Rule of law vs Rule by law

The High Court took cognizance of the fact that the demolition drive was carried out without "demolition orders and notices", thereby violative of the procedure established by law.

Article 21 of the Indian Constitution commands that no person shall be deprived of his life and personal liberty except according to the procedure established by law.

In the Maneka Gandhi case (1978), the Supreme Court expanded the scope of procedure established by law by ruling that such procedure has to be "fair, just and reasonable, not fanciful, oppressive or arbitrary", thereby introducing the principle of "procedural due process".

Despite such an expansion of the scope of Article 21, it is a constitutional travesty that scant regard for such basic principles is demonstrated by elected governments.

The rule of law or rule by law?

While the rule of law is declared a basic feature of the Constitution, rule by law is the antithesis of all that is represented by the rule of law. The rule of law is a government-run by law, not men.

The roots of the idea of a rule of law can be seen in Article 39 of Magna Carta (1215) which declares that "No freemen shall be taken or imprisoned or disseised or exiled or in any way destroyed, nor will we go upon him nor send upon him, except by the lawful judgment of his peers or by the law of the land."

This civilizational journey has since then found its reflection in Article 21 of the Indian constitution and had its contours expanded by the Supreme Court.

This progressive journey gets barbarically reversed when rule by law comes into play.

Rule by law is when the law is used as an instrument of suppression, oppression, and social control in the course of implementing a political agenda.

"Justice must never take the form of revenge", recited the then Chief Justice S. A. Bobde in 2019, in a different context when police allegedly took the law into their hand and shot dead the accused.

THE HINDU

US-IRAN

On August 10, Iran moved five Iranian Americans from prison to house arrest as part of a tentative

deal that is still being negotiated and could lead to their full release.

Iran's Foreign Ministry released a statement on August 11, saying that the process of releasing billions of dollars from the country's assets has begun.

It added that Iran is pursuing the release of Iranians detained in the U.S. for years and that it will be "realized in the near future".

The U.S. government has identified the detainees as Siamak Namazi, Morad Tahbaz, Emad Sharghi, and two others who reportedly did not want to disclose their identities.

THE HINDU

MAYA OS

India's Defence Ministry has decided to replace the Microsoft Operating System (OS) in all its computers that can connect to the Internet with Maya, an Ubuntu- based OS built locally.

The new OS is currently being rolled out only in the Defence Ministry computers, and not the three Services.

While the Navy is said to have cleared Maya for use in its systems, the Army and the Air Force are still evaluating the software.

Maya has been developed by Indian government agencies within six months, and it is aimed at preventing malware attacks by cybercriminals who are increasingly targeting critical infrastructure and government agencies.

The new OS will be backed by a protection system called Chakravyuh.

This end-point system is also being deployed in the computers that have Maya installed.

Devices powered by Microsoft's OS run on the Windows NT kernel.

A kernel is the core of an operating system.

It runs on a computer's Random Access Memory (RAM) and gives the device instructions on how to perform specific tasks

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Differences in the core

This design was monolithic, meaning a single program contained all

necessary codes to perform kernel-related tasks.

This architecture provided rich and powerful abstraction for the underlying hardware

Limitations in the traditional architecture led to a new kernel design called the microkernel.

This design broke down the monolithic system into multiple small servers that communicate through a smaller kernel while giving more space for user customizations

THE HINDU

Metagenomics

In 2022, the world witnessed a global mpox virus outbreak. It was attributed to a super spreader event and threatened the planet with another epidemic, but which 'fizzled' out.

One reason is that scientists were able to apply genome- sequencing technologies perfected during the COVID-19 pandemic to understanding the origin and spread of the mpox virus.

One of the initial breakthroughs in the definitive identification of SARS-CoV-2 as the causative agent of COVID-19 came from the application of unbiased genome sequencing technologies to infected patient samples.

Scientists did not go the more time-consuming microbiology route with these samples; instead, and in a break from tradition, they were directly subjected to genome-sequencing and bioinformatics analysis, which helped the scientists quickly identify the virus.

This new approach called metagenomics was not only rapid but could also be deployed directly on patient samples, without any a priori knowledge of the infectious agent

The worldwide deployment of large-scale genome sequencing infrastructure during the COVID-19 pandemic is now holding us in good stead, by allowing us to conduct avian influenza genomic surveillance at source.

For example, scientists working at the Institute Pasteur du Cambodge, Cambodia, demonstrated earlier this year the power of such surveillance when they successfully decoded the full genome sequence of the Cambodian H5N1 virus in under 24 hours

Since genome surveillance provides the sort of information that experts can use to devise an early response strategy, identify emerging viral strains, and undertake risk-based

surveillance of key animal species, genomic technologies are likely to become mainstays of our arsenal against pathogens of the future.

THE HINDU

Elnino

Temperatures in the central and eastern Pacific Ocean. Six in 10 years, a half degree or more rise in El Nino corresponds to diminished rainfall in India. The converse, or a La Nina, is linked to increased rain.

A study last week however suggests that this cyclical swing called the El Nino Southern Oscillation (ENSO) affects vast regions of India differently.

Monsoon rainfall over Central India known as the monsoon core zone and where agriculture is largely rainfed is increasingly getting disassociated from the ENSO with only 10% of droughts or excess rains linked to ENSO fluctuations.

On the other hand, the ENSO link to North India was strengthening, with 70% of rainfall fluctuations linked to the ENSO cycle. In southern India, the relationship has remained largely stable.

Monsoon rainfall, which accounts for 80% of India's annual rainfall, is influenced by two broad factors: the external one is the impact of ENSO which influences the trade winds and their ability to carry warm, moist air towards India around monsoon.

The other, internal, is the 'monsoon trough an elongated low- pressure area that extends from over Pakistan to the Bay of Bengal.

Rise in temperature in the last few decades, the role of climate change has dramatically increased ocean temperatures in the Indian Ocean,

The ENSO dominance over the core monsoon zone is weak, which means that seasonal prediction over this region has become less predictable in recent decades.

Other factors like Indian Ocean warming should be monitored for the core monsoon zone, due to its impact on the strength of the monsoon trough and the depressions,"

THE HINDU

Global ecosystem and water use efficiency

Increases in global ecosystem water use efficiency and the ratio between carbon assimilation to water evapotranspiration have stalled since 2001 due to a rising vapor pressure deficit, according to a study in Science.

As a result, global ecosystem photosynthesis has become suppressed.

This highlights one way that the adverse effects of our warming climate may undermine human reliance on nature -based climate solutions to achieve carbon neutrality.

THE HINDU

Hominin migration

Researchers used a deep -sea sediment core, which provided a temperature record for Europe from 800,000 to 1.8 million years ago to evaluate the geographic range of hominin species (Science).

Around 1.1 million years ago, the Mediterranean region was characterized by long, stable interglacial conditions that would have allowed for hominin establishment.

But extreme glacial conditions beginning around 1.1 million years ago would likely have made the region too cold for them to survive.

THE HINDU

Human and coral reef

Simultaneously mitigating human impacts on land and sea reduced coral loss during an unprecedented marine heatwave in Hawaii and supported coral reef persistence after the heatwave, according to a paper in Nature.

The findings demonstrate the potential of combined management strategies to protect coral reefs.

Coral reef ecosystems are frequently impacted by human activity on land and in the sea; land- based disturbances include wastewater pollution, and sea-based disturbances include overfishing.

Human impacts Corals are especially impacted by prolonged periods of warm ocean temperatures, known as marine heatwaves, which can cause coral bleaching and death.

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