

Current Affairs search results for tag: science-and-technology

### **1. India announces additional contribution of '\$ 5 million' to ASEAN-India science and technology fund ( Nov. 12, 2022 )**

India announces additional contribution of '\$ 5 million

The Vice President [Jagdeep Dhankhar](#) on 12 November 2022 announced an additional contribution of **USD 5 million** to the **ASEAN-India Science and Technology Fund (AISTDF)** to enhance cooperation in sectors of public health, renewable energy and smart agriculture.

The announcement came during the three-day visit of Vice President Jagdeep Dhankhar to Cambodia for ASEAN-India and East Asia summits.

#### **ASEAN India S&T Development Fund (AISTDF)**

ASEAN-India Science & Technology Collaboration formally started in 1996 with the establishment of the ASEAN India S&T working group (AIWGST).

Initially, the collaborative S&T projects and activities between India and ASEAN were supported through ASEAN India Fund (AIF).

In 2008, a dedicated ASEAN India S&T Development Fund (AISTDF) with an equivalent amount of USD 1 million was established jointly by the **Ministry of External Affairs** and **Department of Science and Technology (DST)** to support Research and Development projects and associated project development activities.

The AISTDF was enhanced to an equivalent amount of USD 5 million through an announcement by the Prime Minister of India on the sidelines of the ASEAN-India Summit in Malaysia in November 2015.

### **2. Google launches 'FloodHub', a platform to forecast flood ( Nov. 11, 2022 )**

'FloodHub', a platform to forecast flood

In November 2022, **Google** launched a platform called '**FloodHub**' to forecast floods. In this context, Google has expanded its AI flood forecasting services, which were first introduced in 2018 to an additional 18 countries in India, Africa, Latin America and Southeast Asia.

#### **Important Facts:**

- The company also launched '**FloodHub**', a platform that displays flood forecasts and shows when and where floods are likely to occur, so that people at risk can be directly informed of their needs and officials can help them effectively. be able to assist.
- In 2018, the company launched its Flood Forecasting Initiative to help combat the devastating damage caused by floods.
- The company has expanded its wildfire monitoring program to a few more countries after launching it in the US.
- Using new AI models based on satellite imagery, the company detects the extent of wildfires and searches and shows their real-time location in a map.

- Google said that since July, we've covered more than 30 major wildfire incidents in the US and Canada, helping people and fire teams search and view Maps more than 7 million times.
- Wildfire detection is now available in the US, Canada, Mexico and parts of Australia.

**Google:**

- Founders: **Larry Page, Sergey Brin;**
- Parent Organization: **Alphabet Inc.;**
- Established: **4 September 1998;**
- Headquarters: **Mountain View, California, United States;**
- CEO: **Sundar Pichai;**

**3. India's first private sector rocket Vikram-S to launch in November ( Nov. 9, 2022 )**

India's first private sector rocket Vikram-S to launch in November

India's **first privately** developed launch vehicle - **Hyderabad-based Skyroute's Vikram-S** - is set to make its maiden flight from **Sriharikota** between November 12 and 16.

**Important facts**

- Marking the launch of the private sector, **Vikram-S** will carry three customer satellites in a sub-orbital flight in this mission, named '**Prarambh**'.
- With this mission, **Skyroute Aerospace** will become the first private space company in India to launch a rocket into space, ushering in a new era for the space sector.
- The launch date will be decided based on the weather conditions.
- It aims to remove barriers to cost-efficient satellite launch services and space-flight while furthering its mission of making spaceflight affordable, reliable and routine for all.

**About Vikram-S Rocket**

- It is a **single-stage sub-orbital launch vehicle** which will carry **three customer payloads** and help test and validate technologies in the Vikram series space launch vehicles.
- The **Prarambh mission** is aimed at carrying three payloads into space, including a **2.5-kilogram payload** that has been developed by students from several countries.
- Skyroute's launch vehicles have been named '**Vikram**' as a tribute to **Vikram Sarabhai**, the founder of the Indian space programme.

- The initial mission and the Vikram-S rocket have been developed by a Hyderabad-based
- startup in collaboration with ISRO and IN-**SPACE** (Indian National Space Promotion and Authorization Centre).

### **Indian Space Research Organisation (ISRO)**

- It was set up on **15 August 1969**
- It is India's national space agency. It launches its space rocket from **Satish Dhawan Space Centre** at Sriharikota in Andhra Pradesh.
- Headquarters: **Bengaluru**
- Chairman: **S. Somanath**

### **4. Government notifies the use of drought resistant PB2 variety of Basmati rice for cultivation ( Nov. 8, 2022 )**

The Union Agriculture ministry has notified the use of drought -tolerant basmati rice developed by the Indian Agricultural Research Institute (IARI) for large-scale release.

The new variety of Pusa **Basmati (PB) 1882** can withstand deficient rainfall during the flowering stage of the grain. In the traditional variety inadequate rain during flowering of plant leads to a drop in the rice productivity

Also there will be no need for transplanting of the rice as is done in traditional methods. This variety of rice can be sown directly in the field resulting in huge saving of water.

According to S Gopala Krishnan, principal scientist, IARI, rice grown through the transplanting method requires close to 3000 litres of water for producing one kg of rice, while the new variety sown through direct seeding method results in huge savings on water usage.

He also said that the new variety during two years of field trials had given an average yield of 4.6 tonne/hectare compared to 4.2 tonne/hectare reported for its parent variety PB 1.

### **Basmati growing region of India**

The new PB.2 variety has been recommended for cultivation in key Basmati rice growing regions of India.

The areas of Basmati Rice production in India are the **Jammu and Kashmir, Himachal Pradesh, Punjab, Haryana, Delhi, Uttarakhand and western Uttar Pradesh.**

India is one of the leading exporters of basmati rice in the world. **Iran, Saudi Arabia, Iraq, United Arab Emirates, U.S and Yemen Republic** are the major buyers of basmati rice from India. (Source APEDA)

### **Indian Agricultural Research Institute (IARI)**

It was set up as Agricultural Research Institute in 1905 at Pusa, Bihar. It was shifted to New Delhi in 1936.

After Independence its name was changed to Indian Agricultural Research Institute.

It is basically engaged in the research in the field of agriculture and its allied field for increasing crop productivity and developing integrated crop management technologies for a sustainable agricultural production system.

It developed the hybrid seeds of wheat and rice which led to Green revolution in India.

Headquarters: **New Delhi**

Director: **Ashok Kumar Singh**

## **5. Cordy gold nanoparticles ( Nov. 5, 2022 )**

Cordy gold nanoparticles

**Cordi Gold nanoparticles (Cor-AuNPs)** which is the result of research by scientists from **four Indian institutes** have recently earned an international patent from Germany.

### **What are Cordy gold nanoparticles?**

- These nanoparticles, derived from the synthesis of the extracts of **Cordyceps militaris** and gold salts, could make drug delivery in the human body faster and safer.
- Cordyceps militaris is a parasitic fungus. Gold salts are ionic chemical compounds of gold generally used in medicine.
- Cordyceps militaris, known as the super mushroom for its tremendous medicinal properties, combines bioactive components in the synthesis of gold nanoparticles.
- The wild Cordyceps mushroom is found in the eastern Himalayan belt.
- Biosynthesized nanogold particles indicate a new application of nanoparticles in the development of therapeutic drugs that can be made into ointments, tablets, capsules and other forms.

## **6. China launches third and final lab module of space station ( Nov. 3, 2022 )**

final lab module of space station

China on 1 November, 2022 launched its **third and final permanent space station module** (Tiangong space station).

### **Important facts**

- The name of this lab module is **Mengtian**.
- Mengtian is the **second lab module** and the last major component of China's space station.

- Mengtian will later be relocated to its permanent position and three modules—named
- **Tianhe, the Wentian Lab Module, and Mengtian**—will form a basic **T-shaped structure** of the space station.
  - It will provide space for science experiments in **zero gravity**.
  - Mengtian weighs about **23 tons**, is **17.9 metres (58.7 ft)** long and has a diameter of **4.2 metres (13.8 ft)**.
  - China's space laboratory will be fully ready as soon as this module, sent to the Wenchang Launching Station, located on the coast of the southern island province of Hainan, via Long March-5BY-4 rocket, connects to the space station Tiangong.
  - China successfully launched the first lab module of its under-construction space station in the last week of July 2022.

## **7. IVRI demanded a ban on using Aceclofenac in cattle ( Nov. 3, 2022 )**

ban on using Aceclofenac in cattle

The **Indian Veterinary Research Institute (IVRI)** has called for a ban on the use of **aceclofenac** in cattle.

### **Important facts**

- IVRI found in its study that **aceclofenac** was rapidly converted to **diclofenac** when injected into the buffalo.

### **About Aceclofenac**

- It is used for the relief of pain and inflammation in rheumatoid arthritis, osteoarthritis and ankylosing spondylitis.
- Wildlife Institute of India, BNHS and IVRI had written to the Union Health Ministry seeking a ban on Aceclofenac, but no action has been taken so far.

### **About Diclofenac**

- It is an **anti-inflammatory drug** and was banned for veterinary use by the Government of India **in 2006**.
- This was the main reason for the massive decline (**99 percent**) in the vulture population across Asia.

## **8. First successful flight test of phase -II ballistic missile defence interceptor ( Nov. 2, 2022 )**

Ballistic Missile Defence (BMD)Interceptor

Defence Research and Development Organisation (**DRDO**) conducted the first successful flight test of **Phase-II Ballistic Missile Defence (BMD) Interceptor AD-1 missile** with

Large Kill Altitude Bracket from **APJ Abdul Kalam Island** off the **coast of Odisha** on November 2, 2022.

### **Interceptor AD-1 Missile**

- It is a long-range interceptor missile designed for both low **exo-atmospheric and endo-atmospheric interception of long-range ballistic missiles as well as aircraft.**
- It is driven by a **two-phase solid motor.**
- It is equipped with indigenously developed advanced control system, navigation and guidance algorithms to accurately guide the missile to the target.
- It has the ability to hit many different types of targets.
- During this flight-test, all sub-systems performed as expected.

### **Defence Research and Development Organisation (DRDO)**

- It is a premier defence research and development agency under the **Ministry of Defence**, Government of India.
- It aims to make India self-reliant in critical defence technology and systems.
- It was set up in **1958.**
- Headquarters - **New Delhi**
- Chairman - **Samir V Kamat**

## **9. SpaceX launches first Falcon Heavy mission after three years ( Nov. 2, 2022 )**

SpaceX launches

**SpaceX's Falcon Heavy**, the **world's most powerful active rocket**, was launched for the first time after nearly three years on November 1, 2022, from **Cape Canaveral, Florida.**

### **Important facts**

- Under this mission, satellites of the US Space Force have been sent into space from the **Falcon Heavy rocket.**
- This mission was delayed for years by the Space Force.
- Earlier in **2018, Elon Musk** sent a **red sports car** of his second company Tesla into space as a test payload on a **Falcon Heavy rocket.**
- The weight of this rocket is equal to the weight of **two space shuttles**, which **weigh 63.8 tonnes.**

- The **230-foot-long rocket** has **27 Merlin engines**, which makes it the world's most powerful rocket.
- **Saturn-5** was the most powerful rocket ever. Which was used by **NASA** for the search on the moon.

### **About SpaceX**

- It is a private spaceflight company that sends satellites and people to space, including NASA crews to the **International Space Station (ISS)**.
- The company sent its first two astronauts to the ISS on May 30, 2020, aboard the SpaceX Crew Dragon, and several more on behalf of NASA and other organizations.
- As of mid-2022, it is the only commercial spaceflight company capable of sending astronauts into space.
- SpaceX was founded by **Alan Musk**, a South African-born businessman and entrepreneur.

### **10. CDFD launches study to develop treatments for rare genetic diseases in children ( Nov. 2, 2022 )**

treatments for rare genetic diseases in children

**Hyderabad-based Centre for DNA Fingerprinting and Diagnostics (CDFD)** on November 1, 2022 launched a nationwide study to decode the **genetic mutation that** causes **Paediatric Rare Genetic Disorder (PRaGeD)** in children.

#### **Important facts**

- The PRaGeD mission is a pan-India initiative funded by the **Department of Biotechnology (DBT)**.
- The initiative will discover genes that cause rare diseases, develop suitable treatments, provide counselling and create awareness among people.
- About 15 research and health institutions from across the country are participating in the study.
- Under this initiative, 5,600 families will be screened over a period of five years to identify the genetic causes of undiagnosed paediatric rare genetic diseases.
- Once the genetic mutation is detected in these children, the researchers will conduct studies in animals and cell models to understand how the genetic mutations are causing the rare disease.

#### **What is a rare genetic disease?**

- A rare disease is any disease that affects a small percentage of the population.
- Most rare diseases are genetic, therefore these are called **rare genetic diseases**.

- These diseases are present throughout a person's entire life, even if symptoms do not
- immediately appear.
  - Common rare diseases found in India are haemophilia, thalassemia, sickle cell anaemia and primary immune deficiency in children, auto-immune diseases, lysosomal storage disorders like Pompe disease, Hirschsprung disease etc.
  - The burden of rare genetic diseases in India is close to **70 million** and about 30 percent of children suffering from such diseases are below the age of five years.