaceful means” with Taiwan “will and can be realised”, speaking amid what Taiwan officials have called the worst tensions in four decades. Mr. Xi was speaking a day before October 10, which is celebrated in China as the 110th anniversary of the 1911 Xinhai Revolution, and marked in Taiwan as its National Day. The 1911 revolution began at Wuchang on October 10 of that year, ultimately leading to the end of the Qing Dynasty and the establishment of the Republic of China (ROC).

The Taliban ruled out cooperation with the U.S. to contain extremist groups in Afghanistan, staking out an uncompromising position on a key issue ahead of the first direct talks between the former foes since America withdrew from the country in August.

The total economic worth of the creative activities involved in Durga Puja festival is about ₹32,377 crore and the festival contributes 2.58% of West Bengal's GDP, reveals a study carried out by the British Council. The first of its kind detailed study of different aspects of the Durga Puja festival commissioned by the West Bengal Government's tourism department looks at ten creative industries related to the pujas such as installation, idol making, lighting and illumination, retail, sponsorship, advertisement and food and beverages.

A reduction in the area under paddy cultivation in Haryana, Punjab and Uttar Pradesh, as well as a shift away from paddy varieties that take long to mature, could see a reduction in stubble burning this year, the Centre-constituted Commission for Air Quality Management said in a statement on Friday. The total paddy area in Haryana, Punjab and the eight NCR (National Capital Region) districts of Uttar Pradesh has reduced by 7.72% during the current year as compared to last

States are left with politically controversial subjects such as law and order and land reforms. Conflict resolution - There is no federal chamber to politically resolve conflicts. Rajya Sabha cannot veto its legislations unlike the U.S. Senate. It can only delay leading to disruptions. Kesavananda Bharati v. State of Kerala - Federalism to be a part of basic structure of the Constitution.

SCHEME FOR GOOD SAMARITAN

- 1.The Union government has launched a scheme for ‘Good Samaritan’. The scheme will be implemented from October 15. Under the Scheme: Anyone who saves the life of a road accident victim by rushing them to a hospital within the “golden hour” will get a cash reward of ₹5,000.
- 2.Each Good Samaritan would also receive a certificate of appreciation. An individual could be awarded a maximum of five times in a year.
- 3.The ministry also said there will be 10 national-level awards each year for the worthiest Good Samaritans, who would be selected from all those who have been awarded during the whole year and they would be given an award of ₹1 lakh each.
- 4.If more than one Good Samaritan saves the life of more than one victim, the amount of award would be ₹5,000 per victim saved, subject to maximum ₹5,000 per Good Samaritan.

ETHANOL 20 PROGRAMME

- 1.The government has launched the Ethanol 20 (E20) programme under which it aims to achieve 20% ethanol blending in petrol by 2025. Earlier, the central government had released an expert committee report on the ‘Roadmap for Ethanol Blending in India by 2025’ that proposes, A gradual rollout of ethanol-blended fuel to achieve E10 fuel supply by April 2022 and A phased rollout of E20 from April 2023 to April 2025. Currently, 8.5% of ethanol is blended with petrol in India. The ethanol economy of India is Rs. 20,000 crore.
- 2.The committee also recommends roll out of E20 material-compliant and E10 engine-tuned vehicles from April 2023 and production of E20-tuned engine vehicles from April 2025. Significance - E20 programme is aimed at reducing the country's oil import bill, and it will also decrease the emissions of carbon monoxide, hydrocarbons and nitrogen oxides by 40%. This new initiative is also part of measures to improve energy security and self-sufficiency measures. With 100% use of 20% blend of bio ethanol, India will be able to save Rs. 30,000 crore on import of fossil fuel.
- 3.Other Initiatives The government is planning to introduce Flex Fuel Vehicles soon, which would be able to operate on 100% bio ethanol or 100% petrol. The government has allowed the production of ethanol from surplus and damaged food grains in addition to sugar cane.

EV SALES TARGET

- 1.The central government aims to have electric vehicles (EV) sales accounting for 30% of private cars, 70% for commercial vehicles and 80% for 2- and 3-wheelers by 2030. This move is made as there is an immediate need to decarbonise the transport sector, and make it sustainable from the economy, ecology, and environmental point of view.
- 2.If EVs expand to 40% in the 2-wheeler and car segments and close to 100% for buses by 2030, India would be able to cut crude oil consumption by 156 million tonnes. The government said that there was no shortage of lithium ion, which is used in making batteries for EVs, in India.
- 3.In the EV mission, NITI Aayog has inspired 25 States to come up with EV policies, out of which 15 have already announced State EV policy.

SACRED PORTAL

- 1.Ministry of Social Justice and Empowerment is developing the Senior Able Citizens for Re Employment in Dignity (SACRED) Portal through NIC. It is an online employment exchange platform that aims to bring the employment seeker senior citizens and employment providers on one platform.
- 2.As per the LASI report 2020, more than 50% senior citizens are found active. The portal is being developed on the recommendations of the Empowered Expert Committee (EEC) report on startups for the elderly.
- 3.Any job provider - individual / firm/ company/ partnership/ Voluntary Organisation/ SHGs etc. - can also register on the

year. Similarly, total paddy straw generation from the nonbasmati variety of rice is likely to be reduced by 12.42% during the current year as compared to the previous year. It's the nonbasmati variety of rice, whose stalk remains, that is usually burnt off by farmers ahead of sowing wheat.

portal. The portal will not be a guarantee for getting a job or selling of the products of the SHGs, or for any other activity. Related Links - SAGE Portal.