



News Analysis (13 Mar, 2021)

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First Leaders' Summit: QUAD

Why in News

Recently, the Prime Minister addressed the **first summit of the leaders' of the QUAD (Quadrilateral Framework)**. The meeting was **hosted by the USA** on a **virtual platform**.

- Earlier in February 2021, **QUAD ministerial meeting** discussed issues across Indo-Pacific and the military takeover in Myanmar.
- **QUAD** is a grouping of India, USA, Australia and Japan which aims to **safeguard the interests of democratic nations** in the **Indo-Pacific region** and **address global challenges**.



Key Points

- **Focus:**
- **Pledge:**
QUAD pledged to promote a **free, open rules-based order**, rooted in international law **to advance security and prosperity** and **counter threats to both in the Indo-Pacific and beyond**.

- **Highlights:**
 - **Quad Vaccine Partnership:**
 - Agreed to ensure “**equitable**” **access to vaccines to counter the pandemic.**
 - Agreed to a **plan to pool their financial resources**, manufacturing capabilities and logistical strengths.
 - **Japan, USA and Australia will finance** the vaccine initiative that India has welcomed.
 - Appreciated the **Vaccine Maitri initiative (India’s Vaccine Diplomacy)** of India.
 - **Vaccine Maitri Initiative** is an initiative launched by India to give **Covid-19 vaccines** to neighbouring countries.
 - **Discussion on China:**
 - The **Line of Actual Control (LAC)** was discussed by the QUAD leaders as one of several examples of **Chinese aggression.**
 - Other issues related to and coercion of Australia, harassment around the **Senkaku**, were also discussed.
 - Concerns regarding Chinese **cyberattacks** on the USA targets (Microsoft Exchange and SolarWinds) and also **cybersecurity incidents in India**, Japan and Australia were discussed.
- **India’s Stand:**
 - QUAD is **united by its democratic values** and will remain an **important pillar of stability in the Indo-Pacific region.**
 - Called the meet an extension of the ancient Indian philosophy ‘**Vasudhaiva Kutumbakam**’, which regards the world as one family.
- **America’s Stand:**
 - QUAD is not a military alliance or **North Atlantic Treaty Organization (NATO)** equivalent, it is an **opportunity to cooperate on economics, technology, climate and security.**
 - Maritime security, humanitarian and disaster response are core to the QUAD agenda.
 - QUAD is going to be a **vital arena for cooperation** in the Indo-Pacific region.
- **Australia’s Stand:**
 - QUAD grouping could be the start of a **new, permanent and powerful regional grouping of like-minded democracies.**
- **Japan’s Stand:**
 - Acknowledged the **new dynamism** that QUAD has received because of the meeting of the top leaders of the member countries.
 - It will firmly advance its cooperation to realise a free and open Indo Pacific, and to **make a tangible contribution to the peace, stability, and prosperity of the region, including overcoming Covid-19.**
- **China’s Apprehension:**
 - Exchanges and cooperation between countries should **contribute to mutual understanding** rather than **targeting a third party and refrain from pursuing exclusive blocs.**
 - A meeting between the top diplomats of the USA and China is set to be held in Alaska later in March 2021.
 - QUAD **should uphold the principles of openness**, inclusiveness and win-win results and do things that are conducive to regional peace, stability and prosperity.

QUAD

- **About:**

- It is a **four-nation alliance** of India, Australia, USA and Japan which was **established in 2007**.
- It is often dubbed as an "**Asian**" or "**mini**" **NATO**, and is viewed as a counterbalance to China's military and economic clout in the Indo-Pacific region.

The **2020 US-China Economic and Security Review Commission** shows China's growing power projection along the Indian Ocean rim with military or economic activities in countries like Pakistan, Sri Lanka, Maldives, Myanmar and Bangladesh.

- Interestingly, the QUAD, which used to be known as the quadrilateral security dialogue, is now known as the **quadrilateral framework** to indicate it has gone beyond a narrow security dialogue.

- **Evolution:**

- The group, which began with an ambitious geostrategic vision 14 years ago, failed to take off initially due to hesitation among the four nations and objections by China.
- In **December 2012**, Shinzo Abe again floated the concept of Asia's "**Democratic Security Diamond**" involving Australia, India, Japan and the USA to safeguard the maritime commons from the Indian Ocean to the western Pacific.
- In **November 2017**, India, the USA, Australia and **Japan gave shape** to the long-pending "**QUAD**" Coalition to develop a new strategy to keep the critical sea routes in the Indo-Pacific free of any influence (especially China).
- Since then, QUAD has **taken several steps to bolster military and strategic** ties with a series of working- and ministerial-level meetings.

- **Participation in Malabar Exercise:**

- In 2020, all four QUAD Countries - Japan, India, Australia and the USA took part in the **Malabar exercise**.
- Malabar exercise is an annual trilateral naval exercise between the navies of India, Japan, and the USA which is held alternately in the Indian and Pacific Oceans.

Source: TH

LGBTIQ Freedom Zone in EU

Why in News

Recently, in response to the **backsliding of LGBTIQ rights in some EU countries, notably Poland and Hungary**, the **European Parliament** has declared the **European Union an "LGBTIQ Freedom Zone"**

- A majority of countries in the EU (**23/27**) recognise **same-sex unions**, with **16 legally recognising same-sex marriage**.
- **LGBTIQ** stands for **Lesbian, Gay, Bisexual, Transgender, Inter-sex and Queer**.

Key Points

- **Background:**

- Same-sex relationships are **not legally recognised in Poland**, and the country already bans same-sex couples from adopting children together. However, as single people are permitted to adopt, some have managed to get around the ban by applying to adopt as single parents.
 - Now, Poland has come up with the proposal wherein a **person is liable to criminal offence** if he/she is found to be applying for adoption as a **single parent being in a same-sex relationship**.
 - LGBTIQ community in Poland is subject to **increased discrimination and attacks**, notably growing hate speech from **public authorities and elected officials**.
 - Since March 2019, more than 100 Polish regions, counties and municipalities have adopted resolutions declaring themselves to be free from **LGBTIQ “ideology”**.
- Recently, the **Parliament of Hungary** too, adopted constitutional amendments that **restrict the rights of LGBTIQ people**.
- Hungary and Poland have been at **loggerheads** with the **European Commission (executive body of the European Union)** over an **array of issues**, mostly **centering around** abuses to the **rule of law**, the **independence of the judiciary and the rights of minorities**.
- The **Hungarian and Poland** authorities have **described LGBTIQ principles** of governance as **“foreign” ideology**.

- **The EU Resolution:**

- The **EU Parliament resolution declared** the entire European Union as an **“LGBTIQ Freedom Zone”**.
- The resolution provides **LGBTIQ** persons everywhere **in the EU** the **freedom to live and publicly show their sexual orientation and gender identity without fear of intolerance, discrimination or persecution**.
- **It further urged the authorities** at all levels **of governance** across the **EU to protect and promote equality** and the **fundamental rights of all, including LGBTIQ persons**.

- **Global Scenario of LGBTIQ Community:**

- **Ireland:** Ireland legalized same-sex marriage. The country, which had decriminalized homosexuality in 1993, became the **first country** to allow same-sex marriage at a national level by popular vote.
- **USA:** US Supreme Court ruled that same-sex marriage was legal.
- **Nepal:** Nepal legalized homosexuality in 2007 and the new Constitution of the country gives many rights to the LGBTIQ community.

LGBT Community in India

Even after section 377 of IPC was removed by the Supreme Court in **Navtej Singh Johar v. Union of India, 2018 case**, there is a wide gap in implementing a policy for the LGBTIQ community and making a better environment for them. Right now, they are facing many issues that are underlined below.

- **Family:** The problem of sexual orientation and gender identity leads to fighting and family disruption. Lack of communication and misunderstanding between parents and their LGBTIQ children increases family conflict.
- **Discrimination at Work Place:** LGBTIQ suffers from the socio-economic inequalities in large part due to discrimination in the workplace.
- **Injustice:** Human rights and fundamental rights are applicable to all people, but the state has failed to create special legislation which protects the rights of LGBTIQ Minority community and to provide real justice to them.
- **Health Issues:** Criminalisation of homosexuality leads to discrimination and results in LGBTQ people getting poor or inadequate access to services within the health system. It also creates barriers to both the availability and the ability to access HIV prevention, testing and treatment services.
- **Isolation and Drug Abuse:** They gradually develop low self-esteem and low self-confidence and become isolated from friends and family. These people mostly get addicted to drugs, alcohol, and tobacco to get themselves relieved of stress and rejection and discrimination.

Related Legal Developments

- **Naz Foundation vs. Govt. of NCT of Delhi (2009):**
Delhi High Court struck off section 377, legalising consensual homosexual activities between adults.
- **Suresh Kumar Koushal Case (2013):**
SC overturned the previous judgment by Delhi High Court (2009) arguing that "plight of sexual minorities" could not be used as an argument for deciding constitutionality of law.
- **Justice K.S. Puttaswamy vs. Union of India (2017):**
SC ruled that Fundamental **Right to Privacy** is intrinsic to life and liberty and thus, comes under **Article 21 of the Indian constitution**. It held that “**sexual orientation is an essential attribute of privacy**”.
- **Navtej Singh Johar vs. Union Of India (2018):**
Dismissed the position taken by SC in Suresh Kumar Koushal case (2013) and decriminalised homosexuality.
- **Shafin Jahan v. Asokan K.M. and others (2018):** The Supreme Court observed that choice of a partner is a person’s **fundamental right**, and it can be a **same-sex partner**.
- **Transgender Persons (Protection of Rights) Bill, 2019:** The Parliament has passed the Transgender Persons (Protection of Rights) Bill, 2019 which has been criticised for its poor **understanding of gender and sexual identity**.
- **Same-sex Marriage:** In February, 2021, the **Central Government opposed same-sex marriage in Delhi High Court** stating that a marriage in India can be recognised only if it is between a “biological man” and a “biological woman” capable of producing children.

Way Forward

- The LGBTQ community needs an **anti-discrimination law** that empowers them to build productive lives and relationships irrespective of gender identity or sexual orientation and place the onus to **change on state and society and not the individual**.
- Government bodies, especially related to Health, and Law and Order need to be sensitised to ensure that the LGBTQ community is not denied public services or harassed for their sexual orientation.

Source -IE

Wrongful Prosecution in India

Why in News

A petition has been filed in the Supreme Court highlighting the **need for the government to frame guidelines for compensating victims of wrongful prosecution** by the police or authorities.

The petition said the government had not bothered to implement the recommendations made by **the Law Commission of India in its 277th report on the miscarriage of justice in 2018**.

Wrongful Prosecution

- It refers to the cases where the accused was not guilty of the offence, and the police and/or prosecution engaged in some form of misconduct in investigating and/or prosecuting the person.
- **The International Covenant on Civil and Political Rights (ICCPR)**, which is ratified by India creates an obligation on the State parties to enact a law to compensate the victims of such miscarriage of justice.

Key Points

- **Wrongful Prosecution in India:**
 - India has no effective statutory/legal Mechanism for the wrongful prosecutions due to police and prosecutorial misconduct which has resulted in a pandemic of false cases.
 - Due to no fear of being prosecuted by courts and growing tendency to frame innocents for ulterior motives, there has been an unprecedented surge in filing of false cases.
 - The petition said **innocents fell victim to the malice of the authorities** who used the **criminal justice system** to settle scores.
 - It has not only **destroyed the social fabric** of the nation but also affected the **over-burdened judiciary** with alarming pendency of **over 40 million cases**.
- **Judicial Pronouncement About Wrongful Prosecution:**
 - Earlier in May, 2017 the **Delhi High Court** in the case of **Babloo Chauhan vs. State Govt. of NCT of Delhi**, expressed grave concern about the state of innocent persons being wrongfully prosecuted.
 - It also asked the Law Commission to undertake a comprehensive examination of the issue and make a recommendation to the Government of India.

- **Recommendations of the Law Commission of India - 277th Report:**

- Recommended **amendments to the Code of Criminal Procedure, 1973 (CrPC)**, to give compensation in cases of miscarriage of justice resulting in wrongful prosecution of persons.

Miscarriage of justice refers to wrongful or malicious prosecution, regardless of whether it leads to conviction or detention.

- Designation of **special courts in each district** for adjudicating upon the claims of compensation for wrongful prosecution.
- The **claim for compensation** can be brought by the accused person so injured; or by any agent duly authorized by the said accused person; or where the accused person died after the termination of the wrongful prosecution, by all or any of the heirs or legal representatives of the deceased.
- **Guiding principles** to be followed by the Court while determining the amount of compensation. These include **seriousness of the offence, severity of punishment, length of detention, damage to health, harm to reputation, and loss of opportunities.**
- Compensation under this framework will include **both pecuniary (monetary) and non-pecuniary assistance** (form of services such as counselling, mental health services, vocational/employment skills development, and such other similar services).

Source: TH

Places of Worship (Special Provisions) Act, 1991

Why in News

The Supreme Court asked the Centre to respond to a plea challenging the **Places of Worship (Special Provisions) Act, 1991** which **freezes the status of places of worship** as it was on **15th August, 1947**.

In agreeing to examine the law, the court has opened the doors for litigation in various places of worship across the country including Mathura and Varanasi.

Key Points

- **About the Places of Worship (Special Provisions) Act, 1991:**

It seeks to **maintain the “religious character” of places of worship** as it was in 1947 except in the case of **Ram Janmabhoomi-Babri Masjid dispute**, which was already in court.

- **Purpose:**

- Section 3 of the Act **bans the conversion of a place of worship** or even a section of it into a place of worship of a different religious denomination or of a different segment of the same religious denomination.

- Section 4(2) says that **all suits, appeals or other proceedings** regarding converting the character of a place of worship (that were pending on 15th August, 1947) will **come to end when the Act commences** and no fresh proceedings can be filed.

However, legal proceedings can be initiated if the change of status took place after the cut-off date of 15th August, 1947 (after enactment of the Act).

- The Act also **imposes a positive obligation on the State to maintain the religious character** of every place of worship as it existed at the time of Independence.

This legislative obligation on the State to preserve and protect the equality of all faiths is an essential secular feature and one of the basic features of the Indian Constitution.

- **Exemption:**

- The disputed site at **Ayodhya was exempted** from the Act. Due to this exemption, the trial in the Ayodhya case proceeded even after the enforcement of this law.

- Besides the Ayodhya dispute, the Act also exempted:

- Any place of worship which is an **ancient and historical monument or an archaeological site** covered by the **Ancient Monuments and Archaeological Sites and Remains Act, 1958**.

- A suit that has been finally settled or disposed of.

- Any dispute that has been settled by the parties or conversion of any place that took place by acquiescence before the Act commenced.

- **Penalty:**

Section 6 of the Act prescribes a punishment of **maximum three-years imprisonment** along with a fine for contravening the provisions of the Act.

- **Supreme Court's View (in 2019):**

In the **2019 Ayodhya verdict**, the Constitution Bench referred to the law and said it manifests the secular values of the Constitution and strictly prohibits retrogression.

- **Petition Arguments:**

- It has been challenged on the ground that the Act violates secularism.

It has been argued that the cut-off date of 15th August, 1947 is “**arbitrary, irrational and retrospective**” and **prohibits Hindus, Jains, Buddhists, and Sikhs** from approaching courts to “reclaim” their places of worship which were “invaded” and “encroached” upon by “fundamentalist barbaric invaders”.

- It is argued that the Centre has no power to legislate on “**pilgrimages**” or “**burial grounds**” which is under the state list.

- However, the government had said it could make use of its **residuary power** under Entry 97 of the Union List to enact this law.

- **Entry 97** confers residuary powers to the Centre to legislate on subjects that are **not enumerated in any of the three lists**.

Source: IE

Energy Efficiency Enterprise (E3) Certifications Programme

Why in News

The Ministry of Power has launched "**Energy Efficiency Enterprise (E3) Certifications Programme for the Brick Manufacturing Sector**".

The E3 Certification Scheme is aimed at tapping huge energy efficiency potential in this sector.

Key Points

- **About the Energy Efficiency Enterprise (E3) Certifications Programme:**

E3 certification is an accreditation process focused on the Brick industry. The certification will be provided by the **Bureau of Energy Efficiency (BEE)**.

 - It is an initiative to recognise burnt clay brick manufacturers who adopt energy-efficient manufacturing and encourage customers to source bricks from such E3 certified manufacturing units.
 - It will be awarded to Brick Manufacturing Enterprises that meet the minimum Specific Energy Consumption (SECVol) performance criteria specified in the Scheme.
 - It is a **shift from conventional to efficient technologies and product shift** towards low density bricks with better thermal insulation.
 - The adoption of the **E3 Certification is currently voluntary** for the Brick industry.
- **Brick Manufacturing Sector:**
 - **Contribution in GDP:** The brick sector contributes nearly 0.7% to the country's GDP, offers seasonal employment generation to over 1 crore workers, and has a strong influence on other economic sectors such as transportation and construction.
 - **Market Size:** India is the **world's second largest producer of bricks** and this demand is expected to multiply three to four times over the next 20 years, through the E3 Certification program.
 - **Energy Consumption:** The brick manufacturing industry consumes about 45-50 million tonnes of coal equivalent annually, amounting to 5-15% of the total energy consumption in the country.

The brick sector has the second largest potential for energy efficiency amongst the Indian industrial sector after steel and more than cement.
- **Advantages of E3 Certification:**
 - The implementation of E3 Certification will lead to multiple benefits:
 - **Energy savings in the brick manufacturing process.**
 - **Improved quality of bricks.**
 - **Cost savings to builders.**
 - **Energy savings to occupiers of buildings** due to better thermal comfort and improved insulation properties.
 - Energy saving of 7 Million Tonnes of oil equivalent (MTOE) per year and CO₂ savings of about 25 Million Tonnes by 2030 are estimated through adoption of E3 Certification by 7500 Bricks manufacturing units.
 - **Modernization of Sector:** The Scheme seeks to accelerate brick sector modernization, using market incentives to create customer demand to fulfil the vision for **Aatmanirbhar Bharat**.
 - **ECBC Compliance:** Energy efficient bricks will be useful in complying with the requirements of **Energy Conservation Buildings Code (ECBC)**.

Bureau of Energy Efficiency

- **Bureau of Energy Efficiency (BEE)** is a **statutory body** under the Ministry of Power which was setup in 2002 under the provisions of the **Energy Conservation Act, 2001**.
It is mandated to implement policy and programmes in the area of energy efficiency and conservation.
- It assists in developing policies and strategies with the primary objective of reducing energy intensity of the Indian economy.
- **Major Programmes:** State Energy Efficiency Index, Perform Achieve and Trade (PAT) scheme, The Standards & Labeling Programme, Energy Conservation Building Code, etc.

Energy Conservation Building Code

- The **Bureau of Energy Efficiency** had launched **Energy Conservation Building Code (ECBC) 2007** to establish minimum energy performance standards for buildings in India.
Buildings consume a significant proportion of our energy resources and the ECBC is an essential regulatory tool to curb their energy footprint.
- ECBC sets minimum energy standards for new commercial buildings having a connected load of 100kW (kilowatt) or contract demand of 120 KVA (kilovolt-ampere) and above.
- BEE has **also developed a voluntary Star Rating Programme for buildings** which is based on the actual performance of a building, in terms of energy usage in the building over its area expressed in kWh/sq. m/year.

Source: PIB

Mera Ration Mobile App Launched

Why in News

In order to facilitate the '**One Nation One Ration Card**' system in the country, the Ministry of Consumer Affairs, Food and Public Distribution has launched the '**Mera Ration**' mobile app to benefit citizens in identifying the nearest **Fair Price Shop** (FPS).

This app will benefit especially those ration card holders who move to new areas for livelihoods.

Key Points

- **About the App:** The app is developed by the **National Informatics Center** (NIC).
 - **Language:** The application is currently available in English and Hindi.
However, it is planned to be introduced in 14 languages which will be identified on the basis of places where most migrant people move.
 - **Facilities to the Beneficiaries:**
 - Can identify and locate the nearest fair price shop.
 - Can easily check details of their foodgrain entitlement, recent transactions and the status of **Aadhaar** seeding.
 - Can register their migration details.
 - An option to enter suggestions/feedback.

- **One Nation One Ration Card (ONORC):**
 - **Implementation:**

The ONORC scheme is being implemented by the Department of Food and Public Distribution for the nation-wide portability of ration cards under **National Food Security Act (NFSA) 2013**.

The Act legally entitled upto 75% of the rural population and 50% of the urban population to receive subsidized food grains under **Targeted Public Distribution System**.
 - **Significance:**
 - This system allows all NFSA beneficiaries, particularly migrant beneficiaries, to claim either full or part foodgrains from any Fair Price Shop (FPS) in the country **through an existing ration card with biometric/Aadhaar authentication** in a seamless manner.

The freedom of choosing any FPS was not available earlier.
 - States completing the One Nation-One Ration Card system reform were eligible for **additional borrowing of 0.25% of gross state domestic product (GSDP)**. **Seventeen states have operationalised 'One Nation-One Ration Card' system** with Uttarakhand being the latest to complete the reform.
 - **Coverage:**
 - The ONORC was started initially in 4 States in the year 2019 and was rolled out in 32 States/UTs by the end of 2020.

The integration of the remaining 4 States/UT (Assam, Chhattisgarh, Delhi and West Bengal) is expected to be completed in next few months.
 - It covers nearly 69 Crore NFSA beneficiaries (about 86% NFSA population) in the country and a monthly average of about 1.5~1.6 Crore portability transactions are being recorded under ONORC.
 - **Making ONORC Available to All:**
 - The government supplies 5 kg of subsidised food grains to each person per month through 5.4 lakh ration shops.
 - The integration of **Migrants' Portal** with ONORC system is undertaken with the support of the Ministry of Labour & Employment.
 - The ONORC has been made a part of **PM SVANidhi** program of the Ministry of Housing & Urban Affairs.
 - Media publicity of the ONORC has been done with the help of the Ministry of Information & Broadcasting, Press Information Bureau, **MyGov**, Bureau of Outreach & Communication.

Source: PIB

Genome Mapping in Indian Ocean

Why in News

National Institute of Oceanography (NIO) is going to launch the **first-of-its-kind project of Genome Mapping** in the **Indian Ocean**.

Indian Ocean is the third largest water body in the world, covering about 20% of the Earth's water surface.



Key Points

- **Aim:**
 - To **gather samples** for **genome mapping of microorganisms** in the Indian Ocean.
 - To **understand the biochemistry** and the **response of the ocean to climate change, nutrient stress and increasing pollution.**
- **Project Cost & Duration:**
Rs. **25 crore** and will take **three years** to complete.
- **About:**
A team of scientists and researchers from the NIO on board its research vessel **Sindhu Sadhana** will spend 90 days traversing the course of over **10,000 nautical miles** in the Indian Ocean on the research project to **reveal the internal working of the body of the ocean at a cellular level.**
They will course the Indian Ocean **from India's east coast**, Australia, Port Louis in Mauritius and up **to the border of Pakistan, off India's west coast.**

- **Genome Collection:**
 - The researchers will **collect samples** from various stretches of the ocean at an **average depth of about 5 km.**
 - Just like **gene mapping** is carried out on blood samples collected from humans, the scientists will map these **in the bacteria, microbes found in the ocean.**
 - The mapping of the **Deoxyribose Nucleic Acid (DNA)** and **Ribonucleic Acid (RNA)** will show the nutrients present in them, and also those lacking in different parts of the ocean.
- **Studying Trace Elements:**
 - Trace metals like **cadmium or copper** are supplied to oceans via continental run-offs, atmospheric deposition, hydrothermal activities and continental shelf interaction.
They are **essential for ocean productivity.**
 - It is important to understand the **interactions of trace metals with marine biota** “for having a holistic understanding about nutrient cycling and productivity of the oceans”.
 - Apart from their reactions on marine life, **isotopic forms of trace metals can be utilised to track the movement of water masses** responsible for ocean circulation and as tools to study the biological, geochemical and ecosystem processes and food web analyse.
 - The NIO’s project is expected **to generate new information about trace metals from underexplored regions** of the Indian Ocean.
- **Benefits:**
 - **Understanding Ecosystem:**
It will help scientists understand the internal **working of the ecosystem** of the Indian Ocean.
 - **Understanding Factors Causing Change:**
The research will enable scientists to identify the **factors controlling the changes in RNA, DNA in the oceans,** and various stressors impacting them.
 - **Identifying Mineral Concentration:**
 - The ocean has several **micronutrients** like nitrates, sulphates and silicates, **minerals** like iron ore and zinc, and **trace metals** like cadmium or copper.
 - The genome mapping will show the **presence of which these microbes have adapted to,** in addition to their reaction to atmospheric carbon dioxide.
 - This will help in **identifying which part of the ocean has a greater concentration of which mineral or element.**
 - Scientists will then use these as tracers to tackle the causative factors for excess or lack of a certain mineral or element and **suggest possible solutions for their mitigation.**
 - **Human Benefit:**
The **large pool of RNA, DNA library of the oceans** will be utilised for using the Indian Ocean to **human benefit in the future.**
 - **Increased Biotechnology Application:**
Genome mapping will enable an increase in the **growing number of commercial biotechnology applications,** extending from multiple anticancer treatments to cosmetics and industrial enzymes, to antiviral molecules.
 - **Optimization of Conservation Efforts:**
Exploration of the ocean at a genetic level will result in **new insights into taxonomy** and adaptive capacity that can help optimize conservation efforts.

Genome

- A genome is the complete set of DNA (or RNA in RNA viruses) of an organism.
- Each genome contains **all of the information needed to build and maintain that organism.**
- In humans, a copy of the entire genome contains more than 3 billion DNA base pairs.

Genome Mapping

- It describes the methods used to identify the locus of a gene and the **distances between genes.** Gene mapping can also describe the distances between different sites within a gene.
- Taking inspiration from the Human Genome Project, the Department of Biotechnology (DBT) initiated the ambitious **“Genome India Project” (GIP)** in January 2020. The GIP aims to collect 10,000 genetic samples from citizens across India, to build a reference genome.

National Institute of Oceanography

- **About:**
It is a **multi-disciplinary oceanographic research institute** and is one of the constituent laboratories of the **Council of Scientific & Industrial Research (CSIR)**, New Delhi.
- **Headquarter and Other Centres:**
Its **headquarters is at Dona Paula, Goa** with regional centres at Kochi (Kerala), Mumbai (Maharashtra) and Visakhapatnam (Andhra Pradesh).
- **Established:**
It was established on **1st January 1966** following the **International Indian Ocean Expedition (IIOE)** in the 1960s.
- **Research Areas:**
 - The principal focus of research has been on **observing and understanding special oceanographic characteristics of the Indian Ocean.**
 - The major research areas include the four traditional branches of oceanography - **biological, chemical, geological/geophysical and physical**, as well as **ocean engineering, marine instrumentation and marine archaeology.**

Source:IE

Sangay Volcano: Ecuador

Why in News

Recently, Ecuador’s **Sangay volcano** erupted.

Key Points



- **About Sangay Volcano:**

- Sangay volcano is one of the **highest active volcanoes in the world** and one of **Ecuador's most active ones**.
- Sangay is the southernmost **stratovolcano** (a volcano built up of **alternate layers of lava and ash**) in the northern volcanic zone of the Andes. It is 5230 m high.
 - The Andes is the **longest above water mountain range in the world** and boasts some of the highest peaks.
 - **Sangay National Park** is located in the central part of Ecuador on the Andes mountains' eastern side. It is a **world heritage site**.

- **Eruptions:**

The **earliest** report of a historical eruption was in **1628**. More or less continuous eruptions were reported from 1728 until 1916, and again from 1934 to the present. Sangay **has had frequent eruptions in historic times**, mostly of **strombolian type**.

- **Other Major Volcanoes of Ecuador:**

Ecuador, part of the **Pacific Rim's "Ring of Fire"** region, has eight volcanoes such as **Cotopaxi** (5,897m), **Cayambe** (5,790m), **Pichincha** (4,784m) etc. in its territory.

Volcanic Eruptions

- **About:**

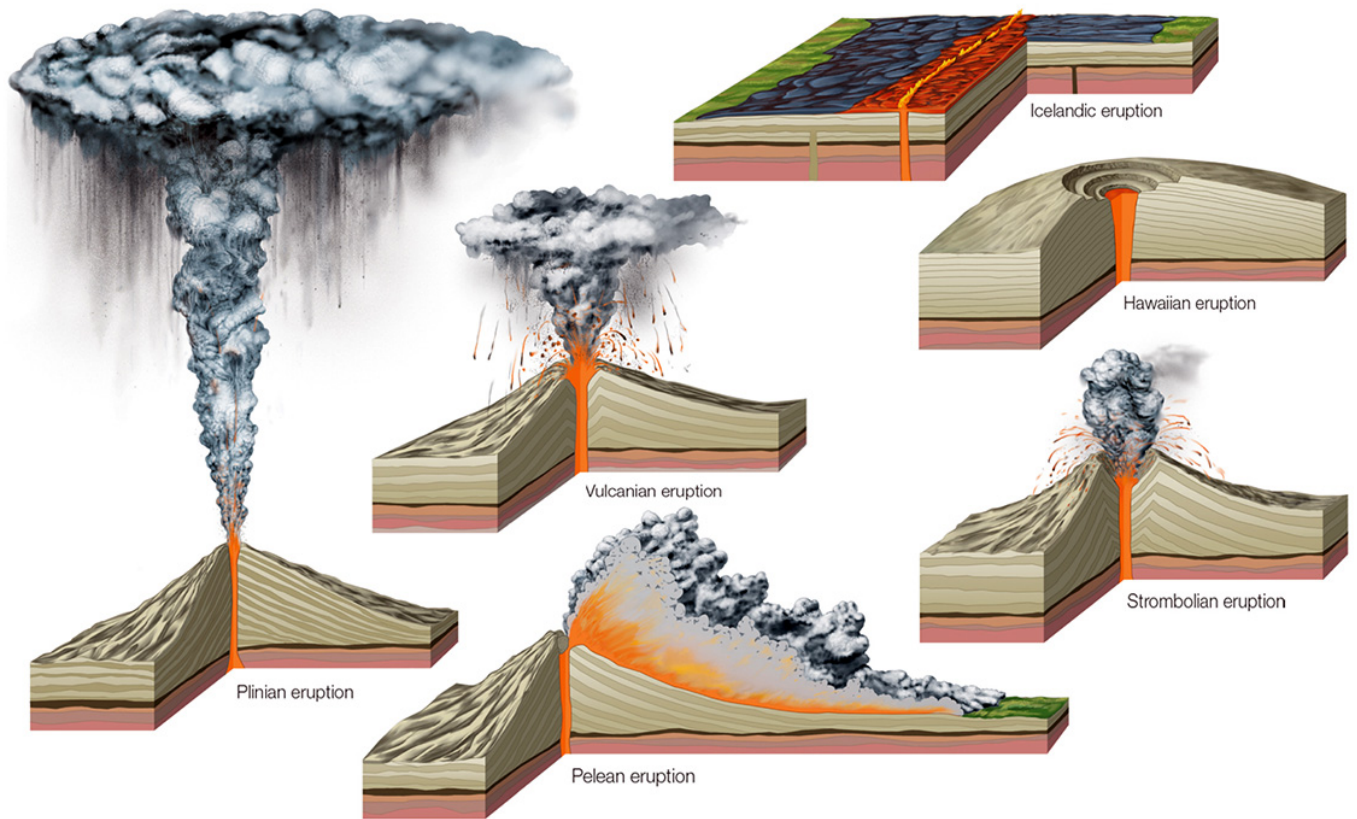
- Volcanic eruptions happen when **lava and gas are discharged from a volcanic vent**.
- The most common consequences of this are population movements as large numbers of people are often forced to flee the moving lava flow.

- **Types:** Volcanic activity and volcanic areas are commonly divided into **six major types:**
 - **Icelandic:**

It is characterized by **effusions of molten basaltic lava** that flow from long, parallel fissures. Such outpourings **often build lava plateaus.**
 - **Hawaiian:**

It is **similar to the Icelandic variety.** In this case, however, fluid lava flows from a volcano's summit and **radial fissures** to form shield volcanoes, which are quite large and **have gentle slopes.**
 - **Strombolian:**
 - These involve **moderate bursts of expanding gases** that eject clots of incandescent lava in cyclical or nearly **continuous small eruptions.**
 - Because of such small frequent outbursts, **Stromboli volcano**, located on Stromboli Island off the northeast coast of **Italy**, has been called the "**lighthouse of the Mediterranean.**"
 - **Vulcanian:**

It is named for **Vulcano Island** near Stromboli, generally involving **moderate explosions of gas laden with volcanic ash.** This mixture forms dark, turbulent eruption clouds that rapidly ascend and expand in convoluted shapes.
 - **Pelean:**
 - It is associated with explosive outbursts that generate **pyroclastic flows**, dense mixtures of **hot volcanic fragments and gas.**
 - The **fluidized slurries** produced by these eruptions are heavier than air but are of low viscosity and pour down valleys and slopes at great velocities. As a result, they are **extremely destructive.**
 - **Plinian:**
 - This type is an **intensely violent kind of volcanic eruption.** In this type of eruption, gases boiling out of gas-rich magma generate enormous and nearly continuous jetting blasts that core out the magma conduit and rip it apart.
 - The uprushing gases and volcanic fragments **resemble a gigantic rocket blast directed vertically upward.** Plinian **eruption clouds can rise into the stratosphere** and are sometimes continuously produced for several hours.
 - **Lightning strikes** caused by a buildup of static electricity are common close to Plinian ash clouds, adding one more element of terror to the eruption.



Source:IE

Asteroid 2001 FO32

Why in News

The **National Aeronautics and Space Administration (NASA)** has predicted that the asteroid ‘**2001 FO32**’ is the largest to pass by Earth in 2021. It will be at its closest on 21st March.

It will provide a rare opportunity for astronomers to get a good look at a rocky relic that formed at the dawn of our solar system.

Key Points

- **About the 2001 FO32 Asteroid:**
 - **Discovery:** It was discovered 20 years ago and ever since the scientists have been tracking its orbital path around the Sun very accurately.
 - It was **discovered in March 2001 by the Lincoln Near-Earth Asteroid Research (LINEAR) program** in Socorro, New Mexico.
 - **1998 OR2 was the last notably large asteroid** that passed close to earth on 29th April, 2020. While 2001 FO32 is somewhat smaller than 1998 OR2, it will be **three times nearer to Earth.**
 - **Orbit:** It is in a highly **eccentric orbit around the Sun. It completes one orbit every 810 days** (about 2¼ years). The orbit is tilted 39° to Earth's orbital plane. This orbit takes the asteroid closer to the Sun than Mercury, and twice as far from the Sun as Mars.
 - **Speed:** The asteroid will pass by at about 1,24,000 kph. It is faster than the speed at which most asteroids encounter Earth. The reason for the asteroid's unusual speed is its close approach to the earth.
 - **No Threat of Collision:** The near-Earth asteroid will make its closest approach at a distance of about 2 million kilometers or 5 1/4 times the distance from Earth to the Moon.
 - The distance is close in astronomical terms, that's why it has been designated a **“potentially hazardous asteroid”**.
 - There is no threat of a collision with our planet now or for centuries to come.
 - **Next Close Approach:** The asteroid will not come this close to Earth again until 2052, when it will pass by at about seven lunar distances, or 2.8 million km.
- **Significance:**
 - It will provide an opportunity for astronomers to get a more precise understanding of the asteroid's size and albedo (i.e. how bright, or reflective, its surface is), and a rough idea of its composition.
 - When sunlight hits an asteroid's surface, minerals in the rock absorb some wavelengths while reflecting others. By studying the spectrum of light reflecting off the surface, astronomers can measure the chemical “fingerprints” of the minerals on the surface of the asteroid.

Asteroids

- Asteroids orbit the Sun and are small bodies in the solar system.
- They are made up of metals and rocks.
- They tend to have shorter and elliptical orbits.
- They do not produce a coma or tail atmosphere.
- The asteroid belt is a torus-shaped region in the Solar System, located roughly between the orbits of the planets Jupiter and Mars.

Classification of Asteroids

- **Main Asteroid Belt:** The majority of known asteroids orbit within the asteroid belt between Mars and Jupiter.

- **Trojans:** These asteroids share an orbit with a larger planet, but do not collide with it because they gather around two special places in the orbit (called the L4 and L5 Lagrangian points). There, the gravitational pull from the sun and the planet are balanced.
 - Lagrange Points are positions in space where the gravitational forces of a two body system like the Sun and the Earth produce enhanced regions of attraction and repulsion. These can be used by spacecraft to reduce fuel consumption needed to remain in position.
- **Near-Earth Asteroids:** These objects have orbits that pass close by that of Earth. Asteroids that actually cross Earth's orbital path are known as Earth-crossers.

Potentially Hazardous Asteroid

- It means that an asteroid has the potential to make threatening close approaches to the Earth.
- Specifically, all asteroids with a **Minimum Orbit Intersection Distance (MOID)** of 0.05 AU (which is about 7,480,000 Km) or less and an **Absolute Magnitude (H)** of 22.0 (about 150 mt in diameter) or less are considered PHAs.
 - **Minimum Orbit Intersection Distance** is a method for calculating the minimum distance between two almost overlapping elliptical orbits.
 - The **Astronomical Unit (AU)** is the distance between the Earth and the Sun and is roughly 150 million km.
 - The **absolute magnitude** is a measure of the star's luminosity i.e. the total amount of energy radiated by the star every second.

Source: IE

Sahitya Akademi Award

Why in News

Recently, Marathi writer Nanda Khare **refused to accept the Sahitya Akademi award** for his novel “**Udya**”, published in 2014.

Key Points

- **About Sahitya Akademi Award:**
 - Sahitya Akademi award **established in 1954**, is a literary honour that is conferred **annually by Sahitya Akademi**, India's National Academy of letters.
 - Akademi gives **24 awards annually to literary works** in the languages it has recognized and an equal number of awards to literary translations from and into the languages of India.
 - **Besides the 22 languages** enumerated in the Constitution of India, the Sahitya Akademi has **recognised English and Rajasthani** as languages in which its programme may be implemented.
 - The Sahitya Akademi award is the **second-highest literary honour** by the Government of India, **after the Jnanpith award**.

- **Criteria for Choosing Awardee:**
 - The author must be of **Indian Nationality**.
 - Book/work eligible for the award must be an outstanding contribution to the language and literature to which it belongs.
 - When equal merit for books of two or more are found, certain criteria like total literary contribution and standing of authors shall be taken into consideration for declaring award.
- **About the Marathi Novel ‘Udya’:**
 - It is a futuristic account of the possible **scenarios emerging** as consequences of the current **capitalistic and machine-driven human life**.
 - It nuances how humans have been enslaved by machines, particularly by the ones that are susceptible to surveillance of one’s personal life.

Jnanpith Award

- The Jnanpith award is the **highest literary award** in India and can only be conferred **annually upon an Indian citizen**.
- **English** along with other languages mentioned in **Indian Constitution (8th Schedule)** is considered for the Award.
- The prize carries a cash award of Rs. 11 lakhs, a citation, and a bronze replica of Vagdevi (Saraswati), the goddess of learning.
- It is sponsored by the **cultural organization Bharatiya Jnanpith**.
- For 2018, author **Amitav Ghosh** became the **first English language writer** to become a Jnanpith laureate.
- Akkitham Achuthan Namboothiri in Malayalam language is the latest recipient of the award for the year 2019.

Other Sahitya Akademi Awards

- **Sahitya Akademi Bal Sahitya Puraskar** is given to an author based on his/her total contribution to children literature and relates to books first published during the five years immediately preceding the year of Award.
- **Sahitya Akademi Yuva Puraskar** relates to books published by an **author of the age of 35 and below**.

Source:IE
