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Daily News Analysis

The Hindu Important News Articles & Editorial For UPSC CSE

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Page 01 : GS 3 : Science and Technology

Prime Minister Narendra Modi co-chaired the AI Action Summit in Paris alongside French President Emmanuel Macron.

➡ The week-long summit (which began with the Science Days on February 6-7) concluded with a High-Level Segment featuring global leaders, policymakers, and industry experts.

History shows that technology won't cause job loss, says PM at AI summit

The Hindu Bureau
NEW DELHI

Governance frameworks for artificial intelligence are "not just about managing risks and rivalries", Prime Minister Narendra Modi said at the AI Action Summit in Paris on Tuesday, calling for a collective approach to set standards for AI that benefit everyone, especially the Global South. India is co-chairing the summit with France this year.

Mr. Modi acknowledged the fear of widespread job losses from AI, but asserted that "history has shown that work does not disappear due to technology. New types of jobs are created". Reskilling workforce was important to prepare it for the changes AI would bring about, he said.

'Global efforts needed'
"There is ... a deep interdependence across borders" when it comes to AI, Mr. Modi said. "Therefore there is a need for collective global efforts to establish governance and standards that uphold our shared values, address risks, and build trust. Governance is also about ensuring access to all, especially in the Global South.

It is where the capabilities are most lacking, be it compute, power talent, data, or financial resources."

Mr. Modi called for pooling together of resources and talent, and developing open source systems for improving trust in AI systems. "We must build quality datasets, free from biases," he said, referring to the data on which AI models are trained.

He also brought up the issue of energy intensity of AI, in a reference to the high electricity consumption by AI data centres. Green energy would need to be pursued, Mr. Modi said, pointing to the most significant Indo-French collaboration on this matter, the International Solar Alliance.

Tech talk: Prime Minister Narendra Modi speaking at a plenary session of the AI Action Summit in Paris on Tuesday. AFP

What's in today's article?

AI Action Summit

➡ The AI Action Summit is a high-profile international event focused on advancing discussions and collaborations in Artificial Intelligence (AI).

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➡️ Hosted by France, the summit was co-chaired by Indian Prime Minister Narendra Modi and French President Emmanuel Macron.

➡️ It brought together global leaders, policymakers, industry experts, and researchers to explore the transformative potential of AI in various sectors.

Themes of AI Action Summit

➡️ The summit will focus on five main areas:
  - Public Interest AI
  - Future of Work
  - Innovation and Culture
  - Trust in AI
  - Global AI Governance

Key Takeaways from the AI Action Summit

➡️ **AI Declaration**
  - The US and UK refused to sign the summit's declaration on "inclusive and sustainable" AI, citing concerns over excessive regulation.
  - 60 nations, including India and China, supported the declaration, which promotes AI accessibility, sustainability, human rights, and transparency.

➡️ **Key objectives of the declaration**
  - **Accessibility of AI:** Ensuring AI is available to all and does not create technological divides.
  - **Trust and Safety:** Deploying AI in a way that is ethical, safe, secure, and trustworthy.
  - **Economic and Labor Market Development**: Encouraging AI innovation while preventing market concentration and ensuring positive impacts on labor markets.
  - Support for Developing Countries: Narrowing inequalities and assisting nations in AI capacity-building.

➡️ **Coalition for Sustainable AI launched**
  - The Coalition for Sustainable AI was initiated by the French government in collaboration with the UN Environment Programme and the International Telecommunication Union (ITU).

India, 57 countries call for inclusive and sustainable AI

U.S. and U.K. have not signed the joint statement at the Paris summit; U.S. Vice-President Vance rails against 'excessive regulation' of the AI sector

The Hindu Bureau
NEW DELHI

Fifty-eight countries, including India, China, Brazil, France, and Australia, signed a joint statement on "Inclusive and Sustainable Artificial Intelligence for People and the Planet" at the AI Action Summit in Paris on Tuesday, with more signatories possible after the summit ends.

The statement was not signed by the U.S. and the U.K. The statement calls for promoting accessibility of AI and ensuring trust and safety in deploying the technology.

India and France are co-chairing the summit. The statement calls for making "innovation in AI thrive by enabling conditions for its development and avoiding market concentration driving industrial recovery and development", and fostering the tech in a way that "positively shapes the future of work and labour markets".

This is the third such international statement,

United effort: Prime Minister Narendra Modi with French President Emmanuel Macron at the AI Action Summit in Paris on Tuesday. AP

with previous ones being issued after the summits in the U.K. and South Korea. It calls for AI "to be human rights based, human-centric, ethical, safe, secure and trustworthy while also stressing the need and urgency to narrow the inequalities and assist developing countries in artificial intelligence capacity-building so they can build AI capacities".

The U.S. did not immediately explain its reasons for not signing the statement.

Earlier in the day, U.S. Vice-President J.D. Vance struck a defiant tone against the themes highlighted in the statement. "I'm not here this morning to talk about AI safety, which was the title of the conference a couple of years ago," Mr. Vance said. "I'm here to talk about AI opportunity."

"...We believe that excessive regulation of the AI sector could kill a transformative industry just as it's taking off, and we'll make every effort to encourage pro-growth AI policies, and I'd like to see that deregulatory flavour making its way into a lot of the conversations at this conference," Mr. Vance said.

- o The coalition aims to create a driving force that brings together various actors committed to working towards sustainable AI.
- o The UK joined the Coalition for Sustainable AI but emphasized national interests, while the US criticized Europe's regulatory approach.
- o India has also joined the coalition.

Current AI Launched

- A new global public interest AI Foundation called Current AI was launched at the AI Action Summit in Paris.
- With an initial $400M investment, Current AI aims to reshape the existing AI landscape by developing and supporting large-scale initiatives that serve the public interest.
- It was launched to promote AI for public good, aiming to counterbalance private-sector dominance. It will foster public-private collaboration in the field of AI.

PM Modi's Address at the AI Action Summit: Key Highlights

- **The Dawn of the AI Age**
  - o PM Modi emphasized that the world is at the beginning of the AI revolution, which is rapidly reshaping governance, the economy, security, and society.
- **Call for a Global AI Framework**
  - o Modi advocated for a global governance structure for AI that promotes innovation while ensuring fair access, especially for the Global South, which lacks compute power, talent, data, and financial resources.
- **Open-Source AI for Trust and Transparency**
  - o He stressed the importance of open-source AI systems and bias-free datasets to enhance trust and transparency.
  - o Modi urged global collaboration in pooling resources and talent to democratize AI technology.
- **AI and the Future of Jobs**
  - o Acknowledging concerns over job losses due to AI, Modi reassured that history has shown technology does not eliminate work but rather changes its nature.
  - o He stressed the need for skilling and reskilling to prepare for an AI-driven future.
- **The Need for Sustainable AI**
  - o Modi highlighted AI's high energy consumption and called for green power solutions.
  - o He also emphasized making AI models efficient in size, data needs, and resource requirements to ensure sustainability.
- **India to Host the Next AI Summit**
  - o Modi proposed that India host the next AI Summit, an offer that was accepted.
  - o He reiterated India's commitment to sharing expertise and experiences in AI for the global good.
- **Strengthening Global AI Partnerships**
  - o Modi welcomed the establishment of the AI Foundation and the Council for Sustainable AI, assuring India's full support.
  - o He also called for the Global Partnership for AI to be more inclusive of the Global South.

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Page 09 : GS 3 : Enviroment & Ecology

Forest fires are a growing global crisis, exacerbated by human activities and climate change.

Addressing the growing threat of forest fires

Suryaprabha Sadasivan
Senior Vice President, Chase India

As wildfires swept throughout Los Angeles last month, destroying homes and causing casualties and displacements, the urgency of addressing and preventing forest fires took centre stage once again. Unfortunately, forest fires become a point of conversation only when some major incident causes irrevocable damage and captures media and public attention. The fires are a stark reminder that no place is immune from their impacts and that we need a clear pathway to prevent and manage them as their frequency increases.

In India, the situation is equally alarming. According to the Forest Survey of India, more than 36% of the country's forest cover is prone to fire. An analysis by the Council on Energy, Environment and Water states that there has been a 10-fold increase in forest fire incidences in the last two decades, whereas the total forest cover has increased by merely 1.12%.

Living on the fringes of the Corbett Tiger Reserve in Uttarakhand, I see the immense value of India's forests, not just as critical enablers of wildlife conservation and sources of biodiversity, but as lifelines for local communities that live around them. While Uttarakhand and Himachal Pradesh often capture headlines for forest fires, Madhya Pradesh, Maharashtra, Odisha, and Karnataka, among others, are also grappling with the frequency and intensity of forest fires.

Devastating consequences
According to various reports, nearly 90% of these fires are caused by human activities such as deliberate land clearing, slash-and-burn agriculture, and unattended campfires. These factors, coupled with climate change-driven factors such as rising temperatures and extended dry spells, intensify the risk of forest fires.

Forest fires have widespread consequences – natural, social, and economic – that are all interconnected. Besides the direct loss of trees, wildlife, and biodiversity, they contribute significantly to carbon emissions. A report by the World Resources Institute estimates that Indian forest fires emit approximately 69 million tonnes of CO_2 annually. Forest fires result in the loss of timber and non-timber forest products, essential for forest-dependent communities, contributing to direct economic losses. A 2018 report by the Ministry of Environment, Forest and Climate Change estimated that forest degradation (including forest fires) results in an annual economic loss of approximately ₹1.74 lakh crore. Forest fires also disrupt the water cycle, cause soil fertility degradation, and worsen human-wildlife conflict as animals seek refuge in human settlements.

India has put in place several policies and schemes to address forest fire management, such as the National Action Plan on Forest Fires and the Forest Fire Prevention and Management Scheme (FFPMS). The centrally sponsored FFPMS assists State governments in strengthening their forest fire prevention and management capabilities.

A more robust response
However, given the growing intensity of forest fires in India, much more remains to be done. First, Budget constraints have proven to be an obstacle. For example, the FFPMS's funding allotment has fluctuated over time. In 2019-2020, it received ₹46.40 crore, followed by ₹32.47 crore in 2020-2021, ₹34.26 crore in 2021-2022, and ₹28.25 crore in 2022-2023. The budget projection for 2023-2024 was ₹51 crore, which was revised to ₹40 crore. The planned allocation for 2024-2025 is ₹50 crore. This shows the need for more steady support.

On the technology front, the existing Forest Fire Alert System cannot distinguish between forest fires and other types of fires, delaying ground-level validation and response. India could use advanced predictive modelling to help identify high-risk areas based on climatic and geographic data. This must be supplemented by using drones equipped with thermal imaging cameras to monitor fire-prone areas, assess damage, and guide firefighting efforts. States such as Tamil Nadu and Odisha have already piloted such initiatives, which could be scaled nationally. In addition, there is merit in also exploring how relevant and existing data from the Forest Survey of India, the India Meteorological Department, and the Indian Space Research Organisation can be integrated and analysed for better forest fire management.

Equipping more and more local communities to collect and share real-time data to report fires as soon as they are sighted through mobile applications, toll-free helplines, and SMS-based systems can strengthen early warning systems and ensure rapid, localised response. In Uttarakhand and Himachal Pradesh, self-help groups, primarily women, collect pine needles to blunt future fires. India can also draw from Nepal's Community Forest User Groups and Indonesia's Fire-Free Village Program to strengthen community forest fire management. Empowering communities with awareness, training, and resources and engaging youth as 'forest fire scouts' can foster stewardship, combining local knowledge with modern tools like fire risk mapping and controlled burns.

Forest fires are not just an environmental issue – they are societal and economic, affecting livelihoods, health, and the foundation of our ecosystems. Addressing this challenge requires the collaboration of policymakers, scientists, civil society groups, and communities. From creating supporting infrastructure through policy intervention, improved budgeting, technology adoption, and building a cadre of trained personnel to empowering communities – all measures must go hand-in-hand to turn the tide.

India has put in place several policies and schemes to address forest fire management, but needs to do much more

➡ Recent wildfires in Los Angeles have highlighted the devastating consequences of these disasters, bringing attention to the urgent need for preventive measures.

➡ However, such concerns often emerge only after significant loss of life, property, and biodiversity.

➡ In India, the issue is equally alarming, with a significant portion of the country's forests prone to fires.

The Rising Threat of Forest Fires in India

➡ India's forests, vital for biodiversity conservation and community livelihoods, are increasingly vulnerable to fires. Reports suggest that over 36% of the country's forest cover is at risk.

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➡️ Alarmingly, incidents of forest fires have surged tenfold in the past two decades, even as overall forest cover has increased by a mere 1.12%.

➡️ States such as Uttarakhand, Himachal Pradesh, Madhya Pradesh, Maharashtra, Odisha, and Karnataka are among the worst affected, facing frequent and intense fires.

➡️ Human activities are a primary cause of these fires, with nearly 90% attributed to practices such as land clearing, slash-and-burn agriculture, and unattended campfires.

➡️ Climate change further worsens the situation, with rising temperatures and prolonged dry spells creating ideal conditions for wildfires to spread uncontrollably.

The Devastating Consequences of Forest Fires

➡️ **Environmental Damage**
   o The loss of trees and biodiversity disrupts ecosystems and threatens endangered species.
   o Fires contribute significantly to carbon emissions, worsening global warming.
   o Indian forest fires alone release an estimated 69 million tonnes of CO_2 annually.
   o Degradation of soil fertility and disruption of the water cycle affect long-term environmental stability.

➡️ **Economic Losses**
   o The destruction of timber and non-timber forest products affects communities reliant on forests for their livelihoods.
   o According to a 2018 report by India's Ministry of Environment, Forest, and Climate Change, forest degradation, including fires, results in an annual economic loss of approximately ₹1.74 lakh crore.

➡️ **Social Disruptions**
   o Fires force wildlife into human settlements, increasing human-animal conflicts.
   o Health hazards from smoke and air pollution exacerbate respiratory illnesses, particularly among vulnerable populations.

Existing Policies and Their Limitations

➡️ **Budget Constraints**
   o The funding for Forest Fire Prevention and Management Scheme (FFPMS) has fluctuated significantly, affecting its ability to sustain long-term prevention programs.
   o For instance, allocations ranged from ₹46.40 crore in 2019-2020 to as low as ₹28.25 crore in 2022-2023, indicating inconsistent financial support.

➡️ **Technological Shortcomings**
   o The Forest Fire Alert System struggles to differentiate between forest fires and other types of fires, leading to delays in response.
   o The lack of advanced predictive modelling and real-time data integration hampers early warning systems.

A Multi-Faceted Approach to Forest Fire Management

➡️ **Strengthening Financial and Policy Support**
   o A steady and increased budget allocation for fire prevention schemes is essential.

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- o Policies must prioritise long-term solutions, including afforestation and sustainable land management practices.

➡ **Leveraging Technology for Early Detection and Response**

- o Implementing predictive modelling using climatic and geographic data can help identify high-risk areas.
- o Drones equipped with thermal imaging cameras can assist in fire detection, damage assessment, and targeted firefighting efforts.
- o Data from agencies such as the Forest Survey of India, India Meteorological Department, and Indian Space Research Organisation should be integrated for better decision-making.

➡ **Enhancing Community Involvement**

- o Early warning systems can be strengthened by equipping local communities with mobile applications, toll-free helplines, and SMS-based reporting tools.
- o Self-help groups in states like Uttarakhand and Himachal Pradesh already collect pine needles to reduce fire hazards; such initiatives can be expanded.
- o India can learn from international models such as Nepal's Community Forest User Groups and Indonesia's Fire-Free Village Program, where local communities actively participate in fire prevention efforts.

➡ **Educating and Training Local Populations**

- o Awareness campaigns can help change behaviours that contribute to fire risks.
- o Training local youth as forest fire scouts can create a dedicated workforce for early detection and prevention.

Conclusion

➡ Forest fires are not merely environmental disasters; they have profound social and economic consequences that demand urgent action.

➡ Addressing this issue requires collaboration between policymakers, scientists, civil society organisations, and local communities.

➡ From policy intervention and increased funding to technological advancements and community engagement, a multi-pronged strategy is necessary to mitigate the risk of wildfires.

➡ Only through proactive and sustained efforts can we hope to turn the tide and protect our forests, wildlife, and communities from the devastating impact of forest fires.

UPSC Mains Practice Question

Ques : Examine the increasing frequency of forest res in India, their causes, and their environmental, economic, and social impacts. Suggest measures to enhance forest re prevention and management. (250 Words /15 marks)

Page 09 : GS : 3 : Internal security

Kaveri 2.0, a web portal launched in 2023 to make property registrations in Karnataka easier was recently hit by a DDoS attack carried out using AI-powered bots.

DDoS attack

- A Distributed Denial of Service (DDoS) attack is a type of cyberattack where multiple computers or bots flood a website or online service with excessive traffic, overwhelming its servers and causing it to slow down or crash.

key issues with Karnataka's response to cyber attacks, specifically the DDoS attack on Kaveri 2.0

- **Lack of Proactive Cybersecurity Measures**: Despite previous cyber incidents like the 2017 WannaCry ransomware attack and the 2019 e-procurement portal hack, the State failed to implement robust preventive measures. The DDoS attack on Kaveri 2.0 in December 2024 – February 2025 exposed the absence of real-time threat monitoring systems.

- **Poor Coordination Between Departments:** The e-Governance Department did not involve the State cyber crime police until February 7, 2025, despite weeks of disruption. Resistance

Struggling with poor cyber security

Karnataka's critical information infrastructure has come under attack again

STATE OF PLAY

K.V. Aditya Bharadwaj
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Kaveri 2.0, a web portal that was launched in 2023 to streamline property registrations in Karnataka, came under a distributed denial of service (DDoS) attack carried out through Artificial Intelligence (AI)-powered bots recently. A denial-of-service (DoS) attack occurs when legitimate users are unable to access information systems, devices, or other network resources due to the actions of a malicious cyber threat actor, while a DDoS attack occurs when multiple machines are operating together to attack one target. The DDoS attack crippled the portal, bringing property registrations across Karnataka almost to a halt for many days in January and February, possibly causing huge revenue losses to the State exchequer.

This is not the first time that the State's critical information infrastructure has come under attack. In 2017, the Karnataka State Data Centre fell victim to the WannaCry ransomware attack, which spreads by exploiting vulnerabilities in the Windows operating system. In 2019, the State's e-procurement portal was hacked leading to a theft of ₹11.5 crore. In 2022, the systems of the National Institute of Mental Health and Neurosciences were attacked. However, as the DDoS attack shows, no lessons seem to have been learned from earlier attacks and the gaps identified in the State's response have still not been filled.

Most government portals, including Kaveri 2.0, are designed and run by the State's e-Governance Department and hosted by the Karnataka State Data Centre.

The attack on Kaveri 2.0 began in December 2024 and brought the portal to a virtual halt in the last week of January and the first week of February. During this period, the e-Governance Department was on firefighting mode. On February 6, the Revenue Department claimed that the issues had been "fixed". Surprisingly, throughout this process, the State cyber crime police were not kept in the loop. The Inspector General of Registrations and Commissioner of Stamps lodged a complaint with the cyber crime police only on February 7.

Earlier too, the State's response to cyber attacks was marred by a lack of coordination between the e-Governance Department and the State police. So far, the e-Governance Department has identified a few IP addresses from which the attack originated. Involving the cyber crime police much earlier could have helped combat the problem in real time, police officials said. However, sources said that there was resistance within the departments to go to the police.

According to the Karnataka Cyber Security Policy, 2023, the State has a Cyber Security Committee, led by the Chief Secretary. This is filled with bureaucrats and not a single representative from the State police. Compare this to the national level, where the cyber security architecture – the Indian Cyber Crime Coordination Centre (I4C), which is affiliated to the Home Ministry and is the nodal point to curb cyber crimes, and the National Critical Information Infrastructure Protection Centre (NCIIPC), which protects the country's critical infrastructure – have evolved.

Many experts feel that a similar cyber security architecture with clearly defined standard operating procedures to deal with such attacks should be put in place in Karnataka as well. The State immediately needs a control room set-up involving both technical experts and the cyber crime police to handle crises so that it can respond to such attacks in a coordinated manner in real time.

In his last Budget, presented in February 2023, former Chief Minister Basavaraj Bommai had proposed to set up a Cyber Security Operation Centre at a cost of ₹20 crore, on the lines of I4C and NCIIPC. However, when the Congress came to power in the State in May 2023, a revised Budget was presented and the proposal was dropped.

Bengaluru is known as the Silicon Valley of India. It is also an emerging cyber crime hotspot, according to a 2023 report titled 'A Deep Dive into Cybercrime Trends Impacting India', by the Future Crime Research Foundation, an IIT Kanpur incubated start-up. Karnataka has among the highest number of cyber crime cases in the country. Yet, the State does not have proper infrastructure. In contrast, Maharashtra and Odisha have robust cyber security infrastructure in place.

It is time for the Karnataka government to act to protect critical data.

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within departments to share cybersecurity concerns with law enforcement delayed incident response, worsening the crisis.

➡️ **Lack of a Dedicated Cybersecurity Infrastructure**: Karnataka lacks a Cyber Security Operation Centre like Maharashtra and Odisha. A ₹20 crore cybersecurity centre, proposed in February 2023, was scrapped after the new government took over, leaving critical digital infrastructure vulnerable.

➡️ **Government Response and Security Measures:** While the government has initiated a police probe and FIR registration under the Information Technology Act, and the Kaveri 2.0 application has been restored with enhanced security measures,

　○ Karnataka launched a cyber security policy in 2024 to combat rising cybercrime, focusing on awareness, skill building, and industry promotion.

Why is it crucial for the state to establish a Cyber Security Operation Centre similar to the national model?

➡️ **Real-Time Threat Detection and Response:** The DDoS attack on Kaveri 2.0 (2024-25) went undetected for weeks, causing major disruptions in property registrations. A Cyber Security Operation Centre (CSOC) would enable 24/7 monitoring and early detection of cyber threats.

　○ National agencies like I4C (Indian Cyber Crime Coordination Centre) and NCIIPC (National Critical Information Infrastructure Protection Centre) use AI-driven analytics and real-time threat intelligence to mitigate cyber risks, a model Karnataka must adopt.

➡️ **Coordinated and Rapid Incident Response:** Karnataka's e-Governance Department handled the Kaveri 2.0 attack alone, only involving cyber crime police weeks later, delaying mitigation efforts.

　○ A CSOC would centralize cybersecurity efforts, ensuring immediate coordination between technical experts, government departments, and law enforcement agencies to prevent prolonged disruptions.

Way forward:

➡️ **Establish a Cyber Security Operation Centre (CSOC):** Revive the ₹20 crore CSOC proposal with real-time threat monitoring, AI-driven analytics, and centralized coordination between government agencies and law enforcement.

　○ Implement automated response mechanisms to detect and neutralize cyber threats before they escalate.

➡️ **Strengthen Inter-Departmental Coordination and Cybersecurity Framework**: Mandate immediate police involvement in cyber incidents and integrate law enforcement into cybersecurity governance structures like the Cyber Security Committee.

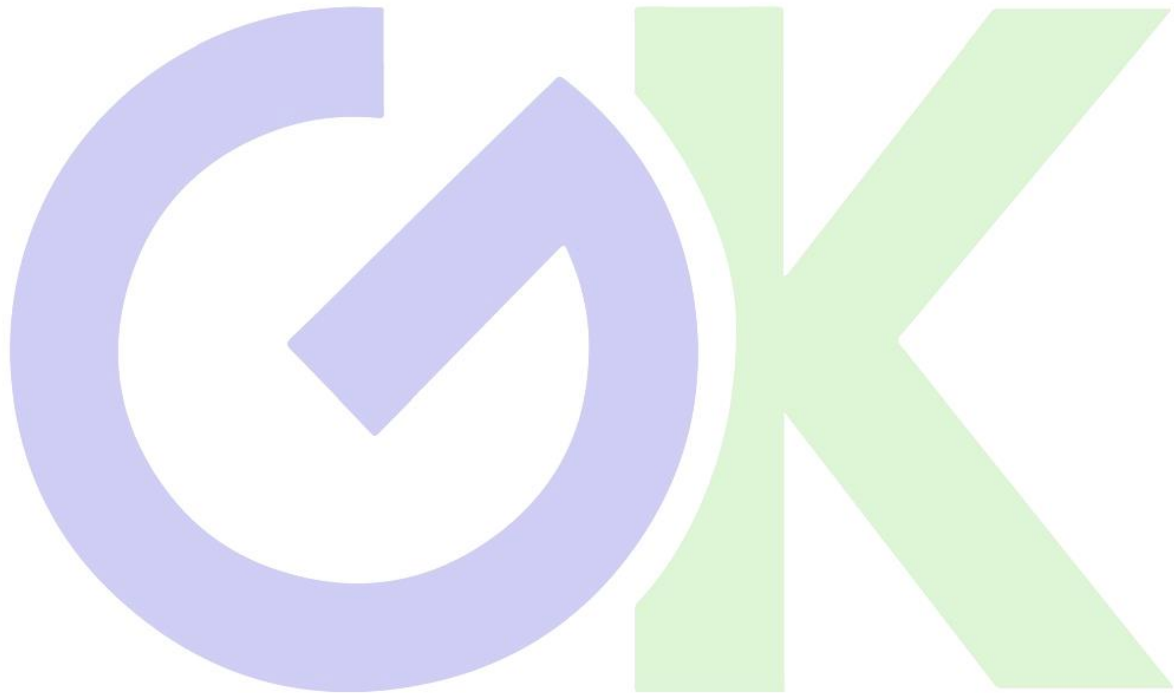No: 1521, Second Floor, H-Block, 5th Street, Anna Nagar, Chennai-40.

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o Conduct joint cyber security drills between the e-Governance Department, State Police, and IT experts to improve incident response efficiency.

UPSC Mains PYQ : 2023

Ques : India's preparedness to deal with cyber security challenges is not up to the mark. Discuss with examples.

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In News : GS 1 Social Issues : Unlocking women's workforce potential in India

Increasing the number of women in the workforce is not just about equality and it is also essential for economic growth.

What are their challenges in enabling women's economic participation in India?

➡ **Unpaid Care Work Burden:** Women in India spend 7.2 hours per day on unpaid domestic work, compared to 2.8 hours by men (Time Use in India Report, 2019). This leaves them with less time for paid employment.
  o **Example:** Many women drop out of the workforce after marriage due to caregiving responsibilities, particularly in rural areas where childcare facilities are scarce.

➡ **Lack of Formal Part-time Employment:** India lacks legally regulated part-time work, unlike OECD countries where part-time work is protected by law and provides benefits.
  o **Example:** According to the NCAER study (2024), 57% of women prefer part-time jobs for flexibility, but due to the absence of formal options, many take low-wage, informal sector jobs without security.

➡ **Gender Discrimination and Wage Gap**: Women in India earn only 77% of what men earn for the same work (World Economic Forum, Global Gender Gap Report 2023).
  o **Example:** The STEM sector in India has only 16% female representation, limiting women's access to high-paying jobs and leadership roles.

➡ **Limited Access to Safe and Affordable Transport**: Lack of safe and reliable transport restricts women's mobility for work, especially in cities with high crime rates against women.
  o **Example:** A study by Ola Mobility Institute (2022) found that over 50% of women in Delhi and Mumbai reject job opportunities due to safety concerns while commuting.

➡ **Low Financial and Digital Literacy:** Women in India have lower financial and digital literacy, limiting their participation in modern, high-skilled jobs and entrepreneurship.
  o **Example:** According to the National Family Health Survey-5 (2019-21), only 33% of Indian women use the Internet, reducing their access to online job markets and digital banking.

What are the Study and Findings from the LFPR Report?

➡ **Low Female Labour Force Participation Rate (LFPR) in India**: India's Female LFPR stands at 37%, which is much lower than the global average of 47% and the OECD average of 67%. The primary reasons for this low participation include unpaid care work, lack of formal part-time jobs, gender discrimination, and mobility constraints.

➡ **Impact of Addressing Barriers on LFPR Growth:** The study used the McCall-Mortensen job search model to simulate the effects of policy changes. It found that addressing two major barriers (formalizing part-time work and redistributing unpaid care work) could increase women's LFPR by 6 percentage points, from 37% to 43%.

➡ **Projected Increase in LFPR:** The study found that addressing these two barriers could raise India's female LFPR by six percentage points, increasing it from the current 37% to 43%.

➡ **Formalizing Part-Time Employment:** The study highlighted that introducing formally recognized part-time work contracts with pro-rated wages and benefits would offer women the flexibility they need.

➡ **Redistributing Unpaid Care Work:** Achieving gender equality in caregiving responsibilities, through policies like paid parental leave and investment in childcare along with cultural changes, is crucial for enabling women's participation in the labour force.

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What are the steps taken by the government?

➡️ **Maternity and Childcare Support –** The Maternity Benefit (Amendment) Act, 2017 increased paid maternity leave to 26 weeks, and schemes like PM Matru Vandana Yojana provide financial aid to pregnant women.

➡️ **Skill Development and Entrepreneurship –** Programs like PM Kaushal Vikas Yojana (PMKVY) train women in various skills, while Mudra Yojana and Stand-Up India provide financial support for women entrepreneurs.

➡️ **Workplace Safety and Legal Protections** – The Sexual Harassment of Women at Workplace Act, 2013 ensures safer workplaces and the Working Women's Hostels Scheme provides secure housing for working women.

Way forward:

➡️ **Policy Reforms for Flexible Work and Social Security:** Introduce formal part-time work laws with pro-rated wages and benefits, ensuring job security and flexibility for women. Expand paid parental leave and affordable childcare facilities to reduce the unpaid care work burden.

➡️ **Improving Safety, Mobility, and Digital Inclusion**: Strengthen safe public transport infrastructure and women-only commuting options to enhance workplace accessibility. Promote financial and digital literacy programs, ensuring women's participation in online job markets and entrepreneurship.

UPSC Mains PYQ : 2018

Ques : 'Women's movement in India has not addressed the issues of women of lower social strata.' Substantiate your view.

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The Supreme Court recently agreed to hear a plea in seeking passive euthanasia for rabies patients.

About Euthanasia:

- Euthanasia is defined as the hastening of death of a patient to prevent further suffering.
- The term "euthanasia" comes from the Greek phrase "eu thanatos", in which "eu" means "good" and "thanatos" translates into "death." Literally speaking, the maxim translates to "easy death".
- The practice of euthanasia can be classified into the following two categories:

Active Euthanasia:

- Active euthanasia is a method that involves taking active steps to end a life.
- This involves taking positive steps to end a patient's life, such as by administering them a dose of medication through their intravenous line that will kill them.
- Active euthanasia is also sometimes referred to by the term "aggressive euthanasia".

Passive Euthanasia:

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➡️ Passive Euthanasia is defined as the deliberate act of causing someone's death by withholding or withdrawing artificial life support, such as a ventilator, from a patient who is terminally ill.

➡️ In a case like this, something that is essential to save a patient's life is not done.

Legality in India:

➡️ In a landmark ruling in the Common Cause vs. Union of India case (2018), a five-judge Constitution bench of the Supreme Court recognised the right to die as part of the right to life, legalising passive euthanasia and permitting the creation of a "living will" for terminally ill patients or those in a persistent vegetative state with no hope of recovery, ensuring a dignified exit by refusing medical treatment or life support.

➡️ However, in India, active euthanasia is illegal and a crime.

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Daily News Analysis

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A role for India in South-South climate cooperation

COP29, at Baku, Azerbaijan, aptly referred to as the 'Climate Finance COP,' has played a crucial role in operationalising core elements of Article 6 of the Paris Agreement (PA). The adoption of Article 6 at Baku represents a renewed focus on the market mechanism which could help countries that are often constrained by limited resources and face difficulties in achieving an economy-wide transition to a carbon-neutral economy.

Article 6 has the potential to meet climate ambitions through cooperative approaches. Its key component, Article 6.2, facilitates the transfer of Internationally Transferred Mitigation Outcomes (ITMOs) between host and partner country to help countries meet their Nationally Determined Contributions (NDCs), by offering flexibility for tailored agreements. The process not only supports emissions reductions in the host country (developing country) but also fosters technology exchange, promotes capacity building, and facilitates financial resources from the partner country (developed country), helping in the transition to a low-carbon economy and reaching the Sustainable Development Goals (SDGs).

Article 6.2 and India's climate policies
India, which is considered to the third largest emitter of greenhouse gases (GHG), though in absolute terms only, and a rapidly growing economy, is well-positioned to draw benefits from Article 6.2. The country has had a challenge in balancing its developmental goals with its climate commitments due to a lack of adequate finance and also a lack of support from developed countries. India's NDCs, *inter alia*, include ambitious targets, such as reducing emissions intensity by 45% by 2030. However, the financial and technical constraints are considerable, as just before COP29, India reiterated its call for the developed nations to mobilise at least $1 trillion annually in climate finance for developing countries to meet the challenges of global warming.

It is an opportune time for India as it moves to its own domestic emissions trading scheme (ETS), launched as a Carbon Credit Trading Scheme (CCTS) in 2023, with the aim of integrating market mechanisms into national policy. While not directly linked to Article 6.2, the CCTS proposes to strengthen India's institutions by providing a framework for transparent carbon credit tracking and verification. India's prior experience with the Clean Development Mechanism (CDM), voluntary carbon market (VCM), Energy Saving Certificates (ESCerts) and Renewable Energy Certificates (REC), has laid the groundwork for effective engagement with international carbon markets under Article 6.2, unlocking opportunities for emission reduction projects and climate finance.

India has identified 14 key activities for international collaboration under Article 6.2, which include Renewable Energy (RE), energy storage, and Carbon Capture, Utilization, and Storage programme. These technologies, such as green hydrogen and sustainable aviation fuel, require advanced expertise, research and significant investment, which India seeks through partnerships with leading nations such as South Korea, the European Union, and Japan.

Engaging in ITMO transactions under Article 6.2 gives India the opportunity to meet its SDGs by transferring surplus emissions reductions certificates to partner countries through different unique project implementations. There are also co-benefits such as reducing health problems and enhancing income through green jobs. On other hand, by encouraging South-South cooperation India can also generate ITMOs while facilitating investments in key sectors, in which India has extensive experience such as RE and sustainable infrastructure.

Opportunities for the country
Article 6.2 offers India an opportunity to unlock large-scale climate finance through South-South cooperation. Countries under pressure to meet stringent NDCs can purchase ITMOs from India, generating financial resources for climate-resilient projects and green technology development. For example, India's renewable energy sector attracted over $10 billion in foreign direct investment in 2022. Further, ITMO transactions could scale up these efforts for other developing countries. The New Collective Quantified Goal (NCQG) also encourages such South-South cooperation as developing countries have been extending climate finance to other developing countries on a voluntary basis; however, their contributions are often unreported. Hence, Article 6.2 may foster such partnerships beyond the traditional North-South dynamic, enabling India to lead South-South cooperation, through the transfer of technology, and building capacity in developing countries (Africa) to help them meet their NDCs.

While India signs memorandums of understanding with developed countries to facilitate ITMO transfers, there is also a strong case for India to focus on building partnerships with African nations (India as partner country and Africa as host country). Africa, with its vast renewable energy potential and urgent climate vulnerabilities, is ideal for South-South cooperation. Many African nations face severe impacts from climate change, particularly in agriculture and water resources. India's close partnership with African governments, extending to trade, investment, and developmental projects, strengthens this case. Under the 10 principles for India-Africa engagement enunciated by Prime Minister Narendra Modi, a key pillar is economic cooperation – emphasising sustained engagement, creating local capabilities, enhancing agricultural productivity, and addressing climate change. With its expertise in RE deployment, digital tools, and sustainable agriculture, India is well-positioned to help the region. This can also help India meet its NDCs while also accessing carbon market opportunities to fund sustainable development projects across the African continent.

The sharing of ITMOs between India and partner countries will depend on agreement specifics, reflecting India's role as the host country and the developed partner's contributions to technology and capacity building, which are also aligned with the Common but Differentiated Responsibilities and Respective Capabilities (CBDR-RC). The share ratio may vary based on each party's contributions – India could claim a larger share if it extends significant financial or technical inputs. A similar approach is seen in the Joint Crediting Mechanism (JCM), where credit allocation is decided through mutual consultation based on contributions to GHG reductions. Japan typically offers technology, funding, and capacity building, while the host country implements the project. The JCM Joint Committee reviews and issues credits, ensuring transparency by publicly sharing allocation details.

The challenges
ITMO sharing offers opportunities for international cooperation. But, at the same time, it also presents challenges for India. Developed nations might rely on low-cost emission reductions from India, potentially avoiding significant domestic decarbonisation efforts and shifting costly mitigation burdens onto India. For India, ITMO transfers could involve opportunity costs, as these reductions might otherwise support its own climate targets or sustainability goals.

Additionally, inadequate transparency and governance in ITMO mechanisms may lead to inefficiencies and can accentuate inequities, affecting India's interests. Over-reliance on ITMO transfers by partner nations could also hinder India's broader priorities, such as capacity building, green technology deployment, and climate-aligned economic growth. To address these risks, India must ensure ITMO agreements include safeguards for equitable benefit-sharing, transparency, and alignment with national and global climate ambitions.

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India can position itself as a leader in the global transition to a low carbon pathway, through transparent processes and equitable partnerships

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GS Paper 03 : **Enviroment & Ecology**

PYQ : (UPSC CSE (M) GS-3 2018) : **Clean energy is the order of the day.' Describe briefly India's changing policy towards climate change in various international fora in the context of geopolitics.**

Context :

📌 India's potential role in fostering climate cooperation between developing nations through South-South cooperation in the context of the Paris Agreement is needed for the global solutions to tackle climate change.

How does Article 6 of the Paris Agreement benefit India in achieving its climate goals?

📌 **Carbon Markets:** Under Article 6.2, countries can trade carbon credits to meet their emissions reduction targets. India can participate in these carbon markets, generating revenue by selling surplus carbon credits earned through emission reductions in sectors like renewable energy, energy efficiency, and afforestation.

   o By engaging in carbon trading, India can attract foreign investments from companies in developed countries looking to offset their emissions. This can provide funding for clean energy projects, supporting India's transition to a low-carbon economy.

📌 **Cooperative Approaches:** Article 6.4 establishes a global carbon market mechanism, similar to the Clean Development Mechanism (CDM) under the Kyoto Protocol, but with improvements. India could utilize this mechanism to undertake joint projects with other countries that help reduce emissions while fostering sustainable development.

   o Through cooperative approaches, India can access advanced technologies, practices, and expertise from other countries, enabling its industries to adopt cleaner technologies and improve energy efficiency, contributing to its climate and development goals.

Non-Market Approaches:

📌 Article 6.8 promotes non-market mechanisms, which focus on facilitating actions like capacity-building, finance, and knowledge sharing to address climate change. This can help India strengthen

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its national capabilities to implement climate policies and adapt to the impacts of climate change, particularly in vulnerable regions.

➡️ India, being highly vulnerable to the effects of climate change, can benefit from non-market approaches to enhance its adaptive capacities and resilience, addressing critical sectors like agriculture, water resources, and infrastructure.

Flexibility in Meeting Targets:

➡️ The flexibility provided by Article 6 allows India to find the most cost-effective solutions for emission reductions, especially in sectors where technology deployment is expensive or challenging. It provides an opportunity to meet its Nationally Determined Contributions (NDCs) in a way that balances economic growth with environmental sustainability.

What are the potential challenges India faces in utilizing ITMOs and engaging in international climate finance?

➡️ **Monitoring, Reporting, and Verification (MRV) Systems:** India's current MRV systems for tracking emissions reductions may not meet the rigorous standards required for ITMOs, which are crucial for ensuring transparency and accountability in carbon markets.
  o Inadequate MRV mechanisms could hinder India's ability to accurately quantify and report emission reductions, limiting its participation in carbon trading and climate finance.

➡️ **Accessing Climate Finance:** Despite being a major developing country, India faces challenges in accessing sufficient and predictable climate finance from international sources, as the global financing mechanisms often favor smaller or more vulnerable nations.
  o Limited access to finance can slow down India's ability to implement large-scale climate projects, especially in sectors like renewable energy, adaptation, and infrastructure development.

➡️ **Ensuring Environmental Integrity:** While ITMOs enable carbon trading, there's a risk of "low-quality" credits or "double counting" (where emissions reductions are claimed by multiple parties), which could undermine the credibility and environmental integrity of the system.
  o If India is not careful in ensuring robust methodologies for generating and trading ITMOs, it might face challenges in maintaining the credibility of its climate commitments, affecting its international reputation.

➡️ **Domestic Policy and Institutional Coordination:** India's domestic policies on climate change may not be fully aligned with the requirements of international climate finance mechanisms or ITMO systems. There is also a need for better coordination among various ministries and stakeholders to implement and track climate action effectively.

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○ Misalignment between international climate goals and domestic policies could result in inefficiencies and missed opportunities to access ITMOs and climate finance.

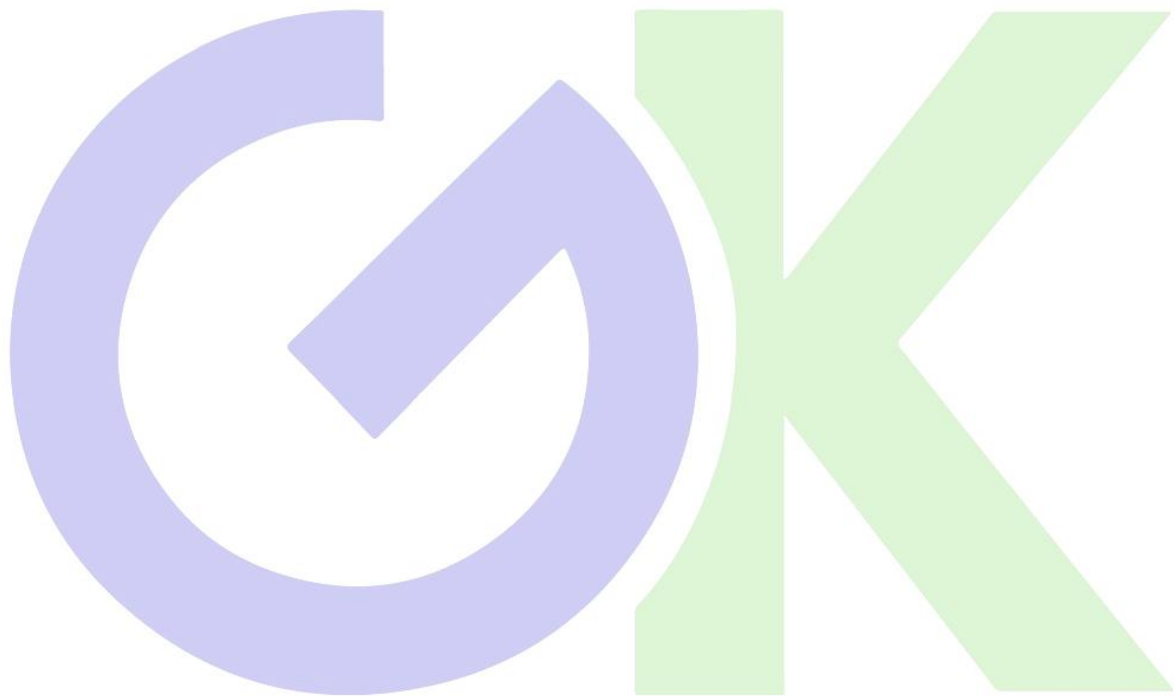**What are the opportunities for India under South-South cooperation via Article 6.2?**

➡️ **Carbon Trading with Fellow Developing Countries:** India can collaborate with neighbouring countries like Sri Lanka, Bangladesh, and others in the South Asian region to work together to reduce emissions through renewable energy, afforestation, or energy efficiency programs.

○ India could sell any surplus carbon credits generated through its own emission reduction efforts to other developing countries that need help meeting their own NDCs (Nationally Determined Contributions). This allows India to both achieve its climate goals and potentially generate revenue.

➡️ **Technology and Knowledge Transfer**: India has already made significant progress in solar energy and can offer valuable lessons and technologies to fellow developing countries.

○ India can also help other countries develop adaptation strategies for climate change impacts, such as water management techniques, disaster preparedness, and climate-resilient infrastructure.

○ In return, India could receive new technologies, methods, and knowledge to enhance its own climate resilience.

➡️ **Joint Ventures for Clean Energy Projects:** India can partner with other developing countries to co-develop large-scale renewable energy projects, such as solar, wind, or hydropower. Joint initiatives could be supported by carbon markets, with emission reductions which could attract investments, expertise, and improve access to clean energy technologies.

○ By collaborating with other developing countries, India can contribute to the development of affordable, scalable solutions that are tailored to the specific needs of developing nations.

○ These solutions could be implemented locally, reducing emissions and improving energy access.

➡️ **Strengthening Capacity and Institutional Frameworks**: South-South cooperation can help India and other developing countries to assist in establishing frameworks for monitoring, reporting, and verifying (MRV) emissions reductions, benefiting both India and its partner countries.

○ India can help south countries in refining its strategies and implementing the best practices that suit their own development contexts.

➡️ **Leveraging Climate Finance:** India, by engaging in South-South cooperation, could also have access to international financial instruments that make climate action more affordable.

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- o This would be particularly beneficial in sectors where India faces challenges in scaling up clean technologies, like electric vehicles, or in regions like rural areas that require adaptation interventions.

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