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## News Analysis (03 Aug, 2021)

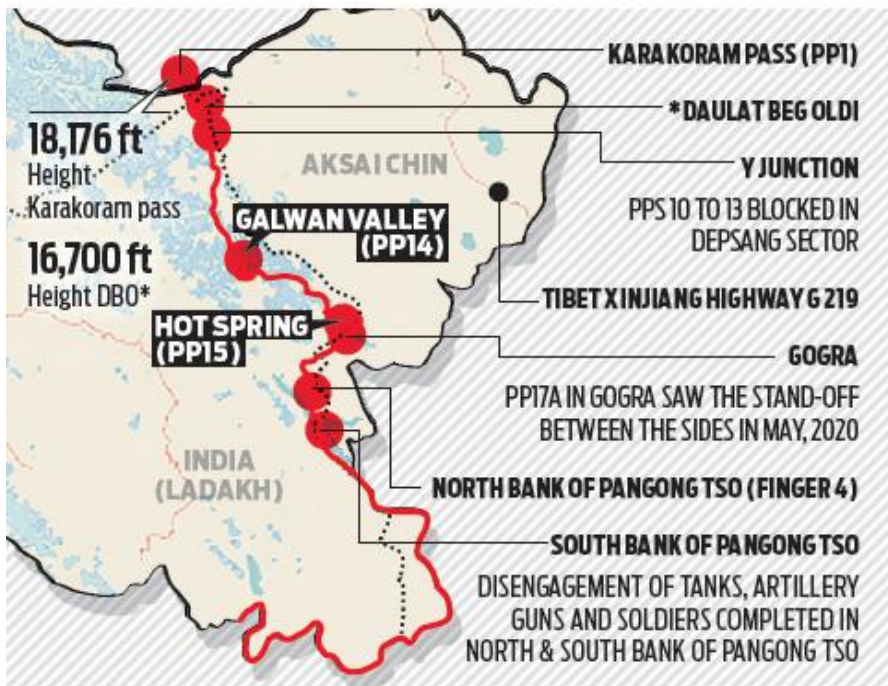
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### China-India Agreed to Disengage

#### Why in News

Recently, during the 12<sup>th</sup> round of discussions between the senior military commanders of India and China to resolve the standoff in eastern Ladakh, both have agreed in principle to disengage at a key patrol point in eastern Ladakh.

The 11<sup>th</sup> Corps Commander-level talks were held in April 2021, when the two sides could not even agree on a joint statement.



#### Key Points

- **Current Disengagement:**

- The agreement on **Patrolling Point (PP)17A (Gogra post)** was reached but **China is not inclined to move back from PP15 (Hot Springs area)**; it continues to insist that it is holding its own side of the **Line of Actual Control (LAC)**.

The disengagement at PP17A is likely to follow the process that was adopted for PP14 in the **Galwan Valley** and **Pangong Tso** where a time-frame was set for withdrawal.

- Both sides **agreed to resolve these remaining issues in an expeditious manner in accordance with the existing agreements and protocols** and maintain the momentum of dialogue and negotiations.
- They also agreed that in the interim they will continue their **effective efforts in ensuring stability along the LAC in the Western sector** and jointly maintain peace and tranquility.

- **Patrolling Point 15 and 17A:**

- Along the LAC between India and China, **Indian Army has been given certain locations that its troops have access to patrol** the area under its control.
- These points are **known as patrolling points, or PPs**, and are decided by the **China Study Group (CSG)**.

CSG was **set-up in 1976**, when Indira Gandhi was the prime minister, and is the apex decision-making body on China.

- Barring certain areas, like **Depsang Plains**, these patrolling points are on the LAC, and troops access these points to assert their control over the territory.
  - It is an important exercise since the **boundary between India and China is not yet officially demarcated**.
  - **LAC** is the demarcation that separates Indian-controlled territory from Chinese-controlled territory.
- PP15 and PP17A are two of the 65 patrolling points in Ladakh along the LAC. Both these points are in an area where India and China largely agree on the alignment of the LAC.
- PP15 is located in an area known as the **Hot Springs**, while PP17A is near an area called the **Gogra post**.

- **Location of Hot Springs and Gogra Post:**

- **Hot Springs is just north of the Chang Chenmo river** and **Gogra Post is east of the point** where the river takes a hairpin bend coming southeast from Galwan Valley and turning southwest.
- The **area is north of the Karakoram Range of mountains**, which lies north of the Pangong Tso lake, and south east of Galwan Valley.

- **Importance of Hot Springs and Gogra Post :**

- The area lies close to **Kongka Pass**, one of the main passes, which, according to China, marks the boundary between India and China.
- India's claim of the international boundary lies significantly east, as it includes the entire **Aksai Chin** area as well.
- Hot Springs and Gogra Post are **close to the boundary between two of the most historically disturbed provinces (Xinjiang and Tibet) of China.**

- **Major Friction Points:**

Apart from PP15 and PP17A, PP14 in Galwan Valley, and **Finger 4 on the north bank of Pangong Tso** and **Rezang La and Rechin La on the south bank of Chang Chenmo river**, were identified as friction points.

### **Pangong Tso lake**

- Pangong Lake is located in the **Union Territory of Ladakh.**
- It is situated at a **height of almost 4,350m** and is the **world's highest saltwater lake.**
- Extending to almost 160km, one-third of the Pangong Lake lies in India and the other two-thirds in China.

### **Galwan Valley**

- The valley refers to the land that sits between steep mountains that buffet the **Galwan River.**
- The river has its **source in Aksai Chin**, on China's side of the LAC, and it flows from the east to Ladakh, where it **meets the Shyok river on India's side of the LAC.**
- The valley is **strategically located between Ladakh in the west and Aksai Chin in the east**, which is currently controlled by China as part of its Xinjiang Uyghur Autonomous Region.

### **Chang Chenmo River**

- Chang Chenmo River or Changchenmo River **is a tributary of the Shyok River, part of the Indus River system.**
- It is at the southern edge of the disputed Aksai Chin region and north of the Pangong Lake basin.
- The **source of Chang Chenmo is near the Lanak Pass.**

### **Kongka Pass**

The Kongka Pass or Kongka La is a **low mountain pass over a hill that intrudes into the Chang Chenmo Valley.** It is in the disputed India-China border area in Ladakh.

### **Karakoram Range**

- It is also known as **Krishnagiri** which is **situated in the northernmost range of the Trans-Himalayan ranges**. It forms India's frontiers with Afghanistan and China.
- It **extends eastwards from the Pamir for about 800 km**. It is a range with lofty peaks [elevation 5,500 m and above].
- Some of the peaks are more than 8,000 metre above sea level. **K2 (8,611 m)[Godwin Austen or Qogir] is the second highest peak in the world** and the highest peak in the Indian Union.
- The **Ladakh Plateau** lies to the north-east of the **Karakoram Range**.

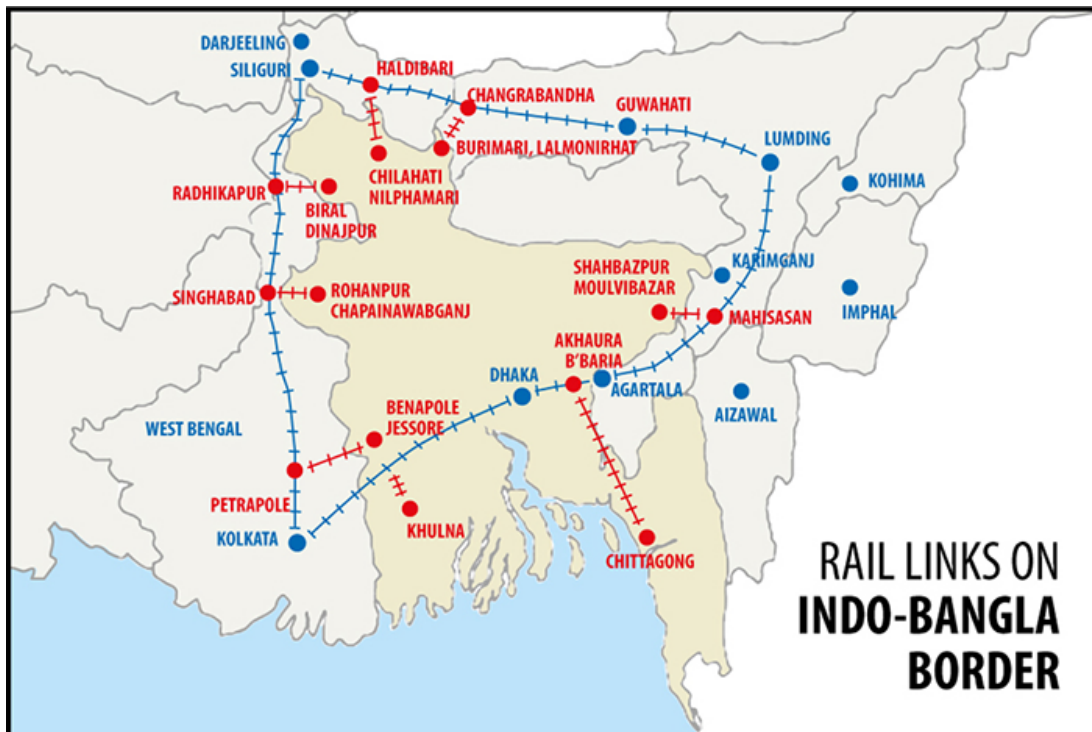
Source: IE

## India-Bangladesh Commercial Railway Link Restored

### Why in News

Recently, Bangladesh and India started **regular operation of freight trains through the restored Haldibari-Chilahati rail route after over 50 years**, which will strengthen railway connectivity and bilateral trade between the two countries.

- The Haldibari-Chilahati rail link is one such route that was operational till 1965.
- Another rail link, between Agartala-Akhaura, is scheduled to open by the end of 2021.



### Key Points

- **Background:**
  - **After the Partition in 1947, seven rail links were operational** between India and Bangladesh (then East Pakistan) **until 1965.**
  - Presently, there are **Five rail links** between Bangladesh and India that are **operational.**
  - They are Petrapole (India)-Benapole (Bangladesh), Gede (India)-Darshana (Bangladesh), Singhabad (India)-Rohanpur (Bangladesh), Radhikapur (India)-Biroi (Bangladesh), Haldibari (India)-Chilahati (Bangladesh).
- **Significance:**
  - The Haldibari-Chilahati route is **expected to enhance the connectivity to Assam and West Bengal from Bangladesh.**
  - It will enhance rail network access to the main ports and dry ports to **support the growth in regional trade** to encourage economic and social development of the region.
  - Common people and businessmen of both countries will be able to reap the benefit of both goods and passenger traffic, once passenger trains are planned in this route.
  - Economic activities (including tourist activities) of these South Asian countries will also be benefitted from this new rail link.
  - The 75-kilometre long track **will also help better integrate the rest of the country with the Siliguri corridor**, also known as the '**Chicken's Neck.**'
    - The corridor connects India with the North-eastern states, which has witnessed growing aggressiveness from another neighbouring country of China in recent times.

## Indo-Bangladesh Ties

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- **Historical Ties:**
  - Fifty years ago, the **Bangladesh Liberation War** in 1971 had added the colours of victory for India as it led the charge towards the formation of the new nation of Bangladesh.
- **Defence Cooperation:**
  - **Joint exercises:**
    - **SAMPRITI** (Army).
    - **TABLE TOP** (Air).
    - **IN-BN CORPAT** (Navy).
    - **Exercise Bongosagar** (Navy).
    - **SAMVEDNA** (Multinational Humanitarian Assistance and Disaster Relief (HADR) Exercise with Bangladesh, Nepal, Sri Lanka and UAE)
  - **Border Management:** India and Bangladesh share 4096.7 km. of border, which is the longest land boundary that India shares with any of its neighbours.

- **Economic Relations:**
  - **Bangladesh is India's largest trading partner in the sub-continent** with the total bilateral trade between the two nations **standing at \$9.5 billion (2019-20), down compared to the previous fiscal (2018-19)**, having crossed \$10 billion.
  - **India's exports** to Bangladesh account for **more than 85%** of the total bilateral trade.
  - In December 2020, to further boost the bilateral trade cooperation, an **India-Bangladesh CEO's Forum** was launched.
  - Bangladesh has appreciated the Duty-Free and Quota Free access given to Bangladeshi exports to India under **South Asian Free Trade Area (SAFTA)** since 2011.
- **Cooperation in Connectivity:**
  - In March 2021, **Maitri Setu—a 1.9 km bridge** built over Feni river joining Sabroom in India and Ramgarh in Bangladesh was inaugurated.
  - Protocol on **Inland Water Transit and Trade** (PIWTT).
  - **Bangladesh-Bhutan-India-Nepal (BBIN) Motor Vehicles Agreement** is in pipeline.
- **Other Developments:**
  - **Line of Credit:**

India has extended 3 Lines of Credits (LOC) to Bangladesh in the last 8 years **amounting to \$8 billion for development of infrastructure** in sectors including roads, railways, shipping and ports.
  - **Covid-19:**
    - Bangladesh is the biggest recipient of **Made-in-India Covid-19 vaccine doses**, accounting for **16% of the total supplies**.
    - India also offered collaboration in therapeutics and partnership in vaccine production.
- **Emerging Disputes:**
  - Bangladesh has already raised concerns over roll out of the **National Register of Citizens (NRC)** in Assam, an exercise carried out to identify genuine Indian citizens living in Assam and weed out illegal Bangladeshis.
  - Currently, Bangladesh is an active partner of the **Belt and Road Initiative (BRI)** that Delhi has not signed up to.
  - In the security sector, Bangladesh is also a major recipient of Chinese military inventory, including submarines.

## Way Forward

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- There should be efforts to resolve pending issues concerning sharing of waters, resolving continental shelf issues in the Bay of Bengal, bringing down border incidents to zero, and managing the media.

- Regular exchanges between younger entrepreneurs and civil society based on areas such as culture, music, sports, films, and sharing of best practices in sustainable development, human capital development, gender equitable growth, amongst others, needs to be pursued.
- Increasing tourist footfall at select border locations from both sides and facilitating a mechanism of exchange through the creation of a common entertainment zone at the border can help strengthen the camaraderie.
- There is a need to jointly work towards a new paradigm of security at the shared borders. A paradigm that enables borders to be not merely thick lines which demarcate national boundaries but act as “connector zones” for inclusive growth and prosperity.

**Source: IE**

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## **Hunger Hotspots Report : FAO-WFP**

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### **Why in News**

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Recently, the **Food and Agriculture Organization (FAO)** and the **World Food Programme (WFP)** released a report named **Hunger Hotspots - August to November 2021**.

The 2021 **Global Food Crises Report** released in May 2021 had already warned of acute food insecurity, soaring to a five-year high, **pushing at least 155 million people into acute food insecurity in 2020**.

### **Key Points**

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- **Major Hunger Hotspots:**
  - Ethiopia, Madagascar, South Sudan, northern Nigeria and Yemen are among 23 countries where **acute food insecurity will worsen from August through November, 2021**.
  - **Ethiopia and Madagascar** are the world's newest "**highest alert**" hunger hotspots.
    - Ethiopia faces a devastating food emergency linked to ongoing conflict in the Tigray region.
    - Meanwhile, in southern Madagascar the **worst drought in 40 years** is expected to push **28,000 people into famine-like conditions** by the end of 2021.

- **Factors causing food insecurity:**

- **Violence:**

- Population displacement, abandonment of agricultural land, loss of life and assets, disruption of trade and cropping and loss of access to markets **caused by conflicts can worsen food insecurity.**

**Violence is predicted to intensify** in Afghanistan, Central Sahel, the Central African Republic etc.

- Violence is also likely to **disrupt access to humanitarian assistance.**

- **Pandemic Shocks:**

In 2020, almost all low- and middle-income countries were affected by the **Pandemic-induced** economic downturns.

- **Natural Hazards:**

- Extreme weather conditions and climate variability are likely to affect several parts of the world during the outlook period.
- In **Haiti**, for instance, **reduced precipitation during the main growing season** ended May is likely to have impacted yield. Continued below-average rainfall, on the hand, is likely to reduce yield during the main rice-growing season.
- **Desert Locust** infestation was a major worry in the **Horn of Africa** at the beginning of July 2021, while other regions were unaffected.

- **Poor humanitarian access:**

- Humanitarian access is limited in various ways, including **administrative/bureaucratic impediments, movement restrictions, security constraints and physical constraints** related to the environment.
- Countries currently facing the most significant obstacles, preventing aid from reaching those who need it most are **Afghanistan, Ethiopia, the Central African Republic** etc.



- **Suggestions:**
  - **Short-term Interventions:**  
**Short-term protective interventions** be implemented before new humanitarian needs materialise and immediate actions are to be taken for **addressing existing humanitarian requirements.**
  - **Integration of policies:**  
Integrate **humanitarian, development and peacebuilding policies in conflict areas** – for example, through **social protection measures** to prevent families from selling meagre assets in exchange for food.
  - **Climate Resilience:**  
Scale-up climate resilience across food systems by **offering smallholder farmers wide access to climate risk insurance** and forecast-based financing.
  - **Strengthen Resilience:**  
Strengthen the resilience of the most vulnerable to economic adversity through **in-kind or cash support programmes** to lessen the impact of pandemic-style shocks or food price volatility.

## India's Step in Ensuring Food Security

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- **National Food Security Mission:**  
It aims **to increase production of rice, wheat, pulses, coarse cereals and commercial crops**, through area expansion and productivity enhancement.
- **PM Garib Kalyan Ann Yojana (PMGKAY):**  
It aimed at providing each person who is covered under the **National Food Security Act 2013** with an additional 5 kg grains (wheat or rice) for free, in addition to the 5 kg of subsidised foodgrain already provided through the **Public Distribution System (PDS)**.
- **One Nation One Ration Card:**  
It will address the poor state of hunger in India, as highlighted by the **Global Hunger Index**, where India has been ranked 102 out of 117 countries
- **Pradhan Mantri Kisan Samman Nidhi:**  
It intends **to supplement the financial needs of the Small and Marginal Farmers (SMFs)** in procuring various inputs to ensure proper crop health and appropriate yields, commensurate with the anticipated farm income at the end of each crop cycle.
- **The National Food Security Act (NFSA), 2013:**  
It legally entitled up to 75% of the rural population and 50% of the urban population to receive subsidized food grains under the Targeted Public Distribution System.  
The eldest woman of the household of age 18 years or above is mandated to be the head of the household for the purpose of issuing ration cards under the Act.

## Food and Agriculture Organization

- FAO is a specialized agency of the **United Nations** (UN) that leads international efforts to defeat hunger.
- **World Food Day** is celebrated every year on **16<sup>th</sup> October** to mark the anniversary of the founding of the **FAO in 1945**.
- It is one of the **UN food aid organisations based in Rome (Italy)**. Its sister bodies are the **World Food Programme** and the International Fund for Agricultural Development (IFAD).

## World Food Programme

- It is the **leading humanitarian organization** saving lives and changing lives, delivering food assistance in emergencies and working with communities to improve nutrition and build resilience.

It was awarded the **Nobel Peace Prize for 2020** for its efforts to combat hunger

- It was founded in **1961** by the **Food and Agriculture Organization (FAO)** and **United Nations General Assembly (UNGA)** with its headquarters in Rome, Italy.
- WFP focuses on **emergency assistance as well as rehabilitation and development aid**.

Two-thirds of its work is in conflict-affected countries, where people are three times more likely to be undernourished than elsewhere.

**Source: DTE**

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## Adverse Impacts of Food Fortification

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### Why in News

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Recently, a group of scientists and activists have warned the **Food Safety and Standards Authority of India (FSSAI)** of the adverse impacts of **Food Fortification** on health and livelihoods.

- It is a **pushback against the Centre's plan to mandatorily fortify rice and edible oils** with vitamins and minerals.
- In order to fight chronic **anaemia** and undernutrition, the government is making plans to distribute fortified rice through the **Integrated Child Development Services** and **Mid Day Meal Schemes** across the country from the year 2021, with special focus on **Aspirational districts**.

# FOOD FORTIFICATION

- Process of adding micronutrients to food to provide extra nutrients i.e. vitamins and minerals (including trace elements)
- It was identified as the strategy by WHO and FAO for decreasing the incidence of nutrient deficiencies at the global level.
- The most common fortified foods are:
  - Cereals and cereal based products
  - Milk and Milk products.
  - Fats and oils.
  - Accessory food items.
  - Tea and other beverages.
  - Infant formulas.



## Key Points

- **Inconclusive Evidence:**

- Evidence supporting fortification is inconclusive and certainly **not adequate before major national policies are rolled out.**
- Many of the **studies** which FSSAI relies on to promote fortification are **sponsored by food companies who would benefit from** it, leading to conflicts of interest.

- **Hypervitaminosis:**

Recent studies published in the medical journal Lancet and in the American Journal of Clinical Nutrition which show that both **anaemia and Vitamin A deficiencies are overdiagnosed**, meaning that mandatory fortification could lead to hypervitaminosis.

**Hypervitaminosis** is a condition of abnormally high storage levels of vitamins, which can lead to various symptoms such as **over excitement, irritability, or even toxicity.**

- **Toxicity:**

- One major problem with **chemical fortification of foods is that nutrients don't work in isolation** but need each other for optimal absorption. Undernourishment in India is caused by monotonous cereal-based diets with low consumption of vegetables and animal protein.
- Adding one or two synthetic chemical vitamins and minerals will not solve the larger problem, and in undernourished populations can lead to toxicity.  
A 2010 study that showed iron **fortification causing gut inflammation and pathogenic gut microbiota profile** in undernourished children.

- **Cartelisation:**

- Mandatory fortification would **harm the vast informal economy of Indian farmers and food processors** including local oil and rice mills, and instead benefit a small group of multinational corporations who will have sway over a Rs.3,000 crore market.
- Just **five corporations have derived most of the benefits of global fortification trends** and these companies have historically engaged in cartelising behaviour leading to price hikes.  
The European Union has been forced to fine these companies for such behaviour.

- **Decrease Value of Natural Food:**

**Dietary diversity was a healthier and more cost-effective way to fight malnutrition.** Once iron-fortified rice is sold as the remedy to anaemia, **the value and the choice of naturally iron-rich foods** like millets, varieties of green leafy vegetables, flesh foods, liver, to name a few, **will have been suppressed by a policy of silence.**

## Food Fortification

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- **About:**

- According to the World Health Organisation (WHO), food fortification is defined as the practice of **deliberately increasing the content of essential micronutrients so as to improve the nutritional quality of the food** supply and to provide a public health benefit with minimal risk to health.
- It can be noted that biofortification differs from conventional food fortification in that **biofortification aims to increase nutrient levels in crops during plant growth** rather than through manual means during processing of the crops.

- **Types:**
  - **Targeted:**

Food fortification can be done for foods widely consumed by the general population (mass fortification), **to fortify foods designed for specific population** subgroups, such as complementary foods for young children or rations for displaced populations.
  - **Market-Driven:**

To **allow food manufacturers to voluntarily** fortify foods available in the marketplace (market-driven fortification).
- **Procedure:**

The extent to which a national or regional food supply is fortified varies considerably. The **concentration of just one micronutrient might be increased** in a single foodstuff (e.g. the iodization of salt), or, at the other end of the scale, there might **be a whole range of food–micronutrient combinations**.
- **Government Interventions:**
  - **FSSAI Regulations:**

In October 2016, FSSAI operationalized the **Food Safety and Standards (Fortification of Foods) Regulations, 2016** for fortifying staples namely Wheat Flour and Rice (with Iron, Vitamin B12 and Folic Acid), Milk and Edible Oil (with Vitamins A and D) and Double Fortified Salt (with Iodine and Iron) to reduce the high burden of micronutrient malnutrition in India.
  - **Nutritional Strategy:**

India's **National Nutritional strategy, 2017**, had listed food fortification as one of the interventions to address anaemia, vitamin A and iodine deficiencies apart from supplementation and dietary diversification.
  - **Milk Fortification Project:**

The **Milk Fortification Project** was launched by the **National Dairy Development Board (NDDB)** in collaboration with the World Bank and Tata Trusts, as a pilot project in 2017.

## **Food Safety and Standards Authority of India (FSSAI)**

- **About:**
  - FSSAI is an autonomous statutory body **established under the Food Safety and Standards Act, 2006 (FSS Act)**.
  - It has its **headquarter in Delhi** and its administrative **Ministry is Ministry of Health & Family Welfare**.

- **Functions:**

- Framing of **regulations to lay down the standards and guidelines** of food safety.
- Granting FSSAI **food safety license and certification** for food businesses.
- Laying down **procedure and guidelines** for laboratories in food businesses.
- To **provide suggestions to the government** in framing the policies.
- To **collect data regarding contaminants in foods products, identification of emerging risks** and introduction of a rapid alert system.
- Creating an **information network across the country** about food safety.

Source: TH

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## Dairy Sector and Climate Change

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### Why in News

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The dairy industry has been a subject of intense debate in recent years, fueled by climate change crisis concerns worldwide as well as the advancement of various plant-based alternatives claiming to be more sustainable replacements.

### Key Points

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- **About:**

- With the help of **White Revolution**, India has transitioned from a **milk-deficient country to the largest producer of milk globally**.  
The **Anand model (Amul)**, which has been replicated across the country, boosted milk production.
- Harvesting animals for **dairy and animal-based products** is crucial for **food security, poverty alleviation and other social needs**.
- However, there are **harmful consequences of animal harvesting on climate**.
- Further, **animal rearing has been criticized heavily by** non-profit organisations like **People for the Ethical Treatment of Animals (PETA)**, for performing cruelty against animals.

- **Importance of Dairy Sector:**

- **Economic Dependence:** Harvesting animals for dairy and animal-based products in India is a major source of livelihood for **150 million dairy farmers**.
  - The dairy sector accounts for **4.2% of the national gross domestic product**.
  - Dairy sector is the **second-largest employment sector** after agriculture in India.
- **Social Importance:** Dairy products are a **rich source of essential nutrients** that contributes to a healthy and nutritious diet.

With demand for high-quality animal sourced protein increasing globally, the dairy sector is well placed to contribute to **global food security and poverty reduction through the supply of dairy products**.

- **Impact of Dairy Sector on Climate Change:**

- **GHG Emission:** Agriculture contributes approximately **16% of India's greenhouse gas (GHG) emissions** which is released by cattle during dairy farming.
  - Methane from animal waste contributes about 75% of the total GHG emissions of the dairy sector.

Recently, Indian Council of Agricultural Research (ICAR) has developed an anti-methanogenic feed supplement '**Harit Dhara**' (HD), which can cut down cattle methane emissions by 17-20% and can also result in higher milk production.
  - The three major GHGs emitted from agri-food systems, namely **methane (CH<sub>4</sub>), nitrous oxide (N<sub>2</sub>O) and carbon dioxide (CO<sub>2</sub>)**.
- **Increasing Pressure on Natural Resources:** With this increasing demand for dairy, there is growing pressure on natural resources, including freshwater and soil.
  - Multinational companies such as Nestle and Danone have been accused of **promoting water-intensive dairy industry** in Punjab and the neighbouring states, which is fast depleting groundwater.
  - Unsustainable dairy farming and feed production can lead to the **loss of ecologically important areas, such as wetlands, and forests**.
  - The alarming loss of biodiversity is attributed to water- and energy-intensive crops needed to feed the cattle.
- **Growing Demand:** Global demand for dairy continues to increase in large part due to **population growth, rising incomes, urbanization and westernization of diets** in countries such as China and India.

- **Others Arguments Against Dairy Sector:**

- **Cruelty Against Animals:** Despite guidelines for appropriate handling of cattle, cruel practices continue unabated to boost production efficiencies as demand for dairy and meat continues to grow. These include:
  - Artificial insemination,
  - Widespread use of growth hormones (oxytocin) to boost milk production,
  - Slaughter of male calves,
  - Abandoning cattle that are sterile,
  - Selling livestock to slaughterhouses and tanneries when they can no longer produce milk, etc.
- **Zoonotic Diseases:** Animal exploitation through animal farming, destruction of natural habitats, livestock-associated deforestation, hunting and trading of wildlife are the leading cause of **zoonotic diseases** caused by germs that spread between animals and humans.

The novel **coronavirus disease (Covid-19) pandemic** is the latest in the long list of such diseases.
- **Food Adulteration:** Milk and milk products in India are not free from adulteration.
  - A recent **Food Safety and Standards Authority of India (FSSAI)** report revealed the presence of aflatoxin M1 and hormone residues in them beyond permissible limits through unregulated feed and fodder.
  - This led to a variety of lifestyle diseases in humans.

- **The Proposed Alternative:**

- **Veganism:** Veganism is a way of living that attempts to exclude all forms of animal exploitation and replace it with plant-based products.
  - In developed countries, the vegan movement is gaining momentum due to ecological and health benefits of plant-based food including milk.
  - PETA is promoting **vegan alternatives to replace animal-based foods**.
- **Criticism of Veganism:** Amul and its supporters argue that PETA's moves may be a ploy for multinational companies to promote synthetic milk and genetically modified seeds through a misinformation campaign.
  - They have raised questions about the suitability of chemical-laden, lab-produced plant-based milk for human consumption.
  - Further, FSSAI notified that the word 'milk' cannot be used for plant-based dairy alternatives.

## Way Forward

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- **Alternate Employment & Social Forestry:** With livelihoods of 150 million at stake, policymakers will need to **identify alternative employment opportunities** for the displaced masses.

Large-scale **social forestry** could be an answer to address this fall-out, with positive consequences to the planet.



- **Sustainable Dairy Practices:** There is a need to proactively ramp up sustainable dairy practices, which may include:
  - In order to reduce emission intensity of milk, the sector needs to urgently act to realize the existing potentials for GHG emission reduction **through technological and farm best practices interventions and solutions.**
  - Fostering changes in production practices that **protect carbon sinks (grasslands and forest)** by targeting drivers linked to degradation of natural ecosystems, agricultural expansion and deforestation.
  - Reducing its demand for resources by better integrating livestock into the **circular bio-economy.**
    - This can be achieved by **recycling and recovering nutrients** and energy from animal waste.
    - **Closer integration of livestock with crops and agro-industries** at various scales to make use of low value and low-emission biomass.

Source: DTE

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## **Demand for Import of Genetically Modified Soy Seeds**

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### **Why in News**

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The **poultry industry is demanding** a permit for the **import of crushed genetically modified (GM) soy seeds for captive consumption of farmers** from the Central government.

**Non-fiscal and fiscal relief measures** which include the restructuring of term loans and additional working capital **has also been demanded** from the Centre and State governments.

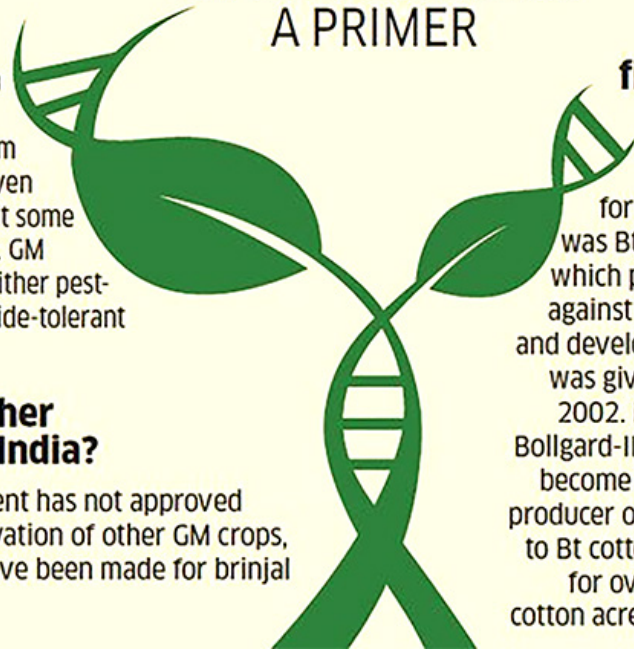
## What is a GM crop?

A crop which has a gene artificially inserted into it from another species, even unrelated, to give it some desired properties. GM crops are mostly either pest-resistant or herbicide-tolerant

## Are there other GM crops in India?

No, the government has not approved commercial cultivation of other GM crops, though efforts have been made for brinjal and mustard

# GM CROPS IN INDIA A PRIMER



## When did India get its first GM crop?

The first GM crop variety approved for commercialisation was Bt cotton. Bollgard-I, which provided immunity against the pink bollworm and developed by Monsanto, was given the go ahead in 2002. Monsanto released Bollgard-II in 2006. India has become the world's largest producer of cotton partly due to Bt cotton, which accounts for over 90% of the total cotton acreage in the country

## Key Points

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- **GM Crops:**
  - A **GM or transgenic crop** is a plant that has a novel combination of genetic material obtained through the use of modern biotechnology.
    - For example, a GM crop can contain a gene(s) that has been artificially inserted instead of the plant acquiring it through pollination.
  - **Conventional plant breeding** involves crossing of species of the same genus to provide the offspring with the desired traits of both parents.
    - Genus is a class of items such as a group of animals or plants with similar traits, qualities or features.
    - **Cross breeding** can take a long time to achieve desired results and frequently, characteristics of interest do not exist in any related species.
  - **Bt cotton** is the **only GM crop that is allowed in India**. It has alien genes from the soil bacterium *Bacillus thuringiensis* (Bt) that allows the crop to develop a protein toxic to the common pest **pink bollworm**.
  - **Herbicide Tolerant Bt (Ht Bt) cotton**, on the other hand is derived with the insertion of an additional gene, from another soil bacterium, which allows the plant to resist the common herbicide glyphosate.
  - In **Bt brinjal**, a gene allows the plant to resist attacks of fruit and shoot borers.
  - In **DMH-11 mustard**, genetic modification allows cross-pollination in a crop that self-pollinates in nature.

- **Status of GM Soyseeds in India:**

- India allows the import of **GM soybean and canola oil**.
- Import of **GM soya bean seeds** has not been approved in India.

The main fear is that import of GM soya bean will **affect the Indian soya bean industry by contaminating non-GM varieties**.

- **Reasons for the Demand:**

- The outbreak of **Covid-19** has created a massive crisis which led to an **initial depletion of demand in chicken products** owing to false news about the linkage between the virus and poultry products.
- This created an **unwarranted financial crisis** and led to the erosion of **working capital (used for day-to-day operations)**.
- Since the last several months, high speculation activities in soya contracts on **National Commodity and Derivatives Exchange Limited (NCDEX)** has been disturbing the sector.

The NCDEX is an online commodities exchange dealing primarily in agricultural commodities in India.

- The **rise in the soybean process** had led to the **skyrocketing of prices of eggs and chicken products** in the retail market.

The import for the particular time frame will stabilise the raw material market.

- **Approval Process for GM crops in India:**

- In India, the **Genetic Engineering Appraisal Committee (GEAC)** is the apex body that **allows for commercial release of GM crops**.
- Use of the unapproved GM variant can attract **a jail term of 5 years and fine of Rs. 1 lakh** under the **Environment Protection Act, 1986**.
- **Food Safety and Standards Authority of India (FSSAI)** is the authorised body to **regulate the imported crops in India**.

- **Some Related Initiatives:**

- **Poultry Venture Capital Fund (PVCF):**

- The **Department of Animal Husbandry and Dairying** is implementing it under “**Entrepreneurship development and Employment generation**” (EDEG) of the **National Livestock Mission**.
- It is a bankable programme and the Central Government is providing subsidy through **National Bank for Agricultural and Rural Development (NABARD)** for those beneficiaries taking loan for PVCF.

- **National Livestock Mission:**

Different programmes under the **National Livestock Mission** under which financial assistance is provided to States/Union Territories for implementation of Rural Backyard Poultry Development (RBPD) and Innovative Poultry Productivity Project (IPPP).

- **Assistance to States for Control of Animal Diseases (ASCAD) Scheme:**

ASCAD under “**Livestock Health and Disease Control**” (LH&DC) which covers the **vaccination of economically important poultry diseases** viz., Ranikhet Disease, Infectious Bursal Disease, Fowl Pox etc., including control and containment of emergent and exotic diseases like Avian Influenza.

**Source: TH**

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## **Halam Sub-tribes Clash**

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### **Why in News**

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**People of Halam sub-tribes**, who took refuge in Assam following **clashes with Bru refugees in north Tripura**, are returning to their village Damcherra in North district of Tripura.

The **Brus came to Tripura in 1997** to escape an ethnic clash in Mizoram and started staying at six relief camps in the North District.



## Key Points

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- **Halam Sub-tribes:**
  - Ethnically, **Halam communities (categorised as a scheduled tribe in Tripura) belong to the Kuki-Chin tribes of Tibeto-Burmese ethnic group.**
  - Their **language** is also more or less **similar to that of the Tibeto-Burman family.**
  - Halams are also known as **Mila Kuki**, though they are not at all Kukis in terms of language, culture and living style.
  - Halams are divided into **several sub-clans** which are referred to as **“Barki-Halam”**.
  - Major sub-clans of Halams are Koloï, Korbong, Kaipeng, Bong, Sakachep, Thangachep, Molsom, Rupini, Rangkhawl, Chorai, Lankai, Kaireng (Darlong), Ranglong, Marchafang and Saihmar.
  - As per **2011 Census**, their total **population is 57,210 and distributed throughout the State.**
  - Halams live in typical **“Tong Ghar”** specially made of **bamboo and Chan grass**. Apart from plain land cultivation they still practice **Jhum cultivation** and depend on both the activities beside other substitute works.

- **Bru Refugees:**

- **Bru or Reang** is a community **indigenous to Northeast India**, living mostly in **Tripura, Mizoram and Assam**. In Tripura, they are recognised as a **Particularly Vulnerable Tribal Group**.
- In **Mizoram**, they have been **targeted by groups** that do not consider them indigenous to the state.
  - In 1997, following ethnic clashes, nearly 37,000 Brus fled Mamit, Kolasib and Lunglei districts of Mizoram and were accommodated in relief camps in Tripura.
  - Damcherra is Tripura's last village before the inter-state boundary with Mizoram.
- Since then, 5,000 have returned to Mizoram in eight phases of repatriation, while 32,000 still live in six relief camps in North Tripura.
- In June **2018**, community leaders from the **Bru camps signed an agreement with the Centre and the two state governments**, providing for repatriation in Mizoram. But **most camp residents rejected the terms** of the agreement.
- In January **2020**, the **Centre, the governments of Mizoram and Tripura and leaders of Bru organisations** signed a **quadripartite agreement**.
  - Under the pact, the Home Ministry has committed to incur the whole expenditure of settlement in Tripura.
  - A package was assured in the accord that each refugee family would get:
    - A plot, fixed deposit of Rs. 4 lakh, free ration and a monthly stipend of Rs. 5,000 for two years.
    - In addition, each family will also be provided Rs. 1.5 lakh to construct a house.

- **Related Issues:**

- The **northeast has had a history of ethnic conflicts** — not only between the “indigenous” and “settlers” but inter-tribe too — and issues could also arise within smaller sub-groups within the same tribe.
- The **decision to settle Bru Tribal People in Tripura could also throw up questions of citizenship, specifically in Assam** where a process is on to define who is indigenous and who is not.
- The move on the Brus **legitimises the settlement of foreigners under Citizenship (Amendment) Act** too, creating conflicts with the indigenous people as well as communities that settled earlier.
- It could also lead to **loss of space and revenue for other communities in Tripura**.
- Further, the inter-state border disputes have come under fresh focus after the recent violent clash on **Assam-Mizoram border**.

## Way Forward

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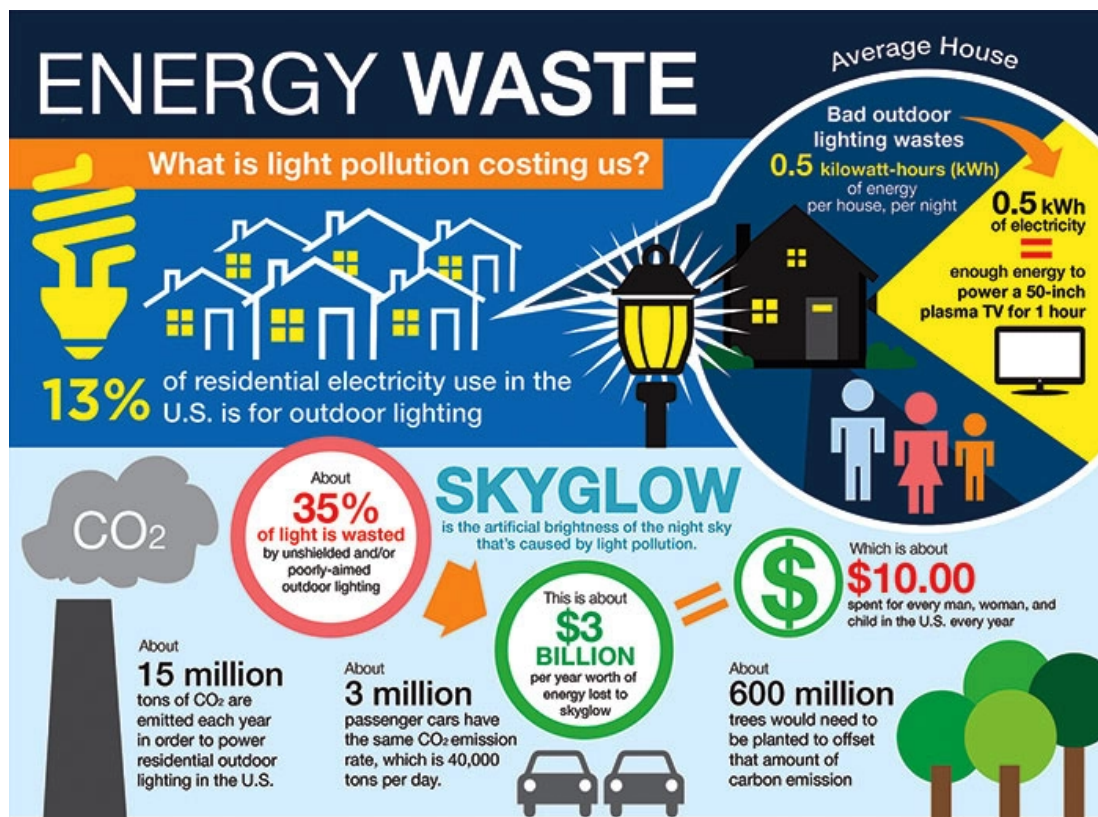
- Considering the present conditions of Brus, the state government should ensure that the **quadrilateral agreement is enforced in letter and spirit.**
- However, the same agreement which provides for resettlement of Bru refugees in Tripura **should be implemented keeping in mind the interests of non-Brus,** so that no conflict emerges between the Bru and non-Bru communities.

**Source: TH**

## Skyglow: Light Pollution

### Why in News

A recent study has shown that the Skyglow forces dung beetles in the city to abandon the Milky Way as their compass, they rely instead on earthbound artificial lights as beacons.



### Key Points

- **About Skyglow:**

- The Skyglow, is **an omnipresent sheet of light across the night sky in and around cities that can block all but the very brightest stars from view.**
- The **brightening of the night sky** over inhabited areas because of streetlights, security floodlights and outdoor ornamental lights **cause the Skyglow.**
- This **light floods directly into the eyes of the Nocturnal** (active at night) and also into the skies and misleads their path.
- 'Skyglow' is **one of the components of light pollution.**



- **Light Pollution:**

- **About:**

- The **inappropriate or excessive use of artificial light** – known as Light Pollution (LP) – can have serious environmental consequences for humans, wildlife, and our climate.
    - **Components** of light pollution include:
      - **Glare:** Excessive brightness that causes visual discomfort
      - **Skyglow:** Brightening of the night sky over inhabited areas
      - **Light trespass:** Light falling where it is not intended or needed
      - **Clutter:** Bright, confusing and excessive groupings of light sources.

- **Causes:**

- LP is a **side effect of industrial civilization.**
    - Its **sources** include building exterior and interior lighting, advertising, commercial properties, offices, factories, streetlights, and illuminated sporting venues.

- **Effects:**

- **Wastes Energy and Money:**

- Lighting that emits too much light or shines when and where it's not needed is wasteful. Wasting energy **has huge economic and environmental consequences.**

- **Disrupting the ecosystem and wildlife:**

- Plants and animals depend on **Earth's daily cycle of light and dark rhythm to govern life-sustaining behaviors** such as reproduction, nourishment, sleep and protection from predators.
      - Scientific evidence suggests that **artificial light at night has negative and deadly effects** on many creatures including amphibians, birds, mammals, insects and plants.

- Ex:** A study has now shown how nocturnal dung beetles are forced to search for cues in their immediate surroundings when they can no longer navigate using natural light from the night sky.

- **Harming human health:**

- Like most life on Earth, humans adhere to a **Circadian Rhythm** — **our biological clock** — a sleep-wake pattern governed by the day-night cycle. Artificial light at night can disrupt that cycle.

- **Solutions:**

- The simple solution is to **reduce animals' experience of direct and indirect light pollution:** turning off unnecessary lights at night.
- Where lights cannot be turned off, they **can be shielded** so that they do not shed light into the surrounding environment and sky.
- The International Dark-Skies Association has certified more than 130 '**International Dark Sky Places**', where artificial lighting has been adjusted to reduce skyglow and light trespass. However, nearly all are in developed countries in the northern hemisphere.
- Less-developed regions are often both species-rich and, currently, less light-polluted, presenting **an opportunity to invest in lighting solutions** before animals there are seriously affected.

Source: DTE

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## **New Frog Species: Minervarya Pentali**

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### **Why in News**

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Recently, a **new frog species was discovered in the Western Ghats** and named after former DU Vice-Chancellor and plant geneticist Deepak Pentali.



### **Key Points**

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- The new frog species named **Minervarya Pentali** belongs to the **family of Dicoglossidae**.
  - The **family Dicoglossidae** comprises **202 species of semiaquatic frogs** distributed by the **tropical and subtropical regions of Africa and Asia and Papua New Guinea**.
  - The family contains large-sized (e.g., genus *Hoplobatrachus*) and dwarf species, with a total length about 30 mm (e.g., genus *Nannophrys*).
- It was discovered from the **Western Ghats biodiversity hotspot**, extending along the **southwest coast of the Indian Peninsula**.

- This new species is **endemic** to the **southern Western Ghats**.
- This species is also among the **smallest known Minervarya (genus) frogs**.

### **The Western Ghats**

- These are the **mountain ranges** running parallel **along the western coast of India starting from Gujarat and ending in Tamil Nadu**.
- Gujarat, Maharashtra, Goa, Karnataka, Tamil Nadu and Kerala are the six Indian states covered by Western Ghats.
- The mountain range is also a **“Hottest Hotspot” of biodiversity**.
- The Ghats are often called the **Great Escarpment of India** and are also a **UNESCO World Heritage Site**.
- **High Biodiversity and Endemism** are special features of Western Ghats along with the presence of Evergreen Forests.

**Source: IE**

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