



## ● POLITY

## ● ECONOMICS

## ● TECHNOLOGY

## ● ECOLOGY

## SCIENCE AND TECHNOLOGY

## PAU DEVELOP NEW WHEAT VARIETY TO KEEP BLOOD SUGAR, OBESITY IN CHECK

The Punjab Agricultural University (PAU) developed a new wheat variety called PBW RS1 claimed to keep blood sugar and obesity in check.

The high amylose content and resistant starch slows down the release of glucose from the wheat into the bloodstream and prevent spikes in blood sugar levels. The variety is expected to be beneficial for people with diabetes or

those who are at risk of developing the condition.

The resistant starch is not digested in the small intestine and travels to the large intestine where it is fermented by gut bacteria. This fermentation process produces short-chain fatty acids, which have a number of health benefits, including improved insulin sensitivity and weight loss.

## ENERGISING THE SCIENCES

The National Research Foundation (NRF) is an apex body that was approved by the Government of India in June 2023 replacing the Science Education and Research Body established in 2009. It is modelled on the lines of the National Science Foundation of the United States, and is expected to have an initial budget of ₹ 50,000 crore over a five-year period from 2023 and 2028.

The NRF would be constituted as a Society and comprise of the following as board members:

1. Prime Minister Narendra Modi (Chairperson)
2. Minister of Science & Technology Jitendra Singh (Vice-Chairperson)
3. Minister of Education Dharmendra Pradhan (Vice-Chairperson)
4. Principal Scientific Adviser to the Government of India (Member)
5. Secretary, Department of Science & Technology (Member)
6. Secretary, Department of Education (Member)
7. Chairperson, University Grants Commission (Member)
8. Director-General, Council of Scientific & Industrial Research (Member)
9. Five eminent researchers (Members)

## OBJECTIVES:

1. Foster a culture of research and innovation in India
2. Build the nation's research infrastructure
3. Promote collaboration among industry, academia, and government
4. Enhance the scientific literacy of the Indian people

## FUNCTIONS:

1. Formulating and implementing national research policies
2. Providing funding for research projects
3. Overseeing the allocation of research resources
4. Promoting international collaboration in research
5. Disseminating the results of research

## SALIENT FEATURES:

1. Apex body that will oversee all aspects of research and innovation in India.
2. Sufficient finance to fund a wide range of research projects.
3. Promote collaboration among industry, academia, and government.
4. Focus on research that has the potential to solve real-world problems.
5. Disseminate the results of research to the wider public.

## GEOGRAPHY

## HEAT IS ON

**Context:** On three different days last week, global average daily temperatures were in a range they have never been before.

## Details of the news

- The temperature first started reaching to high record levels on Monday (July 3) with 17.01 degrees Celsius, surpassing 17 degrees Celsius for the first time in 44 years — since 1979 when the data was first collected.
- The record was broken again on Tuesday (July 4), notching 17.18 degrees Celsius and remained at this record high level on Wednesday (July 5).
- The world recorded its hottest day ever on 6th July (Thursday) with average global temperature hitting 17.23 degrees Celsius.
- This record breaking heat also follows a series of mind-bending extreme

weather events in recent months, with climate-fueled heat waves recorded in China, northern Africa, the western Mediterranean, Mexico and the southern U.S.

## Reasons for the extreme heat

- This hot streak was likely fueled by climate change, as well as the arrival of El Niño. El Niño is a climate pattern characterized by warm sea-surface temperatures around the equator toward the Pacific coast of South America. El Niño events can change atmospheric conditions enough to boost heat waves around the world.
- The warmer climate is also due to human-caused emissions of greenhouse gases.

## ENVIRONMENT

## IN VARANASI, TURTLES HELP CLEAN THE GANGA

**Context:** Under the Namami Gange Programme, large-scale human efforts have been undertaken since 2014 to clean the Ganga and rejuvenate the nearly 2,600-km river network. In this, marine life, especially turtles, has been playing a key role as well.

## Background

- Set up in the late 1980s under the Ganga Action Plan (GAP), the centre has so far released over 40,000 turtles into the river.
- In 2014, the centre got renewed attention after the Central government enlisted it in the Namami Gange Programme.
- In 2014, the Wildlife Institute of India (WII) and the Ministry of Forest joined hands with the National Mission for Clean Ganga (NMCG), the agency

implementing the Namami Gange Programme.

- Since 2017, they have been running the turtle breeding and rehabilitation centre in Uttar Pradesh's Varanasi.

## How turtles help in cleaning Ganga?

- About a dozen of the 29 turtle species in India, both herbivorous and carnivorous, help by clearing rotten or half-burnt human bodies as well as flowers dumped into the river here.
- The quality of water in Ganga has improved and the turtles have a role as they feed on meat and waste products thrown in the river.
- Improvements in biochemical oxygen demand (BOD), fecal coliform (FC) and dissolved oxygen (DO) levels were seen during river water quality

checks.

- During the assessment of the river's pH levels (i.e. acidic nature) at various locations, officials found that the water quality was suitable for bathing.
- It is a long-term biological process and it will take time to know whether these species are playing a major role or not, after 10-15 years.

<b>Dissolved oxygen (DO)</b>	Dissolved oxygen (DO) is a measure of how much oxygen is dissolved in the water - the amount of oxygen available to living aquatic organisms. Healthy water should generally have dissolved oxygen concentrations above 6.5-8 mg/L and between about 80-120 %.
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<b>Biochemical oxygen demand (BOD)</b>	Biochemical oxygen demand (BOD) represents the amount of oxygen consumed by bacteria and other microorganisms while they decompose organic matter under aerobic (oxygen is present) conditions at a specified temperature.
<b>Fecal coliform (FC)</b>	Total coliform bacteria are a collection of relatively harmless microorganisms that live in large numbers in the intestines of man and warm- and cold-blooded animals. They aid in the digestion of food. A specific subgroup of this collection is the fecal coliform bacteria, the most common member being <i>Escherichia coli</i> . The presence of fecal coliform bacteria in aquatic environments indicates that the water has been contaminated with the fecal material of man or other animals.

## INTERNAL SECURITY

### ARMY OFFICERS SAY MANIPUR OPERATIONS CHALLENGING

The Army has raised concerns about operating in Manipur without the legal cover provided by the Armed Forces Special Powers Act (AFSPA). The challenges being faced by the Army and Assam Rifles (AR) get compounded by the fact that the tasks being undertaken in this complex, volatile and charged-up atmosphere are bereft of legal protection and cover of AFSPA. In March 2023, the Union government had removed the AFSPA from one district of Assam, and within the limits of four police stations (Wangoi, Leimakhong, Nambol and Moirang) in Manipur. This took the number of police station limits without the AFSPA to 19, spanning seven districts of Manipur. Over 4,000 weapons, including some automatic and high-calibre weapons and ammunition, were looted from police stations, while Suspension of Operations (SoO) camps were major activity sites.

#### ARMED FORCES SPECIAL POWERS ACT (AFSPA)

The Parliament enacted the Armed Forces (Special Powers) Act, 1958 in Assam, later extended to the whole of Disturbed Areas in Northeast India and later introduced to Jammu & Kashmir in 1990. In simple terms, AFSPA gives armed forces the power to maintain public order in "Disturbed Areas".

- Concurrent powers to declare 'Disturbed Area' - Section 3 of AFSPA, 1958:** Both the Centre and the State Governments (Governor of the State / UT) enjoy concurrent powers to issue notification in 'The Gazette of India' to declare a site of frequent occurrence of Low Intensity Conflict (LIC) among racial, religious, linguistic, castes or communities over minor differences or disputes as 'DISTURBED AREA'.
- Territorial extent of 'Disturbed Areas':** The Centre and the State Governments (Governor of the State or administrator of the Union Territory)

can declare the whole or part of the State or Union Territory as 'DISTURBED AREA'.

- Discretionary powers of the Governor:** The Governor of the State or the Centre can overrule the suggestion of the State Government regarding the geographical limits of enforcement of Armed Forces Special Powers (Amendment) Act, 1990 to issue an official notification under the Section (3) of the AFSPA, 1990 for assistance of Army / CAPF to aid civilian administration to restore and maintain peace and order.)

#### POWERS OF THE ARMED FORCES

Empowers the armed forces to maintain public order in "Disturbed Areas"

- Prohibit a gathering of 5 or more persons in an area declared as Disturbed Area;
- Allowed to use force or even open fire even if it causes death, against the person who is acting against law or order in the disturbed area for the maintenance of public order, after giving such due warning.
- Provides immunity for security personnel from prosecutions for acts done under official capacity, including shootings to kill; arrest, search and seizure without warrants to deal a committed crime or to prevent potential cognizable offence even on "reasonable suspicion".
- Arrest a person without a warrant and may use force if needed for the arrest upon existence of a reasonable suspicion for committing cognizable offences or is reasonably suspected of having done so.
- Enter and search any premise in order to make such arrests, or to recover any person wrongfully restrained or any arms, ammunition or explosive substances and seize it.

## SOCIAL JUSTICE

### FOREST BILL GOES TO HOUSE UNCHANGED

**GIST:** Parliamentary committee endorses proposed amendments to Forest (Conservation) Act, 1980 in its entirety; Environment Ministry denies charge that changes dilute various protections in the law

- Forest (Conservation) Amendment Bill, 2023, is expected to be tabled in Parliament during the Monsoon Session starting on July 20.
- The Bill seeks to amend the pivotal 1980 law which was enacted to ensure that India's forest land is not wantonly usurped for non-forestry purposes.
- The Act empowers the Centre to require that any forest land diverted for non-forestry purposes be duly compensated. It also extends its remit to land which is not officially classified as "forest" in State or Union government records.

#### Godavarman case

- It notes that objections were raised to various aspects of the Bill, including complaints that the proposed amendments "diluted" the Supreme Court's 1996 judgment in the Godavarman case that extended protection to wide tracts of forests, even if they were not recorded as forests.
- Construction of highways, hydel power projects and other such projects in geographically sensitive areas within 100 km of International Borders or the Line of Control will no longer require a forest clearance.
- There were even objection to the proposal to change the name of the 1980 law from the Forest (Conservation) Act to the Van (Sanrakshan Evam Samvardhan) Adhiniyam, which translates to Forest (Conservation and Augmentation) Act.
- Encourage the practice of cultivating plantations on non-forest land that could, over time, increase tree cover, act as a carbon sink, and aid India's ambition of being 'net zero' in terms of emissions by 2070.
- The amendments would also remove the 1980 Act's restrictions on creating infrastructure that would aid national security and create livelihood opportunities for those living on the periphery of forests.

#### Touching a raw nerve

The proposed amendments to the Forest (Conservation) Act, 1980 have attracted objections on various grounds:

■ 'Dilution' of the Supreme Court's 1996 judgment in the Godavarman case that extended protection to wide tracts of forests, even if they were not recorded as forests

■ In geographically sensitive areas within 100 km of the International Borders or the Line of Control, no forest

clearance required to construct highways, hydel power projects and so on

■ No Central protection for vast tracts of so-called 'deemed forest' (forests not officially recorded as forests) and permitting activities such as tourism, compromising their integrity



**Highlights of the Bill**

- The Bill amends the Forest (Conservation) Act, 1980 to make it applicable to certain types of land. These include land notified as a forest under the Indian Forest Act, 1927 or in government records after the 1980 Act came into effect. The Act will not be applicable for land converted to non-forest use before December 12, 1996.
- It also exempts certain types of land from the purview of the Act. These include land within 100 km of India's border needed for national security projects, small roadside amenities, and public roads leading to a habitation.
- The state government requires prior approval of the central government to assign any forest land to a private entity. The Bill extends this to all entities, and allows the assignment to be made on terms and conditions specified by the central government.

- The Act specifies some activities that can be carried out in forests, such as establishing check posts, fencing, and bridges. The Bill also allows running zoos, safaris and eco-tourism facilities.

**Key Issues and Analysis**

- The Bill excludes two categories of land from the purview of the Act: land recorded as forest before October 25, 1980 but not notified as a forest, and land which changed from forest-use to non-forest-use before December 12, 1996. This provision may go against a 1996 Supreme Court judgement on preventing deforestation.
- Exempting land near border areas for national security projects may adversely impact the forest cover and wildlife in north-eastern states.
- A blanket exemption for projects like zoos, eco-tourism facilities, and reconnaissance surveys may adversely affect forest land and wildlife.

**POLITY AND GOVERNANCE****THE GUJARAT HIGH COURT HAS MADE DEFAMATION SOUND LIKE A HORRIFIC CRIME**

The Gujarat High Court order declining to stay the conviction of Congress leader Rahul Gandhi in a defamation case is quite unreasonable and borders on the fanciful.

Justice Hemant M. Prachchhak becomes the third judicial authority in

- Gujarat to rule that Mr. Gandhi, in using the words "Why do all these thieves have Modi as a surname?" in an election campaign speech in 2019, had committed defamation against a large number of people and that it was a "serious offence".

**Section 499 of IPC deals with defamation.**

Defamation arises when a person makes or publishes any wrong or false statement or allegation or false imputation related to any person, by words or in oral or by signs or in any form it is said to defame that person.

- The purported seriousness of the offence has been cited to justify the award of a two-year jail term, the maximum punishment for defamation. While the remark is unlikely to have troubled or caused any reputational harm to any reasonable person, the trial magistrate, a civil court hearing an appeal against conviction, and now, the High Court, have unanimously concluded that the offence is grave, amounting to moral turpitude.
- The High Court has agreed with the first appellate court that Mr. Gandhi does not deserve the benefit of stay of conviction, an order that would help overcome his disqualification from the Lok Sabha.
- It has enthusiastically endorsed the conclusion that the offence is grave

because it was committed by a Member of Parliament and leader of a party that had ruled the country for decades and that it was a speech that contained a false statement made with intent to affect the outcome of an election.

- The court has controversially ruled that the statement has defamed a determinable group of people, referring to those with the surname 'Modi'. It has thus rejected the key argument that 13 crore people with the surname could not have been aggrieved by that sentence. How the court concluded that a large number of people were aggrieved is not clear when no one except the complainant has claimed harm to reputation. It is disconcerting that court after court has endorsed a punishment tailored specifically to disqualify a Member of Parliament.
- The High Court has also ignored the argument that a legislator cannot be pushed out of the House and barred from electoral contest for an offence that was neither serious nor involved moral turpitude. Instead, it has made a fanciful claim that the law's object is to maintain purity in politics and cited the pendency of other cases against Mr. Gandhi to decline to stay the conviction. It has even referred to a complaint by V.D. Savarkar's grandson against Mr. Gandhi, as though a political remark could add another layer of gravity to the offence.
- The extent to which a judicial order can go to make a defamation case sound like a horrific crime against society at large is quite astounding.

**SCIENCE AND TECHNOLOGY****DELHI HIGH COURT REJECTS PEPSI COS APPEAL OVER POTATO PATENT: WHAT IS THE CASE**

In 2019, PepsiCo India filed lawsuits against nine farmers in Gujarat for allegedly infringing patent rights by growing its registered potato variety, FL-2027. The FL-2027 variety is used to make Lay's potato chips. The lawsuits demanded damages of over Rs 5 crore.

However, in December 2021, the Protection of Plant Varieties and Farmers Rights Authority (PPVFRA) revoked PepsiCo India's registration of the FL-2027 potato variety. The PPVFRA found that PepsiCo India had not met the requirements for patenting a seed variety, as the FL-2027 variety was already in use by farmers in India before PepsiCo India registered it.

PepsiCo India appealed the decision to the Delhi High Court, but the court upheld the PPVFRA's decision in July 2023. The court found that PepsiCo India had not provided sufficient evidence to show that it had developed the FL-2027 variety independently.

**Frito-Lay 2027 Potato**

The FL 2027 potato variety was developed by PepsiCo in the United

States. It was first registered in 2005, and it is now grown in a number of countries, including the United States, Canada, India, and China. The FL 2027 variety is a chipping potato, which means that it is specifically bred for its suitability for making potato chips. It has a number of characteristics that make it ideal for this purpose, including:

1. High-yielding variety, which means that it produces a lot of potatoes per acre.
2. Uniform shape and size, which makes it easy to slice and cook.
3. High starch content, which gives the chips a crispy texture.
4. Low moisture content, which helps to prevent the chips from becoming soggy.

The FL 2027 variety is not the only potato variety that is used to make Lay's potato chips. Other varieties that are commonly used include the Russet Burbank, the Yukon Gold, and the Shepody.

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