

WHAT IS EARTH HOUR?

The power discoms in the national capital are gearing up to make the 'Earth Hour' a success by encouraging their consumers to switch off non-essential lights and electric appliances for one hour on March 23 night.



Earth Hour is a global grassroots movement uniting people to take action on environmental issues and protect the planet. It is **organized by the World Wildlife Fund (WWF)**.

- It **started in Sydney, Australia, in 2007** as a symbolic lights-out event and has since grown into a global movement involving millions of people in over 190 countries and territories. It takes place towards the **end of March every year**.
- “Earth Hour” **encourages people to switch off all lights for an hour, from 8:30 p.m. to 9:30 p.m. local time**, to promote awareness of climate change challenges and energy conservation.
- **Governments and companies also participate** by turning off non-essential lights in their buildings, monuments and landmarks to raise awareness about the impact of energy consumption on our planet.

Key Facts about World Wildlife Fund (WWF):

- It is an international non-governmental organization (NGO) founded in 1961 in Morges, Switzerland, to **protect endangered species of wildlife** and preserve natural habitats.
- **Mission:** To stop the degradation of the planet’s natural environment and to build a future in which humans live in harmony with nature.

WORLD HAPPINESS REPORT 2024



Finland has once again claimed the title of the world's happiest country for the seventh consecutive year, according to the annual UN-sponsored World Happiness Report.

About World Happiness Report:

- The annual World Happiness Report is a partnership of Gallup, the **Oxford Wellbeing Research Centre**, the **UN Sustainable Development Solutions Network (SDSN)**, and the World Happiness Report's Editorial Board.
- It is based on global survey data from people based on **people's own assessments of their happiness**, as well as economic and social data. It considers **six key factors**: social support, income, health, freedom, generosity, and the absence of corruption. It assigns a happiness score **based on an average of data over a three-year period**.

Highlights of World Happiness Report 2024:

- **The Nordic nations** continue to **dominate** the top rankings. **Finland topped the list** for the seventh year in a row.
- The other top 10 countries are Denmark, Iceland, Sweden, Israel, Netherlands, Norway, Luxembourg, Switzerland, and Australia.
- Out of the 143 countries surveyed, **Afghanistan remained at the bottom** of the list.
- For the first time in over a decade, the United States and Germany have slipped out of the top 20 happiest nations, landing at 23rd and 24th place, respectively.

Where does India stand?

- India is **ranked 126th** on the list, the same as last year, in the happiness index.
- **Older age is associated with higher life satisfaction** in India. The report said that older Indian men, particularly those in higher age brackets, presently married and those with an education, tend to report greater life satisfaction compared to their counterparts. However, **older women in India report lower life satisfaction than older men**.
- Satisfaction with living arrangements, perceived discrimination, and self-rated health emerged as the top three predictors of life satisfaction.

WHAT IS NATIONAL INTERNET EXCHANGE OF INDIA (NIXI)?

The National Internet Exchange of India (NIXI) is set to unveil the BhashaNet portal at the upcoming Universal Acceptance (UA) Day.

National Internet Exchange of India

About National Internet Exchange of India (NIXI):

- It was established in 2003 as a **not-for-profit** organization under the **Companies Act 2013**. It was set up to extend the use of **Internet Service Protocols (ISPs)** for the purpose of **routing domestic traffic within the country** instead of taking it all the way abroad, thereby resulting in a better quality of service (reduced latency) and reduced bandwidth charges for ISPs by saving on international bandwidth.
- It is **tasked to increase Internet penetration and adoption** in India by facilitating the various infrastructure aspects to enable the Internet ecosystem to be managed and used by the masses.
- **.IN is India's Country Code Top Level Domain (ccTLD)**. The Government of India delegated the operations of INRegistry to NIXI in 2004. The INRegistry operates and manages India's .IN ccTLD.
- Another activity being carried out by NIXI is that of **National Internet Registry (NIR)**. The NIR is known as the Indian Registry for Internet Names and Numbers (IRINN). It offers **IXPs towards building Internet Exchange Points**.

What is Universal Acceptance (UA) Day?

- It is held annually and organized by the community-led Universal Acceptance Steering Group (UASG) and the **Internet Corporation for Assigned Names and Numbers (ICANN)**.
- It was established as a means to rally local, regional and global stakeholders to **spread awareness and encourage UA adoption** through a mix of virtual, in-person and hybrid informational and training sessions.

- **UA is a technical requirement** that ensures all valid domain names and email addresses, regardless of script, language or character length, can be equally used by all Internet-enabled applications, devices and systems.
 - Achieving UA ensures everybody has the ability to experience the full social and economic power of the Internet using their chosen domain name and email address.
 - The **first UA Day was held on 28 March 2023** and marked the first time a diverse set of technical and language communities, companies, governments and Domain Name System (DNS) industry stakeholders mobilized to champion UA and a multilingual Internet on a global scale.
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WORLD FOREST DAY



World Forest Day, also known as International Day of Forests, is celebrated on March 21 each year.

World Forest Day is celebrated every year to remind people of the significance of forests and trees in our lives. Countries are encouraged to take part in regional, global, and local drives to set up a scope of forest and tree-related campaigns, like planting campaigns.

- The **Food and Agriculture Organization of the United Nations (FAO)** and the **United Nations Forum on Forests** are the coordinators of the International Day of Forests.
- It is observed on **March 21 every year.**

History:

- In 1971, the General Assembly of the European Confederation of Agriculture proposed that we should celebrate a day dedicated to forests.
 - March 21 was chosen as World Forestry Day by the United Nations as it **coincides with Vernal Equinox and Autumn Equinox** in northern and southern hemispheres.
 - **The theme for this year is - Forests and Innovation: New Solutions for a Better World.**
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WHAT IS PROJECT GR00T?

Recently, AI chip leader Nvidia announced Project GR00T which promises to revolutionise the evolution of humanoid robots.



- The project GR00T stands for **Generalist Robot 00 Technology**. It is a **multimodal AI system** that acts as the mind for humanoid robots, allowing them to learn new skills and interact with the real world.
- Robots built on this platform are designed to understand **natural language and emulate** movements by observing human actions, such as instantly learning coordination, dexterity, and other skills.
- The project aims to **empower humanoid robots** with human-like understanding and movement **using Artificial Intelligence (AI)**.
- The humanoids learn from human demonstrations with imitation learning and from the robotics platform NVIDIA Isaac Lab for reinforcement learning.
- While imitation learning involves observing an expert performing a task and learning to imitate those actions, **reinforcement learning is a machine learning method** that trains software to make decisions to achieve the most optimal results.

ASBESTOS



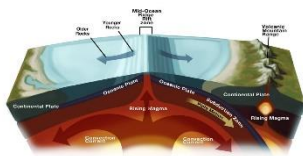
Recently, the United States announced a comprehensive ban on all forms of the deadly carcinogen asbestos.

- Asbestos is a generic term for a **group of six silicate minerals** with similar but distinct properties. These are generally divided into **two sub-groups; serpentine and amphiboles**. Serpentine asbestos (chrysotile or white asbestos) was the most commonly used type of asbestos.
- **Properties:**
 - These are **resistant to heat and corrosion**.
 - It is non-flammable even at very high temperatures.

- It is extremely flexible and durable.
- It has good **tensile strength**.
- It has **low heat conductivity and high resistance** to electricity.
- It was once widely used in **construction materials, insulation and consumer goods**. India's asbestos requirement is met through **imports from Russia, Kazakhstan, Brazil and China**.
- The newly banned **chrysotile asbestos** in USA was primarily used by the **chlor-alkali industry**, which produces chlorine bleach, caustic soda and other chemicals used in water treatment.
- **Health impacts:**
 - According to the World Health Organization, all varieties of asbestos are associated with conditions such as **lung cancer, mesothelioma, laryngeal cancer, ovarian cancer and asbestosis**, a lung fibrosis.
 - If products containing asbestos are disturbed, tiny asbestos fibers are released into the air. When asbestos fibers are breathed in, they may get trapped in the lungs and remain there for a long time.

WHAT IS A SUBDUCTION ZONE?

A recent study by scientists in Portugal predicts the 'Ring of Fire' subduction zone beneath the Gibraltar Strait may lead to the Atlantic Ocean's closure in 20 million years.



- A subduction zone is a spot where two of the **planet's tectonic plates collide** and one dives, or subducts, beneath the other.
 - **Tectonic plates** are pieces of the Earth's rigid outer layer that **slowly move across the planet's surface** over millions of years.
 - This is the main tenet of **plate tectonics**, the theory that portions of Earth's shell glide over the lower mantle, taking continents with them.
 - That **outer layer**, known as the **lithosphere**, consists of the **Earth's crust and the upper section of the mantle**, a dense, hot layer beneath the crust.

- When two tectonic plates meet at a subduction zone and one slide underneath the other, this lithosphere material curves down into the hot mantle.
- This tectonic process can produce some of the planet's most powerful **earthquakes, tsunamis, and volcanoes**.
- This subduction process frequently occurs because of the two different types of lithospheres that make up tectonic plates: **Continental and oceanic**.
 - Because **oceanic material is denser** than continental lithosphere, when the two collide at a subduction zone, the **oceanic portion sinks** into the mantle beneath the more buoyant continental lithosphere.
- Subduction zones can also occur when both colliding plate sections consist of oceanic material. In these cases, older, denser oceanic lithosphere sinks below younger, more buoyant oceanic lithosphere.
 - A new oceanic lithosphere forms at the spots where plates separate, allowing hot mantle material to rise to the surface. As it moves away from those boundaries, this lithosphere cools and gets denser. Thus, older oceanic lithosphere can more easily sink.

The sinking plate, or "slab," at a subduction zone tends to bend at an angle of about 30 degrees from Earth's surface, though some angles are flatter or steeper than this.

- **Sometimes, subduction can begin spontaneously, without the forces of collision** between plates. This **happens as the lithosphere becomes unstable and sinks under** the force of **gravity**. The oceanic lithosphere may grow so old and dense that it collapses and spontaneously forms a subduction zone.
- Subduction zones **occur in a horseshoe shape around the edge of the Pacific Ocean**, offshore of the USA, Canada, Russia, Japan, and Indonesia, and down to New Zealand and the southern edge of South America. **Called the "Ring of Fire,"** these subduction zones comprise "the most seismically and volcanically active zone in the world," responsible for more than 80% of the world's biggest earthquakes and most of the planet's active volcanoes.

WHAT ARE LIANAS?

As the world grapples with rising temperatures, a groundbreaking study led by the University of the Sunshine Coast, Australia exposes an unlikely menace of Lianas.



- Lianas (also known as vines, climbing plants or climbers) are **plants with long, flexible, climbing stems** that are rooted in the ground, and usually have long dangling branches.
- They **particularly thrive in** disturbed forest areas — such as those **affected by logging, natural treefalls, landslides** because they can quickly grow towards the forest canopy using trees as support.
- In terms of climate, lianas are more **resilient to variations in moisture and temperature**, which gives them a competitive advantage over trees. They use their climbing ability, resilience to climatic stress, and efficient water and nutrient usage to outcompete trees for sunlight and resources.
- They compete for sunlight in the canopy and suppress trees. Their **lower carbon sequestering capacity** compared to trees further exacerbates the threat to carbon storage.

Impacts on forest ecosystem

- An increase in lianas's competitive success over trees can significantly affect the forest ecosystem. Lianas, being a **disturbance-favouring plant form**, can impact trees from the understory to the canopy.
- Their prolific growth following heavy disturbance can lead to decreased tree regeneration, **growth and survival**, altering forest structure and ecosystem function, which, in turn, can affect the subsequent recovery of forest.
- Its proliferation **can alter nutrient cycling** within forests and decrease the overall resilience of forests to environmental changes, making ecosystems more susceptible to further disturbances.

COCOA PRODUCTION

A shortage of cocoa beans has led to a near shutdown of processing plants in Ivory Coast and Ghana, the two countries responsible for 60% of global production.



Cocoa is an important **plantation crop** grown for chocolates around the world. It is known as a **crop of humid tropics** and is **native to Amazon basin** of South America.

- It is mainly grown in an area of land **around the equator between 20 degrees latitude north and south.**
- **Required climatic conditions:**
 - It can be grown up to 300 m above mean sea level.
 - **Rainfall:** It requires an annual **rainfall of 1500-2000 mm.**
 - **Temperature:** The temperature range of 15°-39°C with optimum of 25°C is considered ideal.
 - **Soil:** It requires deep and well drained soils. Majority of area under Cocoa cultivation is on clay loam and sandy loam soil.
 - It grows well in the **pH range of 6.5 to 7.0.**
- **Shade requirement:**
 - Cocoa was evolved as an **under-storey crop** in the Amazonian forests. Thus commercial cultivation of cocoa can be taken up in plantations where 50 per cent of light is ideally available.

Major producing regions in the world: About 70 percent of the world's cocoa beans come from four West African countries: Ivory Coast, Ghana, Nigeria and Cameroon.

- In India, it is mainly cultivated in **Karnataka, Kerala and Tamil Nadu** mainly as intercrop with Arecanut and Coconut.