



Surge in Tobacco Prices

For Prelims: [Tobacco](#), [World Health Organization](#), [WHO MPOWER](#), Indian Tobacco Board, [Flue-cured Virginia \(FCV\)](#), [National Tobacco Control Programme](#)

For Mains: Impact of tobacco consumption and measures, Tobacco Consumption in India, Government Policies & Interventions, Global Burden of Cancer

Source: [BS](#)

Why in News?

Tobacco farmers in Andhra Pradesh are set to benefit after crop yields in Brazil, Zimbabwe and Indonesia declined **due to droughts and untimely rainfall**.

- Auction prices in Andhra Pradesh have surged to near-record levels and are expected to rise further.

How are Tobacco Farmers in Andhra Pradesh Benefiting?

- **Surge in Auction Prices:** Prices have risen to near-record levels, marking a 30% increase from initial expectations.
- **Impact of Global Crop Yields:** Trade analysts attributed the price increase to **crop damage in Brazil and Zimbabwe**.
 - **Drought conditions in Indonesia**, another tobacco-producing country, also resulted in crop failures.
 - **China**, another significant producer, **has imposed limitations on tobacco exports** to protect its domestic cigarette industry in response to reports of global stock shortages, further fueling price increases in tobacco-producing nations.
- **Potential Impact on Indian Growers:** Tobacco exporters and the **Indian Tobacco Board** are expecting that the disparity between demand and production is expected to **sustain price escalations for another year**, which is likely to benefit Indian growers.

Note:

- **Indian Tobacco Board:** It was constituted as a statutory body on 1st January 1976 under Section (4) of the **Tobacco Board Act, 1975**.
- The Board is headed by a Chairman with its **headquarters at Guntur, Andhra Pradesh**. It is responsible for the development of the tobacco industry.

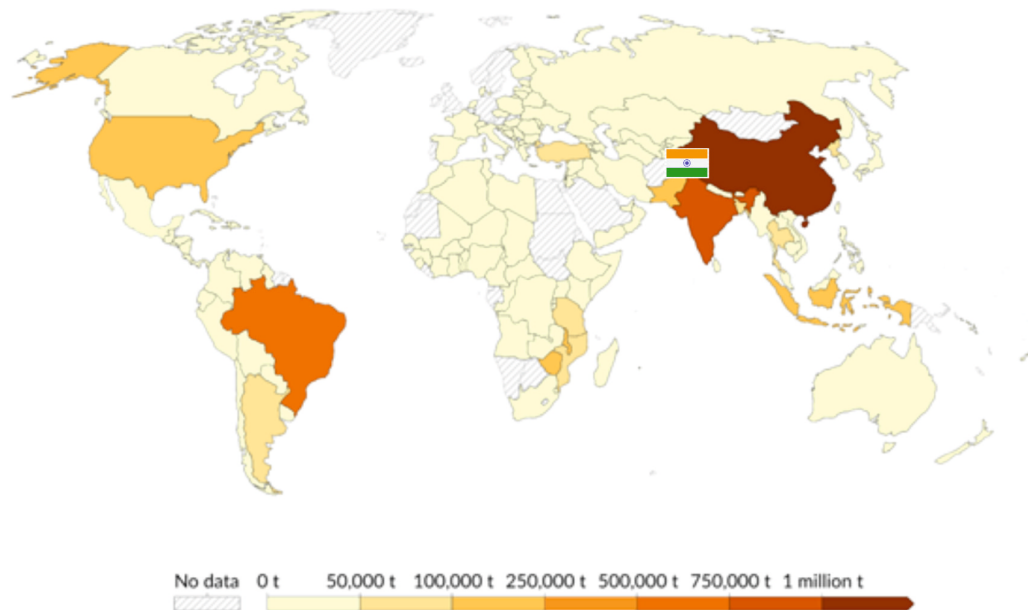
What are the Key Facts About Tobacco Production in India?

- **Agro-Climatic Facts:**

- Tobacco is of tropical origin but thrives under **tropical, subtropical, and temperate climates.**
 - Ideal conditions include a frost-free period of **100 to 120 days with an average temperature of 80°F** and well-distributed rainfall of **88 to 125 mm per month.**
 - Relative humidity ranges from **70-80% in the morning to 50-60% during midday.**
- Various tobacco types have specific soil and climatic preferences for optimal growth.
 - FCV thrives on various soils, including **sandy loams, red loams, and black cotton soils.**
- **Economic Significance:**
 - Tobacco ranks among the most economically significant crops globally.
 - India's tobacco cultivation covers approximately **0.27% of the net cultivated area**, producing around 750 million kg of tobacco leaf annually.
 - Annually, tobacco contributes **excise revenue** of (Rs 14,000 crores), accounting for 4% of the country's total agri-exports.
 - **China, India, and Brazil were rated among the leading producers worldwide.**
 - As regulations tighten in **middle- and high-income countries**, tobacco companies are increasingly targeting African countries to scale up tobacco leaf production.
 - **India is the third largest tobacco-producing nation** and second largest consumer of tobacco worldwide.
- **Diversity in Production:**
 - India produces various types of tobacco, including **Flue-cured Virginia (FCV), Bidi, Hookah, Cigar-wrapper, Cheroot, Burley, Oriental, and others.**
 - Different types of tobacco are cultivated under diverse agro ecological conditions across 15 states in India.
 - **Gujarat, Andhra Pradesh and Karnataka occupy** the top 3 positions in both the area and production of tobacco in the country.
- **Employment and Livelihood:**
 - Tobacco cultivation provides livelihood security to around **36 million people in India**, including farmers, farm labourers, and workers in processing, manufacturing, and exports.
 - **Bidi rolling alone employs around 4.4 million people**, and 2.2 million tribals are engaged in **tendu leaf collection.**
- **Export Market and Competition:**
 - India exported tobacco and tobacco products worth Rs 9,740 crore during 2022-23 with a major contribution coming from **cigarette-type tobacco like FCV and Burley.**
 - Major importers of Indian FCV tobacco include the **UK, Germany, Belgium, South Korea, and South Africa.**
 - **Brazil, Zimbabwe, Turkey, China, and Indonesia** are key competitors in the export market.
 - Despite a **13% share of the world's tobacco production, India accounts for only 5% value of global tobacco leaf exports.**
 - It exports only 30% of the tobacco produced in the country whereas other leading tobacco-growing countries viz. Brazil, USA, and Zimbabwe export between 60-90% of their production.
- **Competitive Advantage of Indian Tobacco:**
 - **Indian tobacco exhibits lower levels of heavy metals, Tobacco Specific Nitrosamines (TSNAs), and pesticide residues** compared to other tobacco-producing countries.
 - India's **varied agro-climatic conditions allow for the production** of different styles of tobacco, meeting diverse customer preferences globally.
 - India enjoys a competitive edge in terms of **low production costs and export prices**, making Indian tobacco considered 'value for money.'

Tobacco production, 2022

Tobacco production is measured in tonnes.



Data source: Food and Agriculture Organization of the United Nations (2023)

Health Burden of Tobacco

Global:

- Tobacco kills more than **8 million people each year**, including an estimated 1.3 million non-smokers who are exposed to second-hand smoke.
- Around **80% of the world's 1.3 billion tobacco users live in low- and middle-income countries.**

India:

- By 2040, India is projected to witness 2.1 million **cancer** cases, with oral cavity cancer being the most prevalent form.
 - 80-90% of individuals diagnosed with oral cancer are tobacco consumers.
- Both **smoking as well as smokeless forms** of tobacco have adverse health impacts and contribute to premature deaths.
 - Smokeless tobacco products examples include gutkha, khaini, and zarda, which are used as chewing tobacco.
- The risk of diseases attributable to tobacco use in India includes **stroke (78%), tuberculosis (65.6%), ischemic heart disease (85.2%), oral cancer (38%), and lung cancer (16%).**
 - Mortality due to tobacco in India is **estimated at upwards of 13.5 lakhs, and it is estimated that by the year 2020**, tobacco use will account for 13% of all deaths in India every year if effective steps are not taken to control tobacco consumption.
- Tobacco consumption is deeply ingrained in the **lifestyle of certain regions, particularly in northern India.**

What are the Initiatives Related to Tobacco?

Global:

- To address the tobacco epidemic, the **World Health Organization (WHO)** adopted the

WHO Framework Convention on Tobacco Control (WHO FCTC) in 2003.

- Currently, 182 countries are **parties to this treaty, including India.**
- The **WHO MPOWER** measures are in line with the **WHO FCTC** and have been shown to save lives and reduce costs from averted healthcare expenditure.
- The **Global Tobacco Surveillance System (GTSS)** aims to strengthen countries' ability to implement tobacco control measures and monitor WHO's **FCTC and MPOWER** technical package.
 - It involves collecting data through four surveys.

▪ India:

- **National Tobacco Control Programme (NTCP)**
- **Cigarettes and Other Tobacco Products (Prohibition of Advertisement and Regulation of Trade and Commerce, Production, Supply and Distribution) Act, 2003:**
 - The **law regulates tobacco products by restricting advertisement, promotion, and sponsorship**; prohibiting smoking in public places; sale to and by minors; and sale within 100 yards of educational institutions.
 - It also requires specified health warnings on all tobacco product packs.
 - The production, sale, storage, and distribution of food products containing tobacco or nicotine are prohibited under the **Food Safety and Standards Act.**
- **Promulgation of the Prohibition of Electronic Cigarettes Ordinance, 2019**

Drishti Mains Question:

Q. Discuss the economic significance of tobacco production in India and its role in the livelihood of millions. How does it balance with the health implications?

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Prelims:

Q. Consider the following: (2012)

1. Assessment of land revenue based on nature of the soil and the quality of crops
2. Use of mobile cannons in warfare
3. Cultivation of tobacco and red chillies

Which of the above was/were introduced into India by the English?

- (a) 1 only
(b) 1 and 2
(c) 2 and 3
(d) None

Ans: (d)

Q. Match List-I with List-II and select the correct answer using the code given below the Lists: (2008)

| | List-I(Board) | | List-II (Headquarters) |
|----|---------------|----|------------------------|
| A. | Coffee Board | 1. | Bengaluru |
| B. | Rubber Board | 2. | Guntur |
| C. | Tea Board | 3. | Kottayam |
| D. | Tobacco Board | 4. | Kolkata |

Code: A B C D

(a) 2 4 3 1

(b) 1 3 4 2

(c) 2 3 4 1

(d) 1 4 3 2

Ans: (b)

Rat Hole Mining

For Prelims: [Article 371A](#), [Rat-Hole Mining](#), [Coal](#), [National Green Tribunal \(NGT\)](#)

For Mains: [Article 371A limitations and challenges](#), Sustainable mining practices, [Rat-Hole Mining](#), [Environmental pollution and degradation](#), Challenges Related to the Indian Himalayan Region.

Source: [DTE](#)

Why in News?

Recently, authorities were given four weeks by the [National Green Tribunal \(NGT\)](#) to respond in a case related to the death of six workers in a [rat-hole](#) coal mine fire in Nagaland's Wokha district.

What is Rat-Hole Mining?

▪ About:

- Rat-hole mining, aptly named for its resemblance to rodent burrows, is an **illegal and highly hazardous method** of extracting coal prevalent in certain pockets of India, particularly the state of Meghalaya.
- Unlike large-scale mechanised mines, this practice involves **digging narrow, horizontal tunnels** barely large enough for a single person to squeeze through.
- These tunnels, often referred to as "rat holes," can extend tens of meters underground.
- Miners descend precariously using ropes, bamboo ladders, or makeshift supports and work in cramped, poorly ventilated conditions with basic tools like pickaxes and shovels.
- The extracted coal is then hauled back up through these narrow passages, making the entire process incredibly **dangerous and backbreaking**.

▪ Types:

- **Side-Cutting Procedure:** Narrow tunnels are dug into hill slopes in the side-cutting procedure, where workers enter to locate the typically less than 2m thin coal seam in Meghalaya's hills.
- **Box-cutting:** In box-cutting, a rectangular opening is created, followed by digging a vertical pit, and then rat-hole-sized tunnels are dug horizontally for coal extraction.

▪ Geographical Spread:

- While predominantly **practised in Meghalaya**, reports of rat-hole mining have surfaced in **other northeastern states** of India as well.
- This method thrives in regions with **thin coal seams**, unsuitable for large-scale mining

techniques.

▪ **Causes of Rat Hole Mining:**

- **Poverty:** Local [tribal populations](#) with limited livelihood options, often resort to rat-hole mining as a means of survival.
 - The quick cash generated from selling the extracted coal, despite the risks involved, becomes a **tempting proposition** for those struggling to make ends meet.
- **Land Ownership:**
 - Ambiguous land titles pose challenges for establishing regulated mines, creating opportunities for illegal operators to exploit loopholes and persist in their activities.
- **Coal Demand:** The constant demand for coal, both legal and illegal, fuels the practice of rat-hole mining.
 - Middlemen and illegal traders create a **market for this illegally extracted coal**, perpetuating the cycle and putting the lives of miners at risk.

▪ **Issues:**

- **Danger to Life and Limb:** The narrow tunnels are **prone to collapses**, often trapping miners underground.
 - Poor ventilation leads to suffocation, and the lack of proper safety measures makes them vulnerable to accidents, injuries and life threatening diseases.
- **Environmental Damage:** [Deforestation to clear land for access points](#), [soil erosion](#) from **haphazard digging**, and [water contamination](#) due to improper waste disposal are some of the lasting environmental consequences of this practice.
 - Rat hole mines also **cause acidic runoff, known as Acid Mine Drainage (AMD)**, leading to degraded water quality and reduced biodiversity in affected water bodies.



The Silkyara (Uttarakhand) Tunnel Collapse

- The **2023 Uttarakhand tunnel collapse**, where 41 workers were trapped, presented a unique situation where a **banned technique, rat-hole mining**, became the key to their successful rescue.
- The miners successfully dug a narrow passage, enabling the rescue of all 41 workers. This case exemplifies the **technique's potential for rapid rescue** in extreme situations.
 - However, it's a **high-risk technique**. This case should not overshadow the importance of prioritising safe and regulated mining practices.

What are the Ways to Regulate Rat Hole Mining?

▪ **Regulation of Rat-Hole Mining in Nagaland:**

- Nagaland has 492.68 million tonnes of coal reserves scattered in **small, erratic pockets**, leading to the permission of rat-hole mining under its 2006 [Nagaland Coal mining policy](#)

due to the impracticality of large-scale operations.

- Rat-hole mining licences, known as **small pocket deposit licences**, are exclusively granted to individual landowners for limited durations and specific conditions.
- Rat-hole mining requires **approval from departments** like Forest and Environment to ensure environmental compliance, yet illegal operations persist despite government clearance and plans.
- **Article 371A and Controlling Rat-Hole Mining in Nagaland:**
 - [Article 371A](#) complicates government regulation in Nagaland, **hindering oversight** of small-scale mining, especially by individual landowners.
- **Remedies:**
 - **Livelihood Alternatives:** Providing sustainable income sources is crucial. This can involve [skilling development programs](#), promoting alternative industries like **tourism or handicrafts**, and creating [micro-financing opportunities](#).
 - By offering a **more secure and less dangerous path** to financial security, communities can be **incentivised** to leave behind rat-hole mining.
 - **Sustainable Mining Practices:** Exploring **alternative, less hazardous mining** techniques suitable for extracting coal from thin seams is essential.
 - Research into and adoption of technologies like **bord and pillar mining** or **small-scale mechanised mining** could pave the way for a safer and more efficient approach.
 - **Stricter Enforcement:** Strengthening **law enforcement** and imposing **harsher penalties** on those involved in illegal mining can act as a **strong deterrent**.
- **Legal Landscape:**
 - **International Context:** There's **no specific international law** directly addressing rat-hole mining.
 - However, international regulations **promote** [sustainable mining methods](#) and prioritise worker safety, indirectly influencing member states to adopt similar practices.
 - **Indian Context:** Recognising the dangers of this practice, the [National Green Tribunal \(NGT\)](#) **banned rat-hole mining in India in 2014**.
 - **Government Initiative:**
 - The NGT ban on rat-hole mining, though **not fully effective**, demonstrates a commitment to ending this practice.
 - Schemes promoting alternative livelihoods, like the [Mahatma Gandhi National Rural Employment Guarantee Act \(MGNREGA\)](#), aim to provide alternative income sources for those dependent on rat hole mining.

Conclusion

- Moving forward, a **multi-pronged approach** is necessary. As seen in many countries, a **complete ban** on rat-hole mining offers a definitive solution.
 - However, for regions **economically dependent** on small-scale mining, the focus should be on **developing and implementing safe alternatives**.
- Investing in **research and development** of mechanized, small-scale mining equipment can provide a safer and more efficient solution. Additionally, **robust safety training programs** and strict enforcement of regulations are crucial to prevent future tragedies.

Drishti Mains Question:

Q. Discuss the environmental and safety concerns associated with rat-hole mining in India. Suggest measures to address these issues while ensuring sustainable mining practices.

UPSC Civil Services Examination, Previous Year Questions (PYQ)

Mains

Q. In spite of adverse environmental impact, coal mining is still inevitable for development. Discuss.

(2017)

Climate Migration

For Prelims: [Climate change](#), [National Action Plan on Climate Change \(NAPCC\)](#), [Nationally Determined Contributions \(NDC\)](#), National Adaptation Fund on Climate Change (NAFCC), [State Action Plan on Climate Change \(SAPCC\)](#)

For Mains: [Issue of Climate Migration](#) and potential remedies

Source: DTE

Why in News?

Recently, the issue of [climate migration](#) has garnered significant attention, yet the world still **lacks a comprehensive legal framework** to protect individuals forced to flee their homes due to increasingly [severe weather disasters](#).

- This critical gap leaves a vulnerable population without adequate safeguards in a time of growing displacement.

Who are Climate Refugees?

▪ About:

- According to the [International Organization for Migration \(IOM\)](#), "climate migration" refers to the movement of a person or groups of **people who are predominantly forced to leave their homes due to sudden or gradual environmental changes caused by climate change**.
 - This movement can be temporary or permanent and can occur within a country or across borders.
 - This definition highlights that climate migrants are primarily those who have **little choice** but to leave their homes due to the impacts of climate change.

▪ Causes of Climate Migration:

- **Sudden-Onset Disasters and Displacement:**
 - **Internal Displacement:** Reports by the [UN Office for the Coordination of Humanitarian Affairs \(OCHA\)](#) highlight that sudden-onset disasters like **floods**, **hurricanes**, and **earthquakes** often cause significant internal displacement.
 - People flee to safer grounds within their countries, but returning home can be difficult due to **destroyed infrastructure** and livelihoods.
 - **Disasters and Vulnerability:** The [UN Refugee Agency \(UNHCR\)](#) emphasises how disasters often disproportionately affect **vulnerable populations**.
 - These populations, lacking resources or living in high-risk areas, are more likely to be displaced and struggle to recover.
- **Slow-Onset Disasters and Migration:**
 - **Environmental Degradation and Livelihoods:** The [IOM](#) reports that slow-onset disasters like **droughts**, **desertification**, and **salinisation** degrade land and water resources.
 - This makes it difficult for people to sustain their livelihoods, pushing them to migrate in search of better opportunities.

- **Sea Level Rise and Coastal Communities:** Reports by the [Intergovernmental Panel on Climate Change \(IPCC\)](#) warn of **rising sea levels** threatening coastal communities. This can lead to permanent displacement as homes and farmland become submerged.
- **The Complexities of Climate Migration:**
 - **Mixed Drivers:** The [UN Department of Economic and Social Affairs \(UNDESA\)](#) acknowledges that migration due to climate change is rarely caused by a single factor.
 - **Poverty, political instability, and lack of social safety nets** often combine with disasters to force migration.
 - **Data Gaps and Policy Challenges:** [World Bank](#) highlights the challenges in accurately quantifying climate migration.
 - This makes it difficult to develop effective policies to support displaced people and build resilience in vulnerable communities.

Chronological Overview of International Efforts Regarding Climate Refugees

- **1951:** Geneva Convention gives a legal definition of refugees. It does not include climate disasters as a ground for seeking asylum.
 - However, the **UN High Commissioner for Refugees**, in 2019, says the Geneva Convention could be applied to persons affected by climate change.
- **1985:** UN Environment Programme for the first time broadly defines environmental refugees as people who are forced to leave their traditional habitat, temporarily or permanently, due to "environmental disruption"
- **2011:** Nansen Conference on Climate Change and Displacement in Norway formulates 10 principles on climate change and cross-border displacement
- **2013:** European Commission downplays climate-induced migration into Europe
- **2015:** The Paris Agreement calls for a taskforce to recommend approaches to avert, minimise and address climate change-related displacement
- **2018:** The UN Global Compact on Refugees has a reference of climate refugees, but lacks actionable commitments from countries
- **2022:** Kampala Ministerial Declaration on Migration, Environment and Climate Change allows people affected by weather events to move safely across the borders in the Horn and East of Africa regions
- **2023:** Pacific island countries agree on a framework to allow cross-border movement of people due to climate change.

What are the Challenges Faced by the Climate Migrants?

- **Precarious Livelihoods:**
 - **Loss of Skills and Assets:** The [International Labour Organization \(ILO\)](#) warn that climate migrants often **lose their skills** and assets due to displacement.
 - This makes it difficult for them to find new jobs and rebuild their livelihoods in unfamiliar environments.
 - **Informal Work and Exploitation:** The [UN Refugee Agency \(UNHCR\)](#) reports that climate migrants often end up in informal work sectors with low wages and poor working conditions.
 - They may also be more vulnerable to exploitation due to their precarious situation.
- **Integration and Social Challenges:**
 - **Lack of Access to Services:** [World Bank](#) highlight that climate migrants often struggle to access basic services like healthcare, education, and housing in their new locations.
 - This can lead to social exclusion and marginalisation.
 - **Cultural and Linguistic Barriers:** The IOM emphasises the difficulties climate migrants face **adapting to new cultures and languages**.
 - This can hinder their ability to integrate into new communities.
- **Legal Status and Protection:**

- **Limited Legal Framework:** Reports by the [UN Office of the High Commissioner for Human Rights \(OHCHR\)](#) point out that there's no clear legal framework to protect climate migrants.
 - They don't qualify for refugee status under current international law.
- **Increased Risk of Statelessness:** The Journal of Environmental Law claims that climate change-induced displacement can lead to **statelessness**, particularly for those who move across borders.
 - In 2021, the **World Bank, in its Groundswell report**, estimated that by 2050, some **216 million people** worldwide would be **internally displaced** due to the impacts of climate change.
- **Psychological and Health Impacts:**
 - **Trauma and Mental Health Issues:** [WHO](#) highlight the **psychological distress and trauma** climate migrants experience due to displacement and loss.
 - Access to mental health services is often limited, further exacerbating their struggles.
 - **Increased Vulnerability to Health Risks:** Climate migrants may be exposed to **new health risks** in their new locations, such as infectious diseases or extreme weather events. This is especially concerning for [children and the elderly](#).

What are the Limitations of Policies Taken to Address the Issue of Climate Migration?

- **Global Compact for Migration:** It acknowledges climate change as a factor for human mobility, its silence on climate refugees reflects the **difficulty in reaching consensus** on this issue at the international level.
- **Regional Treaties and Declarations:** Regional agreements, like the [Kampala Declaration](#), often lack explicit recognition of climate refugees, highlighting the need for more comprehensive legal frameworks.
- **Identification of Climate Refugees:** One of the key challenges is **identifying and categorising individuals** or communities affected by climate change as refugees, given the complex nature of climate-induced displacement.
- **Collective Displacement:** Climate change often affects entire communities or nations, requiring collective responses and highlighting the **limitations of individual-based refugee status**.

What are the Steps Taken to Address the Issue of Climate Migration?

- Countries like **Bangladesh** are investing in **coastal embankments and flood-resistant infrastructure** to protect communities from rising sea levels and storm surges.
- Island nations like **Fiji** are exploring **innovative solutions** like raising landmasses to adapt to rising sea levels.
 - **Kiribati** are exploring options for planned relocation of their populations due to rising sea levels.
 - This involves careful considerations of **land acquisition, cultural preservation, and livelihood opportunities** in the new settlements.
- **Early warning systems** for floods, cyclones, and other extreme weather events have been implemented in countries like **India and Vietnam**.
 - These systems allow communities to evacuate vulnerable areas and minimise casualties and displacement.
- The **Kampala Declaration on Protracted Displacement** is a regional framework adopted by African countries to address the needs of people displaced by conflict, natural disasters, and climate change.
 - It provides a model for regional cooperation on climate migration.
- Countries like **Ethiopia** are investing in **drought-resistant crops** and irrigation technologies to help farmers adapt to changing weather patterns and ensure food security.
 - This reduces the risk of displacement due to food scarcity.
- **Other Examples of Adaptation Measures:**
 - **Pacific Island Climate Mobility Framework:** This framework facilitates legal movement between Pacific island countries for populations affected by climate change, providing a

- model for regional cooperation and adaptation.
- **Tuvalu-Australia Pact:** The pact between **Tuvalu and Australia, granting residency to Tuvaluans** facing climate-related dangers, demonstrates a bilateral approach to addressing climate migration challenges.

What are India's Climate Change Mitigation Initiatives?

- [National Action Plan on Climate Change \(NAPCC\)](#)
- [Nationally Determined Contributions \(NDC\)](#)
- [National Adaptation Fund on Climate Change \(NAFCC\)](#)
- [State Action Plan on Climate Change \(SAPCC\)](#)

Way Forward

- **Tackling Climate Change:**
 - IPCC emphasises the importance of **aggressive mitigation strategies** to reduce **greenhouse gas emissions** and slow climate change.
 - The [UN Framework Convention on Climate Change \(UNFCCC\)](#) promotes adaptation strategies to help communities become more resilient to climate impacts and reduce displacement risks.
- **Disaster Preparedness and Risk Reduction:**
 - The [UN Office for Disaster Risk Reduction \(UNDRR\)](#) emphasises the importance of **disaster preparedness plans**, early warning systems, and risk reduction measures to minimise displacement caused by sudden-onset disasters.
- **Legal Frameworks and Protection Mechanisms:**
 - The UN Refugee Agency (UNHCR) and the IOM advocate for developing legal frameworks to protect climate migrants.
 - This could involve **extending refugee status** or creating a new protection category for those displaced due to climate change.
- **Planned Relocation and Resettlement:**
 - The [World Bank's Groundswell Report](#) acknowledges that some communities will become permanently uninhabitable due to climate change.
 - **Planned relocation and resettlement programs** may be necessary in these extreme cases.
- **Investment in Sustainable Development and Climate-Smart Agriculture:**
 - The [UN Department of Economic and Social Affairs \(UNDESA\)](#) emphasises the importance of **investing in sustainable development** and climate-smart agriculture.
 - This can create opportunities for people to adapt to climate change and reduce the need for migration.
- **Labour Migration Schemes:**
 - Encouraging **labour migration among countries as an adaptation measure** for climate-displaced populations can help mitigate the impacts of climate change on vulnerable communities.

Drishti Mains Question:

Q. Discuss the challenges and policy implications of climate migration in India. How can the government ensure the protection and welfare of climate migrants while addressing the environmental concerns that drive migration?

UPSC Civil Services Examination Previous Year Question (PYQ)

Mains:

Q. Refugees should not be turned back to the country where they would face persecution or human right violation". Examine the statement with reference to ethical dimension being violated by the nation claiming to be democratic with open society. **(2021)**

Q. Rehabilitation of human settlements is one of the important environmental impacts which always attracts controversy while planning major projects. Discuss the measures suggested for mitigation of this impact while proposing major developmental projects. **(2016)**

Increased in Public Health Expenditure

For Prelims: [National Health Policy \(NHP\)](#), [Ayushman Bharat PMJAY](#), [National Health Mission](#), [National Medical Commission](#).

For Mains: Findings of National Health Accounts (NHA) data, Challenges associated with ensuring the effective use of increased Healthcare funds in India.

Source: [IE](#)

Why in News?

Recent **National Health Accounts (NHA)** data show that **government health expenditure (GHE)** as a proportion of **GDP** increased by an unprecedented **63% between 2014-15 and 2021-22**.

National Health Account (NHA)

- The National Health Account (NHA) estimates is **prepared by National Health Systems Resource Centre (NHSRC)**, designated as National Health Accounts Technical Secretariat (NHATS) in 2014 by the Union Health Ministry.
- The NHA estimates are prepared by using an **accounting framework based on the internationally accepted standard of System of Health Accounts, 2011**, developed by the [World Health Organization \(WHO\)](#).
- These estimates are not only comparable internationally, but also enable the policymakers to monitor the progress in different health financing indicators of the country.

National Health Systems Resource Centre

- It was established in 2006-07 under the National Rural Health Mission (NRHM) of Government of India to serve as **an apex body for technical assistance**.
- Its mandate is to assist in policy and strategy development in the provision and mobilization of technical assistance to the states and in capacity building for the Ministry of Health and Family Welfare (MoHFW).

What are the Findings of National Health Accounts (NHA) Data?

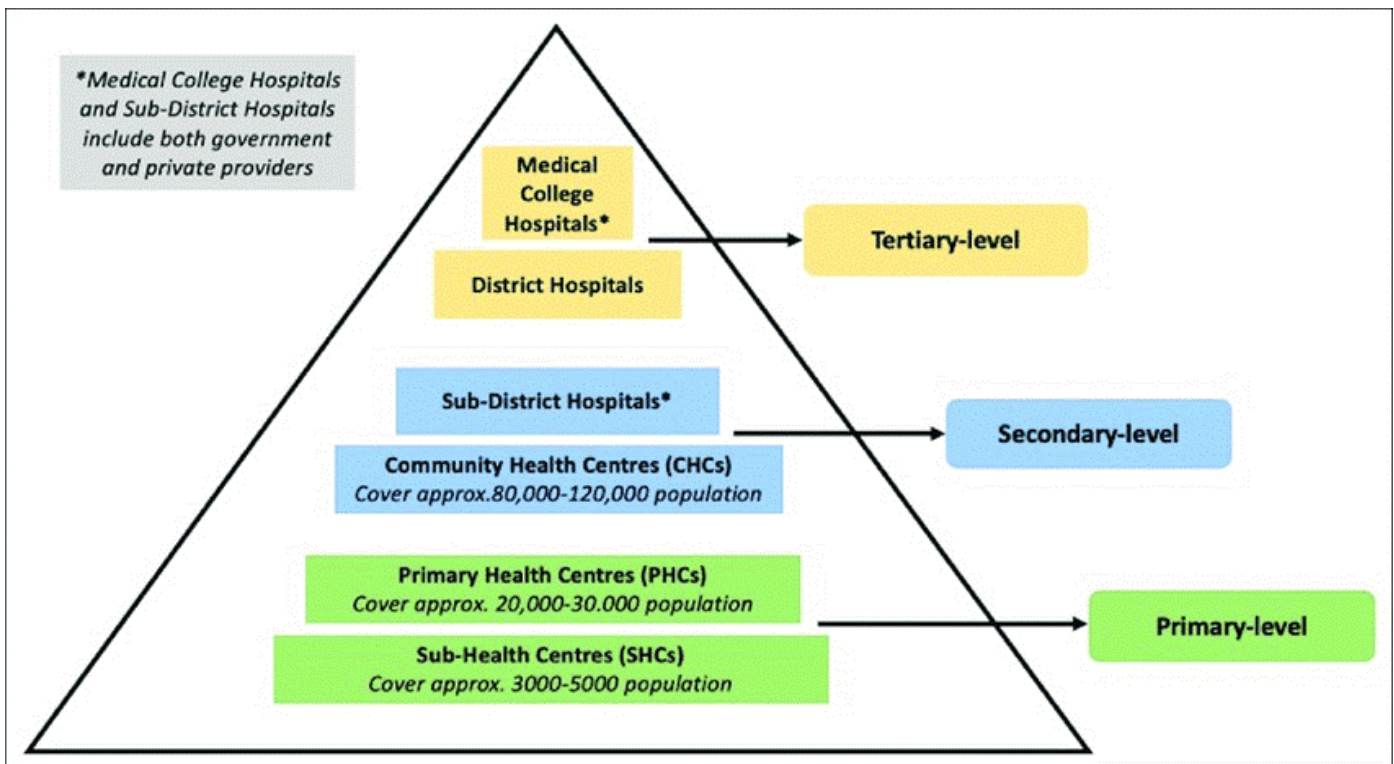
- **Increasing Government Investment in Healthcare:**
 - This is reflected in a significant **increase in government health expenditure (GHE)** as a

percentage of GDP between 2014-15 and 2021-22 (**from 1.13% to 1.84%**).

- **Per capita government spending** on health has also **nearly tripled** in the same period.
- The **National Health Policy (NHP)** aims to provide everyone with access to affordable, quality healthcare. It proposes raising **public health expenditure to 2.5% of the GDP** by 2025.
- **Focus on Government-Funded Insurance Schemes:**
 - Investment in government health insurance schemes like **Ayushman Bharat PMJAY** has risen sharply (4.4 fold increase since 2013-14).
 - The share of social security spending on health has also increased, demonstrating a shift towards a more comprehensive healthcare system.
- **Decreasing Out-of-Pocket Expenditure (OOPE):**
 - **A significant decline in OOPE** (money spent directly by individuals on healthcare) has been observed, dropping from **62.6% to 39.4%** between **2014-15 and 2021-22**.
 - **Factors Contributing to Lower OOPE:**
 - Schemes like **Ayushman Bharat PMJAY** help people access treatment for serious illnesses without financial burden.
 - Increased **utilisation of government facilities, free ambulance services**, and other initiatives contribute to reduced OOPE.
 - Availability of **free medicines and diagnostics at Ayushman Arogya Kendras (AAMs)** further lowers healthcare costs.
- **Focus on Essential Drugs and Price Regulation:**
 - **Jan Aushadhi Kendras** provide **affordable generic medicines** and surgical items, saving citizens an estimated Rs 28,000 crore since 2014.
 - **Price regulation of essential medicines** like stents and cancer drugs has led to further savings (estimated Rs 27,000 crore annually).
- **Strengthening Social Determinants of Health:**
 - Increased government spending not only targets healthcare services but also **includes investments in water supply and sanitation** (through **Jal Jeevan Mission** and **Swachh Bharat Mission**).
- **Investing in Healthcare Infrastructure:**
 - Schemes like **Pradhan Mantri Swasthya Suraksha Yojana** and **Ayushman Bharat Infrastructure Mission** are strengthening medical infrastructure, including AIIMS and ICU facilities.
 - Increased health grants to local bodies are bolstering the **primary healthcare** system.

Note:

- Out-of-Pocket Expenditure (OOPE) is the **money paid directly** by households, at the point of **receiving health care**.
- It excludes the individuals covered under **any public or private insurance or social protection scheme**.



What are the Challenges Associated with Ensuring the Effective Use of Increased Healthcare Funds in India?

▪ Equity in Access to Improved Facilities:

- Rural populations often **face long travel distances** and **limited access to specialists**, leading to delayed diagnoses and poorer health outcomes.
 - A **2021 NITI Aayog report** highlights the significant gap in the **doctor-patient ratio (1:1100)** with a skewed distribution favouring **urban areas (1:400)**.
 - The National Health Profile 2022 reveals a rise in **non-communicable diseases (NCDs)** like diabetes and heart disease, which are expensive to treat.

▪ Misuse and Inefficiencies of Funds:

- Bureaucratic inefficiencies, mismanagement, and potential corruption are the main factors for diverting funds from reaching their intended beneficiaries.
 - A **2018 Comptroller and Auditor-General of India (CAG) report** identified instances of **inflated bills and unnecessary procedures** in government hospitals.

▪ Human Resource Constraints:

- **Shortages of doctors, nurses, and other healthcare professionals often lead to overworked staff, compromised quality of care, and longer waiting times.**
 - The **World Health Organization (WHO)** recommends a doctor-nurse ratio of 4:1, while India currently has a **ratio closer to 1:1**.
 - Also, currently, a doctor in the government hospital attends to ~11000 patients, which is more than the **WHO recommendation of 1:1000**.

Way Forward

- Investing in **rural healthcare infrastructure** by building affordable hospitals and clinics, alongside programs that train and retain healthcare professionals through incentives like **higher salaries, better housing facilities, and career progression opportunities**.
- **Robust monitoring systems and stricter regulations** are needed to ensure efficient utilisation of funds towards actual patient care and **prevent leakages**.
- **Increasing the number of medical professionals in under-staffed government hospitals** and improving **patient-oriented facilities** can lead to better patient care and shorter wait times

for treatment.

- Investing in **preventative healthcare through public health campaigns** promoting healthy lifestyles and early disease detection can reduce future healthcare costs.
 - Increased spending **on educating the public about healthy eating habits** and encouraging regular checkups could potentially lead to a decrease in the number of people developing expensive-to-treat chronic illnesses.

What are the Recent Government Initiatives Related to Healthcare?

- [National Health Mission](#)
- [Ayushman Bharat](#)
- [Pradhan Mantri Jan Arogya Yojana \(AB-PMJAY\)](#)
- [National Medical Commission](#)
- [PM National Dialysis Programme](#)
- [Janani Shishu Suraksha Karyakram \(JSSK\)](#)
- [Rashtriya Bal Swasthya Karyakram \(RBSK\)](#)

Conclusion

- India's healthcare spending is rising, with government programs like Ayushman Bharat reducing out-of-pocket costs for citizens. However, challenges like human resource constraints and inaccessibility in rural areas still exist.
- Ensuring equal access to quality healthcare in rural areas and a focus on preventative care are crucial for a truly robust and equitable healthcare system for all.

Drishti Mains Question:

Discuss about the challenges associated with ensuring the effective use of increased Healthcare funds in India.

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Prelims

Q. Which of the following are the objectives of 'National Nutrition Mission'? (2017)

1. To create awareness relating to malnutrition among pregnant women and lactating mothers.
2. To reduce the incidence of anaemia among young children, adolescent girls and women.
3. To promote the consumption of millets, coarse cereals and unpolished rice.
4. To promote the consumption of poultry eggs.

Select the correct answer using the code given below:

- (a) 1 and 2 only
- (b) 1, 2 and 3 only
- (c) 1, 2 and 4 only
- (d) 3 and 4 only

Ans: (a)

Exp:

- National Nutrition Mission (POSHAN Abhiyaan) is a flagship programme of the Ministry of Women and Child Development, GoI, which ensures convergence with various programmes like Anganwadi services, National Health Mission, Pradhan Mantri Matru Vandana Yojana, Swachh-Bharat Mission, etc.
- The goals of National Nutrition Mission (NNM) are to achieve improvement in nutritional status of children from 0-6 years, adolescent girls, pregnant women and lactating mothers in a time bound manner during the next three years beginning 2017- 18. Hence, 1 is correct.
- NNM targets to reduce stunting, under-nutrition, anaemia (among young children, women and adolescent girls) and reduce low birth weight of babies. Hence, 2 is correct.
- There is no such provision relating to consumption of millets, unpolished rice, coarse cereals and eggs under NNM. Hence, 3 and 4 are not correct.
- Therefore, option (a) is the correct answer.

Mains

Q. “Besides being a moral imperative of a Welfare State, primary health structure is a necessary precondition for sustainable development.” Analyse. (2021)

Nepal’s Currency Featured Kalapani Region

Source: IE

Why in News?

Recently, **Nepal announced** the printing of a **new Rs 100 currency note** with a map that shows the contentious territories of **Lipulekh, Limpiyadhura and Kalapani**, already termed as “artificial enlargement” and “untenable” by India.

- India responded sharply to Nepal's decision, with India’s External Affairs Minister stating that it **will not change the situation** or the reality on the ground.

What are the Regions of Border Dispute Between India and Nepal?

- **About:**
 - Currently, **India and Nepal** have border disputes over the **Kalapani-Limpiyadhura-Lipulekh trijunction and Susta area (West Champaran district, Bihar)**.
- **Kalapani-Limpiyadhura-Lipulekh Trijunction (Kalapani Region):**
 - This is a **35-square-kilometre area** located in the northwestern part of Nepal, near the tri-junction where India, Nepal, and China meet.
 - **Kalapani** is a **valley** that is **administered by India** as a part of the Pithoragarh district of **Uttarakhand**. It is situated on the Kailash Mansarovar route.
 - Kalapani is advantageously located at a height of **over 20,000 ft** and serves as an **observation post** for that area.
 - The **Kali River** in the **Kalapani region** demarcates the border between India and Nepal.
 - The **Treaty of Sugauli** was signed by the **Kingdom of Nepal and British India** (after the **Anglo-Nepalese War**) in 1816.
 - The treaty designated the Kali River (or the Mahakali River) as the western boundary of Nepal.
 - **Land east of the Kali River came under Nepal's control**, while territory **west of the river became part of British India** (present-day India).
 - The **discrepancy in locating the source of the Kali River** led to boundary disputes between India and Nepal, with each country producing maps supporting their claims.



▪ **Claims of Different Parties over Kalapani Region:**

◦ **Nepal's Stand:**

- According to Nepal's claims, the [Kali River](#) originates from a stream at **Limpiyadhura**, northwest of Lipu Lekh.
- Thus Kalapani, Limpiyadhura, and Lipu Lekh, fall to the east of the river and are part of **Nepal's Dharchula district**.
- The territory of Kalapani was **offered to India by King Mahendra** after the 1962 India-China war who wanted to help India's security concerns due to perceived lingering Chinese threats.

◦ **India's Stand:**

- India claims that the **Kali River originates** in springs **well below the [Lipu-lekh Pass \(or Lipulekh Pass itself\)](#)**, effectively bringing the Kalapani region under Indian control.
 - The Sugauli Treaty does not demarcate the area north of these streams.
- The **administrative and revenue records of the nineteenth century** also show that Kalapani was on the Indian side, and counted as part of Pithoragarh district of Uttarakhand.

▪ **Susta Region:**

- The **Treaty of Sugauli** defined the [Gandak River](#) as the international boundary between India and Nepal.
- The **right bank of the river** was under Nepal's control while the left bank was under India's control.
- **Susta village was initially on the right bank** when the treaty was signed and it was a part of Nepal.
- However, over the years, the **Gandak River changed its course and Susta moved to the left bank** and is now currently under India's control.



Conclusion

- While both countries present historical documents and interpretations of the Sugauli Treaty to support their claims, a resolution remains elusive.
- Moving forward, constructive dialogue and a willingness to find common ground will be crucial to resolving this long-standing issue and fostering a stronger relationship between Nepal and India.

UPSC Civil Services Examination Previous Year Question (PYQ)

Q. Consider the following pairs: (2016)

Community sometimes In the affairs of mentioned in the news

1. Kurd — Bangladesh
2. Madhesi — Nepal
3. Rohingya — Myanmar

Which of the pairs given above is/are correctly matched?

- (a) 1 and 2
(b) 2 only
(c) 2 and 3
(d) 3 only

Ans: C

Eta Aquariid Meteor Shower

Source: IE

Why in News?

The **Eta Aquariid meteor shower**, associated with **Halley's Comet**, occurred on the 5th and 6th of May 2024, offering a celestial spectacle for skywatchers worldwide.

What is the Eta Aquariid Meteor Shower?

- The Eta Aquariid meteor shower occurs annually during early May. This event is characterised by its rapid meteors, **originating from the debris left behind by Comet Halley**, resulting in long-lasting, glowing tails.
- Approximately 30 to 40 Eta Aquariid meteors can be seen per hour during the peak, particularly visible from the **Southern Hemisphere**.
- The Southern Hemisphere offers a more favourable viewing experience due to the **higher position of the constellation Aquarius**, the radiant of the meteor shower.
 - In the Northern Hemisphere, observers may witness "**Earthgrazers**," long meteors skimming the horizon.
- The radiant of the Eta Aquariids is in the **constellation Aquarius**, and the meteors appear to come from the area around the **star Eta Aquarii**.
 - This star and the constellation give the shower its name: **Eta Aquarids**.

The Comet 1P/Halley

- Comet Halley (1P/Halley), discovered by **Edmund Halley in 1705**, orbits the Sun approximately every 76 years. The **only naked-eye comet** that can appear twice in a human lifetime.
 - Its dusty trail produces the **Eta Aquariids** in May and the **Orionids in October** when Earth passes through these debris fields.
- Notably, Halley's last appearance visible to casual observers was in 1986, and it won't return until 2061.
- Comet Halley's is one of the **least reflective, objects** in the solar system, with an albedo of 0.03.

What are Comets?

- **About:**
 - Comets are frozen remnants from the early days of the solar system, composed of dust, rock, and ice. They orbit the Sun in highly elliptical paths.
 - Comets emit gas and dust when heated by the Sun, forming a glowing head and a tail.
 - According to NASA, a billions of comets orbiting the Sun beyond Neptune, in the **Kuiper Belt** and distant **Oort cloud**.
- **Meteor Showers Relation to Comets:**
 - **Meteors originate from remnants of comets** and broken asteroids. They are tiny grains of dust or rock that burn up as they enter Earth's atmosphere, creating brief tails of light.

Key Terms

- **Meteoroid and Meteorite:**
 - Meteoroids are space rocks that range in size from dust grains to small asteroids.
 - This term only applies when these rocks are still in space.
 - When **meteoroids enter Earth's atmosphere** at high speed and burn up, they're called **meteors**.
 - If a **meteoroid doesn't burn up completely in Earth's atmosphere** and reaches the ground, it is **called a meteorite**.
- **Constellation:**
 - It is a group of stars that form a **recognizable pattern** in the night sky.
 - It have been used for centuries by different cultures for navigation, storytelling, and keeping track of time.
- **Kuiper Belt:**

- It is a region of the **solar system beyond Neptune's orbit**. It is a vast, icy realm that is home to thousands of icy objects, including dwarf planets like Pluto, comets, and **Kuiper Belt Objects (KBOs)**.
- **Oort Cloud:**
 - It is a giant, spherical cloud of icy objects that surrounds the **solar system at a much greater distance than the Kuiper Belt**.
 - The Oort Cloud is thought to be the source of long-period comets, which are comets that take thousands or even millions of years to orbit the Sun.

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Q. What is the difference between asteroids and comets? (2011)

1. Asteroids are small rocky planetoids, while comets are formed of frozen gases held together by rocky and metallic material.
2. Asteroids are found mostly between the orbits of Jupiter and Mars, while comets are found mostly between Venus and Mercury.
3. Comets show a perceptible glowing tail, while asteroids do not.

Which of the statements given above is/are correct?

- (a) 1 and 2 only
- (b) 1 and 3 only
- (c) 3 only
- (d) 1, 2 and 3

Ans: (b)

Lithographs of Karl Erich Muller

[Source: PIB](#)

The Conservation and Archives Division of the [Indira Gandhi National Centre for the Arts \(IGNCA\)](#) hosted an exhibition titled '**People and Places of India - A Retrospect**' to celebrate **International Labour Day (2nd May)**.

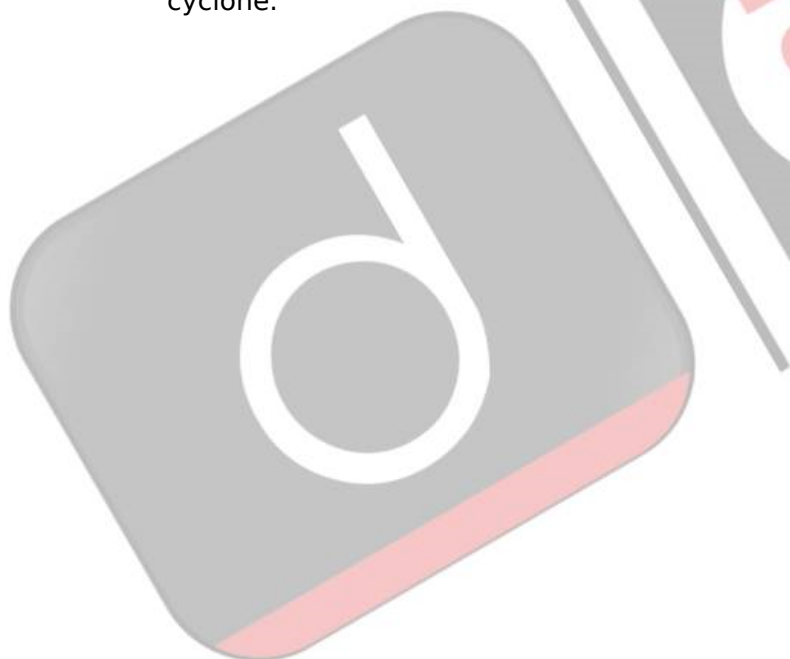
- The exhibition featured lithographs by **German artist Karl Erich Muller** from the IGNCA Archives.
- Muller's lithograph depicts various aspects of **everyday life in the 1970s**, including labourers, transport workers, factory workers, and fisherwomen.
- Muller's works are housed in **IGNCA, NGMA (National Gallery of Modern Art), and Bharat Kala Bhawan**.
- He emphasised their ability to convey **deep messages about life's simplicity** and beauty without the need for abundant resources.
- The **IGNCA** was **established in 1987** as an autonomous institution under the **Ministry of Culture**.
 - It was established as a **centre for research**, academic pursuit and dissemination in the **field of the arts**.

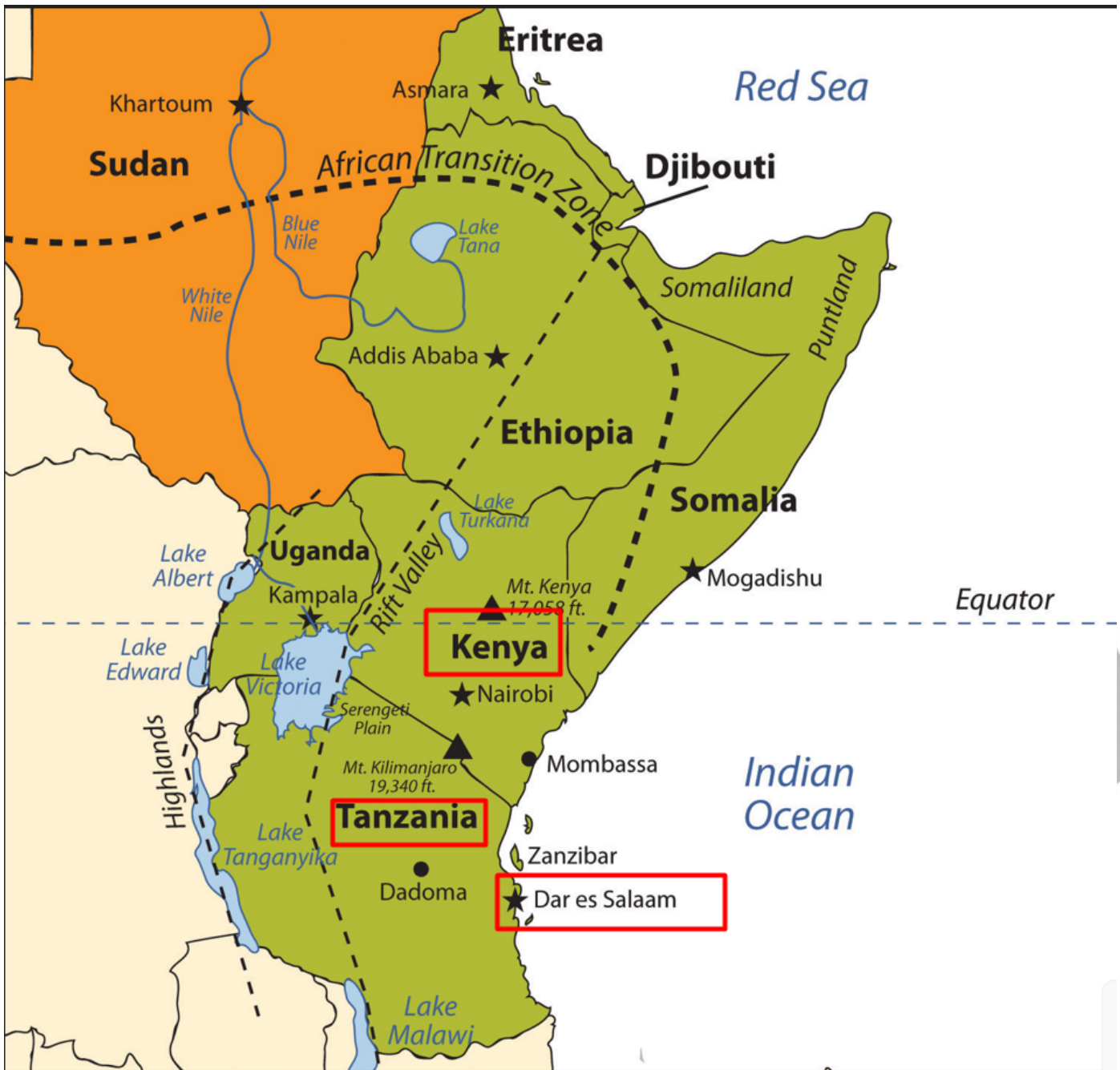
Cyclone Hidaya

Source: DTE

Recently, a severe storm named [Cyclone Hidaya](#) is set to hit the coast of **Tanzania near Dar es Salaam** from the Indian Ocean.

- Cyclone **Hidaya (Guidance in Arabic)**, may bring heavy rain and strong winds to regions in Tanzania like Tanga, Morogoro, the **islands of Unguja and Pemba**.
- It formed over the South Indian Ocean and was named by **France's overseas tertiary in the Indian Ocean**.
- Even though **Kenya is usually considered safe from cyclones**, now it is preparing for the impact of Cyclone Hidaya.
 - Kenya falls within the latitude of **4° North and South** and is considered safe from cyclones because they typically **don't form within 5 degrees of the equator** due to the **weak Coriolis force** there, which is necessary for creating cyclones.
 - Tropical cyclones usually develop in areas **between 5° and 30° North or South of the equator**.
 - However, despite this usual safety, Kenya now faces the possibility of being impacted by Cyclone Hidaya. If this happens, it would be the first time Kenya has ever experienced a cyclone.





Read more: [Cyclone](#)

7th India-Indonesia Joint Defence Cooperation Committee

Source: TH

The recent 7th [India-Indonesia Joint Defence Cooperation Committee \(JDCC\)](#) meeting highlights the ongoing efforts of both nations to **bolster their defence collaboration**.

- Progress on various bilateral defence cooperation initiatives was reviewed, including those deliberated in meetings of **Working Groups on Defence Cooperation and Defence Industries Cooperation**.
 - Means to enhance existing collaboration, particularly in defence industry ties, maritime

security, and multilateral cooperation, were identified.

- JDCC is an **annual meeting** between the Indian and Indonesian Defence Ministries, discussing a wide range of bilateral cooperation.
- India and Indonesia upgraded their **strategic partnership to a "Comprehensive Strategic Partnership" in 2018**, and also signed a **Defence Cooperation Agreement**, aligned with a **shared vision of the Indo-Pacific**.
 - Indonesia is a crucial partner in **India's Act East Policy** and holds significance in the Indo-Pacific region.

Read more: [Local Currency Trade between India-Indonesia](#)

Tirthahalli Areca Nut Variety

Source: [TH](#)

The **Tirthahalli variety of Karnataka** has long been recognised for its exceptional **areca nut production**, as confirmed by a recent analysis conducted by the Areca Research Centre at Keladi Shivappa Nayaka University of Agricultural and Horticultural Sciences in Shivamogga, Karnataka.

- The Tirthahalli areca is **highly sought-after for its suitability in producing high-grade nuts**, with growers of this variety able to cultivate the **coveted Nuli and Hasa grades**.
- The areca nut palm is the source of the popular chewing nut known as **betel nut or Supari**. India is both the **largest producer and consumer of areca nut**, with major cultivation in states like **Karnataka, Kerala, Assam, Tamil Nadu, Meghalaya, and West Bengal**.
 - Arecanut kernels are boiled, and areca precipitates are added after removing the husk. The nuts are later dried and graded as **Nuli, Hasa, Rashi, Bette, and Gorabalu based on their market value**.
 - Nuli and Hasa nuts fetch a higher price than Rashi, Bette, and Gorabalu.
- Earlier **'Sirsi Supari'** grown in Uttara Kannada district of Karnataka has received the **Geographic Indication (GI) tag**.

Read more: ["Sirsi Supari" Gets GI Tag](#)

Vallabhacharya Jayanti

Source: [TOI](#)

Vallabhacharya Jayanti, celebrated on 4th May 2024, commemorates the birth anniversary of the renowned Hind scholar and an ardent devotee of Lord Krishna, **Shri Vallabhacharya (1479-1531 CE)**.

- Vallabhacharya was a revered figure who had a deep command over the **Vedas and Upanishads**. He was known by the titles **Vallabha and Mahaprabhu Vallabhacharya**.
 - Vallabhacharya founded the **philosophy of Shuddha Advaita** or pure non-dualism. He also founded the **Pushti sect of Vaishnavism**, a Krishna-centric cult in the Braj region of India.
- Vallabhacharya was born in a Telugu Brahmin family in 1479 AD and is a prolific writer, he composed many literary works in his lifetime, including sixteen independent granthas called "**Shodash Granth**."



Read more: [Schools of Indian Philosophy](#)

Boeing Starliner's First Crewed Test Flight

Source: TH

Recently, an **Atlas V rocket** is poised to launch with two seasoned astronauts, **Barry Wilmore and Sunita Williams**, aboard the Boeing-built crew capsule called **Starliner**.

- This marks the capsule's **third test flight** and the **first with astronauts on board**, aiming to transport them to the **International Space Station (ISS)** in **low-earth orbit**.
 - If successful, the US will achieve a historic milestone by having **two spacecraft capable** of launching astronauts into space.
 - Currently, the **Dragon spacecraft of SpaceX** is the only spacecraft that can return significant cargo to Earth and the **first private spacecraft to transport humans to the space station**.
- **Starliner** is a spacecraft that carried astronauts to space, launched by a rocket, featuring a **crew capsule** for astronaut accommodation, designed for reentry, and a **non-reusable service module** providing life support and propulsion systems.

Read more: [NASA's Boeing Starliner Spacecraft](#)

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