News Analysis (10 Nov, 2020)

National Agricultural Education Policy

Why in News

The **first National Agricultural Education Policy** is set to bring **academic credit banks and degree programmes with multiple entry and exit options** to the 74 universities focussed on crop sciences, fisheries, veterinary and dairy training and research.

- The process for formulating the **National Agricultural Education Policy** was started about two months ago, after the release of the **National Education Policy (NEP) 2020.**
- Earlier, the Prime Minister had pitched for **taking farm education to middle school level,** saying necessary reforms have been made in this regard in the NEP 2020.

Key Points

- **Agricultural Education Policy to be Aligned with NEP 2020:**
  - **Academic Credit Banks:**
    - These may be a service provider available to a desirable student community. It may facilitate the **integration of the campuses and distributed learning systems,** by creating **student mobility within the inter and intra university system.**
    - It may help in seamlessly **integrating skills and experiences into a credit based formal system** by providing a credit recognition mechanism.
    - It will **digitally store academic credits** earned from recognised **Higher Education Institutions (HEIs)** and allow for credit redemption in order to be awarded a certificate, diploma or degree.
  - **Experiential Education:**
    - In India, agricultural education is already ahead of its time, and already aligned with the NEP. The NEP wants a **shift to four-year undergraduate degrees,** and agricultural degrees are already four-year programmes.
    - The NEP mentions **experiential education,** which has been already mandated in agricultural education since 2016.

      Experiential education is **a teaching philosophy** that informs many methodologies in which educators purposefully engage with learners in direct experience and focused reflection in order to increase knowledge, develop skills, clarify values, and develop people's capacity to contribute to their communities.
    - The **Student READY (Rural Entrepreneurship Awareness Development Yojana) programme** requires all students to undertake a six-month internship, usually in their fourth year, to gain hands-on training, rural awareness, industry experience, research expertise and entrepreneurship skills.
    - One **major challenge** is to ensure that experiential learning is made available to all students if the **multiple entry-exit system** gets implemented.

      The option of multiple entry and exit provides students with the opportunity to earn a diploma or an advanced diploma, while they are given the choice to re-enter as and when they are able to resume their studies and earn a full college degree.

- **Issues:**
  - **Challenge of Multidisciplinarity:**
    - Agricultural universities have been modelled on the **land grant pattern,** with a focus on research and extension, and deep community connections, driven by the philosophy that farmers need holistic solutions to their problems.
    - However, in recent years, several **domain specific universities** in horticulture, veterinary science and fisheries sciences have come up. Incorporating humanities and social sciences into these settings could be a big challenge.
  - **Related to the ICAR:**
    - Though **agricultural education is a State subject,** the **Indian Council of Agricultural Research (ICAR - Ministry of Agriculture and Farmers Welfare)** is responsible for the **quality of education** across the country, and expects to continue in a standards-setting role under the new system of higher education regulation proposed by the NEP.
    - However, it is not clear **whether it will continue in its accreditation and grant making roles** under the new regime.

Source: TH

Pfizer's Covid-19 Vaccine Candidate

Why in News

Recently, **American pharma company Pfizer** has claimed that its **vaccine candidate BNT162b2 is more than 90% effective** in preventing **Covid-19** in participants without evidence of prior **SARS-CoV-2** infection.

Key Points

- **BNT162b2:**
  - It is a **single nucleoside-modified messenger RNA** (modRNA) vaccine, which is made of a short segment of genetic material (the messenger RNA/mRNA) which **provides instructions for a human cell to make a harmless version of a target protein,** in this case the spike protein of SARS-CoV-2, in order **to activate an immune response.**
    - The mRNA vaccine is a new approach to protecting against viral infection.
    - Unlike traditional vaccines, which work by training the body to recognise and kill proteins produced by pathogens, mRNA tricks the patient's immune system to **produce viral proteins itself.**
    - The proteins are harmless, but sufficient to provoke a robust immune response.
  - Its **phase 3 clinical trial began in July** with 43,538 participants, 38,955 of whom had received a second dose by November. The case split between vaccinated individuals and those who received the placebo indicates a **vaccine efficacy rate above 90%,** at 7 days after the second dose.
  - It means that **protection is achieved 28 days after the initiation of the vaccination,** which consists of a **2-dose schedule.**
  - Pfizer has become the **first firm to release promising late-stage trial data of a potential vaccine** for Covid-19, even though the announcement **does not have scientifically conclusive evidence** on the safety and efficacy of the vaccine candidate.
  - However, the **analysis o**f the vaccine candidate by an **external independent Data Monitoring Committee** (DMC) has **not reported any serious safety concerns.**
  - The announcement comes days before the company plans to submit safety and efficacy data from the trial to the American regulator, the **United States Food and Drug Administration** (USFDA) seeking emergency use authorisation.
- **Vaccines Worldwide:**
  - As of mid-October 2020, the **World Health Organization** (WHO) has identified **42 candidate vaccines** at the stage of clinical trials, up from 11 in mid-June.
  - **Ten of them** were at the most advanced **phase 3 stage,** in **which a vaccine's effectiveness is tested on a large scale,** generally tens of thousands of people across several continents.
  - The **USA biotech firm Moderna,** several **state-run Chinese labs,** and a **European project led by the University of Oxford** and **AstraZeneca** are also closing in on potentially viable vaccines.
  - **Two Russian Covid-19 vaccines** have been registered for use even before clinical trials were completed, but have not been widely accepted outside of Russia.

India's Progress

- India is **preparing to administer a vaccine against Covid-19 to its population early in 2021** and for that, it is **working with neighbouring countries** on possible collaborative clinical trials of vaccine candidates in the future.
- A specialist team of scientists and researchers from the **Indian Council of Medical Research** (ICMR) and the **Department of Biotechnology** (DBT) under the Union Ministry of Science and Technology, has **imparted training to doctors and regulators** in **Sri Lanka, Myanmar, Bangladesh, Bhutan, Nepal, and Afghanistan.**
- The Indian team has focused its training on conducting crucial **phase II and III** human clinical trials of the potential vaccine candidate along lines of India's regulatory mechanism.
    - In **phases II/III,** reactogenicity (ability to produce common, adverse reactions), immunogenicity (ability to provoke an immune response), and safety of the vaccine candidate are assessed in a larger population.
- The **current aim is to facilitate a future collaborative clinical trial** but in **future, it will allow India to explore the option of buying** the potential Covid-19 vaccine from these neighbouring countries.
- **Indigenously Developed Vaccines:**
    - **ZyCoV-D**: Designed and developed by Zydus (a pharmaceutical company) with support from the DBT.
    - **Covaxin**: Developed by Bharat Biotech in collaboration with the ICMR.
- **Assistance in Global Trails:**
    - **Covishield**: Name given to an Oxford-AstraZeneca Covid-19 vaccine candidate which is technically referred to as AZD1222 or ChAdOx 1 nCoV-19.
    - **Sputnik V**: The first vaccine to be officially registered and has been developed by Moscow's Gamaleya Institute in collaboration with the Russia's defence ministry.

Source: IE

CCI to Probe Google

Why in News

The **Competition Commission of India (CCI)** has initiated a probe into alleged abuse of dominant position by the company to promote its **payments app, Google Pay.**

Key Points

- CCI highlighted **two main anti market practices** by google to unfairly **push Google Pay** it's payment app:
    - **Mandatory Use:** Google's policy of **mandatory use** of **Google Play's payment system** for purchasing the apps and IAPs (in-app purchases) in the Play Store.
    - **Exclusionary Practices:** It **excluded** other mobile **wallets/UPI (Unified Payments Interface)** apps as one of the effective payment options in Google Play's payment system.
- The CCI also criticised Google's policy to charge **30% commission for all app and in-app purchases.** Since Google's Play store cornered about 90% of all downloads, a **significant volume of payments being processed** in the market would thus be **controlled** by it.

    If the application developers raise their subscription fees **to offset the costs** of google's commission or remove/reduce premium/paid subscription offers for users, **it may affect user experience, cost and choice.** Such conditions imposed by the app stores **limit the ability of the app developers** to offer payment processing solutions of their choice to the users.
- CCI also highlighted reports of Google abusing its **dominant position in the Android-television market by creating barriers for companies** which wanted to use or modify its Android operating systems for their smart televisions.
- The probe against Google Pay comes days after the **National Payments Corporation of India (NPCI)** allowed rival **Facebook-owned WhatsApp to go live on the UPI** in the multi-bank model.
- This is Google's **third major antitrust challenge** in India:
    - In 2018, the CCI fined Google $21 million for **'search bias':**

        It was alleged that Google was indulging in abuse of a dominant position in the market for online search through practices leading to search bias and search manipulation, among others.
    - In 2019, the CCI started probing Google for allegedly misusing its **dominant position to reduce the ability of smartphone manufacturers** to opt for alternate versions of its Android mobile operating system.
- **Other countries where Google facing antitrust probe:**
    - Regulatory scrutiny in the European Union for anti-competitive behaviour.
    - The **United States Department of Justice (DoJ) also sued Google** alleging the company had abused its dominant position in a way that had harmed its competitors as well as customers.

The Competition Act, 2002

- It was passed in 2002 and was amended by the **Competition (Amendment) Act,** 2007. It follows the philosophy of modern competition laws.

- The **Monopolies and Restrictive Trade Practices Act, 1969 (MRTP Act)** was repealed and **replaced by the Competition Act, 2002,** on the recommendations of **Raghavan committee.**
- The Act **prohibits** anti-competitive agreements, abuse of dominant position by enterprises and regulates combinations, which causes or likely to cause an appreciable adverse effect on competition within India.
- In accordance with the provisions of the Amendment Act, the **Competition Commission of India** and the **Competition Appellate Tribunal (COMPAT)** were established.
- The government replaced COMPAT with the **National Company Law Appellate Tribunal (NCLAT) in 2017.**

Competition Commission of India

- It is a statutory body responsible for enforcing the objectives of the **Competition Act, 2002.**
- Composition: A **Chairperson and 6 Members** appointed by the Central Government.
- **Objectives:**
  - To eliminate practices having adverse effects on competition.
  - Promote and sustain competition.
  - Protect the interests of consumers.
  - Ensure freedom of trade in the markets of India.
- The Commission is also required **to give an opinion on competition issues** on a reference received from a statutory authority established under any law and to undertake competition advocacy, create public awareness and impart training on competition issues.

Source: IE

Saffron Cultivation in Northeast

Why in News

A pilot project of saffron cultivation has yielded successful results in **Yangyang village of Sikkim,** which produced its first crop of saffron recently.

Key Points

- **About:**
  - **Saffron** is a plant whose dried stigmas (thread-like parts of the flower) are used to make **saffron** spice.
  - Saffron cultivation is believed to have been **introduced in Kashmir by Central Asian immigrants** around the **1st Century BCE.**
  - It has been associated with traditional Kashmiri cuisine and represents the rich cultural heritage of the region.
  - It is a very precious and costly product.
  - In ancient Sanskrit literature, saffron is referred to as **'bahukam'.**
  - It is cultivated and harvested in the **Karewa (highlands)** of Jammu and Kashmir.
- **Importance:**
  - It **rejuvenates health** and is used in **cosmetics** and for medicinal purposes.
  - It has been associated with **traditional Kashmiri cuisine** and represents the rich cultural heritage of the region.
- **Season:**
  - In India, saffron Corms (seeds) are cultivated during the months of **June and July** and at some places in **August and September.**
  - It starts flowering in **October.**
- **Conditions:**
  - Saffron grows well at an altitude of 2000 meters above sea level. It needs a photoperiod (sunlight) of 12 hours.
  - **Soil:** It grows in many different soil types but thrives best in **calcareous** (soil that has **calcium carbonate** in abundance), **humus-rich and well-drained soil with a pH between 6 and 8.**
  - **Climate**: For saffron cultivation, we need an explicit climatological summer and winter with temperatures ranging from no more than **35 or 40 degree Celsius in summer to about −15 or −20 degree Celsius in winter.**
  - **Rainfall:** It also requires adequate rainfall that is **1000-1500 mm per annum.**
- **Saffron Producing Regions in India:**
  - Saffron production has long been restricted to a limited geographical area in the Union territory of **Jammu & Kashmir.**
  - **Pampore region,** commonly known as **Saffron bowl of Kashmir,** is the main contributor to saffron production.
    Pampore Saffron Heritage of Kashmir is one of the **Globally Important Agricultural Heritage systems (GIAHS)** recognised sites in India.
  - Other districts producing saffron are Budgam, Srinagar, and Kishtwar districts.
  - Recently, the **Kashmir saffron** got **Geographical Indication (GI) tag status.**

- **Production & Demand in India:**
  - India cultivates about **6 to 7 tonne** of saffron while the demand is **100 tonne.**
  - To meet the growing demand of saffron **the Ministry of Science and Technology,** through the **Department of Science and Technology (DST)**, is now looking at extending its cultivation to some states in the Northeast (Sikkim now, and later to Meghalaya and Arunachal Pradesh). There is a huge similarity of climate and geographical conditions between Kashmir and few regions of Northeast.
- **North East Centre For Technology Application and Reach (NECTAR),** an autonomous body under the DST in collaboration with the **Botany and Horticulture departments of Sikkim Central University** implemented a pilot project in **Yangyang village of South Sikkim.**
- **Benefits**
  - The extension of saffron production will help in meeting the annual demand in india.
  - It will help in reducing imports.
  - It will also diversify agriculture and provide new opportunities to the farmers in the North-East.
- **Other Initiatives:**
  - **The National Saffron Mission** was sanctioned by the central government in the year 2010 in order to extend support for creation of irrigation facilities through tube wells and sprinkler sets which would help in production of better crops in the area of saffron production.
  - Recently, the **Institute of Himalayan Bioresource Technology (CSIR-IHBT) and the Government of Himachal Pradesh**, have jointly decided to increase the production of the two spices namely, Saffron and Heeng (asafoetida).

    Under this plan, IHBT will be introducing new varieties of saffron and heeng from the exporting countries and will be standardized under Indian conditions.

Way Forward

Initiatives such as the National Saffron Mission and extension of saffron production to the North-East will help to **diversify the agricultural sector.** It will also enforce **Atmanirbhar Bahrat Abhiyan in the agricultural sector.**

Source:IE

Chabahar Project

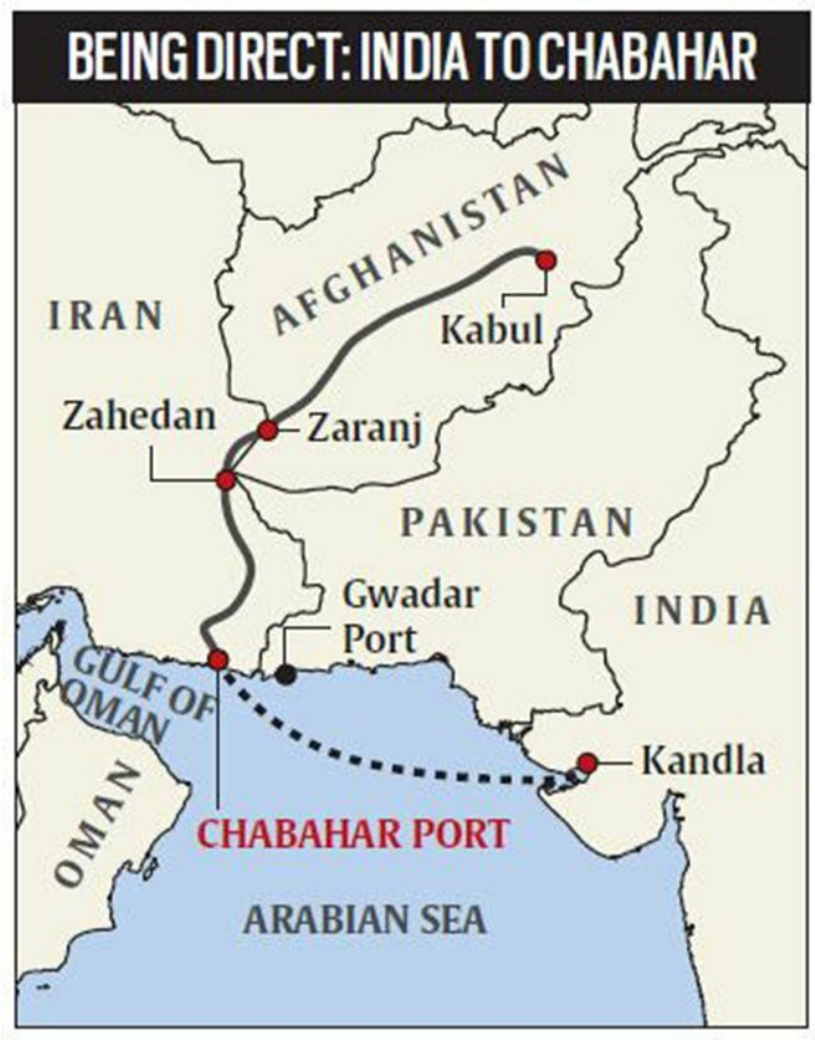
Why in News

Recently, **Iran's Port and Maritime Organisation** (PMO) has **conveyed to India a request** for locomotives and signalling equipment for the **Chabahar-Zahedan railway line.**

- Iran has been facing **difficulty in procuring** them directly due to the **sanctions imposed by the USA.**
- Iran has also asked India to activate the **USD 150 million credit** line which was offered to it by India during the Iranian President's visit in 2018.

Chabahar Port

- It is located on the **Gulf of Oman** and is only **72 km away from the Gwadar port** in **Pakistan** which has been developed by China.
- The port serves as the **only oceanic port of Iran** and consists of **two separate ports named Shahid Beheshti and Shahid Kalantari.]**



Key Points

- **Background:**
    - In **May 2016,** India, Iran and Afghanistan signed the **trilateral agreement** which entailed the establishment of **Transit and Transport Corridor** among them using Chabahar port in Iran as one of the regional hubs for sea transportation.
    - Construction of a **rail line from Chabahar port to Zahedan,** along the border with Afghanistan as an **alternate trade route to Afghanistan and Central Asia,** was also a part of it.
    - The state-owned **Indian Railways Construction Ltd.** (IRCON) **signed a Memorandum of Understanding** (MoU) **with the Iranian Rail Ministry** to provide all services, superstructure work and financing (around USD 1.6 billion).
- **Reasons for Excluding India:**
    - **Iran's Stand:**

        In **July 2020,** Iran decided to proceed with the rail line construction on its own, citing **delays from the Indian side in beginning and funding** the project.
    - **India's Stand:**
        - IRCON completed the site inspection and feasibility report, and had been **waiting for the Iranian side to appoint a nodal authority.**
        - Although the project has **secured a special waiver from the USA,** India is **hesitant to deal with the construction company** which has links with the **Islamic Revolutionary Guard Corps** (IRGC) and is under the sanctions.
            - The IRGC is a **hard-line force which operates its own military infrastructure** in parallel to Iran's regular armed forces. In **April 2020**, it launched **Iran's first military satellite Noor.**
            - Fear of sanctions by the USA has also impacted Indian interest in the **Farzad-B gas field project** of Iran.
- **Significance of Chabahar Port for India:**
    - **Trade:** It is being considered a **gateway to golden opportunities** for trade by the three countries with other **Central Asian countries** in the wake of Pakistan denying transit access to India.
    - **Security:** China is aggressively pursuing its own **Belt and Road Initiative** (BRI) under the **One Belt One Road** (OBOR) project. The port can also act as a counter to Pakistan's **Gwadar Port,** which is being developed with Chinese investment.
    - **Connectivity:** In future, the Chabahar project and the **International North South Transport Corridor** (INSTC) will complement each other by optimising Indian connectivity with Russia and Eurasia.

- **Evolving Scenarios:**
    - With the **results of the USA elections,** both **India and Iran look for the possibile ease of sanctions** allowing for increased engagements.
    - India is also keeping an **eye on the negotiations on a 25-year strategic cooperation agreement between China and Iran** (worth USD 400 billion) which could fund other parts of the Chabahar development, including a **free trade zone** along the Makran coast, and **oil infrastructure projects,** impinging on India's strategic ties with Iran.

Farzad-B Gas Field

- It is located in **Persian Gulf** (Iran) and the contract for exploration of the field was signed in **2002** by Indian consortium comprising **Oil and Natural Gas Corporation Limited (ONGC) Videsh, Indian Oil Corporation** and **Oil India.**
- The contract **expired in 2009** after declaration of commerciality of the field, based on the gas discovery. Since then, the consortium has been **trying to secure the contract** for development of the field.
- The **major dispute** between India and Iran was **over setting up of two pipelines,** and also over **money to be quoted** on the development plan.
- Around 75% of the deal was finalised by **May 2018,** when the **USA unilaterally withdrew from the nuclear deal and announced sanctions** on Iran.
- In **January 2020,** Iran clarified that it would develop the field on its own and would like to **involve India appropriately at a later stage.**

Way Forward

- In a world where **connectivity** is seen as the **new currency,** India's loss on account of these projects can become gain for some other country, **especially China.** Thus, India needs to play a **balancing act** between the USA and Iran and proactively protect its interest in the region.
- As an emerging power, India **cannot remain confined to South Asia** and a **peaceful extended neighbourhood** (Iran-Afghanistan) is **not only good for trade and energy security** but also plays a **vital role in India's aspirations of becoming a superpower.**

Source:TH

Earthquake Concentrations in Dharchula Region

Why in News

Recently, scientists at **Wadia Institute of Himalayan Geology** (WIHG) have unearthed large concentrations of micro and moderate magnitude **earthquakes** in the Dharchula region and adjoining areas of Kumaon Himalaya.

> WIHG is an autonomous institute under the **Department of Science and Technology** (DST), Government of India.

Key Points

- **Location:**
  - The major concentration is in an area **around 45 km from the new Kailash Mansarovar road**, connecting **Dharchula in Uttarakhand to Lipu Lekh on the China border.**
  - The region is known as the **Central Seismic Gap** (CSG) **region,** despite the **Himalayas** being one of the most tectonically and seismically active regions in the country.
    - A gap is a term used to **denote an area with little tectonic activity.**
- **Methodology:**
  - Scientists started investigating and mapping the region precisely to find out the **reason behind the occurrence of crowded** (closely located and frequently felt) **earthquakes.**
  - They **established a seismological network of 15 broadband seismological stations** along the **Kali River** valley to investigate the subsurface configuration in the Kumaon Himalaya region with support from the Ministry of Earth Sciences.

- **Findings:**
    - These large concentrations of earthquakes are **"release of stress"** building up in the region and the geological structure behind it.
    - The Dharchula region **falls between two knee-like structures,** which **traps the stress in this region.**
    - This is the reason why there have been crowded earthquakes here within a span of years and numerous smaller earthquakes have occurred here and the stress keeps building up.
    - For the stress to be finally released, there is a **likelihood of a high magnitude earthquake in the region.** However it is not possible to predict the scale or the exact time that an earthquake will occur.

Earthquake

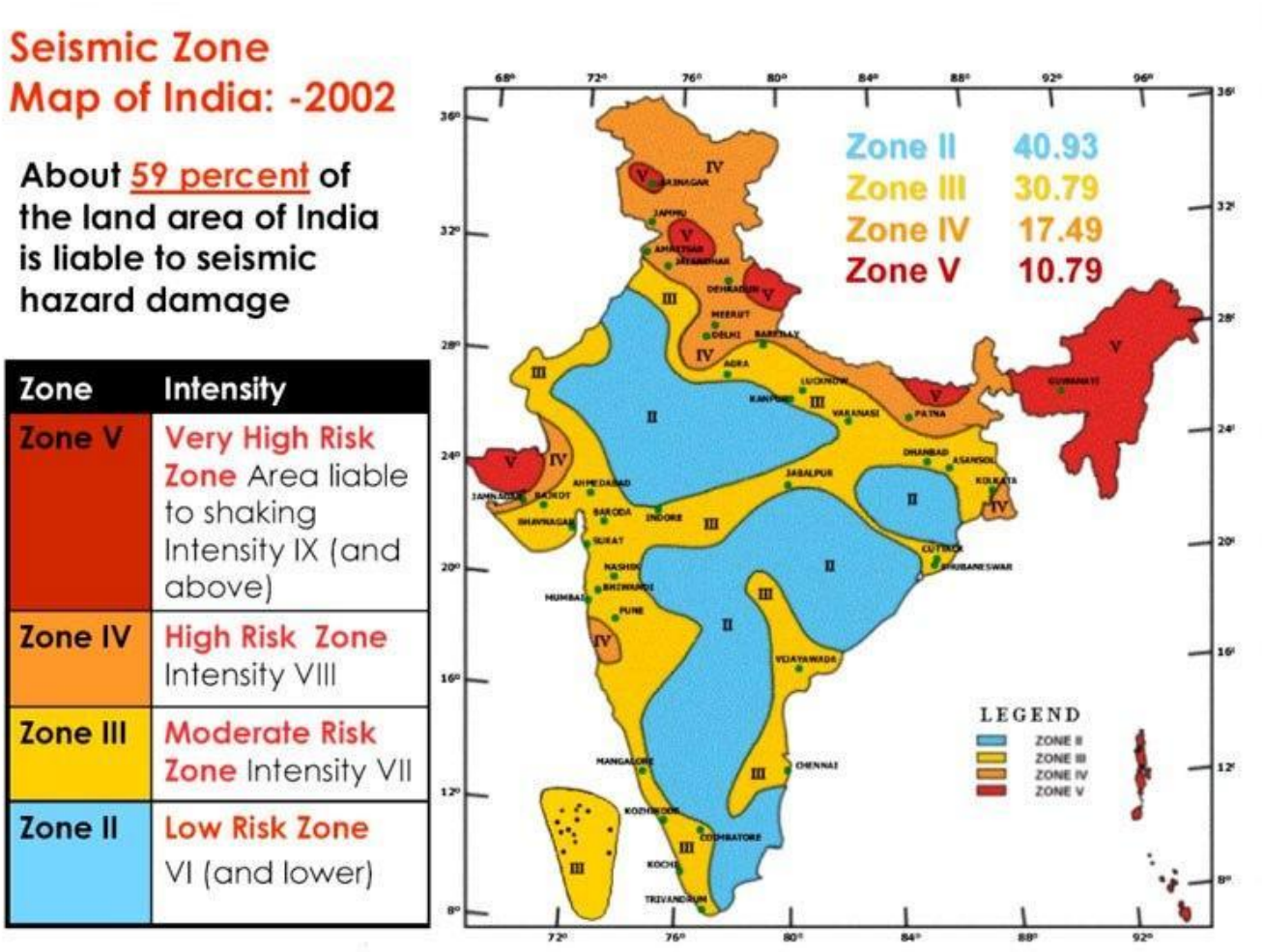
- An earthquake in simple words is the **shaking of the earth.** It is a **natural event which is caused due to release of energy,** which generates **seismic waves** that travel in all directions.
- The location below the earth's surface where the earthquake starts is called the **hypocenter,** and the location directly above it on the surface of the earth is called the **epicenter.**
- **Types of Earthquakes:**
    - Based on **reasons behind their origins:**
        - Fault Zones Earthquake.
        - Tectonic Earthquake.
        - Volcanic Earthquake.
        - Human Induced Earthquakes.
    - Based on the **depth of focus:**
        - Shallow Earthquakes (0-70 km deep)
        - Intermediate Earthquakes (70-300 deep)
        - Deep Earthquakes (300-700 km deep).

- **Measurement of Earthquakes:**
    - **Seismometers** detects seismic waves below the instrument and records them as a series of zig-zags.

        Scientists can determine the time, location and intensity of an earthquake from the information recorded by a seismometer. This record also provides information about the rocks the seismic waves traveled through.
    - The earthquake events are **scaled either according to the magnitude or intensity of the shock.**
        - The **magnitude scale is known as the Richter scale.** The magnitude relates to the energy released during the quake. The magnitude is **expressed in absolute numbers, 0-10.**
        - The **intensity scale is named after Mercalli,** an Italian seismologist. The intensity scale takes into account the visible damage caused by the event. The **range of intensity scale is from 1-12.**

Earthquakes in India

- India is **one of the highly earthquake affected countries** because of the presence of **tectonically active young fold mountains, Himalayas.**
- India has been divided into **four seismic zones (II, III, IV, and V)** based on scientific inputs relating to seismicity, earthquakes occurred in the past and tectonic setup of the region.



Source: IE

High Biodiversity in Ganga River

Why in News

Recently, the **Wildlife Institute of India (WII)** in its survey of the **Ganga river** (the main river without its tributaries), has found that 49% of the river has high biodiversity.

Increased biodiversity sightings, including of the **Gangetic Dolphin** and **Otters**, indicates **reduced pollution levels and a healthier state of the river.**

Key Points

- **The Study:**
  - The study was initiated by **WII** on behalf of the **National Mission for Clean Ganga**, one of the flagship projects undertaken by the **Ministry of Jalshakti**.
  - This is the first study ever done in the country on the **entire river,** and the first also of all its biodiversity.
  - **High Biodiversity Areas of Ganga:**
    10% of the high biodiversity areas fall alongside national parks and sanctuaries such as **Rajaji national park in Uttarakhand**, **Hastinapur wildlife sanctuary in UP and Vikramshila gangetic Dolphin sanctuary in Bihar.**
  - **Method Used:** The institute has been tracking biodiversity through some key aquatic and semi-aquatic species such as the **Gangetic Dolphins, gharials, otters, turtles and various species of water birds.**
  - **Findings:**
    - Many species that used to be found in the main stem and had disappeared, are now coming back.
    - Nesting colonies of the **Indian Skimmer** found.
    - Seibold's, a species of **water snake,** disappeared 80 years ago and has now resurfaced.
    - New distributions of the **puffer fish** found.
    - Many other species have started travelling back from tributaries to the main stem of the river i**ndicating improving water quality and increasing Biodiversity.**
- **Background:**
  - The distribution and density of key aquatic species such as the **Gangetic Dolphin, the gharial and the mugger** had in earlier years, significantly reduced due to **loss of suitable habitat conditions, and change in the river's morphology due to the construction of dams and barrages, bank alteration, agriculture and sand mining.**
  - In the early 19th century, 10,000 **Gangetic Dolphins** were estimated which reduced to 3,526 by early 2000, disappearing entirely in Haridwar and most of the Yamuna and becoming extinct in smaller tributaries.

- **Biodiversity Threat Higher in Freshwater Ecosystem:**
    - Freshwater ecosystems account for **0.01%** of the earth's surface water but support **10%** of species.
    - According to the **United Nations Environment Programme World Conservation Monitoring Centre (UNEP-WCMC),** decline in diversity of freshwater species is the highest, and surpasses losses in marine and terrestrial species.

        World Conservation Monitoring Centre (UNEP-WCMC), is an executive agency of the **United Nations Environment Programme which** provides information for policy and action to conserve the living world.
    - Globally 20% of all known freshwater fish, 44% waterbirds and 42% amphibian species are under threat of extinction.
    - The highest loss of freshwater biodiversity has been reported from the Indian subcontinent, specifically the **Gangetic plains.**
- **Government Initiatives on River Ganga:**
    - **Ganga Action Plan:** It was the first river action plan which was taken up by the Ministry of Environment, Forest and Climate Change in 1985, to improve the water quality by the interception, diversion and treatment of domestic sewage.

        The **National River Conservation Plan** is an extension to this plan, which aims at cleaning the Ganga river under **Ganga Action Plan** phase-2.
    - **National River Ganga Basin Authority:** It was formed by the Government of India in the year 2009 under the **Environment Protection Act 1986.**
    - **Clean Ganga Fund:** In 2014, it was formed for cleaning up of the Ganga, setting up of waste treatment plants and conservation of biotic diversity of the river.
    - **Bhuvan-Ganga Web App:** It ensures the involvement of the public in the monitoring of pollution entering into the river Ganga.
    - **Ban on Waste Disposal:** In 2017, the **National Green Tribunal (NGT)** banned the disposal of any waste in the Ganga.

Way Forward

- Efforts made by the Indian government to save the biodiversity of Ganga are aligned with the **sustainable development goal** no 15 that is to **protect, restore and promote sustainable** use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and **reverse land degradation and halt biodiversity loss.**

- Government efforts to save ganga are being fructified in the form of improved water quality and increased biodiversity. There is a need to change the approach to development which must lay emphasis on understanding that how protecting nature is also about protecting ourselves.

Source:IE
