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Davos Dialogue: World Economic Forum

Why in News

Recently, the Prime Minister addressed the **World Economic Forum's (WEF) Davos Dialogue** via video conferencing.

- The WEF annual meeting in Davos (Switzerland) engages the world's top leaders to **shape global, regional and industry agendas.**
- The Davos Dialogues agenda marks the launch of the WEF's **Great Reset Initiative** in the post Covid world.



The Great Reset Initiative of WEF

- **About:**

It is based on the assessment that the world economy is in deep trouble.

Situation has been made a lot worse by many factors, including the **pandemic's devastating effects on global society**, the **un-folding technological revolution**, and the **consequences of climate change**.

- **Agenda:**

- The world must act jointly and swiftly to revamp all aspects of our societies and economies, from education to social contracts and working conditions. Every country must participate, and every industry, from oil and gas to tech, must be transformed.
- In short there should be a **'Great Reset' of capitalism**.

Key Points

- **India's Fight Against Covid:**

- India, took a **proactive public participation approach** and developed a Covid-specific health infrastructure and trained its resources to fight Covid.
- India, which is the home to the world's 18% population, has not only taken care of its citizens but also **helped other countries by exporting PPE kits and masks**.
- India guided the world how traditional medicine (**Ayurveda**) could help in **improving immunity**.
- India has **developed two coronavirus vaccines** so far which have been **exported to other countries** and the world would see many more Made in India vaccines in the coming days.

- **Indian Economy During the Pandemic:**

- India has maintained economic activity by starting infrastructure projects worth billions of rupees and initiating **special schemes for employment such as: Garib Kalyan Rojgar Abhiyaan**: The scheme empowered and provided livelihood opportunities to the returnee migrant workers and rural citizens who have returned to their home states due to the **Covid-19** induced **lockdown**.
- India's ambition of self-reliance (**Aatmanirbhar Bharat**) will strengthen globalism and will help in **Industrial revolution 4.0**.
India is working on all the four factors of Industrial revolution 4.0 which are **connectivity, automation, artificial intelligence or machine learning and real-time data**.

- **India's Digital Infrastructure:**

- Growing **digital infrastructure** has made digital solutions everyday part of life in India.
 - It has made public service delivery efficient and transparent.
 - 1.3 billion Indians have universal ID- **Aadhar** which is connected to their account and phone.
 - In December 2020, there has been 4 trillion rupees worth of transactions through **Unified Payments Interface (UPI)**.
 - India **could transfer 1.8 trillion rupees worth of assistance through direct benefit transfer** to the accounts of 760 million Indians during the pandemic.
 - India has started a campaign named **National Digital Health Mission** for providing easy access to health care by giving **Unique Health ID** to its citizens.
 - National Digital Health Mission:** It is a complete digital health ecosystem. The digital platform will be launched with four key features – **health ID**, personal health records, Digi Doctor and health facility registry.
- India's vision is to transform the country through access, inclusion and empowerment while **ensuring the privacy of the user**.

- **Indian Policies Support Global Business:**

- India's **Aatamnirbhar Bharat** movement is committed to global good and global supply chain as **India has capacity, capability and reliability to strengthen global supply chain**.
 - Its **massive consumer base** will further grow and help the global economy.
 - India invited the global players to take advantage of the 26 billion dollar **Production Linked Incentive (PLI) scheme**.
- India offers **ease of doing business** as there is a predictable and friendly environment from tax regime to **Foreign Direct Investment** norms, one such example of an Indian initiative is **Foreign Investment Facilitation Portal**.
 - Foreign Investment Facilitation Portal (FIFP)** is the online single point interface of the Government of India with investors to facilitate FDI. It is administered by the **Department for Promotion of Industry and Internal Trade**, Ministry of Commerce and Industry.

- **India and Climate Change:**

- India is matching its growth with the goals of **climate change**.

- Few Indian Initiatives to Fight Climate Change:**

- **National Clean Air Programme (NCAP):** It is a five-year action plan with a tentative target of 20-30% reduction in concentrations of PM10 and PM2.5 by 2024, with 2017 as the base 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 has distributed more than 360 million LED bulbs under the **UJALA scheme**, 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 is focussing on sustainable **urbanization** with focus on ease of living, ease of doing business and climate sensitive development.

World Economic Forum

- **About:**

- The World Economic Forum (WEF) is a **Swiss nonprofit foundation established in 1971**, based in **Geneva, Switzerland**.
- Recognized by the Swiss authorities as the international institution for **public-private cooperation**.

- **Mission:**

Committed to improving the state of the world by engaging business, political, academic, and other leaders of society to shape global, regional, and industry agendas.

- **Founder and Executive Chairman:** Klaus Schwab.
- **Some major reports published by WEF are:**

Source:IE

4th Edition of Future Investment Initiative Forum

Why in News

The Union Minister of Health and Family Welfare addressed the 4th edition of the Future Investment Initiative Forum through a video conference.

The aim of the Forum **hosted in Riyadh (Saudi Arabia)** was to find solutions on how businesses and governments can expand access to healthcare, train healthcare workers, remove regulatory barriers and encourage investment in advanced health technologies.

Future Investment Initiative Forum

- The Future Investment Initiative (FII) is widely described as “**Davos in the desert**”. It is **Saudi Arabia’s flagship investment conference**.
The **informal name derives from the World Economic Forum’s annual meeting** that is held in Davos, Switzerland, where world leaders discuss agendas for pressing international issues.
- FII was announced in **September 2017** by the **Public Investment Fund**, Saudi Arabia's main sovereign wealth fund, in the context of the **Saudi Vision 2030 Economic and Social Reform Programme**.



Key Points

- **India Highlighted Five Big Trends Emerging Due to Covid-19 and Impacting Global Business:**
 - The **impact of Technology and Innovation**.
 - **Importance of Infrastructure** for Global Growth.
 - **Changes coming in human resource** and future of work.
 - Compassion for **Environment**.
 - **Business friendly Governance** with focus on the whole of society and government approach.

- **India's Initiatives Highlighted:**
 - **Indigenous Innovations to Digital Health Tools (for Covid-19):**
Aarogya Setu App: Bluetooth tracking technology is used to analyze and locate Covid hotspots and alert local authorities in advance.
 - **For Strengthening Infrastructure:**
 India has launched a special economic and comprehensive package of **Rs. 2 million Crore**, equivalent to **10%** of India's GDP under **Atmanirbhar Bharat Abhiyan**.
 - **For Human Resource:**
 India has developed a comprehensive vision on developing skilled human resources. For Example: Recently, the government has launched the **Pradhan Mantri Kaushal Vikas Yojana (PMKVY) 3.0**.
 - **For Environment:**
 The steps taken by India to mitigate climate change (e.g. **National Action Plan on Climate Change**) and move towards clean fuel consumption (e.g. **Ujjwala**).
 - **For Business Friendly Governance:**
 India is developing a comprehensive ecosystem from research and development to **tech-entrepreneurship**.
- **Emphasized Healthcare:**
 - India demonstrated the **world's largest vaccination campaign** launched by it recently with **two Covid-19 vaccines (Covidshield and Covaxin)**.
 - Serum Institute of India will deliver **Covishield to Saudi Arabia**.
 - Referred to the development of the **Co-WIN digital platform** and the **Ayushman Bharat scheme**, the world's largest government health program, which are shining examples of the use of technology in the integration of public health communities.

Source: PIB

West Asia Peace Conference

Why in News

Recently, **Russia** backed a Palestinian proposal for a **West Asia Peace Conference**. The Conference is intended to **focus on a two-state solution**, under which Israel and a future Palestinian state would coexist.

Key Points

- **Background:**

The support for the Conference came as the USA, which had sided with Israel under the administration of Donald Trump, intends to “restore credible USA engagement with Palestinians as well as Israelis.”

- **Participants in the Conference:**

The 10 participants would include **Israel, the Palestinians**, the four **members of the West Asia diplomatic quartet** (Russia, the **United Nation**, the USA and the **European Union**), along with four Arab states — **Bahrain, Egypt, Jordan and the UAE.**

- **Russia’s Suggestion:**

Russia suggested that the **West Asia Peace Conference** could be held at the **ministerial level.**

- **Other Related Developments:**

- The **Abraham Accord** between Israel, the United Arab Emirates and Bahrain is mediated by the USA. It was the first Arab-Israeli peace deal in 26 years.
- Palestinians are worried about the impact of the Accords.

Israel-Palestine Conflict

• Background:



o **British Phase:**

- Britain took control of the area known as Palestine after the ruler of that part of the Middle East, the **Ottoman Empire**, was defeated in **World War I**.

- The land was inhabited by a Jewish minority and Arab majority.
- Tensions between the two peoples grew when the **international community gave Britain the task of establishing a "national home" in Palestine for Jewish people.**

For Jews, it was their ancestral home, but Palestinian Arabs also claimed the land and opposed the move.

- In **1948**, unable to solve the problem, British rulers left and **Jewish leaders declared the creation of the state of Israel.**

o **Post British Phase:**

- In another war in **1967**, Israel occupied **East Jerusalem** and the **West Bank**, as well as most of the **Syrian Golan Heights**, and **Gaza** and the Egyptian Sinai peninsula.

- Most Palestinian refugees and their descendants live in Gaza and the West Bank, as well as in neighbouring Jordan, Syria and Lebanon.

Neither they nor their descendants have been allowed by Israel to return to their homes - Israel says this would overwhelm the country and threaten its existence as a Jewish state.

- Israel still occupies the West Bank, and although it pulled out of Gaza the **United Nations** (UN) still regards that piece of land as part of occupied territory.
- Israel claims the whole of Jerusalem as its capital, while the Palestinians claim East Jerusalem as the capital of a future Palestinian state.
- In the past 50 years Israel has built settlements in these areas, where more than 6,00,000 Jews now live.
- Palestinians say these are illegal under international law and are obstacles to peace, but **Israel denies this.**

- **Shift in the Stand of the USA:**

- The USA has played a partisan role in the Israeli-Palestinian conflict.
- In the last few years, developments in the USA mark a clear shift from the **Oslo Accords in favor of support for Israeli plans** to annex a large fraction of the West Bank and design a new settlement of the conflict according to its interests.
 - USA's peace plan (**Peace to Prosperity: A Vision to Improve the Lives of the Palestinian and Israeli People**) would have guaranteed that Israel would control a unified Jerusalem as its capital and not require it to uproot any of the settlements in the West Bank.

The plan was drawn without any meaningful Palestinian participation and was loaded in Israel's favour.
 - In **1993** under the Oslo Accords, **Israel** and the **Palestine Liberation Organisation (PLO)** agreed to officially recognize each other and renounce the use of violence.
 - The Oslo Accords also **established the Palestinian Authority**, which received limited autonomy in the Gaza Strip and parts of the West Bank.
- However, recently after the **change in administration**, the USA said it would **move towards renewing ties with the Palestinians**.

- **India's Stand:**

- India was one of the few countries to **oppose the UN's partition plan in November 1947**, echoing its own experience during independence a few months earlier. In the decades that followed, the Indian political leadership actively supported the Palestinian cause and withheld full diplomatic relations with Israel.
- India **recognised Israel in 1950** but **it is also the first non-Arab country to recognise PLO as the sole representative of the Palestinian**.

India is also one of the first countries to recognise the statehood of Palestine in 1988.
- In 2014, India favored the **United Nations Human Rights Council's (UNHRC)** resolution to probe Israel's human rights violations in Gaza. Despite supporting the probe, India abstained from voting against Israel in UNHRC IN 2015.
- As a part of Link West Policy, India has **de-hyphenated its relationship with Israel and Palestine in 2018** to treat both the countries mutually independent and exclusive.
- In June 2019, India voted in favor of a decision introduced by Israel in the **UN Economic and Social Council (ECOSOC)** that objected to granting consultative status to a Palestinian non-governmental organization.
- So far **India has tried to maintain the image of its historical moral supporter for Palestinian self-determination, and at the same time to engage in the military, economic, and other strategic relations with Israel**.

Way Forward

The **world at large needs to come together for a peaceful solution** but the reluctance of the Israeli government and other involved parties have aggravated the issue more. Thus a **balanced approach towards the Israel-Palestine issue** would help to maintain favorable relations with Arab countries as well as Israel.

Covid-19 Performance Index

Why in News

India has been ranked 86th in a “**Covid-19 Performance Index**” comprising 98 countries.

Key Points

- **About the Index**
 - **Institution Involved:**

Covid-19 Performance Index was compiled by the **Sydney-based Lowy Institute**, an Australian think tank, which sought to **measure the response of countries to the Pandemic**.

The Institute **also took into account** the impact of geography, political systems and economic development in assessing outcomes.
 - **Parameter Used:**
 - **Six Indicators:** Confirmed cases, confirmed deaths, cases per million people, deaths per million people, cases as a proportion of tests, and tests per thousand people.
 - **Fewer reported cases and deaths**, both in aggregate and per capita terms, point towards a better response to the virus.
 - **More tests** conducted on a per capita basis reveal an accurate picture of the **extent of the pandemic at the national level**.
 - **Lower rates of positive tests** indicate **greater degrees of control** over the **transmission of Covid-19**.
 - **Assessing Method:**
 - Assessed **98 countries in the 36 weeks** that followed their hundredth case.

China was not included in the study because all of its testing rates are not publicly available.
 - An average across six indicators was calculated for individual countries in each period and normalised to produce **a score from 0 (worst performing) to 100 (best performing)**.

- **Results:**
 - **Top Countries:**
New Zealand topped the rankings closely followed by Vietnam, Taiwan, Thailand and Cyprus.
 - **Bottom Countries:**
Brazil stood at the bottom of the index. The USA was the fifth-worst performing country, it stood at 94 out of 98 countries.
 - **South Asian Countries:**
Sri Lanka was the best performing nation in South Asia, ranking 10, while the Maldives was at 25, Pakistan at 69, Nepal at 70, and Bangladesh at 84.
 - **Performance of India:**
 - India ranked 86th in the Covid-19 Performance Index out of 98 countries.
 - At 24.3, India's average was lower than the region it belongs to — Asia-Pacific — which scored 58.2 and ranked best in the region-wise evaluation.
- **Trend Analysis:**
 - **Smaller countries performed better:** In general, countries with smaller populations, cohesive societies, and capable institutions have a comparative advantage in dealing with a global crisis such as a pandemic.
Smaller countries with fewer than 10 million people consistently outperformed their larger counterparts throughout 2020.
 - **Leadership Mattered:** Levels of economic development and differences in political systems didn't have as much of an impact on coronavirus response as expected.
Proper management of the pandemic was not much dependent on the regime type but whether citizens trust their leaders, and whether those leaders preside over a competent and effective state.
 - The relatively 'low-tech' nature of the health measures used to mitigate the spread of the virus created a more level playing field between developed and developing countries.
The deployment of vaccines, however, could give richer countries an advantage.

Source: TH

SARS-CoV-2 New Variants

Why in News

SARS-CoV-2 variants have emerged independently in several countries, and the latest research indicates that the virus is **changing quickly (mutatition)** and it may continue to develop towards **evading currently available vaccines**.

SARS-CoV-2 virus is responsible for causing the **coronavirus disease (Covid-19)**.

Key Points

- **Meaning of Mutation:**

- Mutation is **an alteration in the genetic material (the genome) of a cell** of a living organism or of a virus that is more or less permanent and that can be transmitted to the cell's or the virus's descendants.
- The genomes of organisms are all composed of **Deoxyribonucleic Acid (DNA)**, whereas **viral genomes** can be of DNA or **Ribo Nucleic Acid (RNA)**.

- **RNA Mutation vs DNA Mutation:**

- When cells multiply, the DNA within them **replicates** as well, to make **copies for the new cells**. During replication, **random errors** are introduced into the new DNA.
- While the errors in DNA virus genomes can be **corrected by the error-correcting function of cells in which they replicate**, there are **no enzymes in cells to correct RNA errors**. Therefore, **RNA viruses accumulate more genetic changes (mutations) than DNA viruses**.

- **Significance of Mutation:**

Evolution:

- While **most mutations are deleterious to the virus**, if some allow a **selective advantage**, say **better infectivity, transmission, or escape from immunity** then the new viruses out-compete the older ones in a population.
- **For example:** A mutation called **D614G** emerged in January 2020 to change the **amino acid** at a position in the **coronavirus' Spike protein**.
 - Because this variant infected and replicated better and produced **'fitter' viruses**, it now accounts for over 99% of the virus circulating globally. Other mutations are now emerging in this background.
 - It is the **coronavirus spike protein** that binds to a **human protein** to initiate the **process of infection**.
 - Changes here could **possibly affect how the virus behaves in terms of its ability to infect**, or cause severe disease, or escape the immune response made by vaccines.

- **Distinct features of RNA Genome of Coronavirus:**

Coronaviruses have an RNA genome with two unique features:

- **Largest Genome:**

At 30,000 nucleotides (nucleic acid units) they have the **largest genome among RNA viruses.**

- **Stability:**

Coronaviruses have rather stable genomes, changing about a **thousand times slower than influenza viruses**, which too are RNA viruses that cause respiratory illness.

- **Recent RBD Mutations in Coronavirus Variants:**

- Three key **Receptor-Binding Domain (RBD)** mutations **K417N/T, E484K, and N501Y** are found in variants that emerged in **South Africa and Brazil.**
The **UK variant** has the **N501Y, P681H** mutation.
- Viruses with mutations within the receptor-binding domain (RBD) of the Spike protein **have the most potential to evade antibodies** that develop as a result of natural infection or vaccination.
- The RBD binds the cellular receptor allowing the virus to infect cells, and anti-RBD antibodies neutralise the virus.

- **Vaccine Test Against Emerging Variants:**

Indirect tests are done in laboratories to assess if an emerging variant might escape antibodies developed after a natural infection or vaccination.

- **Serum** (the blood components that contain antibodies) from recovered patients or vaccinated people, and **antibodies known to neutralise the original virus**, are tested to determine whether the variant viruses evade antibodies.
- The effectiveness of a serum or antibody is expressed as an **inhibitory concentration (IC) or plaque reduction neutralisation titer (PRNT) value.**
- The IC₅₀ or PRNT₅₀ value is the reciprocal dilution of serum or antibody that neutralises 50% viruses in the sample.

- **Efficacy of Vaccine Against Emerging Variants:**

- Both Moderna and Pfizer/BioNTech have agreed that their vaccines offered **reduced protection against the South African variant.** The two companies are reported to be working on **developing fresh vaccines** to cover these variants.
- There is also proof of **several re-infections** with the variant in South Africa, driven by the ability of new variants to evade immunity developed against the original virus.

- **India's Case:**

- Only the UK variant viruses have so far **been reported from India** and that too, in travellers. There is **no reported local transmission**.
- The evidence so far suggests that current vaccines would still **protect against the UK variant, even if with reduced efficacy**.
 - Scientists from **ICMR-National Institute of Virology** and **Bharat Biotech** tested serum from recipients of their vaccine, **Covaxin**, against a UK variant.
 - The results show no significant difference, suggesting that the vaccine would work equally well on the UK variant.
- With cases already going down, India should **strictly implement masks and limit crowds while aggressively tracing contacts of people infected with the UK variant**.
- India must also be vigilant of people with a history of travel to **South Africa since October 2020, and Brazil since December 2020**.
- The setting up of an inter-ministerial group 'Indian SARS-CoV-2 Genomics Consortium (INSACOG)' to **increase genomic surveillance** is a step in the right direction.
 - Genomic surveillance** can generate a rich source of information for tracking pathogen transmission and evolution on both national and international levels.

Source:IE

Nilgiri Elephant Corridor Case

Why in News

Recently, the **Supreme Court (SC)** appointed a conservationist as Member of a **Technical Committee** constituted in the **October 2020 case** to hear complaints by landowners against sealing of their buildings infringing the **Nilgiri Elephant Corridor** in Tamil Nadu by the state authorities.

Key Points

- **About the October 2020 Case:**

- In October 2020, **SC had upheld the Tamil Nadu government's authority to notify an 'elephant corridor'** and protect the migratory path of the animals through the **Nilgiri biosphere reserve**.
- The SC had said it was the State's duty to protect a **"keystone species"** such as elephants, immensely important to the environment.
- The SC also **allowed the formation of a committee** led by a retired HC judge and two other persons to hear the individual objections of resort owners and private landowners within the corridor space.
- The SC judgment was based on **appeals filed by resorts/private landowners, against a Madras High Court decision of July 2011.**

- **Madras HC Judgement:**

- In 2011, the Madras HC **upheld the validity of the Tamil Nadu government's notification (of 2010) declaring an 'Elephant Corridor'** in the Sigur Plateau of Nilgiris District.
- It said that the government is fully empowered under the **'Project Elephant'** of the Union government as well as **Article 51 A(g)** of the Constitution to notify the elephant corridor in the state's Nilgiris district.

Article 51 A(g): It shall be the **fundamental duty** of every citizen of India to protect and improve the natural environment including forests, lakes, rivers and wildlife and to have compassion for living creatures.

- Further, it upheld directions to the resort owners and other private landowners to vacate lands falling within the notified **Nilgiri elephant corridor**.

- **Nilgiris Elephant Corridor:**

- The corridor is situated in the ecologically fragile **Sigur plateau, which connects the Western and the Eastern Ghats** and sustains elephant populations and their genetic diversity.

It is situated near the **Mudumalai National Park** in the Nilgiris district.

- It has the Nilgiri hills on its southwestern side and the **Moyar river valley** on its northeastern side. The elephants cross the plateau in search of food and water.
- There are about 100 elephant corridors in India of which almost 70% are used regularly.
 - 75% of the corridors are in the southern, central and north-eastern forests.
 - There are an estimated 6,500 elephants in just the **Brahmagiri-Nilgiris-Eastern Ghats ranges**.

- **Challenges for Elephant Corridors:** ‘Right of Passage’, an 800-page study released in August 2017, authored by experts and published by the **Wildlife Trust of India (WTI)** identifies and records details pertaining to 101 elephant corridors across India.
 - **Narrowing Passage Width:** Only 22% corridors are of a width of one to three kilometres in 2017, compared with 41% in 2005, pointing to how constricted corridors have become in the past 12 years.
 - **Human Encroachment of Corridors:** 21.8% of corridors were free of human settlements in 2017 compared with 22.8% in 2005.
 - **Intercepted Corridors:** About 36.4% of the elephant corridors in northwestern India, 32% in central India, 35.7% in northern West Bengal and 13% of the elephant corridors in northeastern India have a **railway line** passing through them.
 - Almost two-thirds of the corridors have a **National or State Highway** passing through them, fragmenting habitats and hindering elephant movement further.
 - 11% of corridors have canals passing through them.
 - 12% are affected by mining and the extraction of boulders.
 - **Land-use Along Corridors:** In terms of land use, only 12.9% of the corridors are totally under forest cover in 2017 compared with 24% in 2005.

Two in every three elephant corridors in the country are now affected by agricultural activities.

Nilgiri Biosphere Reserve

- **Origin:**
 - The name ‘**Nilgiris**’ with literary meaning ‘**blue mountains**’ has originated from the blue flower clad mountains of the Nilgiris plateau within the State of Tamil Nadu.
 - It was the **first biosphere reserve in India** established in the year 1986.
- **Geography:**
 - The total area of the Nilgiri Biosphere Reserve is 5,520 sq. km.
 - It is **located in the Western Ghats** and encompasses parts of **Tamil Nadu, Kerala and Karnataka.**
- **Ecological Characteristics:**
 - **Confluence of Biotic zones:** It exemplifies the **tropical forest biome** which portrays the **confluence of Afro-tropical and Indo-Malayan biotic zones** of the world.
 - **Biodiversity Hotspot:** Biogeographically, Western Ghats is the most important region and one of the noted **Biodiversity Hotspots** (biogeographic regions having **highest density of endemic species**) for speciation in the tropics.

- **Vegetation:**
 - The NBR harbors a wide spectrum of ecosystem types. Major parts of the core areas spread over Kerala and Tamil Nadu States, include **evergreen, semi evergreen, moist deciduous montane sholas and grassland types of vegetation.**
 - Whereas the core area spread over the State of Karnataka contains mostly **dry deciduous forests and a few patches of moist deciduous, semi evergreen and scrub jungles.**
- **Fauna:**
 - Animals like **Nilgiri tahr, Nilgiri langur, slender loris, blackbuck, tiger, gaur, Indian elephant and marten** are found here.
 - Freshwater fishes such as **Nilgiri danio** (*Devario neilgherriensis*), **Nilgiri barb** (*Hypselobarbus dubuis*) and **Bowany barb** (*Puntius bovanicus*) are endemic to this Biosphere Reserve.
- **Water resources:**

Many of the major tributaries of the river **Cauvery** like the **Bhavani, Moyar, Kabini and other rivers like Chaliyar, Punampuzha**, etc., have their source and catchment areas within the reserve boundary.
- **Tribal Population:**

Tribal groups like the **Todas, Kotas, Irullas, Kurumbas, Paniyas, Adiyans, Edanadan Chettis, Cholanaickens, Allar, Malayan**, etc., are native to the reserve.
- **Protected Areas in NBR:**

The **Mudumalai Wildlife Sanctuary, Wayanad Wildlife Sanctuary, Bandipur National Park, Nagarhole National Park, Mukurthi National Park** and **Silent Valley** are the protected areas present within this reserve.

Source:TH
