

News Analysis (08 Jul, 2020)

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Virtual Climate Action Ministerial

Why in News

Recently, the 4th edition of the virtual Ministerial on Climate Action was organised to advance discussions on implementation of the <u>Paris Agreement</u> under the <u>United</u> <u>Nations Framework Convention on Climate Change (UNFCCC).</u>

- The Ministerial:
 - It was **co-chaired by** European Union, China and Canada.
 - The participating countries **exchanged their views on how they are aligning economic recovery plans amid** <u>Covid-19</u>, with the Paris Agreement.
 - India highlighted that **developed country parties have not fulfilled their promise for extending financial and technological support to developing countries** as envisaged under UNFCCC and its Paris Agreement.
 - India hopes that in the remaining 5 months of 2020, the promised amount will be mobilized and delivered, for further strengthening climate actions in developing countries.
 - The developed countries had promised to provide USD 1 trillion by 2020.

- India's Efforts in Combating Climate Change:
 - India has provided 80 million LPG connections under the <u>Pradhan</u> <u>Mantri Ujjwala Yojana (PMUY)</u> in rural areas, providing the people with clean cooking fuel and a healthy environment.
 - It has **distributed more than 360 million LED bulbs** under the <u>UJALA</u> <u>scheme</u>, which has led to energy saving of about 47 billion units of electricity per year and reduction of 38 million tonnes of CO2 per year.
 - India has also shifted from Bharat Stage-IV (BS-IV) to Bharat Stage-VI (BS-VI) emission norms from 1st April 2020 which was earlier to be adopted by 2024.
 - It had levied a coal cess as part of one of the most explicit green initiatives.
 - Under <u>Smart Cities Mission</u>, Climate Smart Cities Assessment
 Framework 2019 has been launched which intends to provide a clear roadmap for cities and urban India towards combating climate change through adoption of both mitigation and adaptation measures.
- Achievements of India in Combating Climate Change:
 - India has achieved a reduction of 21% in emission intensity of its <u>Gross Domestic Product (GDP)</u> between 2005 and 2014, thereby on its way to achieving its voluntary target under its Intended Nationally Determined Contributions (INDC).

India had pledged to cut emission intensity of its GDP by 33-35% by 2030 below 2005 levels.

• Its **renewable energy installed capacity has increased** by 226% in the last 5 years and stands more than 87 gigawatts (GW).

India has a target of installing 175 GW of renewable power capacity by 2022 under its INDC.

- The **share of non-fossil sources** in installed capacity of electricity generation **increased** from 30.5% in March 2015 to 37.7% in May 2020.
 - It has further announced the aspirational target of increasing its renewable energy capacity to 450 GW.
 - India has pledged to increase the share of non-fossil fuels-based electricity to 40% by 2030 under INDC.
- India's total forest and tree cover is 8,07,276 sq. km. which is 24.56% of the total geographical area of the country.

India has agreed to enhance its forest cover which will absorb 2.5 to 3 billion tonnes of CO₂ by 2030.

Paris Agreement- COP 21

• Conference of Parties (COP) 21, also known as the **Paris Climate Conference** is a landmark environmental accord that was adopted in 2015 to address climate change and its negative impacts.

- It aims to **reduce global greenhouse gas emissions** in an effort **to limit the global temperature increase in this century to well below 2°C** above pre industrial levels, while pursuing means to limit the increase to 1.5°C.
- Countries have **promised to try to bring global emissions down from peak levels as soon as possible.**

However, the USA has withdrawn from the agreement.

- The deal includes **loss and damage**, a mechanism for addressing the financial losses vulnerable countries face from climate impacts such as extreme weather.
- Raising money to help developing countries adapt to climate change and transition to clean energy was an important point in the agreement. This part of the deal has been made non-legally binding on developed countries.
- Before the conference started, more than 180 countries had submitted pledges to cut their carbon emissions (Intended Nationally Determined Contributions, or INDCs). The INDCs were recognized under the agreement, but are not legally binding.

Way Forward

- India has to make a huge effort to achieve its target of 175 GW of renewable power capacity by 2022. It is way behind its target.
- The funding commitment made by developed countries has become more important due to the economic challenge posed by Covid-19 pandemic.

Source: PIB

UN Report on Zoonotic Diseases

Why in News

According to a report published by the <u>United Nations Environment Programme</u> (<u>UNEP</u>) and the International <u>Livestock</u> Research Institute (ILRI), about 60% of known infectious diseases in humans and 75% of all emerging infectious diseases are <u>zoonotic.</u>

- The report was released on 6^{th} July 2020, observed as 'World Zoonoses Day'.
- It focuses on the **context and nature** of potential future zoonotic disease outbreaks, during the **Covid-19 <u>pandemic</u>** by identifying the **anthropogenic** (changes in environment due to human activity) factors.

• Zoonoses or Zoonotic Disease:

- It is a disease that passes into **the human population from an animal source** directly or through an intermediary species.
- Zoonotic infections can be **bacterial**, **viral**, **or parasitic in nature**, with animals playing a vital role in maintaining such infections.
- Examples of zoonoses include <u>HIV-AIDS</u>, <u>Ebola</u>, <u>Malaria</u>, and the current <u>Covid-19 disease.</u>

• Anthropogenic Factors:

- **Increased Use of Wildlife:** Exploitation of <u>wildlife</u> for hunting, harvesting of wild animals for meat and research or medical purposes can bring humans in closer contact with wild animals, thus increasing the risk of zoonotic disease emergence.
- **Changes in Food Supply Chains:** The popularity of food products with **animal source** and the need for immediate delivery to consumers is driving major changes in the food supply chain.
- **Increased Demand for Animal Protein:** This has encouraged the **intensification and industrialisation of animal production,** wherein a large number of genetically similar animals are bred in for higher productivity.
- **Intense and Unsustainable Farming:** Intensive farm settings cause **animals to be raised in close proximity** to each other characterised by poor waste management. This makes them more vulnerable to infections, which can further lead to emergence of zoonotic diseases.
- Use of Antimicrobials: High use of antimicrobials in farm settings is contributing to the burden of <u>AntiMicrobial Resistance (AMR).</u>
 - Antimicrobial resistance is the resistance acquired by any microorganism (bacteria, viruses, fungi, parasite, etc.) against antimicrobial drugs (such as antibiotics, antifungals, antivirals, antimalarials, and anthelmintics) that are used to treat infections.
 - As a result, standard treatments become ineffective, infections persist and may spread to others.

• Recommendations:

• One Health Approach: <u>One Health</u> is a multisectoral and transdisciplinary approach with the goal of achieving optimal health outcomes by recognizing the interconnection between people, animals, plants, and their shared environment.

> It aids a coordinated response to future pandemics and is a key to zoonoses risk reduction and control.

- Expanding Scientific Enquiry: This is a crucial element of AMR containment efforts since waste from intensive farms using antimicrobials paves way for AMR determinants (e.g. antibiotic residues, resistant bacteria) in the environment.
- **Strengthening Monitoring:** It would help in regulating practices associated with zoonotic diseases.
- **Sustainable Land Management Practices:** It would help in developing alternatives for food security and livelihoods that do not rely on the destruction of habitats and **biodiversity.**

It would also enhance sustainable co-existence of agriculture and wildlife.

• **Identifying Key Drivers:** It would encourage management and control measures for emerging zoonotic diseases in animal husbandry.

United Nations Environment Programme

- The UNEP is a leading global environmental authority established on **5th june 1972**.
- **Functions:** It sets the **global environmental agenda**, promotes the sustainable development within the <u>United Nations</u> system, and serves as an authoritative advocate for global environment protection.
- **Major Reports:** Emission Gap Report, Global Environment Outlook, Frontiers, Invest into Healthy Planet.
- Major Campaigns: Beat Pollution, UN75, World Environment Day, Wild for Life.
- Headquarters: Nairobi, Kenya

International Livestock Research Institute

- The ILRI is an **international agricultural research institute** formed in 1994 through the merger of the International Livestock Centre for Africa and the International Laboratory for Research on Animal Diseases situated in Nairobi, Kenya.
- Functions:
 - It focuses on **building sustainable livestock** pathways out of poverty in low-income countries.
 - It works with partners worldwide to help poor people keep their farm animals alive and productive and find profitable markets for their animal products.

• Headquarters: Nairobi, Kenya

Way Forward

- The report is one of the first to focus on the environmental side of the zoonotic dimension of disease outbreaks during the Covid-19.
- There is an **immediate need to invest in in-depth understanding of environmental linkages with zoonotic diseases** and monitoring of such diseases in human-dominated environments.
- There is an urgency for adoption of sustainable **methods of food production** and to **reduce dependence on intensive systems** to preserve health and ecosystems.

Source: DTE

U.S.A's Position on CAATSA

Why in News

Recently, the USA has reiterated its position and asked all its allies and partners, including India, to stop transactions with Russia.

It can risk triggering sanctions under the **Countering America's Adversaries Through Sanctions Act (CAATSA).**

Countering America's Adversaries Through Sanctions Act

- CAATSA is a United States federal law that imposed sanctions on Iran, North Korea, and Russia.
- It includes sanctions against countries that engage in **significant transactions** with Russia's defense and intelligence sectors.

- USA's Stand: The USA has reiterated its position on CAATSA in the context of India's planned jet fighter deal with Russia at an estimated Rs. 18,148 crore.
 - Recently, the <u>Defence Acquisition Council</u> had approved the procurement of 21 MiG-29 fighter jets for the Indian Air Force (IAF), an upgrade for 59 of these Russian aircraft and the acquisition of 12 Su-30 MKI aircraft.
 - India could also face USA sanctions for purchasing the <u>S-400 Triumf missile</u> <u>defense system</u> from Russia under the CAATSA.
 - The **USA suspended Turkey from its F-35 aircraft programme** and barred it from purchasing the jet, following Turkey's purchase of the S-400 from Russia.
 - However, this was done without invoking CAATSA.
- Major Defence Partner: The USA recognised India as a Major Defence Partner in 2016.

The designation allows India to buy more advanced and sensitive technologies from America at par with that of the USA's closest allies and partners.

• **Issues with Purchase from Adversary:** The USA fears that acquisitions by countries like India on significant systems would either **expose or put at risk platforms and its technologies to an adversary.**

It has declared that the S-400 purchase by Turkey from Russia has put a risk to its F-35 aircraft system.

• Waiver Criteria under CAATSA: The USA President was given the authority in 2018 to waive CAATSA sanctions on a **case-by-case basis**.

However, the USA has repeatedly stated that India should not assume it will get a waiver.

NOTE:

The S-400 is known as Russia's most advanced **long-range surface-to-air missile defence system.** China was the first foreign buyer to seal a government-to-government deal with Russia in 2014 for the system.

Way Forward

- The defence procurement for India has become significant amid deadly clashes with China on Line of Actual Control (LAC). Russia is an <u>all weather defence partner</u> of India.
- However, India needs to balance its relation with both Russia and USA, so that its national interest is not compromised.

Source: TH

Why in News

Recently, the USA has announced that <u>F-1 and M-1 visa holders</u> who are **planning to take online only models will not be allowed to stay** in the USA.

• Many universities in the USA are planning **to shift all their classes online** for the fall semester due to **Covid-19 pandemic.**

Fall semester starts in late August and ends in late December or early January whereas the Spring semester begins in January and ends in early May.

- **F-1 visas** are issued to study in the USA for **full-time students** whereas **M-1 visas** are issued to students engaging in **vocational or non-academic studies.**
- The announcement comes weeks after the USA President **<u>suspended H1-B</u>** highly skilled worker visas through the end of the year. Most of these visas go to Indian citizens each year.

Key Points

• Announcements Made:

• The students outside the USA **planning to take all courses online** in the fall semester would not be **permitted entry** into the country.

The **USA would not issue visas** to students who are going to take all their classes online due to the pandemic.

• It also stated that the active students under F-1 and M-1 visas in such programs **must depart the country or take other measures,** such as **transferring to a school with in-person instruction** to remain in lawful status.

The USA regulations **do not allow students in F-1 status to be in online classes** but normally F-1 students are allowed to take one class or three credit hours online.

• Affected Population:

• There were **more than one million international students** in the United States for the 2018-19 academic year. That accounted for **5.5%** of the total USA's higher education population.

Also, international students contributed **\$44.7 billion** to the USA's economy in 2018.

• **India** is the **second largest source of the foreign students in the USA** after China.

The largest number of international students come from China, followed by India, South Korea, Saudi Arabia and Canada.

• Consequences:

- If alternative measures are **not opted** then these students may face **immigration consequences** including, but not limited to, the initiation of removal proceedings.
- It is a difficult situation for students as international travel already faces disruption due to Covid-19.

• Available Alternatives :

Affected students may **switch to visitor status** but it is **not a long term** solution as visitor status is short term and there is **no guarantee that it will be approved.**

Way Forward

- Considering the unprecedented pandemic scenario, the USA can amend the regulation for F-1 and M-1 students.
- The one-size-fits-all approach will create more havoc and complexities not only in USA administration but also in diplomatic relations with countries like India and China.

Source:TH

Equalisation Levy for Non-Resident E-Commerce Firms

Why in News

Recently, the Central government has stated that it will **not extend the deadline for payment of equalisation levy by non-resident e-commerce players,** even though a majority of them are yet to deposit the first installment of the tax.

- The **equalization levy** is aimed at taxing foreign companies which have a significant **local client base in India** but are billing them through their **offshore units**, effectively **escaping the country's tax system.**
- The step has come in the backdrop of the <u>United States Trade Representative</u> (USTR) investigations into taxes adopted or under consideration by 10 <u>nations, including India</u>, on revenues of American digital service companies like Netflix, Airbnb etc.

• Background for Equalization Levy:

• Equalisation levy at **6%** has been in force **since 2016 on payment exceeding Rs 1 lakh a year** to a non-resident service provider for online advertisements.

It is now **applicable for e-commerce companies** that are sourcing revenue from Indian customers **without having tangible presence** here in the country.

• The amendments to the **Finance Act**, **2020** had expanded the ambit of the **equalisation levy for non-resident e-commerce** operators involved in supply of services, including online sale of goods and provision of services, with the levy at the **rate of 2%** effective April 1, 2020.

The tax applies on e-commerce transactions on **websites such as Amazon.com. Google in particular** as the tax applies on advertising revenue earned overseas if those ads target customers in India.

- Changes in Challan ITNS 285:
 - The income tax department has modified **challan ITNS 285 (relating to payment of equalisation levy)** to enable payment of the first installment by non-resident e-commerce operators.
 - The challan also seeks **mandatory PAN** and provides for **'Outside India'** option while **seeking address.**
- Penalties Involved:
 - The **non-payment** could result in a **penalty equal to the amount of equalisation levy,** along with interest.
 - The **late-payment** would **attract interest** at the **rate of 1% per month** or part of the month.

Way Forward

As India is racing towards becoming a digital giant and should be negotiated to avoid any hurdles in its implementation. Further, there needs to be international consensus on taxation on a digital economy.

Source:TH

Lithium Production in Stars

Why in News

Recently, scientists from the **Indian Institute of Astrophysics** (IIA) have provided evidence for the first time that **Lithium (Li) production is common** among **low mass Sun-like stars during their Helium (He) core burning phase.**

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

Key Points

• Findings of the Study:

• Scientists performed a large-scale systematic investigation of the **'He-flash'** (on-set of He-ignition at the star's core via violent eruption), at the end of the star's core hydrogen-burning phase.

Hydrogen burning is the fusion of hydrogen nuclei into a helium nucleus.

• This **He-flash** has been identified as the **source of Li production** suggesting that **all low-mass stars undergo Li production**.

Our **Sun** will reach this phase in about **6-7 billion years** and will manufacture Li.

• The study **challenges the long-held idea that stars only destroy lithium** and indicates that there is some physical process missing in **stellar theory.**

Earlier, it was believed that a vast majority of stars with a mass similar to that of the Sun destroy Li gradually over the course of their lives, via **low-temperature nuclear burning.**

• The study also **suggests new limits** (A(Li) > -0.9~dex) for **classifying stars as Li-rich**, which is 250 times below the threshold (A(Li) > 1.5~dex) used till now.

• Origin of Lithium:

- The origin of much of the Li can be traced to the **<u>Big-Bang</u>** that happened about 13.7 billion years ago.
- Over the course of time, **Li content** in the physical universe has **increased** by about a factor of four, which is **meagre compared to the rest of the elements** which grew about a million times.
- **Stars are primary contributors** to the significant enhancement of heavier elements through **mass ejections and stellar explosions.** Li, however, was thought to be an exception till now.

• Usage of Lithium:

- Lithium is a **light inflammable metal** which is mainly used in <u>lithium-ion</u> (<u>Li-ion</u>) <u>batteries</u> and has brought a transformation in modern communication devices and transportation.
- It is used in the **manufacturing of aircrafts.**
- It is also used in **mental health. Lithium carbonate** is a common treatment of bipolar disorder, helping to stabilize wild mood swings caused by the illness.

Source: PIB

Why in News

Recently, reports of an outbreak of **bubonic plague** in Mongolia, China and far east Russia have emerged, caused mainly by **Tarbagan Marmot** (a **species of Marmot**).

It has been compared to the <u>**Covid-19**</u> pandemic which was apparently spread by the consumption of **bat** meat.



Key Points

- General Description:
 - Marmot *(genus Marmota)* belongs to the **squirrel family** *(Sciuridae)* within the **order Rodentia**.
 - These have **almost 15 species** and the closest living relatives of marmots are **ground squirrels and prairie dogs.**

Prairie dogs are **herbivorous burrowing rodents native** to the grasslands of **North America**.

- Marmots are well suited for life in **cold environments** and have **small furcovered ears, short, stocky legs, and strong claws** for digging.
- Marmots are **diurnal** (active during the day) and are almost **entirely vegetarian**.
- Habitat:
 - They are found primarily in the continents of **Europe, Asia and North America.**
 - South Asia or the Indian Subcontinent is home to the Himalayan Marmot and the Long-tailed Marmot (both are Least Concerned in the <u>IUCN Red List</u>).
 - **Tarbagan or Mongolian Marmot (Endangered)** is found in Mongolia, China and parts of Russia.

• Importance:

- While digging burrows, marmots increase aeration in the soil which increases nutrient circulation and helps different plants to propagate.
- Marmots also play a very important role in Himalayan ecology. They are prey species for predators including the <u>snow leopard</u>, red fox, hawks, eagles, etc.
- Threats:
 - Marmots are hunted for their meat in China and Mongolia.
 - High altitude regions lack proteins. Pastoral nomads usually eat these when they do not have any other means of sustenance.
 - Marmots are **also hunted for their fur.**

Plague

• Plague is caused by the **bacteria** *Yersinia pestis* usually found in **small mammals** and their fleas.

It is transmitted between animals and humans by the **bite of infected fleas**, **direct contact** with infected tissues and **inhalation of infected respiratory droplets**.

- It is one of the examples of **<u>bacterial zoonoses.</u>**
- There are **two main clinical forms** of plague infection:
 - **Bubonic plague** is the most common form and is characterized by painful **swollen lymph nodes** or **'buboes'.**
 - Highly infectious bubonic plague killed about 50 million people across Africa, Asia and Europe in the 14th century.
 - Over 3,200 people were infected worldwide between 2000-15, resulting in 584 deaths.
 - The bacterial disease was named the **Black Death** after the dark swellings or buboes that victims suffered.
 - **Pneumonic plague** is a form of severe lung infection.
- Antibiotic treatment is effective against plague bacteria, so early diagnosis and early treatment can save lives. However, if left untreated, the fever can kill a victim in a very short time.

Source: DTE

National Gene Bank

Why in News

Recently, the National Medicinal Plants Board (NMPB) under the Ministry of AYUSH and the National Bureau of Plant Genetic Resources (NBPGR) under the Ministry of Agriculture & Farmers' Welfare have signed a Memorandum of Understanding (MoU).

The purpose of this MoU is to conserve the Medicinal and Aromatic Plants Genetic Resources (MAPGRs) in the **National Gene Bank (NGB).**

Key Points

- Establishment: The National Gene Bank was notified in 1996-97.
- Hosted By: National Bureau of Plant Genetic Resources (NBPGR), New Delhi.
- **Purpose:** To conserve the Plant Genetic Resources (PGR) for future generations in the form of seeds, genomic resources, pollen etc.
- Functioning:
 - The NGB has four kinds of facilities, namely, Seed Genebank (- 18°C), Cryogenebank (-170°C to -196°C), In vitro Genebank (25°C), and Field Genebank, to cater to long-term as well as medium-term conservation.
 - It stores different crop groups such as cereals, millets, medicinal and aromatic plants and narcotics, etc.
- Other Facilities:
 - The **Svalbard Global Seed Vault in Norway** houses the world's largest collection of seeds.
 - India's seed vault is at Chang La (Ladakh) in the Himalayas.
 - National Animal Gene Bank, established at the National Bureau of Animal Genetic Resources (NBAGR Karnal, Haryana), has the objective of conserving the indigenous livestock biodiversity.

NBAGR is one of the <u>Indian Council of Agricultural Research</u> (ICAR) institutes.

National Medicinal Plants Board

- In order to promote the medicinal plants sector, the Government of India set up the National Medicinal Plants Board (NMPB) on 24th November 2000.
- Currently the board is working under the Ministry of <u>AYUSH</u> (Ayurveda, Yoga & Naturopathy, Unani, Siddha & Homoeopathy).
- The primary mandate of NMPB is to develop an appropriate mechanism for coordination between various ministries/ departments/ organizations and implementation of support policies/programs for overall (conservation, cultivation, trade and export) growth of medicinal plants sector both at the Central /State and International level.

National Bureau of Plant Genetic Resources

- The 'National Bureau of Plant Introduction' was renamed as 'National Bureau of Plant Genetic Resources' (NBPGR) in January 1977.
- It is one of the **Indian Council of Agricultural Research (ICAR)** Institutes. ICAR is an autonomous organisation under the **Ministry of Agriculture & Farmers' Welfare.**
- It is a **nodal organisation** in India for **management of Plant Genetic Resources (PGR).**
- It has played a pivotal role in the improvement of various crop plants and diversification and development of agriculture in India through germplasm introduction from various institutes/organizations located in foreign countries and germplasm collection from within the country and abroad and conservation thereof.

Germplasm is a live information source for all the genes present in the respective plant, which can be conserved for long periods and regenerated whenever it is required in the future.

- The NBPGR has linkage with **National Active Germplasm Sites (NAGS)** for the management of active germplasm of field and horticultural crops.
 - NAGS are located at NBPGR regional stations, other crop-based ICAR institutes or State Agricultural Universities.
- It is headquartered in **New Delhi** and has **10 regional stations.**

Source: PIB

Golden Birdwing: India's Largest Butterfly

Why in News

Recently, a Himalayan **<u>butterfly</u>** known as **Golden Birdwing** (*Troides aeacus*) has been discovered as India's largest butterfly after 88 years.

It has replaced an **unknown specimen** which a british army officer Brigadier Evans had **recorded in 1932.**



• Discovery:

The female was recorded from **Didihat in Uttarakhand**, the male was from the **Wankhar Butterfly Museum in Shillong**, Meghalaya.

• Characteristics:

- With a **wingspan of 194 mm**, the female of the species is marginally larger than the Southern Birdwing (190 mm).
 - Earlier, the largest Indian butterfly that was recorded in 1932 was an individual of the Southern Birdwing (*Troides minos*), which was then treated as a subspecies of the Common Birdwing (*Troides helena*).
 - However, the specimen that Evans measured was unknown and no other butterfly measured as much as the 190 mm that he recorded.
- The male Golden Birdwing is much smaller at 106 mm.
- **Measurement:** The only measurement used in the study of **Lepidoptera is wingspan** in which butterflies are measured from the wing base to the tip.

Butterfly

- Butterflies are insects from the **order Lepidoptera of phylum Arthropoda** which also includes moths.
- Adult butterflies have large, often brightly coloured wings, and conspicuous, fluttering flight.
- Significance:
 - **Rich Biodiversity:** Abundance of butterflies in any area represents the rich biodiversity.
 - Indicator Species: The butterfly acts as an indicator species. An indicator species provides information on the overall condition of the ecosystem and of other species in that ecosystem. They reflect the quality and changes in environmental conditions as well as aspects of community composition.
 - **Pollinator:** It acts as a **pollinator** by helping in pollination and conserving several species of plants.



Southern Birdwing

- Scientific Name: Troides minos
- **Description:** It is a large and striking butterfly <u>endemic</u> to south India.
- With a wingspan of 140–190 mm, it is considered as one of the largest butterflies of India.
- **Protection Status:** Least Concern in the **International Union for** <u>Conservation of Nature (IUCN).</u>

Source: TH