

# My Notes....

## NATIONAL

### INDIA IN GHI 2020

**India ranks 94 among 107 countries in the Global Hunger Index (GHI) 2020**, the report released on 16 October 2020 said. According to the report, with a **score of 27.2**, India has a level of hunger that is “**serious**”. **India’s rank was 102 out of 117 countries last year.**

#### What

1. In the index, **India features behind Nepal (73), Pakistan (88), Bangladesh (75), and Indonesia (70)** among others. Out of the total 107 countries, **only 13 countries fare worse than India** including countries like **Rwanda (97), Nigeria (98), Afghanistan (99), Liberia (102), Mozambique (103) and Chad (107)** among others.
2. According to the report, **14 per cent of India’s population is undernourished.** It also says that the **country recorded a child stunting rate of 37.4 per cent.**
3. **Stunted children** are those who have a “**low height for their age, reflecting chronic undernutrition**”.

#### What is the Global Hunger Index?

1. The **Global Hunger Index is a peer-reviewed annual report**, jointly published by **Concern Worldwide and Welthungerhilfe**, designed to comprehensively measure and track hunger at the global, regional, and country levels.
2. **Data from 1991 through 2014 for Bangladesh, India, Nepal, and Pakistan** showed that **stunting is concentrated among children** from households facing multiple forms of deprivation, including poor dietary diversity, low levels of maternal education, and household poverty.
3. In many countries the situation is improving too slowly, while in others it is worsening. For **46 countries in the moderate, serious, or alarming categories**, GHI scores have improved since **2012**, but for **14 countries in those categories**, GHI scores show that **hunger and undernutrition have worsened.**
4. The latest GHI projections show that **37 countries will fail to achieve even low**

#### Flashback

1. The **Global Hunger Index was created in 2006** by researchers from the **International Food Policy Research Institute (IFPRI)**, which in the years since has provided crucial intellectual and financial support for the development and maintenance of the index.
2. In 2015, **IFPRI initiated an improvement in the methodology for calculating the GHI.**
3. With this strong foundation in place, IFPRI is **stepping aside from its involvement in the GHI**, which now goes forward as a **joint project of Welthungerhilfe and Concern worldwide.**
4. It ensured that the **calculation of the index is continued with the same high academic standard that IFPRI has set.**

**hunger by 2030.**

5. The **GHI scores are calculated each year to assess progress and setbacks in combating hunger.**

#### **How is it calculated?**

It is calculated on the basis of **four indicators** —

1. **Undernourishment**
2. **Child wasting**, the share of children under the age of five who are wasted (that is, who have **low weight for their height**, reflecting acute undernutrition)
3. **Child stunting**, children under the age of five who have **low height for their age**, reflecting chronic undernutrition
4. **Child mortality**, the mortality rate of children under the age of five.

### **ANYONE CAN NOW BUY LAND IN J & K**

The Government of India on 26 October 2020 issued a notification stating that **any Indian citizen can now buy land, except agricultural**, in municipal areas of Jammu and Kashmir without being a domicile. According to the Ministry of Home Affairs, the **‘Union Territory of Jammu and Kashmir Reorganisation (Adaptation of Central Laws) Third Order, 2020’** shall come into force with immediate effect, and **“will encourage development in the UT of Jammu and Kashmir”**. After the **J&K’s special status under Article 370 of the Constitution** was withdrawn on 5 August 2019, the reorganisation Act bifurcated the erstwhile state into two union territories — **J&K and Ladakh**.

#### **What**

1. Under the notification, for the **first time the spouse of a J&K domicile shall also be deemed as a domicile.**
2. Earlier, **spouses of Permanent Resident Card holders were considered at par but were not considered domiciles.**
3. Children of central government officials posted for over ten years in Jammu and Kashmir will also continue to be considered domiciles.
4. The rules state that **agricultural land can be transferred** with the government’s approval.
5. According to the rules, **“no sale, gift, exchange, or mortgage of any land will be valid in favour of a person who is not an agriculturist**, unless the government or an officer authorised by it in this behalf may grant permission for the same”.
6. This means that once permission is granted, an agriculturist can sell, gift or mortgage his land to a non-agriculturist, provided nothing bars the lease of that land under the provisions of any law.
7. According to the notification, **although agricultural land cannot be used for non-agricultural purposes in the normal course**, it can be done with prior permission from the government, specifically, the district collector.
8. The permission for conversion of land notified as **‘Saffron Belt’** is made according to the procedure prescribed under the **Jammu and Kashmir Saffron Act, 2007**.
9. The notification further states that **use of agricultural land for making a residential accommodation or grain storage cannot exceed four hundred square metres in total.**

10. The holder of any agriculture land may construct a residential house or erect farm building, grain storage, primary processing of agriculture produce, wells or tanks or make any other improvements thereon for residential purpose or agricultural improvement, on intimation to the tehsildar concerned, the rules state, adding that the plinth area of such building or improvement shall **not exceed 400 square metres in total**.
11. The rules add that any non-agriculturist in whose favour land has been transferred can use it only for non-agricultural purposes, and shall put the land to use only for which it has been transferred, within a **period of five years**.

## INDIA STARTS CULTIVATING HING

**Hing or asafoetida** is a **key part of the cuisine in many parts of India**, but so far, it has had to be **imported from countries like Afghanistan, Iran and Uzbekistan**, because it was **never grown locally**. But now, scientists from the **Centre for Scientific and Industrial Research (CSIR)** have planted **hing saplings in Himachal Pradesh**, in the hope that cultivation of the spice will become a common practice in India. Even though **India consumes 40 per cent of the world's hing**, no attempt has been made to start its cultivation locally. However, since 2016, **CSIR-Institute of Himalayan Bioresource Technology (IHBT) in Palampur**, has been working on growing asafoetida locally.

### How is India entering into heeng cultivation?

1. **Heeng is not cultivated in India.**
2. Government data states that India imports about 1,200 tonnes of raw heeng **worth Rs 600 crore** from **Iran, Afghanistan and Uzbekistan**.
3. Between 1963 and 1989, **India once attempted to procure asafoetida seeds**, the **ICAR – National Bureau of Plant Genetic Resources (NBPGR), New Delhi** stated. However, there are no published results of the same.
4. In 2017, **IHBT approached NBPGR with an experimental project idea** to cultivate heeng in the Indian Himalayas.
5. For research, **heeng seeds were imported from Iran** and they remained in the custody of NBPGR.
6. In June this year, **the CSIR institute inked an MoU** with the agriculture ministry of Himachal Pradesh.
7. Jointly, **the project will be spearheaded over the next five years in the state.**

#### What is asafoetida and where is it commonly cultivated?

1. **Ferula asafoetida** is a **herbaceous plant of the umbelliferae family**.
2. It is a **perennial plant whose oleo gum resin is extracted from its thick roots and rhizome**.
3. The plant stores most of its nutrients inside its deep **fleshy roots**.
4. **Asafoetida is endemic to Iran and Afghanistan**, the main global suppliers.
5. It thrives in **dry and cold desert conditions**.
6. While it is **very popular in India**, some European countries use it for its medicinal properties.

## NEW CLEAN-AIR BODY SET UP

The President of India on 28 October 2020 evening **signed** The **Commission for Air Quality Management in National Capital Region and Adjoining Areas Ordinance, 2020**. The Ordinance came within days of the hearing in '**Aditya Dubey vs Union of India**' in the court of the Chief Justice of India, where Solicitor General Tushar Mehta had indicated the setting up of such a Commission.

### Why is this Commission set up?

1. The **monitoring and management of air quality in the Delhi NCR region** has been done piecemeal by multiple bodies including the **Central Pollution Control Board (CPCB)**, the **state pollution control boards**, the state governments in the region, including Delhi, Haryana, Uttar Pradesh, and Rajasthan, and the **Environment Pollution (Prevention and Control) Authority (EPCA)** of the National Capital Region.
2. They in turn are monitored by the **Union Ministry of Environment and Forests and Climate Change (MoEF)**, and the **Supreme Court itself**, which monitors air pollution as per the judgment in '**M C Mehta vs Union of India**', 1988.
3. The **Ordinance seeks to create an overarching body to consolidate all monitoring bodies**, and to bring them on one platform so air quality management can be carried out in a more comprehensive, efficient, and time-bound manner.
4. The Centre also seeks to relieve the Supreme Court from having to constantly monitor pollution levels through various pollution-related cases.

## INDIA'S FIRST SEAPLANE

**Prime Minister** on 31 October 2020 **launched a seaplane service** between the **Statue of Unity near Kevadiya in Gujarat's Narmada district** and the **Sabarmati Riverfront in Ahmedabad**. This is **India's first-ever water aerodrome and Seaplane service**. With **October 31 also being observed as Rashtriya Ekta Diwas (National Unity Day)** across the country, the Prime Minister attended a parade to mark the occasion.

### What is India's first seaplane project?

1. **The first seaplane project of the country** is part of a directive of the Union Ministry of Civil Aviation.
2. As per the directive, the **Airports Authority of India (AAI)** requested state governments of **Gujarat, Assam, Andhra Pradesh and Telangana and the administration of Andaman & Nicobar** to propose potential locations for setting up water aerodromes to boost the tourism sector.
3. A **seaplane is a fixed-winged aeroplane designed for taking off and landing on water**.
4. It offers the public the speed of an aeroplane with the utility of a boat.
5. There are two main types of seaplane: **flying boats (often called hull seaplanes)** and **floatplanes**.
6. The bottom of a flying boat's fuselage is its **main landing gear**.
7. This is usually supplemented with smaller floats near the wingtips, called wing or tip floats.
8. **The hull of a flying boat holds the crew, passengers, and cargo**; it has many features in common with the hull of a ship or a boat.

## AMENDED ESSENTIAL COMMODITIES ACT INVOKED

The Centre on 24 October 2020 **imposed limits on the extent of onion stocks** that traders and wholesalers can hold invoking a provision of the **newly amended Essential Commodities Act of 1955**. The **stock holding limits will be in force till December 2020**. As per the Central order, **retailers won't be allowed to hold more than two tonnes of onions** with them while for **wholesalers this limit will be 25 tonnes**.

### What

1. The **Essential Commodities Act, 1955, amended a few weeks back**, says the **Centre will not impose stock holding limits unless there are extraordinary circumstances** such as drought, floods, natural calamity or exceptional spike in prices.
2. **Exceptional increase in prices in the case of perishables such as onions is defined in the Act** as 100 percent spurt in retail prices over that prevailing in the immediate 12 months or the average retail price of the last five years, whichever is lower.
3. The **Central government has taken numerous steps in the last few weeks to stabilize onion prices** including a **ban on exports** but the prices were rising due to damage to **standing crops in Maharashtra and Karnataka** which was being exploited by traders.

## ANNUL ACTIONS UNDER ROSHNI ACT

After a **High Court order declared the Roshni Act as amended from time to time as unconstitutional** and unsustainable, the **Jammu and Kashmir government** on 31 October 2020 decided to **annul all mutations, remove encroachment and retrieve such land within six months**.

### What

1. It is hereby ordered that the Principal Secretary to Government, Revenue Department, shall pass an order declaring all actions taken under the **Jammu and Kashmir State Land (Vesting of Ownership to the Occupants) Act, 2001**, as amended from time to time, and rules made there under as void ab-initio, stated an order issued by the Jammu and Kashmir Department of Law, Justice and Parliamentary Affairs, with the Lieutenant Governor's approval.
2. The **Roshni Act is another name for the Jammu and Kashmir State Land (Vesting of Ownership to the Occupants) Act, 2001**.
3. The Principal Secretary (Revenue) shall ensure that all the mutations done in furtherance of the Act are annulled and also work out a plan to retrieve large tracts of state land, according to the order.
4. The officer shall also work out a plan to evict encroachers from such land and retrieve it **within a period of six months**.

## INTERNATIONAL

### INDIA INKED BECA

India and the US on 27 October 2020 inked a landmark defence agreement that will allow sharing of high-end military technology, classified satellite data and critical information between the two countries. The signing of the long-negotiated **Basic Exchange and Cooperation Agreement (BECA)** during the **third edition of the 2+2 dialogue** between the **two strategic partners** also signals further boosting of bilateral defence and military ties and **it comes in the backdrop of India's tense border standoff with China in eastern Ladakh.**

#### What is BECA?

1. The **Basic Exchange and Cooperation Agreement** largely pertains to **geospatial intelligence**, and **sharing information on maps and satellite images for defence.**
2. Signing BECA allows **India to use the US's advanced geospatial intelligence** and enhance the accuracy of automated systems and weapons like **missiles and armed drones.**
3. It will give access to **topographical and aeronautical data** and products that will aid navigation and targeting.
4. **BECA will provide Indian military systems with a high-quality GPS to navigate** and **missiles with real-time intelligence to precisely target** the adversary.

### INDIAN OUTFIT WINS UNGCA AWARD 2020

An Indian organisation that leverages tourism and technology to help remote communities' access solar energy has won a prestigious UN award for its efforts to combat climate change amid the COVID-19 pandemic. The **Global Himalayan Expedition (GHE)** is among the winners of the **2020 UN Global Climate Action (UNGCA) Award 2020.** **GHE is one of the world's first organisations using tourism and technology to bring solar energy** to remote communities.

#### What

1. The recipients of the **2020 United Nations Global Climate Action Awards**, announced on 27 October 2020, bring focus to the best examples of what people across the globe are doing **"to combat climate change in a year that has cast darkness upon so many."**
2. According to the **United Nations Framework Convention on Climate Change (UNFCCC)**, **GHE is the one of the world's first outfit using tourism and technology to bring solar energy to remote communities** as recognised by the **World Travel and Tourism Council (WTTC)** and the **United Nations World Tourism Organisation (UNWTO).**
3. The award announcement is part of the wider effort to mobilise action and ambition as national governments work toward implementing the **Paris Climate Change Agreement** and the **Sustainable Development Goals.**

## INDIA GETS CHAIRMANSHIP OF ILO GB

After a gap of 35 years, India assumed the Chairmanship of Governing Body (GB) of International Labour Organisation (ILO), with Labour Secretary Apurva Chandra being elected to the post. After 35 years, India assumed the Chairmanship of the Governing Body of ILO. Labour Secretary Apurva Chandra has been elected as the Chairperson of the Governing Body of the ILO for the period **October 2020-June 2021**, a labour ministry statement said on 23 October 2020.

### What

1. India assumed the Chairmanship of GB **after 35 years**, marking a **new chapter in the 100 years of productive relationship between India and ILO**.
2. The Chairperson of the Governing Body of ILO is a position of international repute.
3. The **Governing Body (GB) is the apex executive body of the ILO**, which decides policies, programmes, agenda, budget, and elects the Director-General.
4. At present, **the ILO has 187 members**. Chandra will be presiding over the upcoming Governing Body's meeting, to be held in November 2020.
5. At Geneva, Chandra will have the opportunity to interact with the senior officials and social partners of the member states.
6. **Chandra belongs to the 1988 batch of the Indian Administrative Service (IAS), Maharashtra Cadre**. He has spent more than **seven years in the Ministry of Petroleum & Natural Gas**.

## NUCLEAR WEAPONS BAN TREATY TO ENTER INTO FORCE

The **United Nations** announced 24 October 2020 that **50 countries have ratified a UN treaty to ban nuclear weapons** triggering its entry into force in **90 days**, a move hailed by anti-nuclear activists but **strongly opposed by the United States and the other major nuclear powers**. As of 23 October 2020, the **treaty had 49 signatories**, and UN officials said the **50th ratification from Honduras** had been received.

### What

1. The **50 countries that ratify this Treaty** are showing true leadership in setting a new international norm that nuclear weapons are not just immoral but illegal.
2. The **50th ratification came on the 75th anniversary of the ratification of the UN Charter** which officially established the United Nations and is celebrated as UN Day.
3. This treaty is the UN at its best working closely with civil society to bring democracy to disarmament.
4. The **United States had written to treaty signatories** saying the Trump administration believes they made a strategic error and urging them to rescind their ratification.

### Flashback

1. The **treaty was approved by the 193-member UN General Assembly on July 7, 2017** by a vote of 122 in favour, the Netherlands opposed, and Singapore abstaining.
2. Among countries voting in favor was Iran. The five nuclear powers and four other countries known or believed to possess nuclear weapons **India, Pakistan, North Korea and Israel** boycotted negotiations and the vote on the treaty, along with many of their allies.

5. The US letter said the **five original nuclear powers** -- the **US, Russia, China, Britain and France** -- and America's NATO allies stand unified in our opposition to the potential repercussions of the treaty.
6. It says the **Treaty on the Prohibition of Nuclear Weapons**, known as the **TPNW**, turns back the clock on verification and disarmament and is dangerous to the half-century-old **Nuclear Nonproliferation Treaty**, considered the cornerstone of global nonproliferation efforts.
7. The **TPNW is and will remain divisive in the international community** and risk further entrenching divisions in existing nonproliferation and disarmament fora that offer the only realistic prospect for consensus-based progress, the letter said.
8. It would be unfortunate if the TPNW were allowed to derail our ability to work together to address pressing proliferation.

## FUTURE OF ASSUMPTION ISLAND

An **Indian-origin priest from Bihar** has been **elected President of Seychelles** which has a substantial population from the subcontinent. **Wavel Ramkalawan**, whose grandfather came from Gopalganj, Bihar, defeated incumbent **Danny Faure**. A **victory for the Seychelles opposition for the first time since 1977** has brought the **Indian origin Wavel Ramkalawan to the office of president**. But the development could put a question mark over the future of **India developing a naval facility on Assumption Island**, one of the many that make up the **Indian Ocean archipelago nation of Seychelles**.

### What

1. It was with Danny Faure's government that **India signed a pact to develop the naval facility on Assumption Island** for use by both countries.
2. The plan included the **construction of an airstrip and a jetty besides housing infrastructure**, all built through an **investment of \$ 550 million by India**.
3. But opposition from Ramkalawan and his Linyon Demokratik Seselwa (LDS) stalled the project for which an **initial pact was signed in 2015 during a visit to Seychelles by Prime Minister Narendra Modi**.
4. PM's visit to **Seychelles was his first to countries in the Indian Ocean region** and included stops in Sri Lanka and Mauritius.
5. It was seen as a trip reaffirming India's primacy in the **Indian Ocean region** against the backdrop of a growing Chinese presence.
6. PM's visit in March 2015 came about two years before **China announced its first overseas naval base in Djibouti in July 2017**.

## UN DEFEATS RUSSIA RESOLUTION

The **UN Security Council defeated a Russian resolution** on 30 October 2020 to **commemorate the 20th anniversary of a UN measure demanding equal participation for women in activities promoting global peace**, with opponents objecting to its failure to adequately address human rights and the key role of civil society in pushing for gender equality. The **email vote on the resolution was 5-0**, with **10 countries abstaining**, far less than the minimum nine "yes" votes required for adoption. The Russian draft was supported by **Russia, China, Vietnam, Indonesia and South Africa**.



### What

1. The countries that abstained were the United States, United Kingdom, France, Belgium, Dominican Republic, Germany, Estonia, Niger, Saint Vincent and the Grenadines, and Tunisia.
2. The **Russian draft weakened the initial UN resolution adopted in 2000 and nine follow-up resolutions** — which Russia strongly denied.
3. Germany's UN Ambassador Christoph Heusgen said his calls for **strong language on the human rights foundation of all the resolutions**, and for “the adequate reflection of the critical role of civil society, women peacebuilders and human rights defenders” in implementing the measures were not reflected in the Russian draft.
4. The **draft resolution “was designed to undermine and reverse the progress of the past 20 years”**, and “it is evident that our Russian and Chinese colleagues ... do not believe women should be fully empowered to prevent conflict, or sit at the table to pursue peace and reconciliation.”
5. The **Russian resolution would have commemorated the 20th anniversary of the initial women, peace and security resolution** and noted “with deep concern persistent barriers” to its implementation.

## ECONOMY

### EQUALISATION LEVY FOR E-COMMERCE

The **government** on 29 October 2020 notified the changes in the manner of **collection of the 2% equalisation levy** on earnings **originating from India** for non-resident e-commerce platform operators. While **deducting and depositing the levy** — which **came into effect on April 1**— has hitherto been the obligation of resident recipient of services, the onus has now been shifted to the non-resident operator; the **obligation will have to be met on a quarterly basis**.

### What

1. According to an **amendment to the annual statement forms** and appeal documents required to be furnished by relevant firms, it is mandatory for them to **obtain a permanent account number (PAN) in India**.
2. The industry had represented to the government earlier to reconsider the provision for non-residents to obtain PAN.
3. Further, the government has also retained the aspect of limited appeal against only the amount of penalty levied in case of **non-payment of the levy** but not the **quantum of tax assessed itself**.

#### Flashback

1. **Equalisation levy**, also referred to as **Google Tax** was first introduced by **Finance Act, 2016**, at the **rate of 6% on payments for digital advertisement services** received by non-resident companies without a permanent establishment there, if these exceeded a threshold.
2. The **levy is designed to nullify the advantage of foreign e-commerce firms** sans a physical presence in India over local competitors.
3. The Budget 2020-21 expanded its scope to include consideration received by non-resident e-commerce operators from e-commerce supply or services, at a **rate of 2%**.

## MODEL ACT FRAMED ON LAND TITLES

The **NITI Aayog** has **framed a model Act on conclusive land titles** that it hopes will be adopted and implemented by states. The **aim is to facilitate easy access of credit to farmers and reduce a large number of land-related litigations**, besides enabling transparent real estate transactions and land acquisition for infrastructure developments. Since **land is a state subject**, all states will have to adopt the model legislation to roll it out for enhanced transparency in all future land transactions. Although several efforts were made in the past to move towards conclusive **land titling**, the **proposals could never be pushed through**.

### What

1. **Under the model Act**, the **land dispute resolution officer** and the **land title appellate tribunal are one-shot institutions** which will fade away as the work reduces. Besides, it proposes a draft list of titles on which objections and claims are called for. **“After disposal of these claims and objections**, the registers of these titles are notified and thereafter the new registration process sets in.
2. As per the model Act, after three years of its notification the registers of titles attain conclusivity without any external action.
3. **Conclusive land titles are guaranteed by the state for their correctness** and entail provision for compensation by the state in case of any disputes.
4. **In India, currently transactions happen based on the presumptive land titles. Guaranteed title systems** have been developed and adopted in countries such as **Australia, New Zealand, Singapore and the United Kingdom**.
5. Land ownership in India is often determined through various records such as **sale deeds**, which are a record of the property transaction between the buyer and seller, besides property tax receipts and survey documents.
6. Under the **Digital India Land Records Modernization Programme of the Department of Land Resources under the rural development ministry**, the government has achieved **more than 90% digitisation of land records**.
7. Out of the identified 655,959 villages, land records have been computerised in 90.1% or 591,221 villages across the country.
8. Some states like **Maharashtra have already taken the lead** and the Centre hopes other states will follow suit.

## SCIENCE AND TECHNOLOGY

### WATER FOUND ON THE SUNLIT SURFACE OF MOON

**Scientists have confirmed**, for the **first time**, the **presence of water on the sunlit surface of the Moon**, a discovery which indicates that **water molecules may be distributed across the lunar surface**, and **not limited to the cold, shadowed places** as previously thought. Using NASA's **Stratospheric Observatory for Infrared Astronomy (SOFIA)**, the researchers, including those from the University of Hawaii in the US, detected **water molecules (H<sub>2</sub>O) in Clavius Crater -- one of the largest craters visible from the Earth**, located in the Moon's southern hemisphere.

**What**

1. The **earlier studies of the Moon's surface**, including those conducted during the **Indian Space Research Organisation's (ISRO) Chandrayaan-1 mission**, detected **some form of hydrogen**, the NASA scientists said **these were unable to distinguish between water and its close chemical relative, hydroxyl (OH)**.
2. Data from the current study, published in the journal Nature Astronomy, revealed that the **Clavius Crater region has water in concentrations of 100 to 412 parts per million** -- roughly equivalent to a 12-ounce bottle of water -- trapped in a cubic meter of soil spread across the lunar surface.
3. As a comparison, the researchers said the **Sahara desert has 100 times the amount of water than what SOFIA detected** in the lunar soil.
4. According to the scientists, **SOFIA offered a new means of looking at the Moon**, flying at **altitudes of up to 45,000 feet**.
5. Using its **Faint Object infraRed Camera for the SOFIA Telescope (FORCAST)**, the researchers said **SOFIA was able to pick up the specific wavelength** unique to water molecules and discovered a relatively surprising concentration in the sunny Clavius Crater.

**What has SOFIA discovered?**

1. **SOFIA is a joint project of NASA and the German Aerospace Centre**, is a **2.5m telescope**, the **world's largest flying observatory** that is flown on a **Boeing 747-SP aircraft**, which **flies at an altitude of about 45,000 feet**.
2. The telescope uses the **Faint Object infraRed Camera for the SOFIA telescope (FORCAST)**, with the help of which it was **able to pick up the specific wavelength of water molecules** on the surface of the Moon.
3. It has detected these water molecules in one of the largest craters on the Moon located in its southern hemisphere, which is visible from the Earth, called **Clavius**.

**TWO MOLECULES FOUND FOR REGENERATION CELL**

**Scientists from Agharkar Research Institute at Pune**, in collaboration with **University of Hyderabad**, have for the **first time discovered two important molecules** from the **hydra**. The **study is significant as it provides compelling evidence that humans have evolved from simpler common ancestors through biological evolution** as proposed by **Charles Darwin in 1859**. The study has been published in the scientific journal *Developmental Dynamics* published by American Association for Anatomy and is useful to the scientific community to understand tissue and organ regeneration.

**What**

1. **Hydra is a freshwater organism** with a simple body and a **spectacular ability to regenerate**. If cut into pieces, almost every piece of the hydra can regenerate into a new one. Scientists have been interested in finding the **secrets of regeneration in the hydra**.
2. **Gremlin and noggin**, the **molecules discovered in this study**, play crucial roles in **how cells "talk to each other"**.
3. By **using a combination of conventional and modern techniques**, this study shows

- that **noggin and gremlin play a role in tentacle formation and budding of the hydra.**
4. Scientists used **specific chemicals to interfere with normal development/pattern formation** and deciphered the functions of the two proteins.
  5. **These molecules are also present in humans but play different roles.** Such research helps us study biological evolution and understand how complex bodies like a fish, monkey, giraffe or a human are built by using identical or similar molecules (proteins).
  6. This study has **important implications for evolution of animal body plans.** Evolution of body axes was partly responsible for the evolution of complex body plans.
  7. Humans, for example, have **three body axes — dorsal-ventral (back-front), anterior-posterior (head-toe) and left-right —** and have **bilateral symmetry** (two eyes, two hands, two legs, etc).
  8. The axes develop quite early as **development of organs** and systems at proper locations in the body depends on them.
  9. For example, **the brain cannot develop in the head region unless anterior-posterior is decided.** Unlike humans, hydra has an **oral-aboral axis and radial symmetry** (like that of a starfish).

## MESSAGING APP LAUNCHED FOR ARMY

The **Indian Army** on 29 October 2020 launched a **messaging app called SAI** that **will provide secure voice, text and video calling services to its soldiers.** The **model (of SAI)** is similar to commercially available **messaging applications like WhatsApp, Telegram, SAMVAD and GIMS** and utilises end-to-end encryption messaging protocol.

### What

1. The Army developed and named the messaging app as **SAI**, which stands for **Secure Application for Internet.**
2. **SAI will be utilised by the pan Army to facilitate secure messaging** within the service.
3. The application supports **end-to-end secure voice, text and video calling services** for Android platforms over the internet.
4. SAI scores over on security features with local in-house servers and coding which can be tweaked as per requirements.
5. The application has been vetted by **CERT-in empanelled auditor and the Army Cyber Group.**

## SANT MISSILE TEST FIRED

**India** on 19 **October** 2020 test-fired the **Stand-off Anti-tank (SANT)** missile off the coast of Odisha. The test was successful. The **Defence Research and Development Organisation is developing the missile for the Indian Air Force** and it will have **both Lock-on After Launch and Lock-on Before Launch capabilities.**

### What

1. **SANT is an airborne anti-armor guided-missile** which are to be armed, on **HAL developed ALH-Rudra Mk. IV** and **Light Combat Helicopters (LCH)**.
2. The **SANT missile has been developed by DRDO's research center Imarat**, in association with the Indian Air force, and is an **upgrade of Helina's missile**, which had a range of 7-8 km.
3. The **new missile has a range of 15-20 km** and is equipped with a **new nose-mounted fire-and-forget millimeter-wave (MMW) W-band seeker** to help keep the launch platform at a safe distance, to evade defensive fire from the target area.
4. Indian Air Force (IAF) and Indian Army Aviation Corps (AAC) have a combined requirement of **4,000 SANT units** and it is likely will be cleared for production by end of 2021.
5. **SANT will be the main airborne anti-armor guided-missile** for the **ALH-Rudra Mk. IV** and **Light Combat Helicopters (LCH) fleet**.

### FIRST LTG/4G IN SPACE

**Finland based Nokia** which is one of the oldest mobile and telecommunication companies **has been selected by American space agency National Aeronautical Space Agency (NASA) to build the first ever cellular network on the lunar surface**. NASA which is **scheduled to launch the ARTEMIS mission to the Moon by 2024** will partner with Nokia **to deploy the first LTE/4G communications system in space**. The company after it was chosen as the NASA partner to advance the **"Tipping Point"** technologies on the lunar surface for the mission.

### What

1. Its **LTE network is best suited to provide wireless connectivity** for varied activities that need to be carried out by the astronauts on the lunar surface.
2. It also said that **the network will enable the video and voice communication capabilities**, telemetry and biometric data exchange during the mission.
3. The company informed that it will use its **Nokia Bell Labs'** pioneering innovations to deploy the compact, low power consuming space hardened LTE solution on the Moon by the end of 2022.
4. Nokia further said that **it is also doing a collaboration with the Intuitive Machines to integrate the ground breaking into the lunar lander** which will be used in the mission.
5. The network designed by Nokia will be designed in a manner that it can self configure upon the deployment and establish the **first LTE communications on the Moon**.
6. By **partaking in the ARTEMIS mission** and building the wireless network solution on the Moon, the company is **planting the flag for pioneering innovations** beyond the conventional limits.
7. **NASA will send the first woman and the next man astronaut on the lunar surface as part of the ARTEMIS mission**. The mission is scheduled to be launched by the **year 2024**.

## NEW SPECIES OF DIATOMS DISCOVERED

**Seven new species of sub-aerial diatoms, a kind of algae,** have been discovered from some areas of **Western Ghats** by city-based scientists from the **Agharkar Research Institute (ARI)**. **Diatoms, which generate nearly 25 per cent of global oxygen,** are commonly **found in streams, rivers, lakes and seas**. In simple terms, **every fourth breath that we take is produced by diatoms,** which are efficient in the carbon fixation process. In a recently published study led by **Balasubramanian Karthick, diatoms from genus Luticola** were found growing on wet walls close to water bodies near **Kaas plateau in Satara, Varanda ghat near Bhor and Yana caves** in north Karnataka.

### What

1. This is the **first time in two centuries** that a **discovery of Luticola peguana**, found during the 1800s in Bengal, has been found in the **Western Ghats**.
2. On the missing links between the **diatoms found along the Western Ghats and Antarctica**, the ARI scientist said, There could be a possibility that these species share a common ancestry.
3. Across the world, **there are 200 known species under this genus**. Of these, about 20 per cent is endemic to Antarctica.
4. The **Y species of genus Luticola is known to exist** and be endemic to Southeast Asian countries such as **Thailand, Vietnam and Cambodia**.
5. Many large living organisms are known to thrive in varying habitats across geographical boundaries.
6. In a similar manner, even micro-organisms grow in diverse habitats, but very few among the smaller creatures have been identified so far.

## OSIRIS-REX TOUCHES BENNU

The **US space agency NASA** in the early hours of 21 October 2020 **added a feather to its cap** and successfully completed its first attempt for an asteroid sample collection mission. **NASA's OSIRIS-REx spacecraft**, which has been **orbiting Asteroid Bennu since the end of December 2018**, performed a **touch-and-go or TAG maneuver** to collect the sample from the surface of the asteroid.

### About the mission

1. **Back in September 2016**, NASA launched the **Origins, Spectral Interpretation, Resource Identification, Security, Regolith Explorer (OSIRIS-REx) spacecraft** to orbit the asteroid and subsequently collect samples from its surface.
2. The mission had been the **brainchild of Dr Michael J Drake**, who along with Dante Lauretta, repeatedly proposed to NASA to allow a mission to go to an asteroid for sample collection.
3. **Asteroid Bennu is among the millions of asteroids found in our solar system**. However, **it is not a part of the main asteroid belt found between Mars and Jupiter**.
4. **Asteroid Bennu is a near-Earth asteroid** and scientists believe that it contains clues into the formation of the solar system and the planets.
5. Bennu was selected since the team needed a **near-Earth Object with an orbit similar to Earth's**. In fact, Bennu's orbit passes through the Earth's orbit.
6. The mission aimed at **finding the answers to some fundamental questions** like why

there is life in the solar system, **why Earth has a habitable environment and how did life actually form.**

7. **Asteroid Bennu is rich in water and carbon**, one among many, and it could help in solving clues on how oceans came about on the planet.
8. It was also important to understand the asteroid because it is a **potentially hazardous one that could cause severe damage to Earth** if any collision were to occur.
9. In fact, there is a **possibility that about 150 years down the line, Bennu might collide with the Earth.**
10. Therefore, **OSIRIS has been trying to study the orbit of Bennu very closely** and understand the impact of the Sun on the orbit, so that any potential alteration that could cause its collision with Earth could be foreseen and acted upon in advance.

## MISCELLANEOUS

### ONE-MAN PANEL FOR STUBBLE BURNING

A **Supreme Court Bench led by Chief Justice of India (CJI) Sharad A. Bobde** on 16 October 2020 **appointed Justice Lokur as a one-man committee to monitor and prevent instances of stubble-burning by farmers in the three States.** Student forces will patrol highways and fields in the three States and ensure that no fires are started in the fields.

#### What

1. The **Chief Secretaries of the three States will provide facilities to the committee** and provide the student volunteers with adequate transportation to aid their vigil.
2. The **Supreme Court's own Environment Pollution (Prevention and Control) Authority (EPCA)** would consult with the committee on issues related to stubble-burning.
3. The bench was hearing a plea filed by **one Aditya Dubey** who has raised concern over pollution caused due to stubble burning.
4. The committee will file its status reports with the court at **least every fortnight.**

### NTPC RANKS FIRST AMONG INDIAN PSUS

**State-run power giant NTPC** on 22 October 2020 said it has **featured on the top on the list of Indian PSUs** under '**World's Best Employer 2020**', published by **Forbes.**

The recognition is testimony to the NTPC's commitment towards inculcating best in class practices that are thoughtfully designed and robustly executed.

#### What

1. Its training methodology enriched the lives of thousands of its employees through **intensive digitisation and online training enabling them** to avail services even from remote locations.
2. The modules have helped thousands of workforces from NTPC to grow and think beyond the professional sphere.

3. **NTPC has been successfully innovating** and introducing people practices in the **domain of hiring**; engagement; diversity and inclusion; rewards and recognition; and performance management.
4. In the recent past, the company has initiated an '**NTPC Series**' on success stories beyond official work, '**Ambition, Growth, Success Beyond Work**', a series on the achievements of employees beyond their official assignments.
5. The final list comprised 750 multinational and large corporations **headquartered in 45 countries**.

## PUBLIC AFFAIRS INDEX 2020

**Kerala was adjudged the best governed state in the country while Uttar Pradesh ended at the bottom in the large states category**, according to the **Public Affairs Index-2020** released by the Public Affairs Centre in Bengaluru on 30 October 2020. In its annual report released on 30 October 2020, the city-based not-for-profit organisation, , **headed by former Indian Space Research Organisation (ISRO) chairman K Kasturirangan**, said the states were ranked on governance performance based on a composite index in the **context of sustainable development**.

### What

1. Four southern states, **Kerala (1.388 PAI Index point)**, **Tamil Nadu (0.912)**, **Andhra Pradesh (0.531)** and Karnataka (0.468) stood in the first four ranks in the large state category in terms of governance.
2. **Uttar Pradesh, Odisha and Bihar were at the bottom of the ranking**, scoring negative points in the category. They got - 1.461, -1.201 and -1.158 points respectively.
3. In the small state category, **Goa ranked first with 1.745 points**, followed by Meghalaya (0.797) and Himachal Pradesh (0.725).
4. The **Worst performers who scored negative points are Manipur (-0.363)**, **Delhi (-0.289)** and Uttarakhand (-0.277), according to the PAC report.
5. **Chandigarh emerged the best governed union territory** in the category of UTs with 1.05 PAI points, followed by Puducherry (0.52) and Lakshadweep (0.003). Dadar and Nagar Haveli (-0.69), Andaman, Jammu and Kashmir (-0.50) and Nicobar (-0.30) were the least performers.
6. According to the PAC, the **governance performance is analysed in the context of sustainable development** defined by **three pillars of equity, growth and sustainability**.
7. The evidence that PAI 2020 generates and the insights that it provides must compel us to reflect on the economic and social transition that is underway in India.

## AROGYA VAN INAUGURATED

The **Prime Minister** on 30 October 2020 **inaugurated Arogya Van at Kevadia in Gujarat's Narmada district**. After the inauguration, PM Modi took a tour of the '**Arogya Van**' park. PM is in his native state Gujarat to take part in "**Rashtriya Ekta Diwas**" to **mark the birth anniversary of Sardar Vallabhbhai Patel**.



**What is Arogya Van?**

1. **'Arogya Van' or herbal garden has a number of herbs and medicinal plants.** You will get a plethora of information regarding these **herbs at Arogya Van.**
2. Arogya Van, which is **spanned over an area of around 17 acres**, is **located near the Statue of Unity.**
3. Arogya Van has health-related landscapes and **aims to create awareness about the pivotal role of the plant** in the wellness of the human body.
4. With a focus on yoga, Arogya Van's entry gate has 12 postures of Surya Namaskar. All postures are of human size.
5. At Arogya Van, there is a **digital information centre.** This **Digital information centre caters information regarding the importance and heritage of medicinal plants** in our daily life.
6. The main attraction at Arogya Van is the **'Aushadh Manav'.** The giant-sized **'Aushadh Manav' is a three-dimensional layout of a human body** showcased in a resting posture.
7. Medicinal plants represent each human organ denoting the benefits of each plant for each organ. Specific plants are being planted in specific parts of the human body to make visitors aware of the therapeutic treatment.
8. **Arogya Van has five gardens** inside the premises. These are **Leutea Garden, Aroma Garden, Garden of Colours, Alba Garden, and Yoga Garden.**
9. Arogya Van has an **indoor plants section.** This section creates awareness even as the **interior landscaping** provides visitors with a soothing and tranquil ambience.
10. Arogya Van has a Kerala connection. Gujarat Forest Department has tied up with **Santhigiri Ashram in Kerala.**
11. **Santhigiri Ashram** is an organisation that **focuses on Yoga, Ayurveda, and Siddha, Panchakarma.**