



# Weekly Current Affairs

Weekly Current Affairs 20 May 2024 to 26 May 2024



*The Indian* **EXPRESS**



## Corporate Office

Basement 8, Apsara Arcade, Karol Bagh Metro Station  
Gate No. 6, New Delhi 110005

17A/41, 1st Floor, WEA Karol Bagh, New Delhi 110005

706 1st Floor Dr. Mukherjee Nagar Near Batra Cinema  
Delhi - 110009

C 59 Noida Sector 2, Noida, Uttar Pradesh 201301

Phone: 08448440231

Email: [info@plutusias.com](mailto:info@plutusias.com)

Web: [www.plutusias.com](http://www.plutusias.com)



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# POLITY AND GOVERNANCE

## IMPACT OF SOCIAL MEDIA IN A DEMOCRACY



### CONTEXT

Social media has emerged as a significant force in shaping elections across the world. Almost every prominent world leader uses social media as a tool to propagate their message. It has increased the reach of the political leaders and made the political messaging more efficient..

At the same time, social media has democratized society by providing a platform for the citizens to gain information and express their views directly. It has empowered the citizens in real ways, Providing information about the various countries political system and the socio-political movements, for eg. the Metoo movement shaped initiated the sexual harassment discourse across the world.

Gandhiji said that 'I understand democracy as something which gives the weak equal chance as to the strong'. Social media is in line with this thought of Gandhiji as with the rising penetration of the internet it has become a potent voice for the disadvantaged population to express their views.

It is said that a lie can revolve around the entire world until the truth put its boots on. That's why it is important to see the other side of the picture, which is the threats posed by social media on democracy in the age of the internet. In this article we will analyze the impact of social media on Democracies around the world.

### THE POSITIVE IMPACT OF SOCIAL MEDIA ON DEMOCRACY

Social media has brought several positive impacts on democracy:

- **Increased Access to Information:** Social media platforms provide a vast array of information sources,

allowing citizens to access news and political content from diverse perspectives. This **democratization of information** empowers individuals to stay informed about political issues and engage in public discourse.

- **Enhanced Political Participation:** Social media facilitates political engagement by enabling citizens to interact with political leaders, participate in discussions, and express their opinions on various issues. Platforms like Twitter and Facebook serve as forums for political debate, allowing individuals to voice their concerns, mobilize support for causes, and organize grassroots movements.
- **Broadened Civic Engagement:** Social media has expanded opportunities for civic engagement by providing platforms for volunteering, activism, and community organizing. Citizens can use social media to coordinate efforts, raise awareness about social issues, and collaborate on initiatives to effect positive change in their communities.
- **Transparency and Accountability:** Social media has increased transparency in government and politics by enabling real-time reporting, live streaming of events, and direct communication between officials and constituents. Elected representatives are held more accountable for their actions and decisions as they are subject to public scrutiny and feedback on social media platforms.
- **Political Education and Awareness:** Social media serves as an educational tool, helping citizens learn about political processes, policies, and candidates. Platforms like YouTube, podcasts, and online forums provide accessible resources for learning about democracy, civic rights, and electoral systems, empowering individuals to make informed choices as voters.
- **Global Connectivity:** Social media transcends geographical boundaries, connecting people across the globe and fostering cross-cultural dialogue and collaboration. Citizens can learn from the experiences of others in different countries, exchange ideas, and support democratic movements( The Metoo movement) worldwide, promoting international solidarity and cooperation.
- **Empowerment of Marginalized Groups:** Social media amplifies the voices of marginalized communities, allowing them to share their stories, advocate for their rights, and challenge systemic injustices. **Minority**

**groups, women, and LGBTQ+ individuals**, among others, can use social media to raise awareness about issues affecting their communities and demand greater representation and inclusion in the political process.

### OTHER SIDE OF THE PICTURE

The negative impacts of social media on democracy include:

- **Disinformation and Misinformation:** Social media platforms can be breeding grounds for the spread of false information, rumors, and propaganda. Misleading content can manipulate public opinion, distort facts, and undermine trust in democratic institutions and processes.
- **Polarization:** Social media algorithms often **prioritize content that aligns with users' existing beliefs and preferences**, creating **echo chambers** where individuals are exposed only to information that reinforces their worldview. This can exacerbate political polarization, diminish empathy for opposing viewpoints, and hinder constructive dialogue.
- **Manipulation and Election Interference:** Social media has been exploited by foreign actors, political campaigns, and malicious actors to manipulate public opinion and influence electoral outcomes. Tactics such as fake accounts, bots, and targeted advertising can be used to spread propaganda, sow division, and undermine the integrity of democratic elections.
- **Online Harassment and Intimidation:** Social media platforms can be used to harass, threaten, and intimidate individuals, particularly women, minorities, and marginalized groups. Cyberbullying and hate speech can silence dissenting voices, discourage participation in public discourse, and create hostile environments that erode democratic norms of civility and respect.
- **Privacy Concerns:** Social media companies collect vast amounts of personal data from users, raising concerns about privacy, surveillance, and data security. The misuse of user data for political purposes, such as micro-targeting political ads or manipulating voter behavior, can infringe on individuals' privacy rights and undermine the integrity of democratic processes.
- **Filter Bubbles and Echo Chambers:** Social media algorithms may reinforce users' existing biases by filtering content based on their preferences, limiting exposure to diverse viewpoints and alternative perspectives. This can contribute to the polarization of public opinion and hinder the exchange of ideas necessary for a healthy democratic discourse.
- **Undermining Trust in Institutions:** The proliferation

of fake news, conspiracy theories, and misinformation on social media can **erode public trust in traditional media outlets, government institutions, and democratic processes**. Skepticism and cynicism about the reliability of information sources can undermine the foundation of democratic governance and foster disillusionment with the political system.

- **Digital Divide:** Access to social media and digital platforms is not uniform across society, leading to disparities in political participation and representation. The digital divide, characterized by unequal access to technology and internet connectivity, can exacerbate existing inequalities and marginalize certain groups from democratic processes.

### NEED OF THE HOUR

Moving forward, addressing the negative impacts of social media on democracy requires a comprehensive approach involving various stakeholders. Here are some key strategies:

- **Regulatory Measures:** Governments should enact regulations to hold social media companies accountable for addressing harmful content, protecting user privacy, and promoting transparency in political advertising. Regulations should strike a balance between safeguarding free expression and combating online harms, such as disinformation, hate speech, and election interference.
- **Transparency and Accountability:** Social media companies should implement measures to increase transparency about their algorithms, content moderation policies, and data practices. They should also be held accountable for enforcing their policies consistently and effectively, with mechanisms in place for users to report abusive behavior and appeal content moderation decisions.
- **Media Literacy Education:** Promoting media literacy and critical thinking skills is essential to empower users to navigate the digital landscape responsibly. Education programs should teach individuals how to evaluate information critically, identify misinformation, and engage in constructive dialogue with others across diverse viewpoints.
- **Technological Solutions:** Social media platforms should invest in technology and tools to combat the spread of disinformation, such as **fact-checking mechanisms, content moderation algorithms, and user-friendly reporting systems**. They should also prioritize algorithmic transparency and fairness to mitigate the risk of filter bubbles and echo chambers.
- **Collaborative Efforts:** Addressing the challenges of so-

cial media requires collaboration **among governments, civil society organizations, academia, and technology companies**. Multi-stakeholder initiatives should foster dialogue, share best practices, and develop innovative solutions to promote digital democracy and protect civic space online.

- **Promoting Digital Inclusion:** Efforts to bridge the digital divide and promote digital inclusion are crucial to ensure that all individuals have equal access to information and opportunities for political participation. Governments, NGOs, and private sector partners should invest in infrastructure, affordability, and digital literacy programs to close the gap in access to technology and internet connectivity.
- **Protecting Human Rights:** Upholding human rights, including freedom of expression, privacy, and non-discrimination, is fundamental to safeguarding democracy in the digital age. Governments and social media platforms should respect and protect these rights while addressing online harms and promoting responsible online behavior.

## THE USE OF PARADIPLOMACY

### CONTEXT



Recently, Shiromani Akali Dal party in Punjab state has released its manifesto, in which it has argued to exchange the territory of kartarpur sahib with pakistan and to increase economic engagement in both the punjabs.

This is an example of paradiplomacy where sub-state actors want to interact with foreign countries to build peace and to engage economically with the region. C. Rajamohan has argued in an article written in Indian express that, paradiplomacy can be an effective tool for building cordial relations with pakistan and to strengthen regional connectivity.

In this article we will see how paradiplomacy can be an effective tool for South Asian region, the larger context of India- pakistan relations and what can be the policy of India

to reduce tensions in the region.

### WHAT IS PARADIPLOMACY?

Paradiplomacy refers to the diplomatic activities conducted by **subnational entities, such as states, regions, provinces, or cities, on the international stage**. While traditionally diplomacy was conducted exclusively by national governments, paradiplomacy has gained prominence as subnational entities seek to engage directly with other countries, international organizations, and other subnational entities.

Paradiplomacy can take various forms, including **trade missions, cultural exchanges, economic cooperation agreements, and environmental initiatives**. The case of building a transboundary economic zone in the SAD manifesto is an example. It allows subnational entities to pursue their own foreign policy objectives, often in areas such as economic development, tourism promotion, and environmental protection.

This phenomenon has become increasingly common in recent decades as **globalization has empowered subnational actors to engage directly with the international community**. Paradiplomacy can complement national diplomacy by fostering international cooperation and facilitating the exchange of knowledge and best practices between subnational entities around the world.

### HOW PARADIPLOMACY CAN BE USED IN CASE OF PAKISTAN

India could potentially use paradiplomacy as a strategy to enhance relations with Pakistan by engaging with subnational entities within Pakistan, such as provinces, cities, or regions. Here are some ways in which India could utilize paradiplomacy in its relations with Pakistan:

- **Cultural Exchanges:** Facilitating cultural exchanges between Indian states and Pakistani provinces can help build people-to-people ties and promote understanding between the two countries for example kartpur sahib corridor. This could involve organizing events such as art exhibitions, film festivals, or cultural performances.
- **Trade and Economic Cooperation:** Indian states and Pakistani provinces could explore opportunities for trade and economic cooperation at the subnational level. This will increase the **economic interdependence and prosperity** in the region which can lead to initiation of peace talks This could involve establishing trade missions, organizing business delegations, and signing economic cooperation agreements to promote bilateral trade and investment.
- **Tourism Promotion:** Encouraging tourism exchanges between Indian states and Pakistani provinces can

help boost cross-border tourism and promote greater interaction between the people of both countries. This could involve promoting tourist destinations( eg,. kar-tarpur), organizing joint tourism campaigns, and facilitating **visa liberalization** for tourists.

- **Environmental Initiatives:** As South Asia is most vulnerable to environment and pollution problems. Collaboration on environmental initiatives such as water management, climate change mitigation, and renewable energy projects can provide common ground for cooperation between Indian states and Pakistani provinces. This could involve sharing best practices, conducting joint research projects, and implementing collaborative environmental projects.
- **Education and Academic Exchange:** Promoting education and academic exchange programs between universities and research institutions in Indian states and Pakistani provinces can help foster intellectual exchange and cooperation between the two countries. This could involve facilitating student exchanges, joint research projects, and academic conferences.
- **People to people connect:** South Asia is an **Indo-centric region** i.e. all the neighboring countries share commonality with India because they are part of the common Indic civilization . That's why paradiplomacy can open the gate for more people traveling across the border which can strengthen the people to people connect which can build a positive narrative for India.

#### OTHER CHALLENGES IN IND-PAK RELATIONS

India-Pakistan relations face numerous challenges, rooted in historical, political, and strategic factors. Some of the key challenges include:

- **Kashmir Dispute:** The longstanding dispute over the region of Kashmir remains a central issue in India-Pakistan relations. Both countries claim Kashmir in its entirety and have fought multiple wars and engaged in numerous skirmishes over the region.
- **Terrorism and Cross-Border Violence:** Pakistan's alleged support for militant groups operating in Indian-administered Kashmir, as well as terrorist attacks on Indian soil, have strained relations between the two countries. India accuses Pakistan of sponsoring terrorism, while Pakistan denies these allegations.
- **Water Disputes:** The sharing of water resources, particularly the Indus River system governed by the Indus Waters Treaty, has been a contentious issue between India and Pakistan. Disputes over water usage and hydroelectric projects have periodically escalated tensions between the two countries.

- **Nuclear Rivalry:** India and Pakistan are both nuclear-armed states, and their nuclear capabilities add a dangerous dimension to their rivalry. The threat of nuclear escalation further complicates efforts to resolve bilateral disputes and maintain stability in the region.
- **Cross-Border Incidents and Ceasefire Violations:** Incidents along the Line of Control (LoC) in Kashmir and other border areas, including ceasefire violations and skirmishes between the two countries' armed forces, frequently occur and escalate tensions.
- **Lack of Trust and Communication:** Decades of conflict, mistrust, and unresolved disputes have eroded trust between India and Pakistan. The absence of sustained diplomatic dialogue and communication channels exacerbates tensions and limits opportunities for conflict resolution.
- **Regional Influence and Strategic Competition:** India and Pakistan engage in strategic competition not only in South Asia but also in the broader region. Their rivalry affects regional dynamics and complicates efforts to address common challenges such as terrorism, extremism, and economic development.
- **Domestic Politics and Nationalism:** Domestic political considerations, nationalist sentiments, and public opinion in both countries often shape the rhetoric and policies of their respective governments, making it difficult to pursue conciliatory measures or compromise.

#### WAY FORWARD

Moving forward in India-Pakistan relations requires a combination of diplomatic, political, and confidence-building measures aimed at addressing core issues, promoting dialogue, and fostering cooperation. Here are some potential ways forward:

- **Resumption of Dialogue:** Both countries should prioritize the resumption of bilateral dialogue at various levels, including high-level talks between government officials, Track II diplomacy involving non-governmental actors, and people-to-people exchanges. A sustained and uninterrupted dialogue process is essential for building trust and addressing contentious issues.
- **Conflict Resolution Mechanisms:** Establishing and strengthening mechanisms for conflict resolution and crisis management can help prevent escalation during times of tension. This could include hotlines between military and diplomatic authorities, protocols for managing cross-border incidents, and confidence-building measures along the Line of Control in Kashmir.
- **Addressing Core Disputes:** Both countries should demonstrate political will and flexibility in addressing

core disputes, particularly the Kashmir issue. While a comprehensive resolution may be challenging, confidence-building measures, such as cross-border trade and travel facilitation in Kashmir, can help create a conducive environment for dialogue.

- **Terrorism and Cross-Border Violence:** Pakistan must take concrete action to dismantle terrorist networks operating on its soil and prevent cross-border infiltration into India. Enhanced cooperation on counterterrorism efforts, intelligence sharing, and joint operations against terrorist groups can help address mutual security concerns and build trust.
- **Trade and Economic Cooperation:** Promoting trade and economic cooperation can provide mutual benefits and create incentives for peaceful relations. Both countries should explore opportunities for enhancing bilateral trade, removing trade barriers, and investing in cross-border infrastructure projects to boost economic interdependence and stability in the region.
- **Water Diplomacy:** Addressing water disputes through dialogue, cooperation, and adherence to existing agreements such as the Indus Waters Treaty is crucial for ensuring sustainable management of shared water resources. Both countries should refrain from unilateral actions that could jeopardize water security and escalate tensions.
- **Track II Diplomacy and Public Diplomacy:** Track II diplomacy involving non-governmental actors, academics, and civil society can complement official efforts by fostering informal dialogue, generating creative solutions to longstanding issues, and building bridges between communities. Public diplomacy initiatives, such as cultural exchanges, sports diplomacy, and youth engagement programs, can help promote understanding and goodwill among the people of both countries.
- **Regional Cooperation:** India and Pakistan should explore opportunities for regional cooperation and engagement within South Asia. Platforms such as the South Asian Association for Regional Cooperation (SAARC) provide avenues for addressing common challenges, promoting economic integration, and building trust among neighboring countries

## LOW URBAN VOTER TURNOUT

### Why in the News?

After the recently concluded Fifth phase of Lok Sabha elections, The Election Commission (EC) mentioned in a statement that parliamentary constituencies in cities like **Mumbai, Thane, Nashik, and Lucknow** have maintained

the pattern of **urban voter indifference** observed in 2019.

### WHAT IS “URBAN APATHY”?

- In the context of elections, “**urban apathy**” refers to the disinterest or lack of engagement among city dwellers in the voting process. Low voter turnout in urban areas signals a widespread sense of indifference or disillusionment with the political system and voting.
- This issue is particularly troubling as it can result in the underrepresentation of urban perspectives in the democratic process and affect the legitimacy and effectiveness of elections in urban districts.



### REASONS FOR URBAN APATHY

- **Urban Apathy:** Urban voters exhibit a noticeable lack of enthusiasm and engagement, often termed “urban apathy.” Many city residents feel disconnected from the political process and doubt the impact of their vote.
- **Depoliticisation and Informality:** The politically disengaged environment in cities and the widespread informal employment sectors hinder individuals from engaging with urban issues and politics, leading to a disinterest in voting.
- **Anonymity and Disconnection:** The prevalent anonymity and disconnection in large cities foster a sense of alienation, reducing individuals’ sense of belonging and motivation to participate in elections.
- **Voter List Issues:** Issues like improper deletions, duplicate entries, and incorrect polling booth registrations due to migration and inter-city movement cause confusion and frustration among urban voters.
- **Apathetic Candidates:** Many urban voters, particularly from the middle class and younger generations, struggle to relate to candidates who are often feudal lords, have criminal backgrounds, or are celebrities with limited political knowledge.
- **Prioritising Work:** Daily wage earners and profession-

als frequently prioritise work over voting, even on polling holidays, due to the financial impact of taking time off.

- **Lack of Awareness:** Insufficient knowledge about the electoral process and the significance of voting also contributes to the low voter turnout in urban areas.
- **Climate change and Heat waves:** Lok Sabha elections generally take place during peak summertime, and excessive heat reduces voter turnout.

#### IMPACT OF LOWER VOTER TURNOUT

- **Skewed Representation:** When urban voters, who make up a substantial part of the electorate, do not participate in elections, urban issues and concerns become underrepresented in the political process. This can result in policies and decisions that fail to adequately address urban citizens' needs and aspirations.
- **Altered Electoral Dynamics:** Low turnout among urban voters can shift the balance of power between political parties and candidates. In closely contested elections, the absence of urban voters can tip the scales in favour of other demographic groups or regions with higher voter participation, leading to outcomes that may not reflect the true preferences of the entire electorate.
- **Weakened Accountability:** Urban apathy diminishes the pressure on elected officials to address urban issues and fulfil their promises. When urban voters are disengaged, politicians may feel less obligated to prioritise urban development and responsive governance, weakening the accountability mechanism between citizens and their elected leaders.
- **Perpetuation of Urban Neglect:** The lack of political representation and influence from urban voters can lead to ongoing urban neglect, where cities receive disproportionately lower investments in infrastructure, public services, and social welfare compared to rural areas. This exacerbates urban problems and widens the urban-rural divide.
- **Erosion of Democratic Legitimacy:** High levels of urban apathy can cast doubt on the legitimacy and representativeness of elected governments. When a significant portion of the urban population remains disengaged from the electoral process, it undermines the democratic principle of inclusive participation. It can lead to a crisis of confidence in the political system.

#### INITIATIVES TAKEN BY THE ELECTION COMMISSION TO IMPROVE VOTER TURNOUT

**Targeted Outreach and Communication:** The ECI has crafted specialised outreach programs tailored to urban con-

stituencies' distinct needs and demographics. Under the Systematic Voters' Education and Electoral Participation (SVEEP) program, innovative voter awareness campaigns are being implemented, including:

- Collaborations with public and private sector organisations on a pro-bono basis.
- Advocacy and partnerships with celebrities to boost voter engagement.

**Facilitation at Polling Stations:** The ECI is improving queue management at polling stations in urban areas to make voting more convenient. Measures are being taken to facilitate voting in high-rise buildings and congested areas by providing shelter and parking.

**Stakeholder Involvement:** The ECI actively engages resident welfare associations (RWAs), local icons, and youth influencers to encourage urban voter participation. Municipal Commissioners and District Election Officers (DEOs) are being urged to develop targeted strategies for urban areas and plan interventions accordingly for different target audiences.

**Identifying and addressing Challenges at the local level:** The ECI has convened meetings with Municipal Commissioners from major cities to identify urban-specific challenges to increasing voter turnout and to develop strategies for enhancing voter engagement. Booth-wise action plans for greater participation and behaviour change are being prepared in collaboration with Municipal Commissioners and DEOs.

**Establishing Polling Stations in Housing Societies:** To increase voter turnout, the Election Commission has established over 200 polling stations within housing societies in urban areas of Uttar Pradesh. This initiative focuses on urban areas with historically low voter participation, aiming to make voting more accessible for residents in gated communities and multi-storey housing complexes.

#### ONLINE VOTING AS AN EFFECTIVE ALTERNATIVE?

- **Convenience and Accessibility:** Online voting enhances convenience and accessibility by allowing individuals to vote from any location with internet access, eliminating barriers such as transportation issues or limited polling station hours.
- **Targeting Young Voters:** Online voting effectively engages younger generations who are more comfortable with digital technologies. Research indicates that it can significantly boost turnout among younger voters.
- **Sense of Belonging:** Personalized messages that emphasise the importance of individual participation can foster a sense of belonging and community, encourag-



ing voter turnout.

Despite these benefits, the overall impact of online voting on turnout is mixed. While it improves convenience and accessibility, it is unlikely to engage those already disinterested in politics significantly. Factors such as the importance of the election, the competitiveness of candidates, and the political climate have a more substantial influence on voter turnout.

### MAINS BASED QUESTION

**Q1. Discuss the impact of low urban voter turnout on electoral dynamics and the potential consequences for political representation and accountability.**

**Explain how paradiplomacy can be used as a tool to strengthen regional connectivity in South Asia.**

## INTERNATIONAL RELATIONS

### AMBITIOUS CHINA'S FOOD SECURITY PLAN TO DEAL WITH SOIL, LAND, AND WATER MENACE"

#### WHY IN THE NEWS

China has developed plan to feed nearly 20% of the global population with less than 9% of its arable land and 6% of its water resources. China targeted 92% **self-sufficiency** in staple grains and beans by 2033, up from 84% during 2021-2023, as food security has long been a priority for China because has a painful history of **famine**.

#### WHAT IS FOOD SECURITY?

Food security refers to a condition where every person has reliable access to a sufficient quantity of affordable, nutritious food. Food security also includes resilience to potential disruptions in food supply caused by various risk factors such as droughts, floods, economic instability, or conflicts.

#### REASONS WHY CHINA HAS PLANNED TO BECOME SELF-SUFFICIENT :

- China is the world's biggest agriculture importer, especially in **soybeans, meat, and grains**.
- Reducing the influx of imports could negatively impact producers spanning from the United States to Brazil and Indonesia. These producers have significantly ramped up their capacities to cater to the needs of China's vast population of 1.4 billion individuals, which represents the world's largest consumer market for

commodities such as soybeans, meat, and grains.

- With limited arable land, soil quality and water are degraded.
- In China, the average farm size stands at 0.65 hectares, a stark contrast to the significantly larger scales seen in the U.S. at 187 hectares and Germany at 60 hectares. China is in the process of transitioning towards consolidating its fragmented farming operations.
- The imperative to reduce reliance on imports intensified following supply chain disruptions experienced by the national conflict between Russia and Ukraine. and during the COVID-19 pandemic.
- The escalation of trade tensions with the United States, China's second-largest agricultural supplier after Brazil, coupled with climate-related challenges like the significant rainfall last year that adversely affected China's wheat harvest, have further compounded the existing challenges.

#### CHALLENGES TO BECOME SELF-SUFFICIENT IN FOOD SECURITY:

- **Limited arable land:** China has only 7% of the world's arable land to feed 20% of the global population. This land scarcity makes it difficult to significantly boost domestic food production.
- **Declining food self-sufficiency rate:** China's food self-sufficiency rate has fallen from 93.6% in 2000 to 65.8% in 2020, and is expected to further decline to

58.8% by 2030. This widening gap between domestic production and consumption requires increasing reliance on imports.

- **Low agricultural productivity:** China lags behind major food exporters like the US, Canada and Australia in terms of crop yields and production efficiency. For example, the average cost of soybean production in China is 1.3 times higher than the US, while yields are less than 60% of US levels.
- **Degradation of farmland:** Around 30% of China's farmland suffers from soil erosion, while an additional 40% is at risk of desertification. Extreme Climatic events like floods, droughts and heatwaves have also led to significant crop losses in recent years.
- **Rapid urbanisation and loss of arable land:** The conversion of farmland to urban and industrial uses has accelerated, with 24.72% of cropland loss occurring in major grain-producing regions over the past three decades. This threatens the sustainability of domestic food production.
- **Structural imbalances:** China's self-sufficiency policy has focused more on boosting grain output rather than meeting evolving dietary preferences for higher-value foods like meat and dairy. This has led to widening imbalances between domestic production and consumer demand.
- **Environmental unsustainability:** Intensive farming practices relying heavily on chemical inputs have enabled China to maximise grain production on limited land.
- **Expansion in production faces constraints** stemming from limited arable land, small-scale production, and shortages in both skilled farmers and advanced agricultural technology.
- According to the **Soil Survey** conducted in 2014, it was revealed that 40% of China's arable land suffered from degradation caused by excessive chemical usage and contamination by heavy metals.
- **Fragmented farmland:** A significant challenge lies in China's prevalence of small-scale farms, typically managed by elderly owners who may lack the financial means or the expertise to utilise modern machinery like drone sprayers, advanced seed varieties for enhanced productivity, and new technological innovations such as big data analytics and artificial intelligence.

#### GOVERNMENT INITIATIVE TO BECOME MORE SELF-SUFFICIENT IN FOOD PRODUCTION BY 2033:

- **Increasing grain self-sufficiency:** China aims to grow 90% of its grain, including rice, wheat, corn, and soybeans, by 2032. This involves raising the self-sufficiency ratio of oil crops like soybeans from 32% in 2023 to 43.8% by 2033. Increasing grain production by a minimum of 50 million tons by the year 2030. This effort underscores a focus on enhancing agricultural land, along with substantial investments in seed technology to bolster both crop yields and quality.
- **Reducing grain imports:** China plans to reduce annual grain imports from 146.9 million metric tons in 2022 to 122 million metric tons by 2032. This will help consolidate the foundation of grain security.
- **Boosting domestic soybean production:** China is focusing on increasing domestic soybean production to reduce reliance on imports, which currently account for over 60% of global soybean trade. This includes bringing American agricultural expertise to Chinese farmers.
- **Improving crop yields:** China is working to increase crop yields through technological breakthroughs and practical applications on farmland. However, low agricultural productivity compared to major exporters like the US remains a challenge.
- **Protecting arable land:** The government has pledged to ensure China has at least 120 million hectares of arable land[2]. A draft law aims to restrict the conversion of farmland to other uses. However, encroachment and conversion of arable land for development continue to be an issue.
- **Increasing rice exports:** China plans to increase rice exports by 24% over the next decade. This diversification of export markets could impact major rice exporters like Thailand.
- **Diversifying import sources:** China is seeking to reduce reliance on the US and Ukraine for corn imports by sourcing from more diverse suppliers like Brazil and South Africa. Imports accounted for 7.4% of China's corn consumption in 2022.
- **Transformation of land for cultivation purposes:** With initiatives focused on transforming sandy terrain into arable soil and cultivating crops tolerant to saline conditions, China seeks to expand its agricultural land. However, industry experts caution that this strategy will require substantial time and investment in fertilisers, irrigation systems, and biotechnology.
- **Consolidation of fragmented land:** The average farm size is 0.65 hectares, in stark contrast to the significantly larger scales seen in the U.S. at 187 hectares and Germany at 60 hectares. China is in the process of

gradually consolidating its fragmented farms.

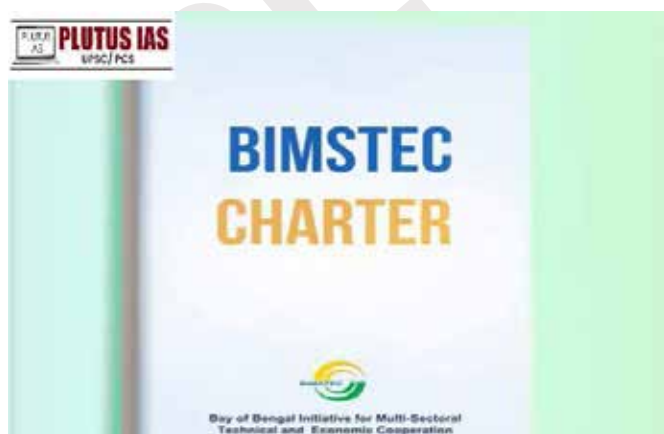
## BIMSTEC ACHIEVED "LEGAL PERSONALITY" STATUS

### Why in the News?

Recently, The BIMSTEC Charter came into force, which was adopted by BIMSTEC leaders at the 5th summit held on 22 May 2022 in Colombo. Implementing the **Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation (BIMSTEC) charter** marks a pivotal development, enabling the organization to welcome new members and observers.

### SIGNIFICANCE OF CHARTER

- The **charter confers legal status on BIMSTEC**, allowing it to enter into agreements with countries as well as sub-regional, regional, and international organizations and institutions.
- This legal framework strengthens the organization's ability to promote deeper integration, meaningful cooperation, and shared prosperity among member states.
- Furthermore, the Charter embodies its members' collective history, culture, vision, and mutual respect, supporting India's Neighbourhood First and Act East policies.
- The implementation of the BIMSTEC Charter marks a significant step toward enhancing regional cooperation, economic integration, and peace and stability in the Bay of Bengal region. It highlights the member states' dedication to achieving common goals and mutual prosperity.



### KEY COMPONENTS OF THE CHARTER

#### Trade, Investment and Development:

- Sub-sector: Blue Economy

#### Environment and Climate Change:

- Sub-sector: Mountain Economy

#### Security:

- Sub-sectors: Counter-Terrorism and Transnational Crime, Disaster Management, Energy

#### Agriculture and Food Security:

- Sub-sectors: Agriculture, Fisheries & Livestock

#### People-to-People Contact:

- Sub-sectors: Culture, Tourism, Poverty Alleviation, People-to-People Contact

#### Science, Technology, and Innovation:

- Sub-sectors: Technology, Health, Human Resource Development

#### Connectivity

#### ABOUT BIMSTEC

- BIMSTEC, or the Bay of Bengal Initiative for Multi-Sectoral Technical and Economic Cooperation, is a regional multilateral organization comprising seven countries in the Bay of Bengal region.
- **Member countries:** Bangladesh, Bhutan, India, Myanmar, Nepal, Sri Lanka, and Thailand.
- **Established in 1997 through the Bangkok Declaration**, the organization initially used the acronym BIST-EC (Bangladesh, India, Sri Lanka, and Thailand Economic Cooperation). It was renamed BIMST-EC in 1997 following the inclusion of Myanmar, and eventually became BIMSTEC in 2004 when Nepal and Bhutan joined.

#### POTENTIAL BENEFITS OF NEW MEMBERS JOINING THE BIMSTEC

- **Enhanced Regional Representation:** Adding new members can broaden BIMSTEC's geographic scope, enabling it to represent more countries in the Bay of Bengal region. This expansion can increase the organization's legitimacy and influence in both regional and global forums.
- **Increased Economic Potential:** The inclusion of new members can introduce additional economic resources, markets, and investment opportunities, potentially driving regional economic growth and development. With a current combined GDP of \$3.6 trillion, BIMSTEC is already an economic force, and new members could

further boost its economic power.

- **Diversified Expertise and Resources:** New members can offer their unique expertise, resources, and experiences, enhancing BIMSTEC's ability to tackle regional challenges and opportunities. This diversity can lead to more effective and sustainable cooperation in various sectors such as security, connectivity, trade, agriculture, environment, science and technology, and cultural exchanges.
- **Strengthened Regional Integration:** The inclusion of new members can promote deeper regional integration by increasing economic interdependence, cultural exchanges, and people-to-people connections among member states. This can create a more cohesive and stable region that is better equipped to address shared challenges and opportunities.
- **Enhanced Global Influence:** A stronger and more diverse BIMSTEC can present a united and influential presence in global forums, allowing the organization to more effectively advocate for the interests of its member states and shape the global agenda.
- **Increased Opportunities for Cooperation:** The entry of new members can introduce fresh perspectives and ideas, leading to new areas of cooperation and collaboration. This can help BIMSTEC remain relevant and dynamic, effectively responding to emerging challenges and opportunities in the region.
- **Support to Least Developed and Land-Locked Countries:** By admitting new members, especially the least developed and land-locked countries, BIMSTEC can provide them with access to technical assistance, capacity building, and economic opportunities, aiding their development and promoting greater regional equity.

#### WHY HAS INDIA SHIFTED ITS FOCUS FROM SAARC TO BIMSTEC?

- **Indo-Pak rivalry:** SAARC has been hampered by the ongoing India-Pakistan rivalry, with Pakistan frequently blocking key initiatives. In contrast, BIMSTEC, which excludes Pakistan, offers a more favourable platform for regional collaboration.
- **Alignment with India's foreign policy:** BIMSTEC supports India's "Neighborhood First" and "Act East" policies, facilitating engagement with countries in the Bay of Bengal region and fostering connections with ASEAN. This maritime focus complements India's continental strategy in South Asia.
- **Geographical advantages:** BIMSTEC provides India with opportunities to utilize its geographical advantage

to promote connectivity projects in the northeastern states and with Myanmar and Thailand, potentially unlocking the region's economic potential.

- **Sidelining Bilateral rivalry:** India has also used BIMSTEC to sideline Pakistan diplomatically, such as by boycotting the 2016 SAARC summit in Islamabad and inviting BIMSTEC leaders to Prime Minister Modi's 2019 swearing-in ceremony, avoiding the need to invite Pakistan.
- **Sector specific cooperation:** BIMSTEC's agenda is more focused on specific sectors like trade, investment, connectivity, security, and cultural exchanges, compared to SAARC's broader scope, leading to more tangible results.
- **Cordial and peaceful relations:** BIMSTEC member states generally maintain cordial relationships, unlike the often tense dynamics within SAARC, creating a more conducive environment for cooperation.

#### CHALLENGES FOR BIMSTEC AS AN ORGANIZATION

- **Leadership deficit and lack of commitment:** There are concerns about the lack of enthusiastic engagement from key stakeholders such as India, Thailand, and Myanmar in advancing BIMSTEC initiatives. It is speculated that these countries may prefer to strengthen their ties with ASEAN rather than commit fully to BIMSTEC's development.
- **Weak Institutions:** BIMSTEC has struggled with a lack of a proper Charter and vision documents, resulting in considerable flexibility in its processes. The establishment of a Permanent Secretariat took 17 years, highlighting institutional weaknesses that impede effective cooperation and integration.
- **Limited Progress and Inactivity:** BIMSTEC has been criticized for its slow progress and inactivity, which has been marked by significant delays between summits and a lack of regular high-level meetings. This sluggish pace has limited the organization's ability to achieve tangible outcomes and effectively promote economic integration. There are only 5 High level summits in the last 25 years.
- **Divergent National Priorities:** The varying economic needs and priorities of BIMSTEC member states present challenges in aligning their interests toward greater economic interdependence. Differences in national policies, such as India's ban on Chinese apps, can create obstacles in cybersecurity cooperation and regional economic integration.
- **Security Concerns:** Differing security concerns and apparatuses among member states pose challenges to

developing a unified security framework within BIMSTEC. Without a shared vision of a stable global order and common security norms, progress in economic integration and other sectors may be slow and incremental.

- **Limited Funding:** BIMSTEC operates on a modest budget of approximately US\$200,000, which is a persistent concern. Adequate funding is crucial for the organization to effectively implement projects and programs and achieve its objectives of regional economic integration.

#### WAY FORWARD FOR INDIA

- **Strengthening the BIMSTEC Secretariat:** Increasing the human and financial resources for the BIMSTEC Secretariat can actively advance the organization's objectives.
- **Focus on Connectivity and Infrastructure:** Emphasizing sustained physical connectivity and high-quality infrastructure is essential to facilitate greater regional movement of goods, services, and people.
- **India's Leadership Role:** India's leadership can enhance cooperation in sectors such as transport and communication, tourism, environmental and disaster management, and combating terrorism and transnational crime.
- **Countering China's Influence:** BIMSTEC offers India a platform to counter China's expanding influence in the region, particularly through infrastructure initiatives like the Belt and Road Initiative (BRI). Strengthening BIMSTEC can help balance China's presence.

### WHY HAVE AFRICAN COUNTRIES BEEN CONTINUOUSLY EXPERIENCING COUP ATTEMPTS?"

#### WHY IN THE NEWS?

DR Congo's Army thwarted a coup attempt that led to the three deaths and arrest of the perpetrators, including several foreigners, following attacks on the presidential palace.

#### MORE ABOUT THE NEWS:

- The coup attempt occurred amid a political crisis that gripped **President Félix Tshisekedi's** ruling party. The crisis revolved around an election for the leadership of parliament, initially slated for 18 May 2024 but subsequently deferred.
- The attempt was blamed on forces loyal to opposition politician **Christian Malanga**, the self-exiled leader of

the United Congolese Party who was killed during the attempt.

- The attackers were members of the Congolese military before it was found that they were linked to Christian Malanga, the self-exiled leader of the opposition **United Congolese Party**.



#### WHERE REPETITIVE COUPS HAVE BEEN EXPERIENCED BY AFRICAN COUNTRIES IN THE PAST DECADES:

- Coups have been observed in the following countries from the past century to till now. Here are some examples: Libya, Egypt and Tunisia in 2011, Burkina Faso in 2014 and 2022, Zimbabwe in 2017, Algeria and Sudan in 2019, Mali in 2020 and 2021, Guinea in 2021, Niger in 2023 and Gabon in 2023.

#### REASONS FOR THE REPETITIVE COUP IN AFRICA:

- **Failed to address the cause that led to the coup:** These coups have failed to address the circumstances that caused them by the governments that followed, which leads to further coups. Subsequent regimes often consolidate their hold on power through corruption and by sidelining their political opponents. Over time, the resulting increase in mass poverty leads to widespread political dissatisfaction. This political instability then triggers a coup, perpetuating the cycle.
- **Interference of foreign countries:** Foreign countries such as France and the USA interfere in their issues, which contribute to the instability of the **Sahel and West Africa region**. The presence of the at least 13 countries, including the UK, US, France,, Germany, Italy, Belgium, Japan, and India, have a 3 comilitary presence.
- **Unconstitutional changes of government:** The Accra Declaration on Unconstitutional Changes of Government in Africa mandates the African Union to denounce any form of unconstitutional government transition, such as coups and the distortion of democratic

procedures.

- Nevertheless, several African leaders have remained in power for extended periods by manipulating constitutional amendments, engaging in electoral fraud, and suppressing opposition. Countries where this has been evident include Equatorial Guinea, Cameroon, Uganda, the Republic of the Congo, Eritrea, Djibouti, and Rwanda.
- **Foreign Armies in Africa:** The Accra Declaration opposes 'foreign interference' in matters of peace and security, which includes financing coups and deploying mercenary forces to African states. Despite this, thirteen foreign countries maintain military bases on the continent, with over eleven bases situated in the Horn of Africa alone. The African Union's Peace and Security Council is tasked with promoting peace, security, and stability.
- Foreign armies often maintain their presence by aligning with sympathetic regimes, thereby expanding their influence without contributing to Africa's development or security. This dynamic is exploited by authoritarian leaders in Africa.
- **Who Pays the Piper Calls the Tune:** The obstacles to Africa's unity are largely due to ineffective leadership. In contrast to European unity, which followed the formation of well-established nations, African unity is hindered by the fact that the continent consists primarily of developing countries reliant on foreign assistance. This dependence not only perpetuates corruption but also undermines the ability of African governments to act independently.
- **The African Electoral Problem and Its Contribution to Coups:** The African Charter on Democracy, Elections, and Governance aims to foster democracy and encourage free and fair elections. However, electoral malpractice is rampant across Africa, with elections often plagued by fraud, discrimination, violence, and falsified votes.
- In nations with authoritarian histories or significant ethnic divisions, elections can be particularly tense. Poverty exacerbates the situation, making people vulnerable to vote buying and selling. Often, elections in Africa become tools for elites to secure power through intimidation, fraud, and manipulation of tribal and religious loyalties. Additionally, Western powers, in pursuit of their own interests, influence African elections, leading to the installation of puppet leaders who do not represent the popular will.
- **African Unity:** In 1963, Ghanaian president Kwame Nkrumah contended that Africa's challenges could only be addressed through genuine continental unity, rath-

er than sporadic actions and well-intentioned declarations. Guinean president Sékou Touré posed insightful questions about whether the success of other continents stemmed from shared customs, language, or economic systems. Touré argued that the true value of a larger community lies in the continuous coordination of its activities.

#### HOW TO REDUCE COUPS IN AFRICAN COUNTRIES?

Reducing the incidence of coups in African countries requires a multifaceted approach, addressing both immediate and systemic issues. Here are several strategies that could help:

- **Strengthen Democratic Institutions:** Ensuring robust, independent, and transparent institutions is crucial. This includes a fair judiciary, independent electoral commissions, and legislative solid bodies that can hold the executive accountable.
- **Promote Good Governance:** Leaders must adhere to principles of accountability, transparency, and the rule of law. Public officials should be held accountable for their actions, and Anti-corruption measures should be enforced.
- **Enhance Electoral Integrity:** Implementing free, fair, and transparent electoral processes can help legitimise governments. This involves preventing electoral fraud, ensuring equal access to media, and protecting the rights of all political parties to participate.
- **Foster Inclusive Politics:** Encouraging political inclusivity and participation from all societal groups can reduce grievances. This includes addressing ethnic, regional, and religious divides and promoting policies that reflect the diverse makeup of the population.
- **Support Economic Development:** Addressing poverty and unemployment can reduce the discontent that often fuels coups. Economic policies should focus on sustainable development, job creation, and equitable distribution of resources.
- **Strengthen Civil Society:** A vibrant civil society can provide a check on government power and advocate for the rights of citizens. Supporting NGOs, community organisations, and the media can help promote a more engaged and informed citizenry.
- **International Support and Cooperation:** The international community can play a role by providing support for democratic processes, offering development aid tied to good governance, and sanctioning regimes that come to power through coups.
- **Professionalize the Military:** Ensuring that the military

is apolitical and professional can prevent its involvement in politics. This includes appropriate training, fair compensation, and a clear separation between military and political roles.

- **Conflict Resolution Mechanisms:** Establishing effective conflict resolution and mediation mechanisms can address disputes before they escalate into coups. This involves both domestic and regional efforts to mediate conflicts and address grievances.
- **Education and Civic Awareness:** Educating citizens about their rights and the importance of democracy can foster a culture that resists undemocratic changes. Civic education programs can empower citizens to demand accountability and participate actively in governance.

**Reducing the Incidence of Coups in African Countries** Needs a Comprehensive Approach that Addresses the Underlying Political, Economic, and Social Factors Contributing to Instability. Strengthening Democratic Institutions, Promoting Good Governance, Ensuring Electoral Integrity, and Fostering Inclusive Politics are Essential Steps.

Additionally, supporting economic development, empowering civil society, and professionalising the military can create a more resilient and stable political environment. Through coordinated efforts within African nations and with the support of the international community, it is possible to build a foundation for lasting peace, stability, and democratic governance across the continent.

### PRELIMS QUESTION:

**Q1. As Global Warming leads to Climate Change, How does it affect the environment:**

1. Reduce soil fertility
2. Erratic rainfall
3. Food Insecurity
4. Loss of Biodiversity

**Which of the following statement/s is/are correct?**

- (a) 1,2 and 4 Only
- (b) 1,2 and 3 Only
- (c) 2,3 and 4 Only
- (d) All of the above.

**Answer: D**

**Q2. Consider the following statements about BIMSTEC:**

1. Nepal and Bhutan were the last to join BIMSTEC in 2004.
2. Defence cooperation is one of the major sectors of the

BIMSTEC charter.

**Choose the correct answer using the codes given below:**

- (a). 1 Only
- (b). 2 Only
- (c). Both 1 and 2
- (d). Neither 1 nor 2

**ANSWER: A**

**Q3. Which of the following strategies is NOT effective in reducing the likelihood of coups?**

1. Strengthening democratic institutions
2. Promoting electoral fraud
3. Enhancing electoral integrity
4. Supporting economic development

**ANSWER: B**

### MAINS QUESTIONS

**Q1. Critically analyse. How food security can be ensured when the world has been facing Climate Change.**

**Q2. How does the BIMSTEC Charter's legal framework contribute to the organization's goal of deeper regional integration and cooperation among its member states?**

**Q3. Why are African countries more vulnerable to the coup? Critically analyse.**

# HISTORY AND CULTURE

## SCHONINGEN STUDY REVEALS FORESIGHTS ABOUT PRIMITIVE HOMINID

A recent study from Shoningen, Germany has revealed the use of wood in technologically advanced tools which required skill and precision for development. This study reveals that primitive hominids too had the foresight for systematic planning and hunting.

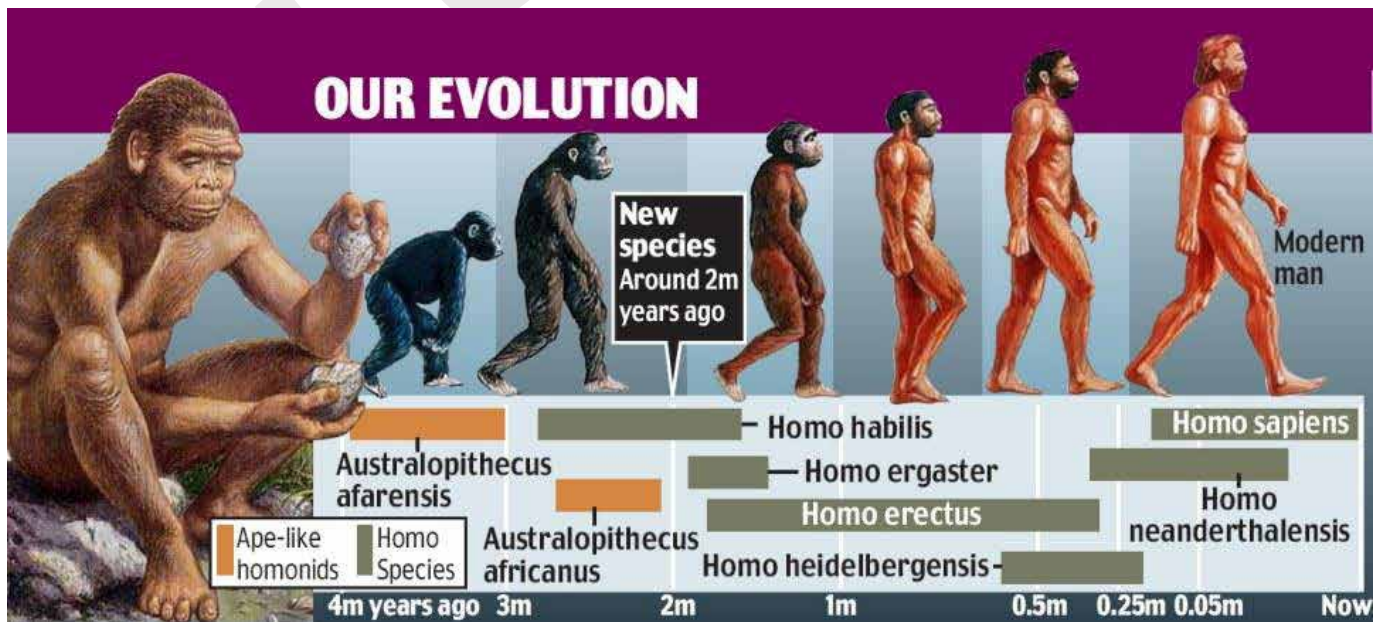
This can lead to revision of many existing theories which dates the systematic hunting much later development. It also shows a preservation bias towards the stone tools as they have been found in large numbers and wood deteriorates faster as compared to stone tools. But this study by Thomas Teberger shows that it does not mean that wooden tools could have been used at the same time as the stone tools.

### THE PERIODS IN STONE AGE

The Stone Age is typically divided into three main periods: the Paleolithic (Old Stone Age), the Mesolithic (Middle Stone Age), and the Neolithic (New Stone Age). Each period is characterized by distinct technological, social, and cultural developments.

- Paleolithic Period (Old Stone Age):
  - This period spans from about 2.5 million years ago to around 10,000 BCE.

- During this time, humans were primarily hunter-gatherers, relying on simple stone tools and weapons such as hand axes and spears.
- The Paleolithic is further subdivided into Lower, Middle, and Upper Paleolithic periods, each marked by advancements in tool-making and cultural development.
- Mesolithic Period (Middle Stone Age):
  - The Mesolithic period followed the Paleolithic and lasted from approximately 10,000 BCE to around 5,000 BCE.
  - It saw the development of more refined stone tools, as well as innovations such as the use of microliths (small stone tools) and the beginning of domestication of animals and plants.
  - Human societies during this period began to settle in more permanent locations, but still relied heavily on hunting and gathering for sustenance.
- Neolithic Period (New Stone Age):
  - The Neolithic period began around 10,000 BCE and lasted until the adoption of metal tools, marking the transition to the Bronze Age (varies by region, but generally around 3,000 BCE to 2,000 BCE).
  - It is characterized by the development of agriculture and animal domestication, leading to settled





communities and the establishment of the first agricultural societies.

- Pottery-making, weaving, and the construction of permanent dwellings were also significant advancements of the Neolithic period.

These periods represent significant milestones in human prehistory, marking the progression from early hominids using basic stone tools to more complex societies based on agriculture and animal husbandry.

### PROBLEMS IN STUDYING THESE TOOLS

Studying stone tools in archaeology is crucial for understanding human prehistory, but there are indeed some limitations and potential defects associated with this approach:

- **Preservation Bias:** As mentioned earlier, there's a preservation bias towards stone tools because they are more likely to survive in the archaeological record compared to organic materials like wood. This bias can lead to an incomplete understanding of past cultures and technologies, as wooden tools and other perishable artifacts may have decayed over time.
- **Selective Deposition:** The deposition of stone tools may not accurately represent their original use or significance within a society. Tools could be intentionally discarded or lost in specific contexts, leading to skewed interpretations if these contexts are not fully understood.
- **Limited Context:** Stone tools are often found out of their original context, making it difficult to determine their chronological or cultural associations accurately. Without contextual information, it's challenging to interpret the purpose, function, or social significance of these artifacts accurately.
- **Functional Interpretation:** While archaeologists can often determine the form and technology used to create stone tools, inferring their specific function or use can be challenging. Experimental archaeology and ethnoarchaeology can help bridge this gap by replicating tool-making techniques and observing their use in modern contexts.
- **Interpretive Bias:** Researchers may bring their own biases and preconceptions to the interpretation of stone tools, potentially leading to subjective interpretations. It's essential to approach archaeological evidence with open-mindedness and consider multiple hypotheses when interpreting stone tool assemblages.
- **Technological Advances:** The study of stone tools relies heavily on technological advancements in analy-

sis techniques. New methods, such as high-resolution imaging, geochemical analysis, and microscopic examination, continually improve our ability to understand stone tool production, use-wear patterns, and sourcing.

The findings from the Schöningen study contribute to our understanding of early human technology, hunting practices, and social behaviors during the Paleolithic period. They challenge previous assumptions about the sophistication of ancient tool-making and suggest that early hominids were capable of crafting complex wooden implements for hunting and other activities, further emphasizing the importance of considering a wide range of materials and evidence in archaeological research.

# ENVIRONMENT AND ECOLOGY

## “THE SUPREME COURT STAYED THE PROJECT IN THE “FRAGILE” KUMAON HIMALAYAS”

### WHY IN THE NEWS?

- The supreme stayed the project in the ecologically fragile and seismic-prone lower Himalayan ranges by temporarily staying the construction of a 90-acre hotel and township project in the Kumaon hills of Uttarakhand.

### ISSUES INVOLVED:

- The petition aimed to halt the initiation of commercial ventures in the State unless they obtained the necessary legal permissions and underwent a thorough **Environment Impact Assessment (EIA)** process.
- The petitioner posed the question to the court whether it is justifiable to overlook essential precautionary measures aimed at safeguarding a delicate eco-zone simply because a single window clearance has been acquired, particularly for a project located in the environmentally fragile and seismic-sensitive Kumaon Himalayas, situated at an elevation exceeding 6,700 feet above mean sea level.
- The petitioner cited a notification from September 14, 2006, which emphasised the necessity of obtaining prior environmental clearance before commencing any construction activities. The petitioner argued against granting **ex-post facto** approval, as it essentially legitimises actions already taken, leading to ecological disasters and should be strongly discouraged.
- The petitioner raised a significant legal query regarding the feasibility of substituting “**single window**” clearances for prior environmental clearances and the mandatory submission of approved building plans before initiating large-scale constructions like hotel projects in environmentally sensitive Uttarakhand.

### THE INDIAN HIMALAYAN REGION (IHR) FACES SEVERAL CRITICAL ISSUES THAT THREATEN ITS ENVIRONMENT AND ECOLOGY:

- **Environmental Degradation and Deforestation:** Extensive deforestation in the IHR disrupts the delicate ecological balance, leading to habitat loss, soil erosion, and disrupted water flow. Rampant construction for infrastructure and urbanisation exacerbates these

challenges.

- **Climate Change and Disasters:** The IHR is highly sensitive to climate change, with reduced snowfall and rising temperatures altering the timing and availability of water resources. Erratic weather patterns and climatic shifts, including reduced snowfall and increased rainfall, increased rainfall intensity, and prolonged dry spells, further impact ecosystems and local communities that are prone to natural disasters like earthquakes, landslides, and flash floods, which are exacerbated by poorly planned development and inadequate early warning systems
- **Cultural and Indigenous Knowledge Erosion:** The IHR is home to diverse indigenous communities with unique knowledge. However, modernisation can lead to the erosion of these cultural traditions, which often contain valuable insights for sustainable development.
- **Fragile Mountain Environment:** Characterized by steep slopes, high seismic activity, and extreme weather conditions, the Himalayan region, including Kumaon, is inherently susceptible to natural disasters. This fragility leaves the environment prone to damage from both natural phenomena and human activities, posing significant risks to local populations.
- **Land Use Changes:** Rapid development projects, such as the construction of numerous hydropower projects in Kinnaur district, have led to extensive land use changes. These alterations, including deforestation and infrastructure development, contribute to heightened vulnerability by disrupting natural ecosystems that increase the more vulnerability of disasters like landslides and floods.
- **Socio-Economic and Cultural Shifts:** Post-independence development policies and socio-economic changes, including land reforms and horticulture promotion, have triggered profound shifts in the region’s socio-economic and cultural landscape. These changes have led to a decline in traditional knowledge systems and an increased perception of risk among local communities.
- **Hydropower Projects:** Mega hydropower projects are often driven by global institutions and local interests. These projects disproportionately impact marginalised communities and areas such as Moorang and Pooh in Kinnaur, heightening susceptibility to erosion and landslides, particularly in the vicinity of project sites. These

alterations, including deforestation and infrastructure development, contribute to heightened vulnerability by disrupting natural ecosystems and enhancing the risk of disasters like landslides and floods.

**A new version of the existing EIA Notification of 2006, The Draft Environment Impact Assessment (EIA) Notification, 2020, aims to streamline and strengthen the environmental clearance process in India. The draft notification introduces several significant changes, including post-facto approval, which allows projects that have started without obtaining prior environmental clearance to seek approval after commencement, and a departure from the existing notification where such projects were deemed illegal.**

**QUESTIONS RAISED ON THE DRAFT ENVIRONMENT IMPACT ASSESSMENT (EIA) NOTIFICATION, 2020 ON THE FOLLOWING GROUNDS :**

- **Reduced public consultation period:** Shortening the time period for public responses during public hearings from 30 days to 20 days, which could impact the effectiveness of public participation in the decision-making process
- **Changes in compliance reporting:** Requiring project proponents to submit compliance reports annually instead of every six months and allowing these reports to be prepared solely by the project proponents without oversight, which could lead to inaccurate information and reduced accountability
- **Exclusion of certain projects from public consultations:** The draft notification excludes a specific category of projects from the requirement of public consultations, raising concerns about transparency and public participation in decision-making for these projects
- **Consolidation of EIA rules:** The draft notification aims to consolidate existing EIA rules, potentially alleviating some ambiguity in the present law. However, it has been criticised for compromising on environmental sustainability principles, such as the precautionary principle, and for limiting public engagement in safeguarding the environment.

**The Draft EIA Notification 2020 represents a significant evolution in environmental governance in India, but its provisions have sparked debates among environmentalists, activists, and policymakers about the potential impacts on sustainable development and environmental protection.**

**SEVERAL CRUCIAL STEPS SHOULD BE TAKEN BY FOLLOWING THESE METHODS TO SAFEGUARD THE ECOLOGICAL FRAGILITY OF THE INDIAN HIMALAYAN REGION (IHR):**

- **Differentiated Environmental Impact Assessment**

**(EIA):** The Indian Himalayan Region requires its own EIA process tailored to its unique vulnerabilities and ecological significance. Currently, the region is not given special consideration in the existing EIA framework despite its distinct needs and fragility.

- **Graded Approach and Environmental Standards:** Implement a graded approach that considers the specific risks and ecological importance of the IHR. This includes setting differentiated environmental standards for projects in the region, taking into account its susceptibility to extreme weather conditions, seismic activity, and the impacts of climate change.
- **Inclusion of Local Communities:** Involve local communities in all stages of the EIA process, from screening to appraisal, to ensure their insights into the potential impacts of projects are considered. This can lead to more ecologically sound and socially responsible project decisions.
- **Ecosystem-Based Approaches:** Embrace ecosystem-based approaches to development in the IHR. Recognise that the region is not just a resource base but also plays a crucial role in maintaining regional and national ecosystems. Policies should prioritise the protection and sustainable use of these ecosystems.
- **Sustainable Tourism Development:** Promote sustainable tourism practices in the IHR to minimise environmental impact and preserve the region's ecological balance. This includes measures like using solar energy, promoting organic produce, waste recycling, and maintaining cleanliness to ensure tourism development aligns with ecological sustainability.

### PRELIMS QUESTION:

**Q1. Consider the following statements:**

1. Black carbon is one of the factors that cause the melting of ice in the Himalayas region.
2. Deep and steep terrain leads to Landslides in the Kumaon region.

**Which of the following statement/s is/are leading to loss of life and damage to the infrastructure?**

- (a) 1 Only
- (b) 2 Only
- (c) Both 1 and 2
- (d) Neither 1 nor 2

**Answer: C**

## MAINS BASED QUESTION:

**Q1. Why is Environmental impact assessment (EIA) not able to effectively address the natural disasters continuously occurring in the “Fragile” ecosystem across the country? Critically analyse.**

# SCIENCE AND TECHNOLOGY

## MOLECULE WHICH CAN SOLVE THE VENUS MYSTERY

### CONTEXT

Human being's curiosity to know the unknown is the sole reason for which we launch so many space missions to explore outer space. The urge to find habitable conditions outside earth is a fascinating topic of research in astrophysics which drives space research organizations to spend so much time and money.

Recently, a study published in a nature journal in which scientists have found deeper insights about the water loss in the Venus atmosphere. Also there is a molecule which could have led to faster drying of the oceans on the venus.

This study is significant to analyze and understand the atmosphere of other planets of solar systems and exoplanets. This can also provide insights about the evolution of the planets and their atmosphere which can be helpful for the future missions for space exploration.

### REASON FOR LOSS OF WATER ON VENUS

The **thermal process**, known as **hydrodynamic escape**, describes how the Sun's heat caused Venus's outer atmosphere to expand, allowing hydrogen gas to escape into space. This phenomenon likely occurred until around 2.5 billion years ago, when the outer atmosphere cooled sufficiently.

On the other hand, **non-thermal processes** may have also played a role in water loss from Venus. These processes involve the interaction of water molecules with ultraviolet radiation from the Sun in Venus's ionosphere. This radiation can split water molecules into their constituent hydrogen and oxygen atoms, with the hydrogen escaping into space due to its low mass.

The exact rates at which these processes occurred, and their relative contributions to Venus's water loss, remain areas of active research and debate among scientists. Un-

derstanding the interplay between thermal and non-thermal processes is crucial for unraveling the history of Venus's water loss and its implications for the planet's evolution over time.

### FINDINGS OF THE STUDY

Dr. Cangi's research on the **formyl cation (HCO<sup>+</sup>)** sheds light on the mechanisms driving hydrogen escape in the atmospheres of both Mars and Venus.

On Mars, scientists have long recognized the role of HCO<sup>+</sup> molecules in facilitating hydrogen escape from the upper atmosphere. This positively charged molecule participates in a reaction known as the **dissociative recombination (DR) reaction**, where HCO<sup>+</sup> absorbs an electron and breaks down into carbon monoxide (CO) and a hydrogen atom (H). The energetic hydrogen atoms subsequently escape into space, contributing to the overall loss of hydrogen from the Martian atmosphere.

Given the similarities between the upper atmospheres of Mars and Venus, Dr. Cangi and her colleagues extended their research to model the same underlying reactions in Venus' ionosphere. They found that the HCO<sup>+</sup> dissociative recombination reaction occurs at an altitude of approximately 125 kilometers above Venus, above the clouds composed of sulfuric acid.

The formation of HCO<sup>+</sup> on Venus involves a carbon monoxide molecule (CO) losing an electron while absorbing a hydrogen atom, leading to the creation of the HCO<sup>+</sup> molecule. Subsequently, the DR reaction occurs, where HCO<sup>+</sup> absorbs an electron and dissociates into CO and a hydrogen atom, which then escape into space.

The researchers found **HCO<sup>+</sup> DR could have doubled the rate at which Venus lost water** by hydrogen escape. This means that the oceans on the Venus could have lasted longer.

### SIGNIFICANCE OF THIS STUDY

The study on the role of the formyl cation (HCO<sup>+</sup>) in driving hydrogen escape in the atmospheres of Mars and Venus

carries several significant implications:

- **Understanding Atmospheric Evolution:** By elucidating the mechanisms responsible for hydrogen escape in the atmospheres of Mars and Venus, this study contributes to our understanding of the long-term evolution of terrestrial planets. Hydrogen escape plays a crucial role in shaping the composition and dynamics of planetary atmospheres and water availability over geological timescales.
- **Comparative Planetary Science:** It provides valuable insights into the factors that govern atmospheric escape across different planetary environments. Identifying similarities and differences between these two planets enhances our understanding of the diverse outcomes of atmospheric evolution within our solar system.
- **Implications for Exoplanetary Research:** Serve as analogs for understanding similar processes occurring on exoplanets. The findings from this research can inform future studies of exoplanetary atmospheres and the potential habitability of distant worlds.
- **Planetary Habitability:** Hydrogen escape is one of the factors influencing the long-term habitability of terrestrial planets. Understanding the rates and mechanisms of hydrogen escape on Mars and Venus provides insights into the conditions that may support or inhibit the development and maintenance of life on Earth-like planets.
- **Applied Space Science:** Insights gained from this study can inform the design and interpretation of observations from spacecraft missions exploring Mars, Venus, and other planetary bodies within our solar system. Understanding atmospheric escape processes is crucial for planning and executing future missions to study planetary atmospheres.

### SIGNIFICANCE OF RESEARCH ON VENUS

Venus is indeed an intriguing subject of research for several reasons:

- **Understanding Planetary Evolution:** Venus is often referred to as Earth's sister planet due to its similar size, mass, and composition. However, it underwent a vastly different evolutionary path. Studying Venus helps scientists understand how terrestrial planets evolve under different conditions, such as atmospheric composition, greenhouse effects, and geological processes.
- **Greenhouse Effect and Climate Change:** Venus has a thick atmosphere composed mainly of carbon dioxide, which has led to a runaway greenhouse effect, result-

ing in surface temperatures exceeding 450°C (842°F). Studying Venus' extreme greenhouse effect helps scientists better understand the mechanisms behind climate change on Earth and other planets.

- **Atmospheric Dynamics:** Venus has a dense atmosphere with strong winds and complex cloud formations. Investigating the atmospheric dynamics of Venus provides insights into atmospheric circulation patterns, weather systems, and the behavior of greenhouse gasses in extreme conditions.
- **Volcanism and Tectonics:** Venus is geologically active, with evidence of past and possibly present volcanic activity and tectonic movements. By studying Venus' geology, scientists can gain insights into the processes shaping terrestrial planets and the factors influencing volcanic eruptions, crustal deformation, and planetary resurfacing.
- **Planetary Habitability:** Despite its inhospitable surface conditions, Venus may have had a more temperate climate in its past. Understanding the factors that led to Venus' transformation from a potentially habitable world to its current state provides valuable insights into the factors influencing planetary habitability and the search for life beyond Earth.
- **Comparative Planetology:** Comparative studies of Venus, Earth, and Mars help scientists understand the diversity of terrestrial planets within our solar system and the range of processes shaping their evolution. By comparing Venus to Earth and Mars, researchers can identify commonalities and differences that shed light on the fundamental principles governing planetary dynamics.
- **Space Exploration:** Venus presents unique challenges for space exploration due to its hostile surface conditions, including high temperatures, atmospheric pressure, and corrosive atmosphere. Developing technologies and mission strategies to explore Venus contributes to advancements in planetary exploration capabilities that can be applied to missions to other planets and moons in our solar system and beyond.

Understanding the dynamics of these reactions and the role of HCO<sup>+</sup> in driving hydrogen escape in Venus' atmosphere provides valuable insights into the processes shaping the evolution of Venus and its atmospheric composition over time. This research contributes to our broader understanding of planetary atmospheres and the factors influencing their dynamics and evolution.

# SOCIAL ISSUES

## MICRO, SMALL AND MEDIUM ENTERPRISES

### WHY IN THE NEWS?

Recently government has released an order demanding timely payments to MSME. This has once again revealed the gaps in knowledge about the structure as well as the everyday functioning of these enterprises.



### WHAT ARE MSMEs?

MSMEs, which stands for Micro, Small, and Medium Enterprises, are businesses categories based on their size and scale of operations. Here's a breakdown of each category:

- **Micro Enterprises:** These are the smallest entities, often run by a single individual or a small team. Micro enterprises typically have low investment in plants and machinery. In India, micro enterprises are defined as businesses with **investment in plant and machinery or equipment not exceeding Rs. 1 crore and turnover not exceeding Rs. 5 crores.**
- **Small Enterprises:** Small enterprises are slightly larger in scale compared to micro enterprises but still relatively small in terms of workforce and investment. They may have more employees and slightly higher investments in plant and machinery compared to micro enterprises. In India, small enterprises are defined as businesses with investment in plant and machinery or equipment between **Rs. 1 crore and Rs. 10 crores and turnover between Rs. 5 crores and Rs. 50 crores.**
- **Medium Enterprises:** Medium enterprises are larger than both micro and small enterprises. They have more employees and higher investments in plants and machinery. In India, medium enterprises are defined as businesses with investment in plant and machinery or equipment between **Rs. 10 crores and Rs. 50**

**crores and turnover between Rs. 50 crores and Rs. 250 crores.**

### THE MSME SECTOR IN INDIA

The Micro Small and Medium (MSME) sector in India is one of the most significant sectors which contributes to GDP growth, provides employment to crores of Indians and helps boost rural demand.

It substantiates **Gandhian vision of Self sufficiency emanating from a village based economy** by providing employment opportunities to people living in rural areas. Let's see why the MSME sector is significant for our country.

The MSME (Micro, Small, and Medium Enterprises) sector holds immense importance for India's economy due to several reasons:

- **Employment Generation:** MSMEs are significant contributors to employment generation in India, **particularly in rural and semi-urban areas.** They provide opportunities for self-employment as well as wage employment to almost 10.6 crore people, thereby contributing to **poverty alleviation and inclusive growth.**
- **Contribution to GDP:** The MSME sector contributes significantly to India's Gross Domestic Product (GDP). It accounts for about 38% of the country's GDP, showcasing its substantial economic contribution.
- **Promotion of Entrepreneurship:** MSMEs play a crucial role in fostering entrepreneurship by providing a platform for individuals to start their businesses with relatively low capital investment. This encourages innovation, creativity, and the development of new business ideas.
- **Balanced Regional Development:** MSMEs are dispersed across various regions of the country, including rural and backward areas. Their presence helps in promoting balanced regional development by creating economic opportunities outside of major urban centers.
- **Contribution to Exports:** MSMEs contribute significantly to India's export earnings, almost 50%. They manufacture a diverse range of **products, including handicrafts, textiles, engineering goods, and agro-products,** which are exported to international markets, thereby contributing to foreign exchange earnings.

- **Promotion of Inclusive Growth:** MSMEs provide opportunities for marginalized sections of society, including women, minorities, and disadvantaged groups, to participate in economic activities. As per data, 20% of MSMEs are owned by women entrepreneurs. This promotes inclusive growth and social development by reducing income disparities and fostering equitable access to opportunities.
- **Support for Large Industries:** MSMEs often act as suppliers and service providers to large industries, contributing to the overall industrial ecosystem. They play a crucial role in the supply chain by providing essential inputs, components, and services to larger enterprises.
- **Flexibility and Adaptability:** MSMEs are known for their flexibility and adaptability to changing market conditions. They can quickly respond to market demands, innovate new products, and adopt new technologies, thereby contributing to the overall dynamism of the economy.

#### CHALLENGES FACED BY MSMEs IN INDIA

MSMEs in India face several challenges, which can hinder their growth and sustainability. Some of the key challenges include:

- **Limited Access to Finance:** One of the most significant challenges for MSMEs is accessing finance. Many MSMEs lack collateral and credit history, making it difficult for them to secure loans from traditional financial institutions.
- **Inadequate Infrastructure:** Poor infrastructure, including transportation, power supply, and internet connectivity, poses challenges for MSMEs in terms of production, distribution, and accessing markets. Inadequate infrastructure **increases operational costs and reduces efficiency**, making it difficult for MSMEs to compete effectively.
- **Compliance Burden:** MSMEs in India face a complex regulatory environment with numerous compliance requirements related to taxation, labor laws, environmental regulations, and business licenses. Compliance can be time-consuming, costly, and confusing for small businesses, diverting resources away from core business activities.
- **Limited Market Access:** MSMEs often struggle to access domestic and international markets due to factors such as lack of marketing capabilities, limited market information, and stiff competition from larger firms. Limited market access constrains the growth potential of MSMEs and restricts their ability to scale up operations.

- **Technology Adoption and Innovation:** Many MSMEs in India operate with outdated technology and limited innovation. Because of less focus on R&D MSMEs are not able to do **Economies of Scale** which hinders their competitiveness and productivity
- **Skill Shortages:** MSMEs often face challenges in recruiting and retaining skilled employees due to competition from larger firms and limited training opportunities. Skill shortages can affect productivity, quality, and innovation within MSMEs, limiting their ability to grow and compete in the market.
- **Access to Markets:** MSMEs often struggle to access markets due to lack of market information, limited distribution networks, and challenges in reaching remote or rural areas. Access to markets is essential for MSMEs to sell their products and services and expand their customer base.
- **Vulnerability to Economic Shocks:** MSMEs are often more vulnerable to economic shocks such as fluctuations in raw material prices, changes in government policies, and market downturns. Lack of financial reserves, limited access to credit, and dependence on a few customers or suppliers can exacerbate the impact of economic shocks on MSMEs.

#### GOVERNMENT INITIATIVES TO STRENGTHEN MSME SECTOR

**Collateral-Free Loans**-The Government Started The Emergency Credit Line Guarantee Scheme (Eclgs) To Provide Collateral-Free Loans To Msmes During The Covid-19 Pandemic. As Of March 2023, Over ₹4.5 Lakh Crore Has Been Sanctioned Under The Scheme.credit Guarantee Scheme

**Credit Guarantee Fund Trust For Micro And Small Enterprises (Cgtmse)** Provides Collateral-Free Credit To Msmes. As Of March 2022, The Scheme Has Provided Guarantees For Over 1.5 Crore Loans Amounting To ₹2.5 Lakh Crore. udyam Registration Portal

The Government Launched The **Udyam Registration Portal** In July 2020 To Facilitate Easy Registration Of Msmes. As Of March 2023, Over 1 Crore Msmes Have Registered On The Portal.public Procurement Policy

The **Public Procurement Policy** Mandates That 25% Of Government Procurement Should Be From Msmes. As Of March 2022, Msmes Have Received Orders Worth Over ₹2.5 Lakh Crore Under This Policy.skill Development Initiatives

The government has launched several initiatives for skill development like the **Pradhan Mantri Kaushal Vikas Yojana (PMKVY)** to train and upskill MSME workers. Over 1 crore people have been trained under PMKVY as of March

2023.

These initiatives have helped in improving access to credit, promoting ease of doing business, and enhancing the competitiveness of the MSME sector in India.

Thus, seeing the importance of the MSME sector there is an imminent need for strengthening the MSME sector in India