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India-Nepal Rail Services Agreement (RSA)

Why in News

India and Nepal have signed a **Letter of Exchange (LoE)** to the **India-Nepal Rail Services Agreement (RSA) 2004**.

It will **allow all authorized cargo train operators to utilize the Indian railway network to carry Nepal's container and other freight** - both bilateral between Indian and Nepal or third country from Indian ports to Nepal.

The authorized cargo train operators **include public and private container trains Operators**, automobile freight train operators, special freight train operators or any other operator authorized by Indian Railways.

Key Points

- **About Rail Services Agreement (RSA), 2004:**

- The Rail Services Agreement was executed in 2004 between the **Ministry of Railways, Government of India** and the **Ministry of Commerce, the Govt. of Nepal** for introduction of **freight train services** between these two countries to and from **Birgunj (Nepal) via Raxaul (India)**.
- The agreement **guides movement between India and Nepal by rail**.
- The Agreement shall be **reviewed every five years** and **may be modified (through Letters of Exchange)** by the Contracting Parties by mutual consent.
- In the past, there have been **amendments to RSA through LoE on three occasions**.
 - First such amendment was in 2004.
 - Second LoE was signed in 2008 at the time of introduction of bilateral cargo between the two countries which required introduction of new customs procedures.
 - Third LoE was signed in 2016 enabling rail transit traffic to/from Visakhapatnam Port in addition to existing provision of rail transportation through Kolkata/Haldia Port.

- **Benefits of the Latest Agreement:**

- **Allow Market Forces to Operate:** This liberalization will **allow market forces (such as consumers and buyers) to come up in the rail freight segment in Nepal**, and is likely to increase efficiency and cost- competitiveness, eventually benefiting the Nepalese consumer.
- **Reduce Transportation Cost:** The liberalisation will particularly reduce transportation costs **for automobiles and certain other products** whose carriage takes place in special wagons and will boost rail cargo movement between the two countries.
- **Enhance Regional Connectivity:** Wagons owned by Nepal Railway Company will also be authorized to carry Nepal-bound freight (inbound and outbound on **Kolkata/Haldia to Biratnagar/Birganj routes**) over the Indian Railways network as per **IR standards and procedures**.

The signing of this LoE marks another milestone in India's efforts to enhance regional connectivity under the "**Neighbourhood First**" policy.

- **Other Connectivity Project:**

- **Nepal being a landlocked country**, it is surrounded by India from three sides and one side is open towards Tibet which has very limited vehicular access.
- India-Nepal has undertaken various connectivity programs to enhance people-to-people linkages and promote economic growth and development.
- MoUs have been signed between both the governments for **laying an electric rail track** linking **Kathmandu with Raxaul** in India.
- India is looking to develop the **inland waterways** for the movement of cargo, within the framework of trade and transit arrangements, providing additional access to sea for Nepal calling it linking **Sagarmatha (Mt. Everest) with Sagar (Indian Ocean)**.
- In 2019, India and Nepal have jointly inaugurated a **cross-border petroleum products pipeline**.
 - Pipeline carries petroleum products from Motihari in India to Amlekhgunj in Nepal.
 - This is South Asia's first cross-border petroleum products pipeline.

Neighbourhood First Policy

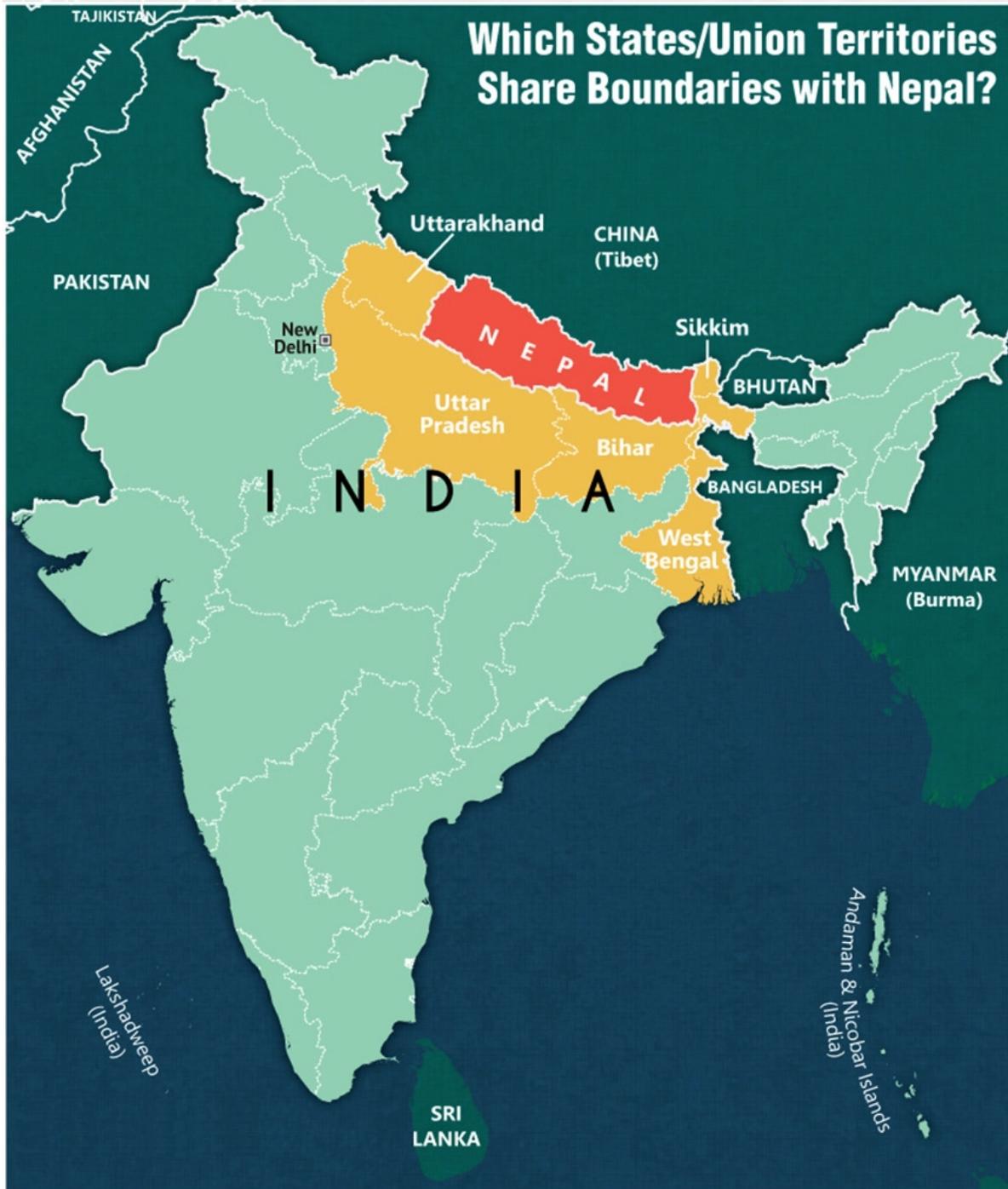
- It is part of India's foreign policy that actively focuses on improving ties with India's immediate neighbours which is being termed as Neighbourhood first policy in the media.
- It was started well by inviting all heads of state/heads of government of **South Asian countries** in the inauguration of PM Narendra Modi first term and later held bilateral talks with all of them individually which was dubbed as a mini **SAARC summit**.
- In the second swearing-in ceremony in 2019, India had invited the heads of **BIMSTEC countries**.

Indo-Nepal Relations

- **Neighbour:** Nepal is an important neighbour of India and occupies special significance in its foreign policy because of the geographic, historical, cultural and economic linkages/ties that span centuries.

The **India-Nepal Treaty of Peace and Friendship of 1950** forms the bedrock of the special relations that exist between India and Nepal.
- **Cultural Ties:** India and Nepal share similar ties in terms of Hinduism and **Buddhism** with Buddha's birthplace Lumbini located in present day Nepal.
- **Open Border:** The two countries not only share an open border and unhindered movement of people, but they also have close bonds through marriages and familial ties, popularly known as **Roti-Beti ka Rishta**.

- **Common Multilateral Forums:** India and Nepal share multiple multilateral forums such as **BBIN (Bangladesh, Bhutan, India, and Nepal)**, **BIMSTEC (Bay of Bengal Initiative for Multi Sectoral Technical and Economic Cooperation)**, **Non Aligned Movement**, and **SAARC (South Asian Association for Regional Cooperation)**. etc.
- **Issues:**
 - In 2017, **Nepal** signed up to **China's Belt and Road Initiative (BRI)**, which sought to create highways, airports and other infrastructure in the country. BRI was rejected by India and this move of Nepal was seen as an inclination towards China.
 - Currently, India and Nepal have border disputes over **Kalapani - Limpiadhura - Lipulekh trijunction** between India-Nepal and China and Susta area (West Champaran district, Bihar).



Source: PIB

Assassination of Haiti's President

Why in News

Recently, Haiti's President Jovenel Moise was **assassinated** at his private residence in **Port-au-Prince, Haiti**.



Key Points

- **About Haiti:**
 - Haiti is a country in the **Caribbean Sea** that **includes the western third of the island of Hispaniola** and such **smaller islands as Gonâve, Tortue (Tortuga), Grande Caye, and Vache**. The **capital is Port-au-Prince**.
 - Its population is almost entirely descended from African slaves, **won independence from France in 1804**, making it the **second country in the Americas, after the United States, to free itself from colonial rule**.
 - It is the **world's first independent Black-led republic**.
 - The nation underwent about **two centuries of Spanish colonial rule and more than a century of French rule**.
 - Over the centuries, however, **economic, political, and social difficulties** as well as a number of **natural disasters** have beset Haiti with chronic poverty and other serious problems.
 - It is the **Western Hemisphere's poorest country**, has a painful history of **foreign interventions, economic exploitation and dictatorial rule**.

- **Recent Instability:**

- Haiti's latest instability revolves around a **dispute over Jovenel Moise's presidency**. He was elected in 2016 to a five-year term, but **because of contention over election results, he did not take office until the next year**.
Under Jovenel Moise's administration, the political and **economic situation in Haiti further deteriorated**.
- Jovenel Moise insisted that it entitled him to another year in power — a **claim that Haiti's opposition rejected**.
- In February 2021, when Moise's opponents said his term ended, they declared their Supreme Court Judge as interim president. Jovenel Moise called it a **coup attempt, and 23 opponents were arrested**.
- At the same time there has been a **surge in kidnappings, rapes and killings as rival gangs battle each other** and the police for control of Haiti's streets.
- The human rights activists have accused Jovenel Moise's government of having ties to the gangs.
So far this year, at least **278 Haitians have been killed** in gang-related violence.
- The unprecedented level of **violence and subsequent displacements is creating a host of secondary issues**.

India- Haiti Relations

- **Political:**

- India's relations with Haiti have been **friendly, though interaction between the two countries has been limited**.
- India established **diplomatic relations with Haiti in September 1996**. Haiti appointed a Honorary Consul in New Delhi in October 2014.
- India had sent a 140 member **Central Reserve Police Force (CRPF)** troop to Haiti on a **peace mission under the auspices of the United Nations (UN)** in August 1995.
- In October 2008, a 140-member **Formed Police Unit (FPU)** from India joined the **UN's Stabilization Mission in Haiti (MINUSTAH)** to help with international efforts to ensure a safe environment in Haiti.
The last units of **FPU stationed in Haiti left in July 2019** on completion of assignment.
- At the multilateral level, the Government of Haiti has supported Indian candidatures in the elections for various international organizations, including elections for **International Court of Justice (ICJ)**, **UNESCO**, **International Maritime Organization** and **World Customs Organization (WCO)** in the recent past.

- **Commerce:**
 - India's trade with Haiti is small but **Indian exports to the country have been growing in recent years.**
 - Two way trade between the two countries was at **USD 93.10 million by the end of 2018-19.**
 - The main items of **exports to Haiti are pharmaceutical goods, textiles, rubber products, cosmetics, and plastic and linoleum products.**
 - India has granted **duty free access to Haitian products** as a special gesture to a **Least Development Country.**
- **Educational:**
 - India has been offering assistance to Haiti under **Indian Technical and Economic Cooperation (ITEC) programme.**
 - The **ITEC programme** provides for organizing training courses in India, deputation of Indian experts abroad, aid for disaster relief, gifting of equipment, study tours and feasibility studies/consultancy services.
 - Haitian diplomats have also been taking advantage of **Professional Course for Foreign Diplomats (PCFD) courses at regular intervals.**
 - PCFD** affirms the commitment of India to its friendly countries in sharing the knowledge and expertise acquired in the field of diplomats' training.
 - Haitian illiterate women received **training at the Barefoot College in Rajasthan in harvesting solar power.**
- **Disaster Relief:**
 - India **donated medicines worth USD 50,000/-** as humanitarian assistance to Haiti for the damage caused by **Hurricane Noel in November 2007.**
 - Another **USD 5 million relief assistance was given in January 2010.** A relief of **USD 5,00,000 annually for three years till 2011 was also provided.**
 - India also provided **emergency financial aid of USD 2,50,000** to Haiti in the aftermath of **Hurricane Mathew in October 2016.**
- **Indian Community:**
 - Indian community in Haiti is small. It **comprises approximately 70 members. Almost all of them are Indian passport holders.**
 - Several of them are professionals, – **doctors, engineers, technicians. Some are into private businesses.**

Source: TH

Human-Wildlife Conflict

Why in News

A report '**A Future for All – A Need for Human-Wildlife Coexistence**' was recently released by **World Wildlife Fund for Nature (WWF)** and **UNEP.**

- It examined **increasing human-wildlife conflict (HWC)**.
- HWC-related killing affects more than **75% of the world's wild cat species**, as well as many other **terrestrial and marine carnivore species** such as polar bears and Mediterranean monk seals, and **large herbivores** such as elephants.

Key Points

- **About:**

Human-wildlife conflict (HWC) refers to struggles that arise when the presence or behaviour of **wildlife poses actual or perceived direct**, recurring **threats to human interests or needs**, often leading to disagreements between groups of people and negative impacts on people and/or wildlife.

- **Causes of Human-wildlife Conflict:**

- **Lack of Protected Area:** Marine and terrestrial **protected areas** only cover **9.67% globally**. About 40% of the African lion range and 70% of the African and Asian elephant ranges fall outside protected areas.

In India, 35% **tiger** ranges currently lie outside protected areas.

- **Wildlife-borne Infections: Covid-19 pandemic** – sparked by a zoonotic disease is driven by the close **association of people, their livestock, and wildlife** and by the unregulated consumption of wild animals.

With closer and more frequent and diverse contact between animals and people, the probability of animal microbes being transferred to people increases.

- **Other Reasons:**

- **Urbanization:** In modern times rapid urbanization and industrialisation have led to the diversion of forest land to non-forest purposes, as a result, the wildlife habitat is shrinking.
- **Transport Network:** The expansion of road and rail network through forest ranges has resulted in animals getting killed or injured in accidents on roads or railway tracks.
- **Increasing Human Population:** Many human settlements coming up near the peripheries of protected areas and encroachment in the forest lands by local people for cultivation and collection of food and fodder etc. therefore **increasing pressure on limited natural resources** in the forests.

- **Impacts:**

- **Impact on Wildlife And Ecosystems:** HWC can have detrimental and permanent impacts on ecosystems and biodiversity. People might kill animals in self-defence, or as pre-emptive or retaliatory killings, which can drive species involved in **conflict to extinction**.
- **Impact on Local Communities:** The most evident and direct negative impacts to people from wildlife are injuries and the loss of lives and of livestock, crops, or other property.
- **Impact on Equity:** The economic and psychological costs of living with wildlife disproportionately **fall to those who live near that wildlife**, while the benefits of a species' survival are distributed to other communities as well.
- **Impact on Social Dynamics:** When a HWC event affects a farmer, that farmer may blame the government for protecting the perpetrator that damages crops, while a conservation practitioner may blame industry and farmers for clearing wild habitats and creating the HWC in the first place.
- **Impact on Sustainable Development:** HWC is the theme in conservation that is strongly linked to the **SDGs** as biodiversity is primary to sustain the developments, even though it is not explicitly mentioned as one.

- **Solution:**

- **Moving From Conflict To Coexistence:** The goal of HWC management should be to enhance the **safety of people and wildlife** and to create mutual **benefits of coexistence**.
- **Integrated and Holistic Practices:** Holistic HWC management approaches allow species to survive in areas where they otherwise would have declined or become extinct.

All species on our planet also are essential for maintaining ecosystem health and functions.
- **Participation:** The full participation of local communities can help reduce HWC and lead to coexistence between humans and wildlife.



Indian Scenario

- India faces an increasing challenge of human wildlife conflict, which is driven by **development pressures** and an **increasing population, high demand for land and natural resources**, resulting in loss, fragmentation, and **degradation of wildlife habitats**.

These pressures intensify the interactions between people and wildlife because they often share living space without a clear demarcation of boundaries.
- In India, data from the Ministry of Environment, Forests and Climate Change shows that **over 500 elephants were killed between 2014-15 and 2018-19**, most related to human-elephant conflict.
- During the same period, **2,361 people were killed as a result of conflict** with elephants.

- **Some Initiatives:**

- **Advisory for Management of HWC:** This has been issued by the Standing Committee of **National Board of Wildlife** (SC-NBWL).
 - **Empower Gram Panchayats:** The advisory envisages empowering gram panchayats in dealing with the problematic wild animals as per the **WildLife (Protection) Act, 1972**.
 - **Provide Insurance:** Utilising add-on coverage under the **Pradhan Mantri Fasal Bima Yojna** for crop compensation against crop damage due to HWC.
 - **Augmenting Fodder:** Envisages augmenting fodder and water sources within the forest areas.
 - **Take Proactive Measures:** Prescribes **inter-departmental committees** at local/state level, adoption of **early warning systems, creation of barriers, dedicated circle wise Control Rooms** with toll free hotline numbers, Identification of hotspots etc.
 - **Provide Instant Relief:** Payment of a portion of ex-gratia as interim relief within 24 hours of the incident to the victim/family.
- **State-Specific:**
 - In 2018, the Uttar Pradesh government had given its in-principle approval to bring **man-animal conflict under listed disasters** in the State Disaster Response Fund
 - The Uttarakhand government (2019) carried out **bio-fencing** by growing various species of plants in the areas.
 - The Supreme Court (2020) affirmed the **right of passage of the Elephants** and the closure of resorts in the Nilgiris elephant corridor.
 - Odisha's Athagarh Forest Division has started casting **seed balls (or bombs)** inside different reserve forest areas to enrich food stock for wild elephants to prevent man-elephant conflict.

Source: IE

'Joint Communication' for Tribal Communities

Why in News

A **joint communication** was signed by the **Ministry of Tribal Affairs** and the **Ministry of Environment, Forest, and Climate Change** which is aimed at giving **more power to the tribal communities** in managing the forest resources.

Forest Resources

- Forests are not only home to trees and animals. They are also a vital source of resources. They give clean air, timber, fuel, wood, fruits, food, fodder, and more. These are known as forest resources upon which many depend for livelihood and survival.
- Forests provide resources, which makes its conservation and protection further important. It is also because of these resources that forests are exploited.
- **Initiatives for forest conservation and preservation:**
Indian Forest Act, 1927, Forest Conservation Act, 1980, National Forest Policy, 1988, National Mission for Green India, National Afforestation Program, Wildlife Protection Act, 1972.

Key Points

- **Joint Communication:**
 - It pertains to **more effective implementation of the Forest Rights Act (FRA), 2006** and for harnessing the potential for livelihood improvement of the **Forest Dwelling Scheduled Tribes (FDSTs)** and other Traditional Forest Dwellers (OTFDs).
 - State forest departments **will carry out verification of claims for forest rights, mapping of forest lands** involved and provision of necessary evidence as required, authentication of records, joint field inspections, awareness generation etc.
 - The lack of recognition of forest rights has left tribal and forest dwelling communities across the country insecure of tenure and fear of eviction from their lands.
 - State forest departments are to undertake projects for **value chain addition** including **capacity building** of primary collectors, new harvesting methods, storage, processing and marketing of **Non-Timber Forest Products (NTFP)**.
 - A nodal agency to be designated for **specific non-timber forest products** as supply chain platforms in collaboration with **TRIFED, Ministry of Ayush, MFP (Minor Forest Produce) Federations, Van Dhan Kendras** etc.

- **Forest Dwellers and MFP:**
 - Tribals and other forest dwellers can contribute significantly in efforts towards climate change through **preservation of biodiversity, environmental conservation and enhancing forest cover.**
 - Forest dwellers are dependent on forests, not only for their livelihood but their traditions are also intertwined with forests.
 - **Non-Timber Forest Products or Minor Forest Produce (MFP):**
 - MFP includes all **non-timber forest produce** of plant origin and includes bamboo, canes, fodder, leaves, gums, waxes, dyes, resins and many forms of food including nuts, wild fruits, honey, lac, tusser etc.
 - It provides both **subsistence and cash income for people who live in or near forests.**
 - They **also form a major portion of their food, fruits, medicines** and other consumption items and also provide cash income through sales.
 - NTFP are **also known as MFP or Non-Wood Forest Produce (NWFP).**
The NTFP can be further categorized into Medicinal And Aromatic Plants (MAP), oil seeds, fiber and floss, resins, edible plants, bamboo, reeds and grasses.
- **Initiatives for Forest Dwellers:**
 - The government had enacted the **Scheduled Tribes and Other Traditional Forest Dwellers (Recognition of Forest Rights) Act, 2006**, commonly known as the Forest Rights Act and recognized the right to livelihood and occupation within the forest of these communities.
 - **Ekalavya Model Residential Schools (EMRS)**
 - **Pradhan Manti Van Dhan Yojana (PMVDY)**
 - Increasing the number of **Minor Forest Products (MFP)** in the bracket of **Minimum Support Price (MSP)** from 10 to 86 in the last few years has supported tribes immensely in improving their incomes and livelihood prospects.
 - State tribal welfare departments along with forest departments are also to work out strategies to extend **MGNREGA** and **National Rural Livelihood Mission (NRLM)** to forest dwellers as well as initiate **skill development programs** and give impetus to **agro-forestry and horticulture projects.**
 - **Programme for Capacity Building of Scheduled Tribe Representatives in Local Self Governments.**

Forest Rights Act, 2006

- The Act recognizes the forest rights in Forest land for **Forest Dwelling Scheduled Tribes (FDST) and Other Traditional Forest Dwellers (OTFD)** who have been residing in such forests for generations.
Forest rights can also be **claimed** by any member or community who has for at **least three generations (75 years) prior** to the 13th day of December, 2005 primarily resided in forest land for bona fide livelihood needs.

- It **strengthens the conservation regime** of the forests while **ensuring livelihood and food security** of the FDST and OTFD.
- **The Gram Sabha** is the authority to initiate the process for determining the nature and extent of **Individual Forest Rights (IFR)** or **Community Forest Rights (CFR)** or both that may be given to FDST and OTFD.
- The Act identifies four **types of rights**:
 - **Title rights**: It gives FDST and OTFD the **right to ownership to land** farmed by tribals or forest dwellers subject to a maximum of 4 hectares. Ownership is only for land that is actually being cultivated by the concerned family and no new lands will be granted.
 - **Use rights**: The rights of the dwellers extend to extracting **Minor Forest Produce**, grazing areas etc.
 - **Relief and development rights**: To rehabilitate in case of illegal eviction or forced displacement and to basic amenities, subject to restrictions for forest protection.
 - **Forest management rights**: It includes the right to protect, regenerate or conserve or manage any community forest resource which they have been traditionally protecting and conserving for sustainable use.

Source: IE

Lymphatic Filariasis

Why in News

Recently, the **Maharashtra government has started a drug administration drive for the elimination of Lymphatic Filariasis (LF)** and become the **first State in the country to resume giving rounds of the drug** after the second wave of **Covid-19**.

Key Points

- **About:**

- LF, commonly known as **elephantiasis** and is considered as a **Neglected Tropical Disease (NTD)**. It is the **second most disabling disease after mental health**.

- It **impairs the lymphatic system** and can lead to the **abnormal enlargement of body parts**, causing pain, severe disability and social stigma.

The lymphatic system is a network of vessels and specialized tissues that are essential to maintaining the overall fluid balance and health of organs and limbs and, importantly, are a major component of the body's immune defense system.

- Lymphatic filariasis is a **vector-borne disease**, caused by infection with parasites **classified as nematodes (roundworms)** of the family Filarioidea. There are **3 types** of thread-like filarial worms which causes lymphatic filariasis:

- ***Wuchereria Bancrofti*** is responsible for 90% of the cases.
- ***Brugia Malayi*** causes most of the remainder of the cases.
- ***Brugia Timori*** also causes the disease.

- **Drug Treatment:**

The **World Health Organization (WHO)** recommends **three drug treatments to accelerate the global elimination of lymphatic filariasis**.

- The treatment, **known as IDA**, involves a combination of ivermectin, diethylcarbamazine citrate and albendazole.
- The plan is to administer these drugs for two consecutive years. The life of the adult worm is hardly four years, so it would die a natural death without causing any harm to the person.

- **Scenario in India:**

- Lymphatic filariasis poses a grave threat to India. An **estimated 650 million Indians across 21 states and union territories are at risk** of lymphatic filariasis.

- **Over 40% of worldwide cases** are found in India.

- The government launched the **Accelerated Plan for Elimination of Lymphatic Filariasis (APELF) in 2018**, and as part of intensifying efforts towards elimination, **later rolled out IDA treatment (triple drug therapy)** in a phased manner.

- **Global Initiatives:**

- **WHO's New Roadmap for 2021–2030:** To prevent, control, eliminate and eradicate a set of 20 diseases, termed neglected tropical diseases, by 2030.
- **Global Programme to Eliminate Lymphatic Filariasis (GPELF):**
 - In 2000, WHO established the **GPELF** to stop transmission of infection with **Mass Drug Administration (MDA)** and to alleviate suffering among people affected by the disease through **morbidity management and disability prevention (MMDP)**.
 - The **target set by GPELF in 2000 to eliminate LF as a public health problem globally by 2020 was not achieved**. Despite setbacks due to Covid-19, WHO will **accelerate work to achieve this target by 2030**.

Source: TH

Agriculture Infrastructure Fund

Why in News

Recently, the Union Cabinet approved some modifications in the **Central Sector Scheme** of Financing Facility under '**Agriculture Infrastructure Fund**'.

Key Points

- **Launch:** It was launched in 2020 as a part of the **Rs. 20 lakh crore stimulus package** announced in response to the **Covid-19 crisis**.
- **Aim:** To provide **medium-long term debt financing facility** for investment in viable projects for post-harvest management Infrastructure and community farming assets.
The **funds will be provided for** setting up of cold stores and chains, warehousing, grading and packaging units, e-marketing points linked to e-trading platforms, besides **PPP (Public Private Partnership) projects** for crop aggregation sponsored by central/state/local bodies.
- **Duration:** Extended to 13 years upto 2032-33.

- **Features:**
 - **Eligible Beneficiaries:**
 - They are Farmers, **Farmer Producer Organizations (FPOs)**, Primary Agricultural Credit Society (PACS), Marketing Cooperative Societies, **Self Help Groups (SHGs)**, Joint Liability Groups (JLG), Multipurpose Cooperative Societies, Agri-entrepreneurs, Start-ups, and Central/State agency or Local Body sponsored PPP Projects.
 - Eligibility has been **extended to State agencies** and **Agricultural Produce Marketing Committees (APMCs)**, as well as federations of cooperative organisations, FPOs and SHGs.
 - **Financial Support:** Rs. **1 Lakh Crore** will be provided by **banks and financial institutions** as loans to eligible beneficiaries.
Moratorium for repayment may vary subject to minimum of 6 months and maximum of 2 years.
 - **Interest Subvention:** Loans will have **interest subvention of 3% per annum** up to a **limit of Rs. 2 crore**. This subvention will be available for a maximum period of seven years.
 - **CGTMSE Scheme:** A credit guarantee coverage will be available for eligible borrowers from this financing facility under **Credit Guarantee Fund Trust for Micro and Small Enterprises (CGTMSE) scheme** for a loan up to Rs. 2 crore.
- **Management:** The fund will be managed and monitored through an online **Management Information System (MIS)** platform. It will enable all the qualified entities to apply for loans under the Fund.
The National, State and District level monitoring committees will be set up to ensure real-time monitoring and effective feed-back.

Source: PIB

High-Altitude Yak

Why in News

Recently, the **National Research Centre on Yak (NRCY)** at Dirang in Arunachal Pradesh's West Kameng district has tied up with the **National Insurance Company Ltd.** for insuring the high-altitude yak.

NRCY is a **premier research institute exclusively engaged in research and development of yak in India**. It was **established in 1989** by the **Indian Council of Agricultural Research**.

Key Points

- **About:**

- The Yak **belong to the Bovini tribe**, which also includes **bison, buffaloes, and cattle**. It can **tolerate temperatures as low as -40 degrees Celsius**.



Adapted for living at high altitudes, they have long hair that hangs off their sides like a curtain, sometimes touching the ground.

- Yaks are **highly valued by Himalayan peoples**. According to Tibetan legend, the **first yaks were domesticated by Tibetan Buddhism founder Guru Rinpoche**.

They are also known as the **lifeline of pastoral nomads in high altitudes of the Indian Himalayan region**.

- **Habitat:**

- They are **endemic to the Tibetan Plateau and the adjacent high-altitude regions**.

Yaks are most **comfortable above 14,000 feet**. They climb to an elevation of 20,000 when foraging and usually don't descend any lower than 12,000 feet.

- The yak-rearing states of India are **Arunachal Pradesh, Sikkim, Uttarakhand, Himachal Pradesh and Jammu & Kashmir**.

The countrywide population trend shows that the **yak population has been decreasing at an alarming rate**. The total yak population in India is **about 58,000**.

- **Threats:**

- **Climate Change:**

The **increasing trend of environmental temperature at high altitudes is resulting in heat stress in yak** during warmer months of the year. This, in turn, is affecting the rhythms of physiological responses of the animal.

- **Inbreeding:**

As wars and conflicts have led to the closing of borders, the yaks outside borders are thought to be **suffering from inbreeding due to the lack of availability of new yak germplasm** from the original yak area.

- **Protection Status of Wild Yak (*Bos mutus*):**
 - **IUCN Red list status: Vulnerable**
IUCN considers the **wild species of yak under *Bos mutus***, while the **domestic form is considered under *Bos grunniens***.
 - **CITES: Appendix I**
 - **Indian WildLife (Protection) Act of 1972: Schedule I**

Source: TH

dbGENVOC: Database of Genomic Variants of Oral Cancer

Why in News

Recently, the **National Institute of Biomedical Genomics (NIBMG)**, funded by the **Department of Biotechnology**, has **created the world's first database of genomic variations in oral cancer (dbGENVOC)**.

Key Points

- **About dbGENVOC:**
 - dbGENVOC, a comprehensive, flexible database framework, developed with an aim to **allow potential users to access, query, browse and download** clinically relevant somatic and germline variation data from Indian oral cancer patients.
 - **Somatic or acquired genomic variants** are the most common cause of cancer, occurring from **damage to genes in an individual cell** during a person's life.
 - A germline variant occurs in gametes and is **passed directly from a parent to a child** at the time of conception. Cancers caused by germline **pathogenic** variants are called inherited or hereditary.
 - It will be updated annually with variation data from new oral cancer patients from different regions of India and southeast Asia.
- **Cancer Burden in India:**
 - According to the World Cancer Report 2020, India had an **estimated 1.16 million new cancer cases in 2018**.
 - 1 in 10 Indians **will develop** cancer during their lifetime and **1 in 15 will die** of the disease.
 - The **six most common cancer types** in India are breast cancer, oral cancer, cervical cancer, lung cancer, stomach cancer, and colorectal cancer.
Oral cancer is the most prevalent form of cancer among men in India, largely fuelled by tobacco-chewing.

- **Other Related Initiatives:**

- **National Cancer Grid (NCG)** is a network of major cancer centers, research institutes, patient groups and charitable institutions across India with the mandate of establishing uniform standards of patient care for prevention, diagnosis, and treatment of cancer, providing specialized training and education in oncology (study of cancer) and facilitating collaborative basic, translational and clinical research in cancer. It was formed in August 2012.
- **National Genomic Grid (NGG):** NGG will collect samples from cancer patients, through a network of pan-India collection centres by bringing all cancer treatment institutions on board.
- **National Programme for Prevention and Control of Cancer, Diabetes, Cardiovascular Diseases and Stroke (NPCDCS)** is being implemented under **National Health Mission (NHM)** for up-to the district level activities.

Source: PIB

Covid-19 Vaccine Booster Shots

Why in News

Recently, **Pfizer and BioNTech** have announced that they would seek regulatory authorization for a third booster dose of their **Covid-19** vaccine (**BNT162b2**).

This development comes amid the global spread of highly transmissible **Delta strain of Covid-19**.

Key Points

- **Booster Shots:**
 - A booster is a means of **strengthening one's immune system** against a **particular pathogen**.
 - It may be exactly the **same original vaccine**, in which case its **goal is to increase the magnitude of protection** by producing more **antibodies**.
 - Scientists **can also tweak what goes into the booster** if they are aiming to **protect people from a new variant** — a version of the virus that's mutated significantly from the original version people were vaccinated against.
 - These shots are **only for the fully-vaccinated**.

- **Need:**
 - These boosters will be **particularly helpful for the elderly and immunocompromised people** whose bodies were unable to mount a robust protection against the virus following the first two shots.
 - Secondly, if there are studies showing that a new variant can sneak past the antibodies created by a specific vaccine, the need of a tweaked booster shot arises then.
- **Concerns:**
 - Booster shots are **yet to get a nod** from the **World Health Organisation (WHO)**.
 - In fact, the WHO has **expressed caution** in encouraging third doses.
 - Such a recommendation is unnecessary and premature given the **paucity of data on booster shots** and the fact that **high-risk individuals in much of the world still haven't been fully vaccinated**.

Source: IE

Kappa Variant: Covid-19

Why in News

Recently, two cases of the **Kappa variant of Covid-19** have been recorded in Uttar Pradesh (UP).

- According to the **World Health Organisation (WHO)**, Kappa is one of the two Covid-19 variants, the other being **Delta**, first identified in India.
- Earlier a new variant **Lambda** was reported from Peru.

Key Points

- **About:**
 - As India raised **objection over the B.1.617.1 mutant of the novel coronavirus being termed an "Indian Variant"**, the WHO had named this variant '**Kappa**' and B.1.617.2 'Delta' just as it **named** various variants of the coronavirus using Greek alphabets.

The **Delta and Kappa variants are actually siblings, the direct descendants** of a variant that earlier used to be referred to as the **double mutant, or B.1.617**.
 - It is still listed among '**variants of interest**' and not '**variants of concern**' by the WHO.

- **Variants of Interest:**
 - They are **SARS-CoV-2 variants with genetic changes** that are predicted or known to **affect virus characteristics such as transmissibility, disease severity, immune escape, diagnostic or therapeutic escape.**
 - **Examples:** Lambda, Iota, Eta and Kappa variants.
- **Variant of Concern:**
 - A variant **for which there is evidence of an increase in transmissibility, more severe disease** (e.g., increased hospitalizations or deaths), **significant reduction in neutralization by antibodies** generated during previous infection or vaccination, reduced effectiveness of treatments or vaccines, or diagnostic detection failures.
 - **Examples:** Alpha, Beta, Gamma and Delta variants.

Source: IE
