Topics - MINDS MAPS included (Daily current affairs 7th January 2025

- Target UPSC CSE Prelims 2025
- **Ancient DNA and Population Dynamics.**
- **Collegium System**
- **Digital Governance in India:**
- **The Climate Conference in Baku 2024:**
- **National Anthem Protocols in India**
- **Understanding Human Metapneumovirus (HMPV)**
- **Mains**

By saurabh Pandey

THE HINDU

Q Digital governance is a wayforward for citizen centric administration '' Illustrate

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Q. It is a magnificent monument dedicated to Lord Shiva which was built by King Jajati Keshari in the 10th Century and completed by King Lalatendu Keshari in the 11th Century. This great temple represents the quintessence of the Kalinga type of architecture. (IE)

A) Bhadrachalam Temple

B) Venkateswara Temple

C) Sun Temple Konark

D) Lingaraj Temple

Schedule CRASH COURSE ON UPSC CSE Prelims 2025
(Upcoming week, 6th to 11th January)

Monday	6th January 2025	Indian Geography through Mapping of INDIA (Mountain)
Wednesday	8th January 2025	Indian GEOGRAPHY through mapping (Passes, Rivers)
Friday	10th January 2025	Agriculture for GS
Saturday	11th January 2025	Agriculture for GS

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EVERYTHING IN ONE COURSE !!

Twigstats: new tool reveals hi-res genetic view of people's ancestors

A fresh analysis using Twigstats has determined more precisely than ever individual-level ancestry at a very high resolution. An international collaboration was even able to revisit the ancestry of population groups in the far-flung western frontiers of the Roman Empire

Sridhar Sivasubbu
Vinod Scaria

Tracing genetic ancestry in particular across populations still remains a challenging task. This is because populations across geographical regions often tend to be very similar, statistically speaking CHUTTERSNAP

Prehistoric human ceremonial burials, mass graves, and war graves scattered around the world are a treasure trove of ancient genetic material that scientists consider key to unlocking secrets from our past. The ancient DNA (aDNA) at these sites opens windows into population dynamics, including the expansion and replacement of populations using peaceful, natural, or violent means; admixture events involving two or more sub-populations; cultural transitions; migrations for hunting; and wealth at individual, local, and global scales.

That said, tracing genetic ancestry in particular across populations still remains a challenging task. This is because populations across geographical regions often tend to be very similar, statistically speaking.

Different sample sizes

For example, studies in the past have documented genetic differences between ancient groups such as the hunter-gatherers, early farmers, and the steppe-pastoralists of the Stone and Bronze Ages. Similarly, numerous studies in recent years have provided insights into the genetic diversity of mediaeval populations across the world. But comparing the genetic ancestry of ancient and mediaeval populations has been hampered by differences in sample sizes. There are fewer samples bearing aDNA, resulting in lower sequencing quality compared to that of mediaeval or modern genomes, which come from larger cohorts.

The incorporation of genetic material in the form of gene flows laterally, from an ancient line into a modern one after ancient times, adds an additional layer of complexity.

Traditionally, researchers' studies of aDNA have involved analysing single nucleotide polymorphisms (SNPs), which are natural genetic variations in the genomes. The method has been extensively used to reconstruct genetic histories and ancestry models using aDNA derived from Indo-European and Native American populations.

In a 2009 study, researchers from the Broad Institute in the US and the CSIR-Centre for Cellular and Molecular Biology, Hyderabad, reconstructed India's population history as well. They analysed 25 diverse groups and identified two ancient populations in the country that were ancestral to most Indians. Ancestral North Indians were found to be genetically closer to Central Asian, European, and Middle Eastern populations, while Ancestral South Indians were a distinct group. The analysis of SNPs is a powerful technique when the task is to understand populations, but it's restricted by the need for high-quality DNA samples and its inability to resolve the histories of groups with closely related ancestors.

Combining various techniques

Alternatively, analytical methods that use haplotypes, or shared segments of DNA, and rare variants instead of only SNPs have been found to be more powerful.

Researchers have applied the genealogical tree inference method to modern and ancient genomes to understand their population structure, demographics, locations of ancestors, etc.

This method captures information from haplotype-sharing, or identity-by-descent, and rare variants simultaneously, includes time-resolved information about genetic ancestry, and provides comprehensive insights into how individuals 'share' their ancestors.

For example, in a study published on January 1 in *Nature*, a collaboration led by the Francis Crick Institute in the UK and including multiple research groups across the UK, Japan, and Sweden developed a new way to infer genome-wide genealogies. The team has called it Twigstats. It uses time-stratified ancestry analysis that boosts the statistical power of existing methods by a magnitude and reduces statistical errors.

A particularly unique aspect of Twigstats is its ability to take into account the coalescence of populations in recent times.

The moving Viking

The authors first tested Twigstats on multiple simulated genetic conditions, including to verify using previously published work, to ascertain its robustness. Then they applied it to the task of reconstructing the genetic history of 1,556 aDNA samples belonging to individuals who lived in northern and central Europe from 500 BC to 1000 AD, spanning the Iron, Roman, and Viking ages on the European continent.

This fresh analysis using Twigstats has determined more precisely than ever individual-level ancestry at a very high resolution. The researchers were even able to revisit the ancestry of population groups in the far-flung western frontiers of the Roman Empire in the first millennium AD. Twigstats models also provided direct evidence and

high-resolution maps of the migration of individuals who spoke Germanic languages and had Scandinavian-like ancestry across Europe in the first century AD.

In the region represented by present-day Poland, the analysis of ancient genomes using Twigstats suggested a unique shift in ancestry over historical timelines. For example, the team found signs of a shift away from the corded ware cultures in the middle to late Bronze Age (1500 BC to 1000 BC). For another, in the first to the fifth centuries AD, populations associated with the Wielbark culture peeled away from Bronze Age groups.

In the appropriate historical and anthropological contexts, these insights are significant – and Twigstats should be credited for uncovering them. By analysing a large dataset of ancient genomes, the researchers could reconstruct fine population movements and admixture events that coincided with key cultural transitions, offering new insights into the genetic legacy of groups like the Vikings and the impact of migrations on the genetic makeup of modern Europeans.

The study also uncovered evidence of Scandinavian-like ancestry present in the British and the Baltic regions before the traditional commencement of the Viking Age. This suggests interactions with and migrations from Scandinavia began sooner than researchers believed was the case. The presence of Scandinavian ancestry in Britain was also linked to the Anglo-Saxon migrations, while its presence in the Baltic region indicated early contact with Scandinavian groups.

While Scandinavian ancestry expanded significantly across Europe, the study also revealed gene flows into Scandinavia before the Viking Age. Specifically, the researchers reported evidence of ancestry related to continental Europe and the British Isles in pre-Viking Age

Researchers reconstructed fine population movements and admixture events coinciding with cultural transitions, offering new insights into the genetic legacy of groups like the Vikings and the impact of migrations on the genetic makeup of Europeans

Scandinavian individuals. The implication is that the flow of genes was bidirectional. Evidence of the movements of Vikings is recorded in the genetic makeup of the populations of Britain, Ireland, and Iceland.

Cultures and genes

In the historical context, the study seems to confirm the widespread impact of Viking activity as well as highlight the complex and dynamic nature of population movements during the Viking Age.

Taken together, the new study is a good example of how the use of innovative methods for genomic analysis can refine our understanding of the dynamics of early mediaeval populations. By combining genetic data with archaeological and historical evidence, and adding the fact that cultural shifts are often associated with genetic changes as well, researchers can now offer a more nuanced and detailed picture of the complex processes that shaped the cultural histories of our ancestors.

As the researchers wrote in their paper, "Our approach can be used for the reconstruction of new high-resolution genetic histories around the world."

Topics → Ancient DNA and Population Dynamics

🧬 **Ancient DNA (aDNA) Significance**

Prehistoric burial sites provide valuable genetic material.
Helps in understanding population dynamics and historical migrations.

🌍 **Challenges in Genetic Ancestry**

Tracing genetic ancestry is complicated.
Similarities among populations across different geographical regions add complexity.

📊 **Sample Size Issues**

Comparisons between ancient and medieval populations are hindered by smaller aDNA sample sizes.
Affects sequencing quality.

🔬 Advancements in Analysis Techniques

Traditional SNP analysis is being supplemented with haplotype and rare variant methods.
Enhances understanding of population structures.

🧬 Twigstats Methodology

A new method called Twigstats improves the analysis of ancient genomes.
Allows for high-resolution ancestry reconstruction and better understanding of population coalescence.

⚔️ Viking Ancestry Insights

Study revealed earlier interactions and migrations from Scandinavia to Britain and the Baltic regions.
Indicates a complex ancestry before the Viking Age.

📚 Cultural and Genetic Interplay

Research highlights the relationship between cultural transitions and genetic changes.
Provides a nuanced view of early medieval population dynamics.

Summary: Innovative genomic analysis methods, particularly Twigstats, enhance our understanding of ancient populations, migrations, and the interplay between culture and genetics.

The Collegium and changes — it may still be early days

Two interesting nuggets of information have emanated in recent days about the functioning of the Supreme Court of India's Collegium. As is often the case with the body's processes, reports in the media attribute the news of these decisions to unnamed sources. The collegium, the accounts say, will now conduct interviews of candidates who have been recommended for elevation as judges to the High Courts. The panel will also, to the extent possible, exclude from selection those whose close relatives have served or continue to serve as judges of the High Courts or the Supreme Court.

By themselves, neither of these resolutions might seem especially remarkable. One would think that appointments to important positions in the State – in this case, to the higher judiciary – would require careful consideration, including a meeting by the decision-makers with the nominated candidates.

One would also think that some amount of pruning of nominees is inevitable in any process of selection. Here, the collegium is conscious that a few deserving candidates might miss out in a move to exclude those with kin on the Bench, but it believes, on a balance, that this will help create a more diverse judiciary.

There is still a concern

It is too early to judge the merits of these choices. In time, they may well come to be seen as harbingers of change and reform, but, for now, a familiar concern looms large, threatening to militate against that prospect. Any reform of the collegium system – much needed as it is – will only go so far, if the government is permitted to stonewall proposals, on arbitrary, whimsical and often undisclosed grounds.

At its foundation, the collegium is a product of judge-made law. Thus, it seems to forever stand at a crossroad. It has no formal rules to bind it; it is answerable to nobody; and its functioning – whether it is in the publication of its decisions or in the opacity and the mystique of its methods – is suffused in a certain ad hocism.

Replacing this with a clear set of binding rules is essential to the maintenance of the system's integrity. For example, we are told that there exists a "memorandum of procedure". But does a breach of that manual carry with it any consequences? Will the interviewing of candidates be written into those set of rules? Who is to say how the collegium under future Chief Justices of India (CJI) will function?

In recent weeks, as we have marked the 75th anniversary of the Constitution's adoption, we have seen many a paean sung to the document's text and vision. Its survival has enlivened our commitment to equality and social justice. But that we have been unable to determine quite how

Suhrith Parthasarathy

an advocate practising in the Madras High Court

best to appoint our judges is an enduring blemish.

The Constitution's framers debated the question over many days. They were mindful of the foundational ideas underlying the republic: that the legislature, the executive and the judiciary must remain separate. But striking a balance and ensuring that the sovereign function of making judicial appointments would not come in the way of ensuring the autonomy of the courts was always going to be a sticky issue.

The 'middle course' it was

All manners of suggestions were made in the Constituent Assembly. But the drafters, in the Assembly's chairperson Dr. B.R. Ambedkar's words, chose to go down a "middle course". To that end, the Constitution provides that judges to the Supreme Court are to be appointed by the President of India in consultation with the CJI and such other judges that he or she deems fit. Judges to the High Courts are to be appointed by the President in consultation with the CJI, the Governor of the State and the Chief Justice of that court. In the case of transfers, the President may move a judge from one High Court to another, but only after consulting the CJI.

These stipulations are by themselves clear. But in failing to define what manner of consultation ought to be made, in failing to explicate how transparent this process needs to be, the provisions opened themselves up for judicial consideration.

In 1993, in what is popularly known as the Second Judges Case, the Court held that "consultation" must mean "concurrence". And concurrence not only from the CJI, but from a "collegium" of judges. In the process, the Court fashioned a whole new procedure that it believed would maintain both a fidelity to the bare text of the Constitution's words and the chief objective of ensuring an independent and autonomous judiciary.

The process has a number of nuts and bolts to it. But, in short, it postulates the following: the recommendation to appoint a new judge to a High Court or to the Supreme Court, to transfer a judge from one High Court to another, and to elect a new Chief Justice to a High Court, would come from the collegium – a body comprising the CJI and his senior colleagues, in some cases, two members, and in others four. The collegium will make this recommendation after taking the views of "consultee" judges. Once this recommendation is made, the Union government can either choose to accept the proposal or return the proposal for reconsideration. Upon reconsideration, if the proposal is submitted anew, the government has no choice but to sanction the resolution.

While this seems simple enough, seeing as the

law was laid down by the Court sans any attendant and binding rules, the government has a variety of means available to it to block recommendations it deems inconvenient. It can either keep the proposal pending at its end or, on a re-recommendation, stop short of issuing a presidential warrant authorising the appointment or transfer.

This has led to a curious paradox: in theory, the collegium retains primacy over judicial appointments. But the government's capacity to forestall any recommendation made means that the question of primacy remains moot, despite the Court having previously spelled out – in the Fourth Judges Case (2015) – that it is the judiciary alone that must retain pre-eminence and that any tinkering with that position would impinge on the Constitution's basic structure.

The Judges' cases and rule of law

Whatever our position on the collegium's constitutional suitability may be, today, the system represents the rule of law. The government is legally obliged to follow the procedure laid down in the Judges' cases. It enjoys no discretion in the matter. When it sits over recommendations endlessly, and when it resists proposals by simply failing to act, it is effectively stymieing the legal process.

There is no doubt that until such time we manage to find a process that can marry the requirements of accountability with independence, embracing meaningful reforms within the extant process remains critical. The law as it stands must be followed. The collegium's newest proposals address some of the long-standing concerns over its processes. But at some stage, we must also take seriously the question of implementation.

Until now, while the Court has, on occasion, asked questions of the government when it has failed to follow through on a resolution, it has stopped short of issuing express directions for compliance. Perhaps the Court has felt that orders of this kind might be seen as unnecessarily confrontational. Ultimately, in matters such as these, one would want different wings of the state working together collaboratively to ensure that the procedure stands fulfilled.

But for the collegium system to retain salience, and for it to achieve its purported objective – the maintenance of our judiciary's independence – the rulings in the Judges' cases must be accorded due respect. The Court's ability to function as a counter-majoritarian institution depends as much on its ability to declare the law as it does on its ability to ensure that the law is followed. For, as Chief Justice Coke put it, way back in 1611, summing up the essence of the rule of law, "The king hath no prerogative but what the law of the land allows him."

Any meaningful reform of the collegium system is possible only when the government stops stonewalling proposals on arbitrary and often undisclosed grounds

Topic → Collegium System

Introduction

The Supreme Court of India's Collegium, a pivotal body in the judicial appointment process, is undergoing transformative changes aimed at enhancing transparency and accountability.

Recent developments have illuminated the Collegium's commitment to reform, including the introduction of interviews for prospective judges and a concerted effort to curb nepotism in judicial appointments.

These changes, while seemingly modest, could herald a significant shift in the landscape of India's judiciary.

New Interview Process for Judgeship Candidates

The Collegium has recently decided to implement interviews for candidates recommended for elevation to the High Courts. This move is aimed at ensuring that the selection process is not merely a formality but rather a thorough assessment of each candidate's qualifications and suitability for the role.

Importance of Interviews:
Allows for a more nuanced evaluation of candidates' capabilities.
Encourages candidates to present their qualifications and vision for the judiciary.

Expected Outcomes:
By engaging directly with candidates, the Collegium aims to foster a more diverse judiciary and ensure that the most deserving individuals are selected.
This shift may also enhance public confidence in the judicial appointment process.

Addressing Nepotism in Judicial Appointments

One of the most contentious issues in judicial appointments has been nepotism. The Collegium's new guidelines propose excluding candidates with close familial ties to sitting judges from consideration for high judicial positions.

Rationale Behind the Change:
Aims to promote a more equitable selection process.
Reduces the perception of bias in judicial appointments.

Potential Impact:
While some deserving candidates may be overlooked, the overall diversity and integrity of the judiciary may benefit from such measures.
This move could serve as a precedent for future reforms in other areas of governance

Challenges to Reform and Accountability

Despite the promising reforms, the effectiveness of these changes is contingent upon the government's willingness to cooperate. The government's role in judicial appointments can either facilitate or hinder the reform process.

Concerns Over Government Intervention:

The government has historically been able to stall or block recommendations made by the Collegium.

This power can lead to delays and may compromise the independence of the judiciary.

The Need for Clear Rules:

Establishing a definitive framework governing the appointment process is crucial for maintaining the integrity of the system.

Without a binding set of rules, the Collegium's decisions remain vulnerable to arbitrary government actions

The Absence of Formal Rules

Without a clear set of binding rules, the Collegium's functioning remains shrouded in mystery, making it difficult to assess its effectiveness.

The Constitutional Framework

The Constitution of India provides a framework for judicial appointments, but it lacks clarity on the consultation process.

The Role of the President and CJI

The President of India appoints judges in consultation with the Chief Justice of India (CJI) and other judges. However, the lack of defined consultation methods leaves room for interpretation.

The Concept of Consultation

The term "consultation" has evolved over time, leading to the establishment of the Collegium system, which emphasizes the need for concurrence among judges.

The Judges' Cases and Their Impact

The landmark Judges' Cases have shaped the current judicial appointment process, emphasizing the importance of judicial independence.

The Second Judges Case

In this case, the Supreme Court ruled that "consultation" must mean "concurrence," leading to the formation of the Collegium.

The Fourth Judges Case

This case reinforced the judiciary's primacy in appointments, asserting that any interference from the government undermines the Constitution's basic structure.

The Rule of Law and Accountability

The rule of law is paramount in ensuring that the government adheres to the procedures laid down in the Judges' Cases.

The Need for Implementation

While the Collegium's proposals address long-standing concerns, the real challenge lies in implementing these changes effectively.

Enhancing governance the digital way

In recent years, India has embarked on an ambitious journey toward digital governance – a transformation designed not only to improve citizen services but also to bolster the capabilities of government employees. This effort underscores a critical truth: the efficiency of public service delivery is inextricably linked to the skills and competencies of the workforce behind it. Yet, despite the strides made, the question remains – what more needs to be done to fully realise the potential of this digital shift?

At its core, governance is a complex web of decision-making processes that involves stakeholders, from government bodies and non-governmental organisations to local community leaders and influential citizens. Chanakya's governance principles have left a lasting impact, particularly in South Asia, shaping modern governance theories, public administration, and strategic diplomacy, with the Arthashastra's insights into statecraft, economic policy, and ethical leadership continuing to serve as a framework for political strategy and governance ethics. In this context, building the capacity of participants to integrate digital tools has become essential to reimagining governance at every level.

Capacity building in digital governance

Digital governance represents a paradigm shift in how government employees and associated service providers or intermediaries such as contractors should engage with their work. The adoption of technology in governance facilitates more effective communication, informed decision-making, and streamlined workflows. As public expectations evolve, so too must the skill-set of those in governance roles. The pressing need for government employees to become adept at navigating digital platforms is paramount in a world that is increasingly technology-driven.

Initiatives such as the iGOT Karmayogi

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As public expectations evolve, so too must the skill-set of those in governance roles

platform have taken centre-stage. Launched in 2020, this online training portal aims to equip government officials with essential skills in data analytics, public administration, and digital technologies. The flexibility of personalised learning paths fosters continuous improvement – a vital trait where adaptability defines success.

Equally transformative is the e-Office initiative, which digitises government workflows, drastically reducing reliance on paperwork and enhancing operational efficiency. By automating file management, workflows, and grievance redress, the initiative promotes real-time communication and transparency. Another initiative is the transition of procurement processes to the online sphere, with platforms like the Government e-Marketplace (GeM) playing a crucial role.

The government's commitment to enhancing digital literacy is commendable, with various programmes aimed at familiarising employees with the essential tools of e-governance, cybersecurity, and digital communication. However, as we celebrate these advancements, it is imperative to recognise the challenges that lie ahead in this digital governance journey.

Taking digital empowerment forward

Despite these initiatives, hurdles remain that could undermine progress. The resistance to change among some segments of the workforce presents a tangible challenge. Bureaucratic structures can sometimes be slow to adapt, with varying levels of enthusiasm and readiness among employees. While some quickly embrace new technologies, others may benefit from extra training and support to effectively navigate the digital landscape. The government must foster an environment that encourages innovation while providing the necessary resources for those who may resist or struggle to adapt.

The lack of incentives raises concerns that government initiatives such as the iGOT Karmayogi platform could become merely attendance trackers. True success should not be measured by participation numbers alone but by the platform's ability to deliver real value to employees. It is worth considering whether these trainings lead to meaningful outcomes – such as opportunities to apply new skills through relevant job postings – rather than just enhancing performance reviews.

Additionally, the digital divide is a pressing issue, especially in rural areas where access to high-speed Internet and digital tools can be limited. Without addressing this disparity, we risk leaving many employees, and by extension, many citizens behind in an increasingly digital world.

Cybersecurity also looms large as a concern in the digital governance landscape. As government operations shift online, the risk of data breaches and cyberattacks escalates. Protecting sensitive information is non-negotiable, and training employees in cybersecurity protocols is critical to fortifying digital governance systems.

Finally, the need for continuous learning cannot be overstated. The rapid evolution of digital tools necessitates ongoing training and upskilling opportunities to ensure that employees remain capable and confident in their roles. Ensuring that capacity-building programmes remain dynamic and adaptable to new developments is crucial.

A perspective

India's digital governance initiatives have laid a strong foundation, but much remains to fully harness the potential of digital transformation.

With robust infrastructure, targeted training, and a commitment to building a dynamic workforce, India can set a global benchmark for digital governance. The key lies in ensuring that every employee, regardless of background, rank, or location, is equipped to excel in the digital age. Only then can we achieve a governance model that is accountable, transparent, and inclusive for all.

Topic →Digital Governance in India: A Transformative Journey

Introduction

In recent years, India has embarked on an ambitious journey toward digital governance. This transformation is not just about improving citizen services; it's also about enhancing the capabilities of government employees. The efficiency of public service delivery is closely tied to the skills and competencies of the workforce behind it.

The Importance of Digital Governance

Enhancing Citizen Services

Digital governance is a game-changer for citizen services. Imagine being able to access government services from the comfort of your home, without the hassle of long queues and paperwork. This shift not only saves time but also makes services more accessible to everyone.

Empowering Government Employees

On the flip side, digital governance empowers government employees by equipping them with the tools they need to perform their jobs more effectively. As public expectations evolve, so too must the skill set of those in governance roles. The pressing need for government employees to navigate digital platforms is paramount in our tech-driven world.

Historical Context: Chanakya's Influence

The Arthashastra and Modern Governance

Chanakya's governance principles have left a lasting impact, particularly in South Asia. His work, the Arthashastra, provides insights into statecraft, economic policy, and ethical leadership. These principles continue to shape modern governance theories and public administration, emphasizing the need for a skilled workforce in governance.

Capacity Building in Digital Governance

The Shift in Government Work Culture

Digital governance represents a paradigm shift in how government employees engage with their work. The adoption of technology facilitates effective communication, informed decision-making, and streamlined workflows.

iGOT Karmayogi: A Training Revolution

One of the standout initiatives is the iGOT Karmayogi platform, launched in 2020. This online training portal aims to equip government officials with essential skills in data analytics, public administration, and digital technologies. The flexibility of personalized learning paths fosters continuous improvement, a vital trait in today's fast-paced world.

e-Office Initiative: Streamlining Processes

Equally transformative is the e-Office initiative, which digitizes government workflows. This drastically reduces reliance on paperwork and enhances operational efficiency. By automating file management and grievance redress, the initiative promotes real-time communication and transparency.

Government e-Marketplace (GeM)

Another significant initiative is the transition of procurement processes to the online sphere, with platforms like the Government e-Marketplace (GeM) playing a crucial role. This not only simplifies procurement but also ensures transparency in government spending.

Challenges in Digital Governance

Resistance to Change

Despite these initiatives, hurdles remain. Resistance to change among some segments of the workforce presents a tangible challenge. Bureaucratic structures can be slow to adapt, with varying levels of enthusiasm and readiness among employees.

The Digital Divide

The digital divide is another pressing issue, especially in rural areas where access to high-speed internet and digital tools can be limited. Without addressing this disparity, we risk leaving many employees—and by extension, many citizens—behind in an increasingly digital world.

Cybersecurity Concerns

As government operations shift online, the risk of data breaches and cyberattacks escalates. Protecting sensitive information is non-negotiable, and training employees in cybersecurity protocols is critical to fortifying digital governance systems.

The Path Forward

Continuous Learning and Adaptability

The need for continuous learning cannot be overstated. The rapid evolution of digital tools necessitates ongoing training and upskilling opportunities to ensure that employees remain capable and confident in their roles.

Conclusion

India's digital governance initiatives have laid a strong foundation, but much remains to fully harness the potential of digital transformation. With robust infrastructure, targeted training, and a commitment to building a dynamic workforce, India can set a global benchmark for digital governance. The key lies in ensuring that every employee, regardless of background, rank, or location, is equipped to excel in the digital age. Only then can we achieve a governance model that is accountable, transparent, and inclusive for all.

The end of global climate policy

The climate conference in Baku in 2024 turned the climate treaty on its head by scrapping the defining feature of the post-colonial world divided between 'donors' and 'recipients' and suggesting the need for an alternate global sustainability forum. The shift requires that developing countries take charge of their own destiny.

The purpose of the climate treaty in 1992 was to collectively deal with a common concern. In an unequal world, this was defined by the G7 reducing future emissions of carbon dioxide despite the treaty acknowledging cumulative emissions alone matter. Developing countries agreed to take on a problem they did not create in exchange for technology transfer and funds, not realising that the imbalance in research capacity had set the stage for shifting the burden.

The backbone of the current arrangement is the disconnect between academic treatment and rules and practice, providing continuing advantage to the G7. The way global concerns have been selected, agenda defined, and rules implemented – all the time dealing with the symptoms rather than the causes of problems – provides continuing advantages to the G7. The pressure to provide incentives for private finance and dealing with trade restrictions at the same time was never part of the 'grand bargain'. The G7 have now absolved themselves of any responsibility for climate change with, in India's words, the "optical illusion" of providing financial support by 2035.

Two world views

The former colonial powers morphed into the G7 in 1973. Climate change with its reduction in emissions of carbon dioxide is only for the G7 who have overused their fair share of the common atmospheric resource. For the others, the greatest challenge is sustainable development, that is, modifying pathways, lifestyles and

Mukul Sanwal

Former UN diplomat

energy transition. The way the agenda was set masks the injustice within the climate crisis and the extent it is underestimated.

The impact of the Global South, representing four-fifths of the global population and half the GDP, no longer following the lead of the G7 has been felt most significantly in climate change with growing calls for climate justice. The Nationally Determined Contributions of 72 countries explicitly include the concept of a "just transition", reflecting recognition of the social dimensions of climate action.

Climate justice is not about perceptions of fairness of specific policies. It questions the framing of existing distinctions between global and local levels and between mitigation and adaptation. It is not just the disproportionate continuing levels of emissions but also solutions such as carbon pricing and trade restrictions that widen the income gap and increase inequality. Current global rules do not reflect the interests of the Global South.

These views reflect conflicting visions of how society is organised and what constitutes progress. Distinguishing between total emissions of countries and trends, drivers, and patterns of natural resource use as causes of climate change masks the impact of the most stable global trend of urbanisation covering three-quarters of global emissions and natural resource use. A middle class and more equal world is adopting opinions, pathways, and actions distinct from those who developed earlier.

The foundational fact is that patterns of urban natural resource use of the G7 are not being followed by the Global South. The G7 with one-fifth the population was consuming three-quarters of global resources in 1950, with the U.S. alone consuming 40%. By the 1970s, three-quarters of the population of the G7 had shifted to cities and their lifestyles based on commodity prices kept low by the former colonial powers directly

led to climate change. The real price of the most traded commodity, oil, was not allowed to increase over a century, leading to its wasteful use. In 2050, the G7 will account for 25% of global emissions with a 10% share of the global population, while Asia is expected to account for 55% of the world's emissions equal to its share of the global population.

The time is ripe for new foundational principles of sustainability with justice at its centre. India would have to match the strategic thinking of the U.S. in setting up interlinked voluntary arrangements of the 'rules-based order', with the rules determined by the G7, for a new order for 'shared prosperity' seeking comparable levels of well-being within ecological limits.

Global governance

With global cooperation itself in danger, three initiatives are suggested. First, BRICS and partner countries should take the strategic leap for an alternate sustainability forum to support each other in the urban energy transition. This would not be an anti-G7 forum, but focused on units located in member countries in different continents researching sustainability science, urbanisation, monitoring G7 climate policy and supporting exchange of experiences.

Second, the UN Climate negotiations should be limited to reviewing emissions reductions in the G7 and grants in the $300 billion to the most vulnerable – Small Island States and Least Developed Countries.

Third, international fora should be seen as what they are: annual stocktaking that helps the world assess its position and decide course-correction accordingly. The World Trade Organization with its dysfunctional dispute settlement could also be allowed to wither away.

The BRICS playing a bridging role in the new multilateralism will entitle them to their rightful place in the UN Security Council.

Bringing justice centre stage requires an alternate sustainability forum

Introduction

The climate conference in Baku in 2024 has stirred the pot in the world of climate treaties, flipping the script on the traditional donor-recipient dynamic that has long defined international climate negotiations. This pivotal moment suggests a new path forward, one where developing countries are encouraged to take charge of their own destinies.

The Historical Context of Climate Treaties

The 1992 Climate Treaty

Back in 1992, the climate treaty was established with the noble goal of addressing a common concern: climate change. However, the treaty was heavily influenced by the G7 nations, who were tasked with reducing future carbon emissions. The irony? The treaty acknowledged that cumulative emissions are what truly matter, yet developing countries found themselves shouldering a burden they didn't create.

The Role of G7 Nations

The G7 nations, representing former colonial powers, have historically dominated the climate agenda. They've been the ones to dictate terms, often overlooking the unique challenges faced by developing nations. This imbalance has set the stage for a system that favors the G7 while leaving developing countries in a precarious position.

The Shift in Paradigm

From Donors and Recipients to Self-Determination

The Baku conference has proposed a radical shift: moving away from the outdated donor-recipient model. Instead, it emphasizes the need for developing countries to take control of their own climate strategies. This is a game-changer, as it empowers nations that have often been sidelined in global discussions.

The Need for an Alternate Global Sustainability Forum

The call for an alternate global sustainability forum is not just a suggestion; it's a necessity. This new platform would allow developing countries to collaborate, share knowledge, and develop strategies that are tailored to their unique circumstances. It's about creating a space where all voices are heard and valued.

The Disconnect in Climate Action

Academic Treatment vs. Practical Implementation

One of the biggest issues in climate action is the disconnect between academic theories and real-world practices. While research may highlight the need for urgent action, the rules and practices often lag behind, providing an unfair advantage to the G7 nations. This gap must be bridged if we are to make meaningful progress.

The Burden on Developing Countries

Developing countries have been caught in a web of expectations, agreeing to take on climate challenges in exchange for technology and funding. However, this arrangement has often resulted in a shifting of the burden rather than a genuine partnership. It's time to recognize that these nations are not merely recipients but active participants in the fight against climate change.

Climate Justice: A New Perspective

Understanding Climate Justice

Climate justice goes beyond just fairness in policy; it challenges the very framework of how we view climate action. It questions the distinctions between global and local levels and between mitigation and adaptation. It's about recognizing that the solutions we propose must not exacerbate existing inequalities.

The Role of the Global South

The Global South, representing a significant portion of the world's population and GDP, is no longer willing to follow the G7's lead. There's a growing demand for climate justice, with many countries explicitly including the concept of a "just transition" in their Nationally Determined Contributions. This shift reflects a recognition of the social dimensions of climate action.

The Future of Global Governance

Proposed Initiatives for Change

As we look to the future, several initiatives could reshape global governance in the context of climate action.

BRICS and Alternate Sustainability Forum

First, BRICS and partner countries should take the initiative to create an alternate sustainability forum. This wouldn't be an anti-G7 movement but rather a collaborative effort to support each other in urban energy transitions and sustainability research.

Reevaluating UN Climate Negotiations

Second, the UN climate negotiations should focus on reviewing emissions reductions in the G7 and providing substantial grants to the most vulnerable nations. This would ensure that those who are most affected by climate change receive the support they need.

The Role of International Fora

Lastly, international fora should be viewed as annual stocktaking events, helping the world assess its position and make necessary course corrections. The dysfunctional World Trade Organization could also be allowed to fade away, making room for more effective governance structures.

Conclusion

The climate conference in Baku has opened the door to a new era of climate action, one that prioritizes justice and self-determination for developing countries. As we move forward, it's crucial to embrace these changes and work towards a more equitable and sustainable future for all.

Decoding the National Anthem controversy

What is the practice followed in the Tamil Nadu Legislative Assembly during and after the Governor's address? Why did Tamil Nadu Governor R.N. Ravi leave the Assembly without delivering his address? Is the singing of the National Anthem during certain occasions mandatory?

EXPLAINER

D. Suresh Kumar

The story so far:

On January 6, Tamil Nadu Governor R.N. Ravi left the Legislative Assembly without delivering the customary address on the opening day of the first session of the year complaining that the National Anthem was not played before his scheduled address. Last year too, he had refused to read out his address.

What did the T.N. Raj Bhavan say?

The Raj Bhavan has alleged "the Constitution of Bharat and the National Anthem were once again insulted in the Tamil Nadu Assembly". It said respecting the National Anthem is among the first fundamental duties enshrined in our Constitution. It is sung in all the State legislatures at the beginning and at the end of the Governor's address. Not to be a party to such "brazen disrespect to the Constitution and the National Anthem," the Governor left the House.

What is the practice in Tamil Nadu?

As per convention, the State anthem – 'Tamil Thai Vazhthu' – is played at the beginning of the Governor's address. The National Anthem is played at the end of the address. The practice of playing the State anthem at the commencement of the Governor's address and the national anthem at the end in the Tamil Nadu Assembly was introduced in July 1991 when the All India Anna Dravida Munnetra Kazhagam (AIADMK) government, led by Jayalalithaa, was in power. At that time, Bhishma Narain Singh was Governor. Prior to that, the Governor would enter the House, deliver the address, and leave.

What is the practice in other States?

Each House follows its own convention. For instance, in Nagaland, the national anthem was not played at all for several decades. It was played for the first time in February 2021 when R.N. Ravi was the Governor of the northeastern State. Likewise, it was only in March 2018, that the national Anthem was played for the first time in the Tripura Assembly.

What is the practice when the President's address is delivered?

When the President reaches his seat on the dais, a band installed in the lobby of the central hall to the right of the President, plays the National Anthem. The President then reads the printed address – in Hindi or English, followed by a reading of the address in another version if necessary, by the Chairman of the Rajya Sabha. After the conclusion of the address, the President rises in his seat, followed by the members and visitors in the galleries, when the National Anthem is played again. The President, thereafter, leaves the central hall in a procession.

What does the Constitution say?

Section 51 (A) (a) of the Constitution of India dealing with fundamental duties, says, "It shall be the duty of every citizen of India to abide by the Constitution and respect its ideals and institutions, the national flag and the national anthem."

What does the order issued by the Ministry of Home Affairs say?

The full version of the National Anthem shall be played on the following occasions – during civil and military investitures; when the national salute is given in accompaniment with the National Anthem to the President or to the Governor/Lieutenant Governor during ceremonial occasions within their respective States/ Union Territories; during parades; on arrival of the President at formal State functions and other functions organised by the Government and on his departure from such functions; immediately before and after the President addresses the nation over All India Radio; on arrival of the Governor/Lieutenant Governor at formal State functions within his State/Union Territory and on his departure from such functions; when the National Flag is brought on parade; when the regimental colours are presented; and for the hoisting of colours in the Navy.

When is mass singing of the national anthem required?

The full version of the anthem shall be played accompanied by mass singing on the following occasions – on the unfurling of the National Flag, on cultural occasions or ceremonial functions other than parades; and on the arrival of the President at any government or public function (excluding formal State functions) and also immediately before his departure from such functions.

Can punishment be imposed if it isn't played at official functions?

On January 29, 2019, the Prime Minister, Tamil Nadu Governor and Chief Minister had participated at a function in Madurai for laying the foundation stone for an AIIMS building. The national anthem as well as 'Tamil Thai Vaazhthu' were not played at this function. Objecting to this, a woman had moved the Madras High Court seeking a direction to the Ministry of Information and Broadcasting to frame the rules for imposing punishment, and also to take action against the Chief Secretary for disobedience in not playing the National Anthem.

The court pointed out that a bare reading of her representation made it abundantly clear that when the petitioner herself has stated that there is no mandate for the National Anthem to be sung, and is only a customary practice, mandamus sought against the respondents, cannot be issued. The court dismissed her petition.

Problems in procedure: Tamil Nadu Governor R.N. Ravi and Chief Minister M.K. Stalin salute the national flag, in Chennai on January 26, 2024. S. R. RAGHUNATHAN

THE GIST

▼ Each House follows its own convention. For instance, in Nagaland, the national anthem was not played at all for several decades.

▼ In Tamil Nadu, as per convention, the State anthem — 'Tamil Thai Vazhthu' — is played at the beginning of the Governor's address. The National Anthem is played at the end of the address.

▼ Section 51 (A) (a) of the Constitution of India dealing with fundamental duties, says, "It shall be the duty of every citizen of India to abide by the Constitution and respect its ideals and institutions, the national flag and the national anthem."

Topic → National Anthem Protocols in India

Overview of National Anthem Protocols

📜 Fundamental Duties: Section 51 (A) (a) of the Indian Constitution requires citizens to respect the Constitution, its ideals, institutions, the national flag, and the national anthem.

🎶 Occasions for Playing the Anthem: The full version of the National Anthem is played during civil and military investitures, national salutes, parades, and formal State functions involving the President or Governor/Lieutenant Governor.

🎖️ Presidential Functions: The Anthem is played upon the President's arrival and departure from formal State functions, and before and after his addresses on All India Radio.

🇮🇳 Governor's Functions: Similar protocols apply for the Governor/Lieutenant Governor during their formal State functions, including arrival and departure.

🎉 Mass Singing Requirements: Mass singing is required during the unfurling of the National Flag, cultural occasions, and public functions attended by the President.

🚩 Flag and Colours: The Anthem is played when the National Flag is paraded, during the presentation of regimental colours, and for the hoisting of colours in the Navy.

📅 Ceremonial Functions: The Anthem is integral to various ceremonial functions, emphasizing its importance in national pride and unity.

What is the human meta-pneumovirus?

Is the unknown pathogen a reason for concern? How does it spread and can it be prevented? What are the symptoms exhibited after being infected by the human metapneumovirus?

Zubeda Hamid

The story so far:

China's diseases control authority said that it was piloting a monitoring system for pneumonia of unknown origin. The country was already witnessing an upward trend in overall infections as of mid-December, and is expecting to see more respiratory infections in the winter and spring. One of the pathogens that was detected, especially among people under the age of 14, was human metapneumovirus. Subsequently, posts showing crowds of people in what looked like Chinese hospitals appeared on social media along with statements about China declaring an emergency over the virus. So far, there has been no such declaration.

What is human metapneumovirus?

Human metapneumovirus (HMPV) is a respiratory virus that causes mild infections similar to that caused by a common cold. First identified by scientists in 2001, the virus belongs to the *Pneumoviridae* family, of which respiratory syncytial virus (RSV), measles and mumps are also members. HMPV can cause both upper and lower respiratory tract infections and is generally seen in winter and early spring. Children, the elderly and those with weakened immune systems are more susceptible to the infection and to developing complications from it. The symptoms of HMPV can resemble those caused by a common cold. They include a cough, runny or blocked nose, sore throat, fever and wheezing. The estimated incubation period is three to six days. In most people, the illness goes away on its own within a few days, with rest and supportive care at home. In a few people however, complications such as bronchitis or pneumonia may arise, requiring medical care.

How does HMPV spread?

HMPV spreads through contact with an infected person or touching objects that have the virus on them. This can be through secretions from coughs and sneezes; close contact with someone who has the infection by shaking hands, hugging; touching a doorknob or a phone or a keyboard that may be contaminated with the virus and then touching the mouth, nose or eyes.

How is HMPV treated?

There is no vaccine and no specific antiviral to treat HMPV. Most people require over-the-counter medications to relieve fever and pain, possibly with a decongestant. Antibiotics will not work for HMPV. However, the virus can be prevented. As with most other respiratory viruses, the best way to protect yourself from illness is to wash your hands frequently with soap and water, avoid close contact with infected persons, avoid touching your face, nose, eyes and mouth and wear a mask if you think you may be infected, so that you can prevent transmitting it to others. People with lung conditions such as asthma or COPD should be extra cautious and protect themselves from infection.

What has the Indian govt. said?

In light of the reports from China, the National Centre for Disease Control (NCDC) under the Union Health Ministry is closely monitoring respiratory and seasonal influenza cases in the country, and is in touch with international agencies. "We will continue to monitor the situation closely, validate information and update accordingly," sources said.

HMPV cases have been confirmed in two infants from Karnataka and one in Ahmedabad, Gujarat. In Chennai too, two children tested postive for the virus. The Union Health Minister J.P. Nadda in a video statement said, "Health experts have clarified that the HMPV is not a new virus. It was first identified in 2001 and it has been circulating in the entire world for many years. HMPV spreads through air, by way of respiration... The health systems and surveillance networks of the country are vigilant and there is no reason to worry."

THE GIST

▼ Human metapneumovirus (HMPV) is a respiratory virus that causes mild infections similar to that caused by a common cold.

▼ There is no vaccine and there is no specific antiviral to treat HMPV. Most people require over-the-counter medications to relieve fever and pain, possibly with a decongestant.

▼ In light of the reports from China, the National Centre for Disease Control (NCDC) under the Union Health Ministry is closely monitoring respiratory and seasonal influenza cases in the country.

Topic → Understanding Human Metapneumovirus (HMPV)

HMPV, identified in 2001, belongs to the Pneumoviridae family, which includes respiratory syncytial virus (RSV). It predominantly affects children, the elderly, and immunocompromised individuals.

Transmission and Vulnerable Populations

HMPV spreads predominantly through respiratory secretions. Close contact with an infected person or contaminated surfaces can facilitate transmission.

At-Risk Groups:
Children under 14
Elderly individuals
Those with compromised immune systems

Comparison

DNA viruses	RNA viruses
o DNA as genetic material	o RNA as genetic material
o Mostly double stranded	o They are single stranded
o Mutation rate is less than RNA viruses	o Mutation rate is higher than DNA viruses
o DNA viruses are stable	o RNA viruses are unstable
o Replicate in nucleus of host cell	o Replicate in the cytoplasm of host cell
o Contain a large genome	o Contain a small genome
o Newly synthesized DNA is packed in a pre-formed capsid called procapsid	o Newly synthesized RNA is not packed in a procapsid

Therapeutic interventions for RNA virus infections

Antiviral drugs

Influenza virus
- M2 ion channel blockers, e.g. damantanes
- RNA-Dependent RNA Polymerase Inhibitors, e.g. favipiravir

Hepatitis C
- IFNα monotherapy,
- Direct acting antivirals (DAAs), protease inhibitors e.g. boceprevir and telaprevir

SARS-CoV-2
- Direct acting antivirals (DAAs), e.g. remdesivir, molnupiravir
- RNA replication inhibitors, e.g. nirmatrelvir, favipiravir

HIV
- Azidothymidine (AZT), first approved
- Non-nucleoside reverse transcriptase inhibitors (NNRTIs), e.g. doravirine

RNA-based therapeutics

RNA interference (RNAi)
- Silencing of RNA expression by using ds RNA
- Effective in HIV, Influenza, SARS-CoV treatment

Antisense oligonucleotides (ASOs)
- Occupancy-mediated degradation: target mRNA cleavage
- Occupancy-only mechanism: splice switching, blocking of miRNA binding to target RNA

CRISPR-based genome editing
- Edit genome sequence to irreversible knockout/knock in of a target gene
- Application in detection of SARS-CoV-2, Zika virus etc.

Aptamers
- ss oligonucleotide sequences specifically bind to and inhibit protein expressions.
- Application in diagnosis for influenza A and HA glycoprotein viral particles

micro RNA (miRNA)
- Have role in tumour progression and predict the radiation necrosis
- Could be used as potential biomarker for early detection and gradation of stage of gliomas

mRNA vaccines

- mRNA introduced as a vaccine, expresses the required functional protein

- More efficient, quicker to design and produce, more adaptable, and less expensive

- mRNA-based vaccination against SARS CoV-2 has been a pathbreaking

- Nanoparticles based delivery system able to increase stability, immunogenicity and effectiveness of mRNA vaccines

- Three types of mRNA vaccines available are, conventional mRNA, self-amplifying mRNA, and trans-amplifying mRNA

- First two mRNA vaccines for SARS-CoV-2, the Pfizer–BioNTech vaccine and the Moderna vaccine

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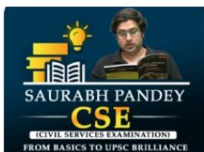
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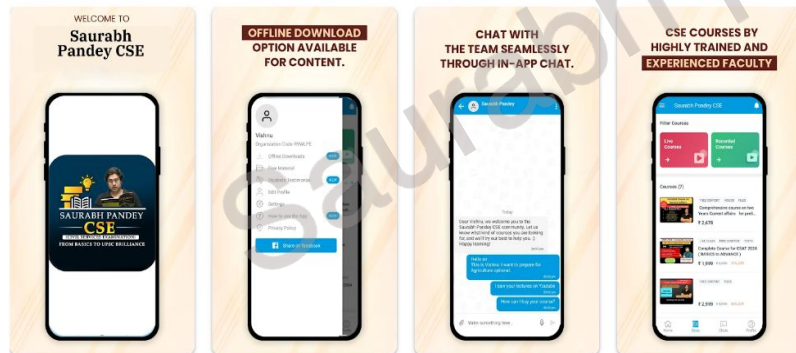
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Q. It is a magnificent monument dedicated to Lord Shiva which was built by King Jajati Keshari in the 10th Century and completed by King Lalatendu Keshari in the 11th Century. This great temple represents the quintessence of the Kalinga type of architecture. (IE)

A) Bhadrachalam Temple

B) Venkateswara Temple

C) Sun Temple Konark

D) Lingaraj Temple

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