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The Hindu Important News Articles & Editorial For UPSC CSE

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Edition : International Table of Contents

Page 02 : GS III : Environment / Prelims Exam

Lakes in Jammu and Kashmir (J&K) are not merely scenic landmarks; they are the "ecological kidneys" of the Himalayan region, regulating local climate, supporting biodiversity, and acting as critical flood-balancing reservoirs. The CAG report reveals a systemic failure in conservation, noting that 74% of the 697 lakes surveyed have either vanished or shrunk significantly, exacerbating climate insecurity and flood risks in the region.

518 of 697 lakes in J&K either vanished or shrunk: CAG

Peerzada Ashiq
SRINAGAR

A whopping 518 lakes, constituting 74%, have either disappeared or shrunk in Jammu and Kashmir, according to the latest report of the Comptroller and Auditor General of India on Conservation and Management of Lakes for the period up to March 2022. Consequently, it has degraded ecosystem and climate insecurity.

The report highlighted that 315 lakes, 45% of the total 697 lakes in J&K that constitute a water area of 1,537.07 hectares, have disappeared. "These lakes included 80 lakes (25%) falling under the jurisdiction of the Forest Department and 235 lakes (75%) falling under the jurisdiction of Revenue Department and Agriculture Department," it said.

The CAG report highlighted that 315 lakes in J&K that constitute a water area of 1,537.07 hectares have disappeared. FILE PHOTO

The water area of 203 lakes (29% of 697 lakes) had decreased by 1,314.19 hectares. The report suggested that water in 63 lakes has disappeared by "more than or equal to 50%". "Thus, there is a potential greater risk of extinction of these lakes," it added.

Meanwhile, the water area of 150 lakes (22%) has increased by 538.22 hectares. "The water area of 14,535.76 hectares in 29 lakes (4% of 697 lakes) had remained static," the report pointed out.

Cause of floods

The CAG report suggested that the shrinkage of lake area was one of the causes for massive floods in J&K in September 2014, "as lakes are natural flood balancing reservoirs and defence for the flood regulating system".

It highlighted that four administrative departments and the Forest Department did not have lake generic management programmes. As such they failed to check growing anthropogenic pressures around lakes, resulting in loss and decrease in open water area and increase in aquatic vegetation. "This adversely affected the ecosystem of the lakes," it said.

It further pointed out that failure to formulate conservation and management programmes and to undertake lake generic management activities by the district administrations concerned and the Forest Department in respect of 44 lakes resulted in anthropogenic pressures, generated by human activities including construction works. "These anthropogenic pressures led to land use changes in these lakes," it added.

According to the report, the J&K Ecology, Environment & Remote Sensing Department, had "failed to carry out a detailed survey of 697 lakes". "Hence physical, chemical and biological dynamics of lakes were not available for preparing development plans for these lakes," it said.

Besides, 255 lakes, under the jurisdiction of the Forest Department, "had no comprehensive conservation and management programme". "Although high altitude lakes in protected areas are free from anthropogenic pressures, they may be facing problems of siltation and issues relating to water sources. As such, they also require conservation and management efforts," it suggested.

The J&K government has conservation and management programmes for only six lakes, which include Dal, Wular, Hokersar, Manasbal, Surinsar and Mansar lakes.

Key Findings of the CAG Report

1. The Scale of Disappearance

Total Loss: 315 lakes (45%) have completely disappeared, covering a lost water area of **1,537.07 hectares**.

Shrinkage: Another 203 lakes (29%) have shrunk by over **1,314 hectares**.

Extinction Risk: 63 lakes have lost more than 50% of their water, putting them at immediate risk of permanent extinction.

2. Governance and Administrative Gaps

Jurisdictional Neglect: The Forest Department (holding 25% of the disappeared lakes) and the Revenue/Agriculture Departments (holding 75%) failed to implement generic management programs.

Lack of Data: The J&K Ecology, Environment & Remote Sensing Department failed to conduct detailed surveys of the 697 lakes, leaving a vacuum of physical and biological data necessary for planning.

Selective Conservation: Management programs exist for only **six major lakes** (Dal, Wular, Hokersar, Manasbal, Surinsar, and Mansar), leaving 691 lakes virtually unprotected.

3. The "Anthropogenic" Factor

The report identifies human-induced pressures as the primary driver of degradation:

Land Use Change: Unregulated construction and encroachment in lake catchments.

Pollution: Direct discharge of untreated sewage and solid waste, leading to nutrient loading and excessive aquatic vegetation (eutrophication).

Siltation: Deforestation in catchment areas has led to increased soil erosion, filling up high-altitude lakes with sediment.

Dimensions of the Crisis

A. Impact on Disaster Management

Lakes serve as natural buffers. The CAG explicitly links the shrinkage of these water bodies to the **2014 Kashmir Floods**. When lakes lose their water-holding capacity, the excess runoff from heavy rainfall or glacier melt flows directly into inhabited areas, turning a manageable weather event into a catastrophe.

B. Ecological and Climate Insecurity

Micro-climate Regulation: The loss of water bodies alters the local temperature and humidity, affecting fruit production (Saffron, Apples) which is the backbone of J&K's economy.

Biodiversity: Many of these lakes are part of the **Central Asian Flyway**; their disappearance disrupts the habitat of migratory birds and endemic fish species.

C. Policy Shift: Relocation vs. In-situ Conservation

The J&K government recently shifted its strategy for Dal Lake from a **relocation-based model** (which failed to achieve even 30% of its target over 15 years) to an **"in-situ" conservation approach**. This acknowledges lake dwellers as stakeholders rather than "encroachers," focusing on modular Sewage Treatment Plants (STPs) and reviving internal water channels.

Recommendations for Sustainable Management

Single Umbrella Authority: Creating a centralized "Lake Development and Regulatory Authority" to avoid the current "diffused functions" across multiple departments.

Scientific Demarcation: Immediate geo-tagging and digital mapping of all existing water bodies to prevent further encroachment.

Catchment Area Treatment (CAT): Massive afforestation in the surrounding hills to check siltation.

Community-Led Conservation: Following the new "in-situ" model, involving local communities in monitoring water quality and managing waste.

Conclusion

The vanishing lakes of Jammu and Kashmir are a "canary in the coal mine" for the Himalayan ecosystem. The CAG report serves as a stern reminder that environmental conservation cannot be restricted to high-profile tourist spots like Dal Lake. For a climate-resilient future, J&K requires a decentralized, data-driven, and legally backed conservation framework that treats every small water body as a vital component of the region's survival.

UPSC Prelims Exam Practice Question

Ques: The term "Central Asian Flyway" is best associated with:

(a) Migration route of nomadic pastoralists

(b) Trade corridor connecting Central Asia to India

(c) Migration path of birds across Eurasia

(d) River system originating in Central Asia

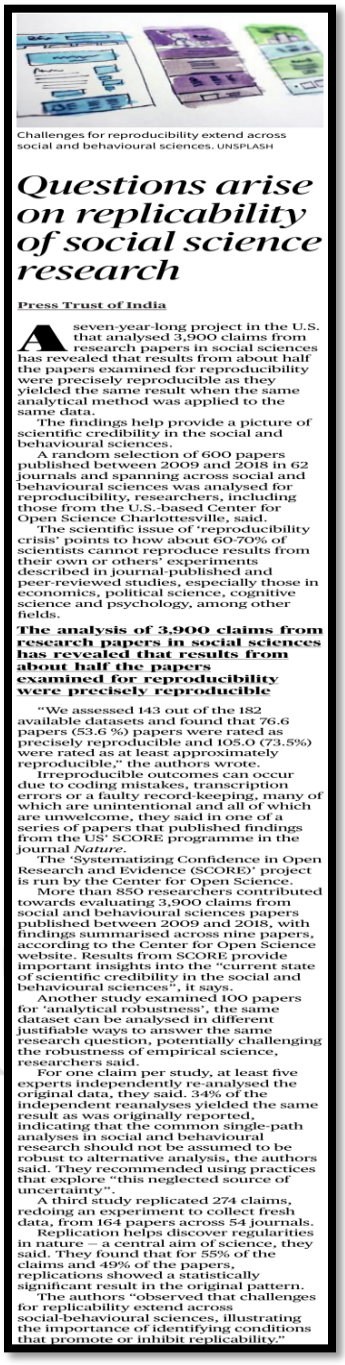
Ans: c)

UPSC Mains Exam Practice Question

Ques: Examine the role of anthropogenic factors in the degradation of Himalayan lakes. Suggest remedial measures. **(150 Words)**

Page 07 : GS I & IV : Social issues & Ethics / Prelims Exam

The Systematizing Confidence in Open Research and Evidence (SCORE) project, led by the Center for Open Science, has released findings from a seven-year study evaluating nearly 3,900 claims in social and behavioral research. The report highlights a significant "reproducibility gap," where only about half of the research findings could be precisely replicated. This crisis challenges the "empirical" status of social sciences and calls for a systemic overhaul in how scientific knowledge is produced and verified.



Challenges for reproducibility extend across social and behavioural sciences. UNSPLASH

Questions arise on replicability of social science research

Press Trust of India

A seven-year-long project in the U.S. that analysed 3,900 claims from research papers in social sciences has revealed that results from about half the papers examined for reproducibility were precisely reproducible as they yielded the same result when the same analytical method was applied to the same data.

The findings help provide a picture of scientific credibility in the social and behavioural sciences.

A random selection of 600 papers published between 2009 and 2018 in 62 journals and spanning across social and behavioural sciences was analysed for reproducibility, researchers, including those from the U.S.-based Center for Open Science Charlottesville, said.

The scientific issue of 'reproducibility crisis' points to how about 60-70% of scientists cannot reproduce results from their own or others' experiments described in journal-published and peer-reviewed studies, especially those in economics, political science, cognitive science and psychology, among other fields.

The analysis of 3,900 claims from research papers in social sciences has revealed that results from about half the papers examined for reproducibility were precisely reproducible

"We assessed 143 out of the 182 available datasets and found that 76.6 papers (53.6 %) papers were rated as precisely reproducible and 105.0 (73.5%) were rated as at least approximately reproducible," the authors wrote.

Irreproducible outcomes can occur due to coding mistakes, transcription errors or a faulty record-keeping, many of which are unintentional and all of which are unwelcome, they said in one of a series of papers that published findings from the US' SCORE programme in the journal *Nature*.

The 'Systematizing Confidence in Open Research and Evidence (SCORE)' project is run by the Center for Open Science.

More than 850 researchers contributed towards evaluating 3,900 claims from social and behavioural sciences papers published between 2009 and 2018, with findings summarised across nine papers, according to the Center for Open Science website. Results from SCORE provide important insights into the "current state of scientific credibility in the social and behavioural sciences", it says.

Another study examined 100 papers for 'analytical robustness', the same dataset can be analysed in different justifiable ways to answer the same research question, potentially challenging the robustness of empirical science, researchers said.

For one claim per study, at least five experts independently re-analysed the original data, they said. 34% of the independent reanalyses yielded the same result as was originally reported, indicating that the common single-path analyses in social and behavioural research should not be assumed to be robust to alternative analysis, the authors said. They recommended using practices that explore "this neglected source of uncertainty".

A third study replicated 274 claims, redoing an experiment to collect fresh data, from 164 papers across 54 journals.

Replication helps discover regularities in nature – a central aim of science, they said. They found that for 55% of the claims and 49% of the papers, replications showed a statistically significant result in the original pattern.

The authors "observed that challenges for replicability extend across social-behavioural sciences, illustrating the importance of identifying conditions that promote or inhibit replicability."

Key Concepts: Reproducibility vs. Replicability

To analyze this news, one must distinguish between three core scientific pillars:

Term	Definition	Findings from SCORE
Reproducibility	Obtaining the same results using the original data and the same analytical methods.	Only 53.6% were precisely reproducible.
Replicability	Obtaining the same results by redoing the experiment to collect fresh data.	Only 49% of papers showed the original pattern.
Analytical Robustness	Whether the same dataset yields the same conclusion when different (but justifiable) analytical paths are taken.	Only 34% of independent re-analyses yielded the same result.

The Root Causes of the Crisis

The SCORE program identifies several factors—ranging from honest errors to systemic pressures—that undermine scientific credibility:

1. Methodological Failures

- **Coding & Transcription Errors:** Simple human mistakes in data entry or software programming.
- **Faulty Record-Keeping:** Lack of detailed "lab notebooks" or digital trails makes it impossible for others to follow the original researcher's steps.

2. The "Single-Path" Bias

Researchers often choose one specific statistical path that yields a "significant" result (often called **p-hacking**), ignoring other analytical paths that might show no effect. The study on analytical robustness proved that different researchers analyzing the same data often reach different conclusions.

3. Systemic Pressures (The "Publish or Perish" Culture)

Journals prioritize "novel" and "positive" results over "null" results (where the hypothesis fails).

This incentivizes researchers to present their data in the most favorable light, sometimes at the expense of accuracy.

Why This Matters for Governance

1. Evidence-Based Policy Making

Governments often rely on behavioral science (e.g., "Nudge Theory") to design public health or tax compliance programs. If the underlying research is not reproducible, the policies derived from them may fail, leading to a waste of public exchequer and loss of public trust.

2. Ethical Dimensions

The crisis highlights a lapse in **Scientific Temper** and **Objectivity**. Intentionally or unintentionally "massaging" data to fit a narrative violates the ethical core of intellectual honesty.

3. The "Open Science" Movement

The report advocates for **Open Research**:

Pre-registration: Researchers must declare their methods before starting the study to prevent "moving the goalposts."

Data Sharing: Making raw data available for peer scrutiny.

Conclusion

The findings of the SCORE project are not a rejection of social science but an invitation to improve its rigor. In an era of "post-truth" and misinformation, the credibility of scientific institutions is paramount. By adopting "Open Science" practices and acknowledging the "uncertainty" in single-path analyses, the social sciences can move from a crisis of confidence to a new era of transparency and reliability.

UPSC Prelims Exam Practice Question

Ques: The term "p-hacking" in research methodology refers to:

(a) Manipulating data collection tools

(b) Selecting statistical methods that produce significant results

(c) Publishing only peer-reviewed articles

(d) Sharing raw datasets publicly

Ans: b)

UPSC Mains Exam Practice Question

Ques: How does the reproducibility crisis in social sciences impact evidence-based policymaking? Illustrate with examples. **(150 Words)**

Page 08 : GS II : Social Justice / Prelims Exam

While global discourse often focuses on melting glaciers and economic loss, the "human cost" of climate change manifests as a broad-spectrum medical crisis. In India, changing planetary patterns are intensifying known diseases and introducing others to non-endemic regions. Dr. Trehan argues that we must categorize climate change as a medical emergency to trigger the necessary urgency in policy response.

Climate change as a public health emergency

Dr. Naresh Trehan

Chairman and Managing Director, Medanta

India faces growing health crises from climate change impacts

When we talk about climate change, the conversation almost always veers toward rising sea levels or extreme weather events. Some may even talk about the economic disruption that these natural disasters can and do cause. However, few, if any, touch upon another dimension of climate change: the broad-spectrum medical crisis that changing planetary patterns can trigger, as climate change intensifies every disease we already know and opens the door to those we have yet to face.

Nowhere is this more visible than in India. Increasingly frequent and severe waterlogging due to excess rain in cities such as Mumbai is creating ideal conditions for waterborne infections including cholera, typhoid, hepatitis A and leptospirosis. Recurrent waterlogging overwhelms sanitation infrastructure, contaminates clean water supplies, and leaves urban populations exposed to serious illnesses.

Conversely, drought-prone regions are facing worsening water scarcity, forcing communities to rely on unsafe water sources, thereby increasing the burden of diarrhoeal diseases as well as chronic dehydration.

Expanding disease risk

Meanwhile, shifting seasonal patterns are driving a rise in infections, allergies and vector-borne diseases, as changing temperatures and rainfall cycles disrupt established trends and prolong pollen seasons. Disease windows are expanding, and their geographic reach is steadily widening, quietly accelerating climate-driven spread. Communities with no prior exposure lack immunity, while health-care systems in these regions remain underprepared to respond at scale. One major example of this is the exponential growth of mosquito-borne diseases, as rising temperatures have made previously inhospitable regions suitable for this insect. The impact on dengue patterns is already measurable in Delhi-NCR. The number of cases traditionally peaked in September but now peaks in November, as warmer and rainier conditions sustain mosquito populations for longer periods.

Malaria, once largely confined to endemic pockets of the Gangetic Plains and the warm, humid regions of central India, is now being reported in cooler areas such as Himachal Pradesh, where it historically had minimal presence.

Climate change threats

Climate change also triggers rising air pollution. As summers become increasingly hotter, greater reliance on air conditioning drives higher energy use and greenhouse gas emissions. These emissions contain elevated levels of $PM_{2.5}$ – microscopic pollutants that penetrate deep into the lungs and bloodstream – exerting widespread effects across multiple organs in the body, particularly the lungs, heart and kidneys.

Fine particulate matter penetrates deep into the lungs, causing inflammation, reduced lung function, and exacerbating respiratory conditions such as asthma and chronic obstructive pulmonary disease.

These particulates can also damage blood vessels, accelerate atherosclerosis, and increase the risk of hypertension, heart attack and stroke. The kidneys are equally vulnerable, and chronic exposure can impair kidney function, reduce filtration efficiency, and contribute to the progression of chronic kidney disease.

Greenhouse gases also trap more heat in the atmosphere, creating a feedback loop that amplifies the very crisis we are trying to manage through air conditioners and other cooling appliances. This heat stress forces the heart to work harder to regulate the body's temperature, increasing strain on the cardiovascular system. This can trigger complications such as hypertension, heart attack, and stroke. These conditions disproportionately affect people without adequate shelter, such as manual labourers who spend long hours working outdoors in extreme conditions.

Parts of the country, such as Odisha, Telangana, and Vidarbha, are reporting a rising number of heat-stroke-related deaths. In addition, rising night-time temperatures in urban pockets such as Delhi-NCR and Mumbai are eliminating the critical recovery window that the human body relies on to cool down after prolonged daytime heat exposure.

Infant health outcomes are also increasingly at risk – exposure to extreme heat and air pollution has been linked to preterm births and low birth weight among newborns.

Impact on food security

The health consequences of climate change also extend into food systems and nutrition. Extreme weather events and unseasonal rain disrupt crop cycles and reduce agricultural productivity, contributing to food shortages. The declining nutritional quality of food crops, combined with rising prices, further compounds the crisis, creating a hidden burden of micronutrient deficiencies and chronic malnutrition, especially among children.

Rising temperatures can also cause a decline in milk production, as cattle affected by heat stress compromise infant and child nutrition. These cascading effects on food security translate directly into weakened immunity and greater vulnerability to disease particularly among children and the elderly.

The warnings have existed for decades, but were largely overlooked. Climate change is no longer a distant threat – for public health in India, it is already a present reality. It is a multifaceted challenge. Treating it as purely environmental overlooks its profound human cost. Recognising it as a medical emergency is the first step toward responding with urgency.

The Multi-Dimensional Health Crisis

1. Water-Related Pathogens

Climate change disrupts the water cycle in two opposing but equally lethal ways:

- **Excess Rain/Waterlogging:** In cities like Mumbai, frequent flooding overwhelms sanitation, leading to spikes in **Cholera, Typhoid, Hepatitis A, and Leptospirosis**.

Drought & Scarcity: In regions like Vidarbha, water stress forces communities to use unsafe sources, increasing **diarrheal diseases** and **chronic dehydration**.

2. Expanding Vector-Borne Diseases

Warmer temperatures and altered rainfall are expanding the "geographic reach" and "seasonal windows" of diseases:

Dengue: In Delhi-NCR, the peak has shifted from September to November due to prolonged warmth.

Malaria: Historically confined to the plains, it is now surfacing in cooler high-altitude regions like **Himachal Pradesh**, where populations lack natural immunity.

3. The Air Pollution & Heat Feedback Loop

Rising heat creates a dangerous cycle:

Organ Damage: PM2.5 doesn't just affect lungs (Asthma, COPD); it enters the bloodstream, damaging the **Heart** (Atherosclerosis, Hypertension) and **Kidneys** (CKD).

Heat Stress: Extreme heat forces the cardiovascular system to overwork. The lack of "night-time cooling" in urban heat islands prevents the body from recovering, leading to increased mortality in cities like Delhi and Mumbai.

4. Nutritional & Maternal Health

Food Security: Unseasonal rains disrupt crop cycles, leading to malnutrition.

Cattle Stress: Heat stress reduces milk production, directly impacting infant nutrition.

Maternal Outcomes: Exposure to extreme heat and pollutants is now clinically linked to **preterm births** and **low birth weight**.

Strategic Implications

A. Vulnerability of the Informal Sector

The report highlights an "environmental injustice" aspect. Manual laborers and those without "thermal shelter" bear the brunt of heatwaves. This necessitates a shift in **Labor Laws** and **Urban Planning** (e.g., Cool Roof policies).

B. Strengthening Health Infrastructure

India's healthcare system is traditionally "reactive." The CAG report (and Dr. Trehan's insights) suggests a need for a **"One Health" approach** that integrates environmental monitoring with disease surveillance.

C. The Feedback Loop Challenge

The use of Air Conditioning as a primary adaptation strategy is counter-productive as it fuels the greenhouse effect. This points toward the need for **Passive Cooling** and **Green Architecture** under the **India Cooling Action Plan (ICAP)**.

Conclusion

Dr. Trehan's analysis serves as a call to action for "Climate-Resilient Health Systems." The transition from an environmental threat to a public health emergency means that India's climate policy must now be led not just by environmentalists, but by doctors and public health experts. Preventing the next pandemic or "silent" health crisis requires mitigating the climate triggers today.

UPSC Prelims Exam Practice Question

Ques: Which of the following best describes the "One Health" approach?

(a) Integration of human, animal, and environmental health

(b) Focus only on infectious diseases

(c) Privatization of healthcare systems

(d) Emphasis on hospital-based treatment

Ans: a)

UPSC Mains Exam Practice Question

Ques: Recognizing climate change as a public health emergency shifts policy from mitigation alone to integrated resilience—where environmental sustainability and human health become inseparable pillars of governance. **(150 Words)**

Page 09 : GS II : Social Justice / Prelims Exam

The "One Health" approach recognizes that the health of people is closely connected to the health of animals and our shared environment. As highlighted by the recent WHO Pandemic Agreement (May 2025) and the ongoing One Health Summit in Lyon, the world is shifting toward a legally binding framework to prevent the next "Zoonotic spillover"—where diseases jump from animals to humans due to anthropogenic activities like deforestation and illegal wildlife trade.

Reinforcing the case for a One Health approach

Global health risks demand a One Health approach grounded in coordination and scientific collaboration to strengthen pandemic preparedness and response

Ramya Kannan

When the 1995 film *Outbreak*, starring the inimitable Dustin Hoffman, was released to audiences worldwide, it seemed like surreal science fiction, pitched at the very edge of the realm of possibility. The pacy film profiled the desperate race to contain an imaginary zoonotic virus, *Motaba*, that jumped to humans as a result of anthropogenic activity – deforestation and trade in wild animals – spreading across nations like a forest fire.

The movie, though dramatic, served as a prescient illustration of a crisis that was to visit the world, nearly a quarter of a century later: the COVID-19 pandemic.

Interestingly, the film also stood out for its early portrayal of the core principles of One Health – long before the term was even coined. Since then, though, One Health, which draws on the interconnectedness between humans, animals and the environment, has emerged as a key concept gaining traction among nations, though practical implementation has progressed at a nearly glacial pace.

From fiction to reality

This year's World Health Day message – "Together for health. Stand with science" – underlines the essentiality of adopting a One Health approach to protect animals, the environment, and humans. It also highlights the critical role of scientific collaboration and the use of evidence in crafting policy. As *Outbreak* outlines cinematically, there is a permanent state of conflict between different departments, arms of the government, and even nations, that come in the way of working synchronously to better tackle health crises.

As John S. Mackenzie and Martyn Jeggo indicated in their 2019 editorial in *Tropical Medicine and Infectious Diseases*, the term 'One Health' was first officially used in 2003-2004, associated with the emergence of severe acute respiratory syndrome. With the spread of avian influenza H5N1, it gained ground. A significant contributor was the 'Manhattan Principles,' derived at a 2004 Wildlife Conservation Society meeting, which recognised the link between human and animal health and the threats diseases pose to food supplies and economies.

The authors explained: "It has become increasingly clear over the past three decades that the majority of novel, emergent zoonotic infectious diseases originate in animals and that the principal drivers of their emergence are associated with human activities, including changes in ecosystems and land use, intensification of agriculture, urbanisation, and international travel and trade."

Swift action: Post-COVID, the Indian government fast-tracked collaborative positions to address future crises. K. MURALI KUMAR

Today, international wisdom acknowledges that a pathogen unknown to mankind can suddenly emerge, wreak havoc on populations, and threaten the stability of the world faster than one can say 'One Health'.

According to the One Health Commission: "One Health is an integrated, unifying approach that aims to sustainably balance and optimise the health of people, animals and ecosystems." The approach it advocates involves mobilising multiple sectors, disciplines and communities to foster well-being and tackle threats to health and ecosystems.

The COVID-19 pandemic, in some senses, was the fulcrum that convinced even reluctant nations of the world to invest in One Health, demonstrating visibly what the lack of coordination; and on the other hand, seamless coordination can do. It was the collective sharing of SARS-CoV-2 genetic data and the study of human genetic factors in COVID-19 susceptibility that drove the international vaccine development effort. The WHO Pandemic Agreement, adopted on May 20, 2025, is a legally binding international treaty aimed at enhancing global prevention, preparedness, and response to future pandemics. It focuses on equity, establishing a Pathogen Access and Benefit-Sharing system to ensure rapid pathogen data sharing and equitable access to vaccines and treatments.

Internationally, One Health is led by the Quadripartite collaboration – including WHO, FAO, the United Nations Environment Programme, and the World Organisation for Animal Health. In October 2022, they launched the One Health Joint Plan of Action.

Post-COVID, the Indian government fast-tracked collaborative positions to address future crises. It mobilised the National One Health Mission as a collaborative initiative designed to integrate human, animal, and environmental health sectors. It avowedly aims to enhance pandemic preparedness, disease surveillance, and zoonotic disease control.

With increasing evidence emerging of stressors from climate change and how these affect the natural ways of the world, it has become clear that addressing the effects of extreme climate events is essential. While several national initiatives exist to drive India ahead on this path, continuous monitoring, evaluation, and interim mitigation programmes are urgently needed.

In this context, some State-led initiatives present inspired examples for replication. These include Odisha's pioneering Climate Budget to track climate-resilient development expenditures, Kerala's participatory carbon-neutral plan in Meenangadi, and Tamil Nadu's Green Climate Company and Cool Roof Project in Chennai.

Coordinated solutions

The One Health Summit in Lyon, France, currently under way, in time for World Health Day, will focus on the main factors contributing to infectious and non-communicable diseases, such as zoonotic reservoirs, vectors, antimicrobial resistance (AMR), sustainable food systems, and exposure to pollution. It hopes to foster international and interdisciplinary dialogues about global challenges, particularly with reference to co-operation, propose solutions to strengthen health systems, and rethink global institutional frameworks that will align with One Health goals.

Welcoming increasing political consensus on One Health, WHO Director-General Tedros Adhanom Ghebreyesus said in 2023: "A One Health approach makes public health sense, economic sense and common sense." Indeed, the only thing that makes sense in an increasingly interconnected world is an approach that recognises and acts on these connections.

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The Pillars of One Health

The approach is built on the synergy of three distinct but overlapping domains:

Human Health: Addressing infectious diseases, non-communicable diseases, and nutritional security.

Animal Health: Monitoring domestic livestock and wildlife for potential pathogens (e.g., Avian Flu, Rabies).

Environmental Health: Tackling climate change, pollution, and ecosystem degradation that force wildlife into closer contact with human settlements.

Key Global and National Milestones

1. Global Frameworks

The Quadripartite: A collaboration between the WHO (Health), FAO (Food/Agriculture), UNEP (Environment), and WOAH (Animal Health). They launched the One Health Joint Plan of Action (2022-2026).

The WHO Pandemic Agreement (2025): A landmark treaty focusing on Pathogen Access and Benefit-Sharing (PABS). It ensures that if a developing nation shares data on a new virus, they are guaranteed equitable access to the resulting vaccines and treatments.

2. India's Institutional Response

National One Health Mission: A cross-ministerial initiative to break "silos" between the Ministry of Health and the Ministry of Animal Husbandry.

State-Led Innovations: Odisha: Introduced a Climate Budget to track resilient spending.

Kerala: Implementing a Carbon-Neutral Plan in Meenangadi.

Tamil Nadu: Established a Green Climate Company and Cool Roof Projects to mitigate urban heat islands.

Why One Health is Non-Negotiable

A. Economic Rationale

The World Bank estimates that a One Health approach would cost significantly less than the multi-trillion dollar loss caused by a single pandemic like COVID-19. It transitions the global health strategy from "Crisis Management" to "Risk Mitigation."

B. Tackling Antimicrobial Resistance (AMR)

One Health is the only way to solve AMR. Since nearly 70% of antibiotics are used in the livestock and poultry industry, regulating animal health is critical to preventing the rise of "superbugs" that affect human medicine.

C. Climate and Zoonosis

Climate change acts as a "threat multiplier." As habitats shrink, species migrate to new areas, bringing novel viruses to naive populations (as seen with Malaria's movement into Himachal Pradesh).

Challenges to Implementation

Institutional Silos: Different departments (Forest vs. Health vs. Revenue) often have conflicting mandates and don't share data in real-time.

Funding Gaps: While political consensus is high, actual financial allocation for "preventative" environmental health remains low compared to "curative" medical spending.

Data Sovereignty: Nations are often hesitant to share pathogen data due to fears of trade bans or economic sanctions.

Conclusion

The One Health approach is, as Dr. Tedros Adhanom Ghebreyesus stated, "common sense." For India, it represents a path toward Sustainable Development Goal 3 (Good Health and Well-being) while safeguarding the economy from future shocks. Success will depend on whether the National One Health Mission can effectively integrate grassroots surveillance with international scientific collaboration.

UPSC Prelims Exam Practice Question

Ques : **The term "zoonotic spillover" refers to:**

(a) Spread of diseases within animal populations

(b) Transmission of diseases from animals to humans

(c) Genetic mutation in viruses

(d) Spread of plant diseases to animals

Ans: b)

UPSC Mains Exam Practice Question

Ques: Explain the concept of the One Health approach. Why is it important in preventing future pandemics? **(150 Words)**

Page : 13 : GS III : Indian Economy / Prelims Exam

The Global South faces a unique paradox: while it leads the world in the rate of renewable energy capacity addition, its economic stability is still dictated by the volatile prices of imported oil, gas, and coal. Current metrics like Carbon Intensity (emissions per unit of GDP) and Energy Intensity (total energy per unit of GDP) fail to capture this specific "import vulnerability." Experts now argue for a new metric—Fossil-Fuel Intensity—to bridge this gap in policy and planning.

Oil risk: why India and the Global South need fossil-fuel intensity metric

Economies such as Brazil, China and India stood among the top five in the Renewables 2025 Global Status Report for "Total Renewable Energy Supply by Technology" yet, each fossil-fuel price and supply-chain volatility shock shakes most countries in the Global South grouping

NEWS ANALYSIS

Nirmal Kumar Singh
Debajit Palit
Martand Shardul

Surging price: Crude oil free-on-board price/barrel rose by over 50% in March from a year earlier.

From the OPEC crisis of the 1970s to today's West Asia tensions and the Russia-Ukraine conflict, each disruption has reminded the Global South of a structural vulnerability it has never fully measured - dependence on fossil fuels, particularly imports of oil, gas, and coal.

The Global South, which is historically least responsible for anthropogenic causes of climate change, has deployed terawatt-scale non-fossil capacities. Economies such as Brazil, China and India stood among the top five in the Renewables 2025 Global Status Report for "Total Renewable Energy Supply by Technology".

Yet, each fossil-fuel price and supply-chain volatility shock shakes most countries in the Global South.

As per India's Petroleum Planning & Analysis Cell (PPAC), crude oil free-on-board (FOB) price (Indian basket) per barrel increased by over 50% in March 2026 compared with March 2025. With the ongoing tensions in West Asia showing little sign of easing, such volatility is unlikely to remain a one-off episode. Recently, *Reuters* reported increases of 34% and 35% in petrol and diesel prices respectively per litre in Malawi. Similarly, Gambia is reported to have increased petrol and diesel prices by over 18% and 12% respectively. The Global South economies, despite steady progress on clean energy transition, are once again susceptible to fossil-fuel shocks.

Under-reported

Vulnerability is more pronounced in economies that are heavily dependent on fossil-fuel imports, where import bills constitute a substantial share of gross domestic product and where imports originate from geopolitically volatile regions.

Fossil-fuel shocks penetrate deep through costs and erode household purchasing power, raise input costs for industry, and amplify inflationary pressures for all sectors. If the West Asia conflict situation persists, as appears likely, rising import burden can adversely impact development activities and disproportionately affect the vulnerable populations. A long-term crisis can undo the progress on energy access.

> A composite index, based on fossil-fuel intensity, fossil-fuel vulnerability scores, and the benefits of fuel-substitution programmes is required.

To track decarbonisation, countries primarily measure carbon intensity and energy intensity. These don't measure continued fossil-fuel dependence and vulnerabilities.

Fossil-fuel intensity, defined as the total consumption of oil, gas, and coal relative to economic output, can be leveraged as complementary metric to measure progress.

Fuel substitution

To cut fossil-fuel risks, leading economies are undertaking fuel substitution programmes, tailored to national contexts. In India, flagship initiatives for universal access to electricity and clean cooking have considerably improved energy access. Strategic electrification of demand, from households to railways, has reduced consumption of petroleum products, while deployment of renewables and green molecules, such as biofuels and green hydrogen, is gradually replacing fossil fuels in hard-to-abate sectors. A composite index, based on fossil-fuel intensity, fossil-fuel vulnerability scores, and the benefits of fuel-substitution programmes can be leveraged to fully understand the real transition in the Global South.

Exposed to import risks

As per the IEA, future growth in energy demand is expected to come from emerging economies, which are mostly in the Global South. While energy intensity and carbon emissions in most Global South countries are declining, their fossil-fuel demand is not. As per the PPAC, between 2014-2015 and 2024-2025, India registered a 40% rise in aggregate consumption of petroleum product categories.

Leveraging existing datasets from the IEA, IRENA, the World Bank, and national statistical agencies, among others, measuring national and sectoral fossil-fuel intensity is possible.

In this endeavour, incorporating the principle of Common but Differentiated Responsibilities and Respective Capabilities, by normalising preliminary findings with country specific data on income levels, historical emissions, vulnerability and resource endowments, will facilitate equitable infusion of financial and non-financial interventions.

This will enhance macroeconomic stability, help attract climate finance, improve transition rankings, and boost investment attractiveness. It is imperative for financial institutions, policymakers, renewable energy agencies to explore synergistic partnerships to allow agencies align on standardised protocols, data sources, and methodologies for defining, evaluating and normalising the composite index.

A comprehensive clean energy transition metric for the Global South must serve its purpose: building resilient economies that are not exposed to external fossil-fuel shocks, not merely to enable comparison with the developed world.

(Martand Shardul is former Policy Director (India) at the Global Wind Energy Council and a former Fellow at TERI. Dr. Debajit Palit is heading the Centre for Climate Change & Energy Transition at the Chintan Research Foundation. Nirmal Kumar Singh is a former executive at Indian Oil Corporation Limited. All views are personal)

The Vulnerability Gap: Why Renewables Aren't Enough (Yet)

1. The Import Dependency Trap

India's consumption of petroleum products rose by **40% between 2015 and 2025**. Even as the "green" share of the energy mix grows, the absolute volume of fossil fuels required to power emerging economies continues to climb. This exposes the Global South to:

Geopolitical Shocks: Tensions in West Asia and the Russia-Ukraine conflict.

Inflationary Pressures: High oil prices penetrate deep into the economy, raising transport costs, food prices, and industrial input costs.

Currency Depreciation: Rising import bills drain foreign exchange reserves, as seen recently in Malawi and Gambia.

2. The Failure of Existing Metrics

Carbon Intensity: Measures how "dirty" the economy is, but doesn't tell you how much of your "cleaner" growth is still tethered to foreign oil.

Energy Intensity: Measures efficiency, but doesn't distinguish between a unit of energy derived from a domestic solar plant versus an imported barrel of crude.

The Proposed Solution: Fossil-Fuel Intensity Metric

The authors suggest a **Composite Index** to measure the true state of energy transition in the Global South.

Component	Purpose
Fossil-Fuel Intensity	Ratio of total oil/gas/coal consumption to economic output.
Vulnerability Score	Measures exposure to import risks and geopolitical volatility of supply sources.
Fuel Substitution Benefit	Tracks progress in replacing fossil fuels with Green Hydrogen, Biofuels, and Electrification (Railways/EVs).

Strategic and Economic Dimensions

A. Macroeconomic Stability

For India, reducing fossil-fuel intensity is a matter of **Fiscal Prudence**. A predictable metric would allow the RBI and the Ministry of Finance to better hedge against inflation and manage the Current Account Deficit (CAD).

B. Attracting Climate Finance

Global climate finance often flows toward projects that reduce "carbon." However, the Global South needs finance for "structural substitution." By demonstrating a declining Fossil-Fuel Intensity, these nations can prove they are becoming lower-risk destinations for long-term investment.

C. CBDR-RC Principle

The metric aligns with the UN principle of **Common but Differentiated Responsibilities (CBDR)**. It allows findings to be normalized based on a country's income level and historical emissions, ensuring that developing nations are not unfairly penalized for the energy demand required to lift millions out of poverty.

Pathways to Reduction: India's "Substitution" Strategy

India is already implementing several "Hard-to-Abate" sector interventions:

National Green Hydrogen Mission: Aiming to replace natural gas in fertilizers and refineries.

PM-eBus Sewa: Electrifying public transport to reduce diesel demand.

Biofuel Blending (E20): Reducing the net volume of imported crude in the petrol pool.

Railway Electrification: India's railways are on track to be the world's largest "Green Railways."

Conclusion

The 1970s OPEC crisis and the 2026 oil price surge share a common lesson: energy security is not just about having "some" renewables; it is about the "rate of substitution" of fossil fuels. Adopting a Fossil-Fuel Intensity metric will provide the Global South with a realistic mirror of its vulnerabilities, moving beyond mere "comparison with the West" toward building truly resilient, self-reliant (Atmanirbhar) economies.

UPSC Prelims Exam Practice Question

Ques: The term Current Account Deficit (CAD) is most directly affected by:

(a) Increase in domestic savings

(b) Rise in fossil fuel imports

(c) Decline in tax revenues

(d) Increase in capital inflows

Ans: b)

UPSC Mains Exam Practice Question

Ques: Explain the concept of "Fossil-Fuel Intensity." How does it better capture the vulnerabilities of the Global South? **(250 Words)**

Page : 08 : Editorial Analysis

A disturbing step for rights, dignity and mental health

Dr. Kavita Arora

Senior psychiatrist with over 25 years of clinical practice and lived-experience expertise, Founding Cohort member of India Mental Health Alliance (IMHA), Co-Founder of Children First, and adviser and trainer in gender-affirming mental health practices across several Indian institutions

The Transgender Persons (Protection of Rights) Amendment Bill, 2026 has caused deep confusion, perplexity, and, over the past two weeks since its introduction, apprehension and fear. In trying to make sense of both the intent and the possible implications of the amendment, these days have raised more questions than they have provided satisfactory answers. At the core is the question, "Who owns my gender and therefore my gender identity?"

For the majority of men and women who happen to be cisgender, life hardly ever brings us to a point where we are faced with this as a question. There is no 'evaluation' that we need to undergo. Whether it is a form at a hospital, clinic, bank, or workplace, we claim our gender ourselves by ticking a box. We simply state our gender, not expecting anyone to question the obvious. However, for gender diverse and transgender individuals, this is what is proposed henceforth. This violates the foundational principles of dignity, autonomy and mental well-being.

From progression to regression

In 2014, the Supreme Court of India delivered a historic judgment in *NALSA vs Union of India*, recognising transgender persons as a legitimate gender identity. It was a watershed moment for jurisprudence, public policy and governance because it rested on a simple and powerful principle: gender identity is self-identified. Just as any individual declares themselves a man or a woman without external verification, transgender persons, too, were reaffirmed as the final and only authority on their gender identity. This principle is rooted not only in human dignity and autonomy but also in constitutional morality under Articles 14 (Equality before Law), 15 (non-discrimination), 19 (Freedom of Expression) and 21 (Right to Life and Personal Liberty).

In 2019, Parliament passed the Transgender Persons (Protection of Rights) Act. While parts of it were criticised by the community, it remained aligned with *NALSA* on the cornerstone issue of self-identification. Indeed, it acknowledged the community's long history of discrimination and exclusion, and sought to prohibit discrimination, ensure access to education and health care, extend welfare measures such as housing, skill development and employment support. These welfare schemes, in our minds, as allies and health-care practitioners, represented an attempt to build an enabling framework rather than a restrictive one.

Much of the work being done at both the health-care training and education levels, as a result of the 2019 Act, requires sensitisation drives to ensure that curricula and training for health care and allied professions are sensitive to gender-affirming practices, and to make welfare schemes more widely known and implementable. In these six years, all stakeholders had just about started to align themselves with the global standards that the 2014 judgement and the 2019 Act both validated.

The Transgender Amendment Bill threatens welfare access and instils fear and humiliation for an already vulnerable population

The amendment to the 2019 Act – which was notified in the Gazette on March 30, 2026 – fundamentally reverses the NALSA judgment. It replaces self-identification with medical and bureaucratic gatekeeping, redefining who is 'allowed' to call themselves transgender. Under this amendment, a transgender person must appear before a medical board; undergo an assessment to 'prove' their gender identity; wait while the board forwards its recommendation to the District Magistrate, and obtain a certificate declaring them transgender.

There is no medical or evaluative biomarker for gender identity. No external knowledge or proof of any sort can determine the deeply held and personally felt experience of one's gender identity. There would have been no need for trans individuals to "come out "at all if that had been the case.

This is the accepted truth in medicine and health care across the globe. Therefore, it is perplexing that the Amendment talks about determining and validating someone's gender through a process in which the answer to the question "what is my gender?" has to be given by complete strangers.

This raises many issues that seem to present challenges at many levels.

Medical boards – many of which do not exist at the district level – are already overburdened even for urgent health-care needs. In the absence of criteria, as well as time and process, it is likely that boards may fall back on arbitrary, invasive or abusive examinations, including the possibility of genital inspection. This stems arguably from the traditional way of "assigning "gender at birth by looking at the genitals of a newborn child by a doctor or another adult. This is far from what we know to be the understanding of gender identity for gender diverse and trans individuals. Extrapolating this method to an adult and making it mandatory is in direct and complete violation of dignity, privacy and bodily autonomy. I cannot imagine any circumstance that would make me wish to approach this premise for myself as an adult cisgender woman. The very thought of such a scrutiny by a board of strangers, would probably create anticipatory mental distress and make me actively avoid approaching such a premise.

Instead of improving welfare access, the amendment will likely shrink it, deter individuals from approaching the state, and reintroduce fear and humiliation into an already vulnerable population.

Mental health fallout, crisis in the making

The transgender community already faces extreme vulnerability. Data show that 99% of transgender persons have faced social rejection; 52% have faced harassment or violence in educational spaces; 57% of trans women report experiencing physical or sexual violence at least once, and transgender adolescents have suicide attempt rates estimated between 13% and 50%, far above the national average.

Against this backdrop, introducing additional layers of suspicion, verification and scrutiny is not just insensitive. It is unsafe. As a mental-health practitioner and an ally for the trans community, I am deeply concerned.

Not just prospective; what is concerning is the uncertainty for thousands of transgender individuals currently enrolled in health-care services, whose access may now be questioned or invalidated in the face of the ambiguity about supporting the gender exploration and gender journey of an individual. This is not merely a procedural shift; it has the potential of developing rapidly into a public mental-health emergency.

The amendment introduces a clause that criminalises 'undue influence' in helping someone identify as transgender, with penalties up to 15 years of imprisonment. For mental-health practitioners, psychologists, lawyers and educators, this creates an unprecedented ethical and legal risk. In many families, gender-identity journeys create tension or disagreement. Community-based organisations, trans-affirmative mental health practitioners and services are frequently accused of 'encouraging' adolescents simply for acknowledging their lived reality. Under this amendment, such allegations could become criminal charges.

This will discourage health-care practitioners from providing essential, evidence-based care; challenge community-based organisations to remain as allies, and push transgender persons away from formal health care and heighten mental distress that will likely remain unsupported.

Additionally, the amendment collapses distinctions between transgender, intersex and hijra identities, erasing cultural, social and biological differences. Trans men remain nearly invisible in the framework, further marginalising them.

An appeal for reflection and action

The current amendment risks undoing a decade of progress across law, governance, health systems and institutional practice. If misuse has occurred – even if limited to the 0.01% that the government suggests – the solution lies in audits, verification protocols and administrative strengthening – not in policing gender identity or forcing medicalisation.

To uphold constitutional values, protect mental health, and ensure administrative feasibility, this amendment must be reconsidered. We owe each individual in India the assurance that governance frameworks do not deepen fear, stigma, or exclusion for any community.

GS Paper II: Social Justice

UPSC Mains Exam Practice Question: The conflict between state regulation and individual autonomy lies at the heart of transgender rights debates. Critically analyze in the context of recent legislative developments. **(150 Words)**

Context : The 2026 Amendment marks a departure from the "self-identification" model established by the landmark NALSA vs. Union of India (2014) judgment. By introducing medical and bureaucratic "gatekeeping," the bill has sparked a debate on the ownership of gender identity and the potential for a public mental health crisis among an already marginalized community.

The Shift: From Self-Identification to Medical Boards

The core of the controversy lies in the procedural changes for obtaining a transgender certificate:

Feature	2014 NALSA / 2019 Act	2026 Amendment Bill
Primary Authority	The Individual (Self-identification)	Medical Board & District Magistrate
Verification	No external proof required for gender.	Mandatory assessment to "prove" identity.
Privacy	High; based on personal felt experience.	Low; risk of invasive physical/genital exams.
Legal Philosophy	Autonomy & Dignity (Art. 21).	Surveillance & Prevention of "Misuse."

Key Concerns Highlighted by the Expert

1. Violation of Constitutional Morality

The bill is seen as a reversal of the rights guaranteed under Articles 14, 15, 19, and 21. By requiring a board of strangers to "validate" a person's gender, the state interferes with bodily autonomy and the right to privacy.

2. The "Medicalization" of Identity

Dr. Arora emphasizes that there are no biological biomarkers for gender identity. Forcing individuals to undergo medical evaluation treats a natural variation of human identity as a "condition" to be diagnosed, which contradicts global medical standards.

3. The "Undue Influence" Clause

The amendment introduces a clause criminalizing "undue influence" in helping someone identify as transgender, with up to 15 years of imprisonment.

- **Impact:** This creates a "chilling effect" for mental health practitioners, lawyers, and NGOs.
- **Risk:** Allies may stop providing gender-affirming care for fear of being accused of "encouraging" or "influencing" an individual's journey.

4. Administrative & Practical Hurdles

- **Overburdened Systems:** District-level medical boards are often non-existent or lack the training to handle gender-diverse cases sensitively.
- **Erasure of Nuance:** The bill collapses the distinctions between Transgender, Intersex, and Hijra identities, ignoring their unique cultural and biological contexts.

Social and Ethical Dimensions

A. Impact on Mental Health

The transgender community already faces staggering rates of social rejection (99%) and suicide attempts (up to 50%). Adding layers of suspicion and scrutiny can lead to "Minority Stress," deterring individuals from seeking formal healthcare and welfare.

B. Governance vs. Rights

The government justifies these measures to prevent the misuse of welfare schemes (estimated at 0.01%). However, the principle of Proportionality suggests that the solution to administrative misuse should be better auditing, not the stripping away of fundamental rights for the entire community.

C. Jurisprudential Regress

In Indian law, the trend has generally been toward expansion of rights (e.g., Decriminalization of Sec 377). This amendment is viewed as regressive because it moves away from the "Right to be Let Alone" and toward state-monitored identity.

Conclusion

The Transgender Persons Amendment Bill, 2026, presents a classic conflict between state regulation and individual liberty. While the government aims to streamline welfare, the human cost—manifesting as fear, stigma, and mental distress—cannot be overlooked. To uphold the spirit of the NALSA judgment, the focus should remain on sensitization and enabling frameworks rather than policing the deeply personal reality of gender identity.