INDIAN COUNCIL OF FORESTRY RESEARCH AND EDUCATION (ICFRE) RELEASED FACT SHEET TO PROMOTE AGROFORESTRY

- ICFRE's fact sheet **listed 36 species** that **can be grown in different agro-climatic zones.**
  - ICFRE (HQ: Dehradun) is an **autonomous council under Ministry of Environment, Forest, and Climate Change** and is registered as a society.
  - It is an **apex body in national forestry research system.**
- Agroforestry is a **combination of practising agriculture and forestry together** on same unit of land with **emphasis on interaction and interdependence of various elements** in nature.
  - **Main components are** - crops, trees and livestock.
- **Major agroforestry systems** based on type of components are:
  - **Agrisilviculture** (crops + trees)
  - **Silvopastoral** (pasture/ livestock + trees)
  - **Agrosilvopastoral** (crops + livestock + trees)
- **Significance of agroforestry**
  - **Enhances farm profitability** and reduces input costs.
  - **New products** from agroforestry increase financial flexibility and diversification to farming enterprises.
  - **Reduces pollution, prevents soil erosion,** and establishes wildlife habitat.
  - Aids in **carbon sequestration.**
- **Challenges faced:** trees interfering with agricultural crop yield, long tree gestation period, increased crop damage from birds, release of some allelochemicals from some tree leaves, lack of market mechanisms etc.
- **Initiatives taken to promote agroforestry**
  - **National Agroforestry Policy** 2014.
  - **Sub-Mission on Agroforestry** (Har Medh par Ped) Scheme.

MINISTRY OF NEW AND RENEWABLE ENERGY NOTIFIES INDIAN GREEN HYDROGEN STANDARD UNDER NATIONAL GREEN HYDROGEN MISSION (NGHM)
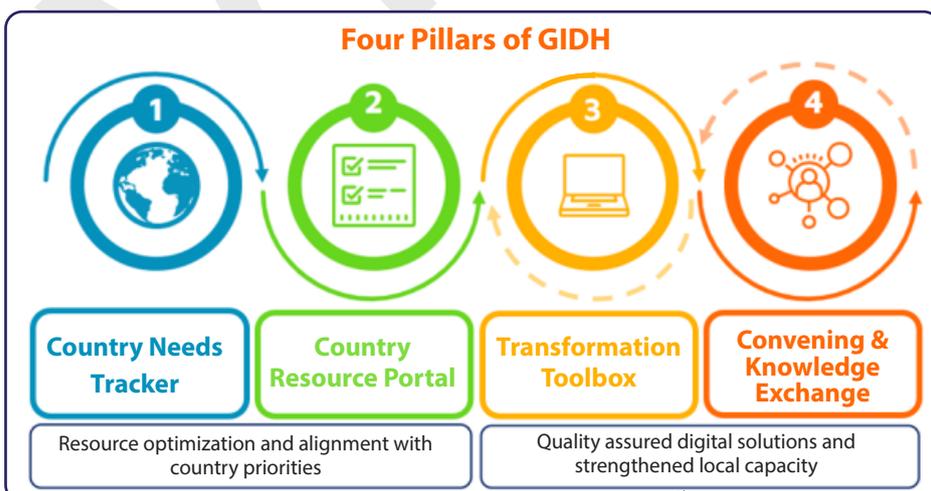
- Notification outlines **emission thresholds that must be met** in order to classify produced hydrogen **as 'Green'.**
  - **Hydrogen** can be produced by **splitting water into hydrogen and oxygen using** fossil fuels or renewable energy.
- **Key highlights**
  - **Definition:** Green Hydrogen (GH) is **produced using renewable energy** including production through **electrolysis or biomass conversion.**
  - **Emission thresholds: Well-to-gate emission** (i.e., water treatment, electrolysis, gas purification, etc.) **of not more than 2 kg CO_2 equivalent/kg H_2.**
  - **Nodal Authority: Bureau of Energy Efficiency** shall accredit agencies for the monitoring, verification, and certification of GH production projects.
- **About NGHM**
  - **Aim:** To make India a **Global Hub for producing, utilizing, and exporting GH and it's derivatives.**
  - **Expected Mission Outcomes by 2030**
    - GH **production capacity** of at least **5 MMT per annum.**
    - **Renewable energy capacity addition of about 125 GW in country.**
    - Abatement of nearly **50 MMT of annual greenhouse gas emissions.**
    - Over ₹**1 lakh crore cumulative reduction in fossil fuel imports.**
- **Programs**
  - **Strategic Interventions for Green Hydrogen Transition Programme (SIGHT)** for financial incentive.
  - **Strategic Hydrogen Innovation Partnership(SHIP)** PPP framework for R&D.

G20 DIGITAL ECONOMY MINISTERS MEETING ADOPTED THE OUTCOME DOCUMENT ADDRESSING THREE PRIORITY AREAS

Priority Areas	Initiatives announced/adopted
Digital Public Infrastructure (DPI)	• **G20 Framework for Systems of DPI**-a **voluntary and suggested framework** for development, deployment and governance of DPI ➢ DPI refers to a **set of shared digital building blocks,** such as applications, systems, and platforms, powered by **interoperable open standards or specifications.** ➢ **India Stack** is a set of **commonly used DPIs in India.**
Security in the Digital Economy	• **G20 High-Level Principles (HLPs) to Support Businesses** in Building Safety, Security, Resilience, and Trust in the Digital Economy. ➢ It draws from the **practices, strategies and tools developed and implemented by G20 members.** • **G20 Toolkit on Cyber Education and Cyber Awareness of Children and Youth** to protect children's privacy and personal data, uphold children's dignity, and respect their rights
Digital Skilling	• **G20 Toolkit for Designing and Introducing Digital Upskilling and Reskilling Programs** to help better assess and improve strategies towards building a future-ready workforce. • **G20 Roadmap to Facilitate Cross-Country Comparison of Digital Skills** to enable a common understanding of job roles, digital skills, and related credentials.

G20 HEALTH MINISTERS' MEETING CONCLUDES WITH UNANIMOUS ADOPTION OF OUTCOME DOCUMENT

- Under India's G20 presidency, **G20 nations deliberated on three health priorities:**
  - ➢ **Health emergencies, prevention, preparedness and response** (with focus on One Health and Antimicrobial Resistance [AMR]),
  - ➢ **Strengthening cooperation in pharma sector.**
  - ➢ **Digital health innovation and solutions** to aid universal health coverage and improve healthcare service delivery.
- **Key highlights of the outcome document**
  - ➢ **Tackle future public health emergencies with equitable access to vaccines** and other medical countermeasures.
  - ➢ **Improving understanding of long-Covid** — long-term health effects that continue to afflict people who had suffered from the infection.
  - ➢ **Prioritising climate-resilient health systems,** mainstreaming a **gender perspective while designing health systems, strengthening dialogue** through G20 Joint Finance-Health Task Force etc.
- On the occasion **WHO and G20 India presidency also announced Global Initiative on Digital Health** (GIDH), a key **deliverable of third health priority** under India's G20 presidency.
  - ➢ GIDH is a **platform for sharing digital goods and knowledge** to promote **country capacity and strengthen international cooperation.**
  - ➢ GIDH will operate as a **WHO-managed network to support** implementation of **Global Strategy on Digital Health 2020–2025.**

Four Pillars of GIDH

Country Needs Tracker	**Country Resource Portal**	**Transformation Toolbox**	**Convening & Knowledge Exchange**
Resource optimization and alignment with country priorities	Quality assured digital solutions and strengthened local capacity →		

WORLD BANK RELEASES 'DIGITAL IN HEALTH – UNLOCKING VALUE FOR EVERYONE' REPORT

- Report calls for a shift from simple digitization of health data to **fully integrating digital technology in health systems.**
- **Key highlights**
  - ➢ Digital technology **strengthens health systems, improves health financing,** makes public health more effective, and serves underserved.
  - ➢ Yet, **some countries use less than 5% of health data.**
  - ➢ Over past decade, **World Bank has invested almost $4 billion in digital health.**
  - ➢ In India, **World Bank support enabled over 40% of Anganwadi workers to use digital technology.**
  - ➢ Emerging initiatives like **Poshan Didi** (a chatbot-based nutrition counseling service) **has been developed in India for behavioral nudging.**
  - ➢ **Concerns:** Reliability of data, lack of IT support, unknown ways in which technology could change the doctor-patient relationship, etc.
- **Key recommendations**
  - ➢ **Prioritize:** Digital health interventions to solve health challenges and for reaching the underserved.
  - ➢ **Connect:** Global and regional collaboration, leadership and partnership within and across sectors, etc. **to deliver better and seamless health services.**
  - ➢ **Scale:** Digital skills and literacy, Public-private partnerships for funding, etc. to ensure equitable **access to health care for everyone.**

INDIAN RESEARCHERS DEVELOPED THE FIRST EVER LOW-PUNGENT MUSTARD USING GENOME EDITING (GE)

- New mustard variety is less pungent as it has **lesser quantity of glucosinolate** at par with the Canola quality limit (30 parts per million or PPM dry weight).
  - ➤ **Glucosinolates** is a group of **sulphur and nitrogen-containing** compounds contributing giving characteristic **pungency to mustard products.**
  - ➤ It **protects plants** from invading pathogens, animals, etc.
  - ➤ However, **high glucosinolates** make it unpalatable, and **causes goiter** and **internal organ abnormalities** in livestock.
  - ➤ **Indian mustard** (Brassica juncea) contains 120-130 ppm of glucosinolates.
- It is produced through **gene editing of 'Varuna',** a high-yielding Indian mustard variety, **using CRISPR/Cas9 gene editing technology.**
- Unlike GMOs, **Gene Editing** incorporates modification of **existing genetic material to** improve the quality.
  - ➤ **Genetically modified organisms (GMO)** have **transgene** (foreign genes) for improvement in quality.
  - ➤ **Dhara Mustard Hybrid-11 (DMH-11),** is a GM variant of mustard developed in India.
- GE crops require clearance only from the **Institutional Bio-Safety Committee** (IBSC) of concerned institution.
  - ➤ IBSC has a **nominee from Department of Biotechnology.**
  - ➤ GM crops require clearance from the **Genetic Engineering Appraisal Committee of the Ministry of Environment, Forest, and Climate Change.**

ALSO IN NEWS

RBI study on investment attractiveness	• RBI study gives an indication of **how attractive states are among investors.**
	• **Key highlights**
	  ➤ **UP, Gujarat, Odisha, Maharashtra and Karnataka accounted for 57.2 per cent** of total bank-assisted **investment proposals** made during 2022-23.
	  ➤ **Kerala, Goa and Assam** got the **lowest number of new investments.**
	  ➤ **Overall investment** plans shot **up by 79.50 per cent,** highest since 2014-15.
	  ➤ **Investment in green field** projects accounted for **the largest share.**

Public Tech Platform for Frictionless Credit	• RBI announced a pilot programme for **'Public Tech Platform for Frictionless Credit'.**
	  ➤ It would strive to deliver frictionless credit by **"facilitating seamless flow of required digital information to lenders."**
	• The platform will **simplify credit assessment** by providing an **end-to-end digital ecosystem.**
	  ➤ Currently, **Data required for the credit appraisal rest with different entities** like governments, account aggregators.
	  ➤ This **hinders delivery of rule-based lending.**
	• **Initial Focus** is on Kisan Credit Card loans, dairy loans, collateral-free MSME loans, and personal loans.

World's highest Motorable Road	• Border Roads Organisation has started construction of 64-km long **Likaru-Mig La-Fukche road in Eastern Ladakh's Demchok sector.**
	  ➤ Once completed, it will be the **world's highest motorable road** (19,400 ft height).
	  ➤ It will play a **crucial role in accessing the LAC** for the armed forces to be deployed **all along the Indus valley** in Fukche.
	• Currently, **Umling La in Ladakh** (19,024 ft height) is the **highest motorable road** in the world.
	• It connects **Chishumle to Demchok and is right on the Line of Actual Control (LAC).**

Tactical Airborne Platform for Aerial Surveillance - Beyond Horizon-201 (TAPAS BH-201)	• Defence Research and Development Organisation's **TAPAS** crashed in Karnataka.
	• TAPAS BH-201 (previously Rustom-II) is a **Medium Altitude Long-Endurance (MALE) Unmanned Aerial Vehicle (UAV)**
	  ➤ Can **operate at 30000 ft altitude, endurance of 24 hours.**
	  ➤ Can carry **payloads** up to a **maximum of 350 kgs.**
	  ➤ Has a **range of 250 km** and is capable of **day and night missions.**
	  ➤ Can **fly autonomously or via remote control.**
	• Can provide **I**ntelligence, Surveillance, Target Acquisition, Tracking, and Reconnaissance **(ISTAR) services.**

Acoustic Side Channel Attacks (ASCA)	• Use of **laptops** has **increased** the scope of **ASCAs** as laptop models have the same keyboard which eases the interpretation by AI-enabled deep learning. • ASCA is a type of cyberattack wherein **Artificial Intelligence (AI)** can be used **to decode passwords by analyzing the sound produced by keystrokes.** • SCAs are a method of **hacking a cryptographic algorithm based on the analysis of auxiliary systems** (electromagnetic waves, power consumption, sound from keyboard, printer, etc.) used in the encryption method.
'Namoh 108' Lotus	• A lotus variety named **'Namoh 108'** was unveiled in CSIR - National Botanical Research Institute, Lucknow under **One Week One Lab (OWOL) initiative of the CSIR.** ➤ Under OWOL, every lab would showcase its history and scientific achievements for a week. • It was **discovered several years ago in Manipur** and is the **only lotus variety in India** to have had its **genome sequenced.** • To promote its cultivation in other parts of the country **Lotus Mission** was also launched as part of horticulture mission.
Alcanivorax Borkumensis	• It is a **small bacterium that thrives on petroleum.** • Able to **feed on both hydrocarbons and alkanes abundant in oil,** this bacterium **occurs naturally near oil seeps** in marine environments. • **A recent study** highlighted that Alcanivorax Borkumensis **forms "dendritic" biofilms** that **reshape oil droplets** to **speed up hydrocarbon breakdown.** • **Some other measures for marine oil-spill clean-up:** Oilzapper and Oilivorous-S developed by TERI, Floating booms, Skimmers or oil scoops deployed to boats etc.
Demon particle	• Researchers **claimed to have spotted Demon particle** in the metal **strontium ruthenate.** • Demon particle was first **predicted by** physicist **David Pines in 1956.** • David Pines believed that **electrons would behave strangely when passed through a solid.** ➤ If enough energy is supplied to the system, **electrons can form composite particles known as plasmons.** ➤ **But the energy required** to produce plasmons **is so high** that they **cannot be produced at room temperature.** • **Pines's demon is an exception** to this as it is **massless, has no charge and does not interact with light** so it would **require no extra energy** to be formed.
Thoppikkallu or Hat Stones	• A large number of **megalithic hat stones** were found at **Nagaparamba, near Thirunavaya in Malappuram district in Kerala.** ➤ Thirunavaya is **situated on the banks of Bharathapuzha river** and is considered the **land of ancient Mamankam** (grand assembly of rulers held once in 12 years). • **Hat stones,** popularly called Thoppikkallu in Malayalam, are **hemispherical laterite stones** used as **lid on burial urns** during the **megalithic period.**
CAG report on UDAN (Ude Desh ka Aam Naagrik)	• **Key finding** ➤ **52 % of the awarded routes** could not commence operations. ➤ **Airfare charged and Viability Gap Fund (VGF) disbursed **was higher** than required. • **Recommendations:** ➤ **Devise appropriate mechanisms** to assess the feasibility of routes. ➤ **Audit of Regional Air Connectivity Fund Trust** accounts should be entrusted immediately **to CAG.** ➤ **Performance of the Selected Airline Operators may** be evaluated through **Independent Auditors.** • **UDAN,** launched in 2016, is a **market-driven scheme.** ➤ It aims to **enhance regional air connectivity** from unserved and underserved airports and **make air travel affordable.**

AHMEDABAD BHOPAL CHANDIGARH DELHI JAIPUR JODHPUR GUWAHATI HYDERABAD LUCKNOW PRAYAGRAJ PUNE RANCHI SIKAR

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