

## ● POLITY

## ● ECONOMICS

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## SCIENCE AND TECHNOLOGY

## ISRO releases images captured by Aditya-L1

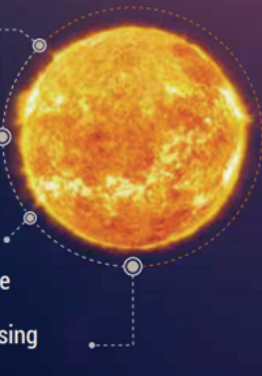
**CONTEXT:** The Indian Space Research Organisation on Monday released six images of the sun and its activities taken by the a payload aboard India's maiden solar mission, Aditya-L1, during the solar storm, which occurred in May.

Two of the remote sensing payloads aboard India's maiden solar mission, Aditya-L1, have captured images of the sun and its dynamic activities during the solar storm, which occurred in May. Between May 8 and 15, several X-class and M-class flares erupted in the active region AR13664 on the sun. This was associated with coronal mass ejections (CMEs) during May 8 and 9.

The ISRO said that during these eruptive events, two remote sensing instruments, Solar Ultra Violet Imaging Telescope (SUIT) and Visible Emission Line Coronagraph (VELC), were in baking and calibration modes, respectively, and could not observe the event during May 10 and 11. However, SUIT and VELC doors were opened on May 14.

### Uniqueness of Aditya-L1

- First-time spatially resolved solar disk in the near UV band
- CME dynamics close to the solar disk (~from 1.05 solar radius) thereby providing information in the acceleration regime of CME, which is not observed consistently
- Onboard intelligence to detect CMEs and solar flares for optimised observations and data volume
- Directional and energy anisotropy of solar wind using multi-direction observations



### About Aditya L1

Aditya-L1 is India's first space-based solar mission to study the Sun. It was launched on September 2, 2023, by the Indian Space Research Organisation (ISRO) into a halo orbit around the Sun-Earth Lagrange point 1 (L1). Aditya-L1 would provide an uninterrupted view of the Sun for prolonged periods, overcoming the limitations of Low Earth Orbits where the view is frequently blocked by the Earth itself.

Aditya-L1 will facilitate India to establish its own solar observatory in space, which would have numerous applications in day-to-day life. Further, its success would place ISRO into an elite space club along with NASA and ESA.

### Significance of Aditya-L1 mission

The Aditya-L1 mission holds immense significance in the field of space science and technology for several reasons:

- India's own space-based solar observatory:

- The Aditya-L1 mission builds on ISRO's prior expertise in space astronomy missions like Chandrayaan-1, Astrosat and UVIT. It expands ISRO's scientific capabilities beyond Earth's orbit.
- It highlights India's advancing space technologies, positioning ISRO as a leading space agency globally alongside NASA, ESA and China's CNSA.
- Aditya-L1 signifies India's first-ever solar mission and entry into the domain of solar physics, similar to NASA's Parker Solar Probe.

**Expanding India's expertise in space technology:** Real-time monitoring of the Sun and observations of the corona and solar storms will boost space weather prediction capabilities. This has major applications for securing satellite systems and power grids on Earth.

The mission affirms India's proficiency in undertaking complex deep space travel and building specialised spacecraft and instrumentation for cutting-edge space science.

- The mission diversifies and advances ISRO's space technology expertise beyond traditional areas like remote sensing and communication.

## INTERNATIONAL RELATIONS

## Centrists humbled, far-right surges as 4-day European Union polls end

**CONTEXT:** A four-day election has shaken the foundations of the European Union (EU), with the far-right rocking ruling parties in France and Germany, the bloc's traditional driving forces. French President Emmanuel Macron called snap national elections after Marine Le Pen's National Rally humbled his pro European centrists in the polls. German Chancellor Olaf Scholz's Social Democrats also suffered as the extreme-right Alternative for Germany (AfD) shrugged on scandals to make massive gains.

### About European Union

The European Union is a group of 27 countries that operate as a cohesive economic and political block.

19 of these countries use **EURO** as their official currency. **8 EU members** (Bulgaria, Croatia, Czech Republic, Denmark, Hungary, Poland, Romania, Sweden) **do not use the euro**.

The EU grew out of a desire to form a single European political entity to end centuries of warfare among European countries that culminated with World War II and decimated much of the continent.

The EU has developed an internal single market through a standardised system of laws that apply in all member states in matters, where members have agreed to act as one.



### What are the Objectives of the EU?

- Promote peace, values and the well-being of all citizens of EU.
- Offer freedom, security and justice without internal borders
- Sustainable development based on balanced economic growth and price stability, a highly competitive market economy with full employment and social progress, and environmental protection
- Combat social exclusion and discrimination
- Promote scientific and technological progress
- Enhance economic, social and territorial cohesion and solidarity among EU countries
- Respect its rich cultural and linguistic diversity
- Establish an economic and monetary union whose currency is euro.

### What led to the Formation of the EU?

- After World War II, European integration was seen as a **cure to the excessive nationalism** which had devastated the continent.
- In 1946 at the University of Zurich, Switzerland, Winston Churchill went further and advocated the emergence of a United States of Europe.
- In 1952, **European Coal and Steel Community (ECSC)** was founded under **Treaty of Paris (1951)** by 6 countries called Six (Belgium, France, Germany, Italy, Luxembourg and the Netherlands) to renounce part of their sovereignty by placing their coal and steel production in a common market, under it.
  - **European Court of Justice** (called "Court of Justice of the European Communities" until 2009) was also established in 1952 under Paris Treaty.
- **European Atomic Energy Community (EAEC or Euratom)** is an international organisation established by the **Euratom Treaty (1957)** with the original purpose of creating a specialist market for nuclear power in Europe, by developing nuclear energy and distributing it to its member states while selling the surplus to non-member states.
  - It has same members as the European Union and is governed by the European Commission (EC) and Council, operating under the jurisdiction of the European Court of

Justice.

- **European Economic Community (EEC)** was created by the **Treaty of Rome (1957)**. The Community's initial aim was to bring about economic integration, including a common market and customs union, among its founding members (Six).
  - It ceased to exist by Lisbon Treaty-2007 and its activities were incorporated in EU.
- **Merger Treaty (1965, Brussels)** in which an agreement was reached to merge the three communities (ECSC, EAEC, and EEC) under a single set of institutions, creating the European Communities (ECs).

## ECONOMICS

# Ensure crop loan waiver by August 15, says Telangana CM

**CONTEXT:** Emphasising the urgency of ensuring crop loan waiver "at any cost" by August 15, a promise made by the Congress before the Assembly election, Telangana Chief Minister A. Revanth Reddy has instructed officials to meticulously compile data on farmers with crop loans up to ₹2 lakh by collecting accurate information from banks and Primary Agricultural Credit Societies.

## Farm loan waivers: So far, so much

10 states have offered write-offs, some more than once. Nearly all states are implementing these waivers with many riders and in a phased manner to dissipate their financial impact, meaning there is a huge gap between eligible beneficiaries and those who have actually got relief so far.

State	Announced on	Limit* (in ₹/lakh)	Total Amount (in ₹/cr)	Beneficiaries** (in mn)
Karnataka	July 5 2018	2	42,165	4.3
Uttar Pradesh	Apr 14 2017	1	36,359	4.4
Madhya Pradesh	Dec 17 2018	2	35,000	3.4
Maharashtra	June 11 2017	1.5	30,500	3.9
Andhra Pradesh	Aug 2 2014	1.5	24,000	4.9
Rajasthan	Dec 19 2018	Full	18,000	3.3
Telangana	Aug 13 2014	1	17,000	3.6
Punjab	June 11 2017	2	10,000	1
Rajasthan	Feb 12 2018	0.5	8,500	2.8
Chhattisgarh	Dec 17 2018	Full	6,100	1.6
Tamil Nadu	May 23 2016	1.5	5,318	1.2
Chhattisgarh	Dec 26 2015	1	129.7	0.5
Jammu & Kashmir	Jan 23 2017	1	2.4	0.1

\*Individual loan not exceeding \*\*Eligible beneficiaries

### What is a Farm Loan Waiver?

Farm loan waivers are customised schemes announced by states to help the peasants.

When there is a poor monsoon or natural calamity, farmers may be unable to repay loans. **The rural distress in such situations often prompts States or the Centre to offer relief — reduction or complete waiver of loans.**

Essentially, the Centre or States take over the liability of farmers and repay the banks. Waivers are usually selective — only certain loan types, categories of farmers or loan sources may qualify.

Loan waivers, originally intended for a one-time settlement. However, the past two decades have seen such schemes announced with increasing regularity, signalling the chronic distress of the agricultural sector in India.

### What are the Issues Related to Farm Loan Waivers?

**Reputational Consequences:** Loan waiver schemes will **disrupt credit discipline** as farm loan waivers may act as a temporary solution and can prove to be a moral hazard in future.

This is because those farmers who can afford to pay their loans might not pay it expecting a waiver.

**Free Rider Problem:** Some farmers may take loans even if there is no need, in the hope of the next loan waiver scheme. This will impact the farmers who are genuinely in need of loans.

**Decline in Formal Access to Credit:** After the implementation of debt waiver schemes and subsequent losses to the banking industry, **banks will be reluctant to lend further to the farm sector.**

This leads to a rise in farmer's dependence on informal sector lenders.

**Impact on Banking Sector:** A report by the Indian Council for Research on International Economic Relations stated that the 2008 farm-loan waiver led to three-fold increase in non-performing assets of commercial banks between 2009–2010 and 2012–2013.

This further affects credit-deposit ratio and risk-weighted capital adequacy ratio, return on assets and economic value of equity of banks. This downgrades the ratings of banks in particular and destabilises the functioning of the credit market in general.

**Against the Interests of Depositors:** Banks receive money from the depositors and lend money to borrowers under different contracts and agreements.

Thus, the loss to the bank, due to loan waivers, is directly or indirectly against the interests of the depositors.

Moreover, banks being custodians of depositors' money, need to be guided primarily by the protection of depositors' interests.

The Union Agriculture Ministry said in a release that after being sworn in as Prime Minister for the third time, Mr. Modi signed his first file authorising the release of the latest instalment. "This will benefit 9.3 crore farmers and distribute around ₹20,000 crore," the release said.

#### About PM-KISAN:

- It is a Central-Sector scheme with 100% funding from the Government of India.
- Objective: The scheme aims to supplement the financial needs of the farmers in procuring various inputs to ensure proper crop health and appropriate yields, commensurate with the anticipated farm income.
- It has become operational from 1.12.2018.
- Under the scheme, income support of 6,000/- per year in three equal instalments will be provided to all land-holding farmer families.
- The definition of family for the scheme is husband, wife, and minor children.
- The State Government and UT administration will identify the farmer families that are eligible for support as per scheme guidelines.
- The fund will be directly transferred to the bank accounts of the beneficiaries.

**Exclusion Categories:** The following categories of beneficiaries shall not be eligible for benefits under the scheme:

- All institutional landholders.
- Farmer families that belong to one or more of the following categories:
  - Former and present holders of constitutional posts.
  - Former and present Ministers/ State Ministers, and former/present Members of Lok Sabha/ Rajya Sabha/ State Legislative Assemblies/ State Legislative Councils, former and present Mayors of Municipal Corporations, former and present Chairpersons of District Panchayats.
  - All serving or retired officers and employees of Central/ State Government Ministries /Offices/Departments and its field units Central or State PSEs and Attached offices /Autonomous Institutions under Government as well as regular employees of the Local Bodies (Excluding Multi Tasking Staff /Class IV/Group D employees).
  - All superannuated/retired pensioners whose monthly pension is Rs.10,000/-or more (Excluding Multi Tasking Staff / Class IV/Group D employees) of above category.
  - All Persons who paid Income Tax in the last assessment year.
  - Professionals like Doctors, Engineers, Lawyers, Chartered Accountants, and Architects registered with Professional bodies and carrying out profession by undertaking practices.

### GOVERNMENT SCHEME

## PM Kisan Nidhi instalment released to 9.3-cr. farmers

**CONTEXT:** The Union government on Monday released the 17th instalment of the PM Kisan Nidhi scheme as the first decision of the new Narendra Modi government. The Opposition said Mr. Modi, by signing the file, has done nobody a great favour as these are legitimate entitlements due to the beneficiary farmers by his government's policy.



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## POLITY

## On Special Category Status for Andhra

**CONTEXT:** The Andhra Pradesh Reorganisation Act, 2014, which bifurcated unified Andhra Pradesh into two States, was notified on March 1, 2014 and had come into force from June 2, 2014. While the Act had specified many things, there was no mention of giving a Special Category Status (SCS) to Andhra Pradesh. Now with the completion of the 2024 Lok Sabha elections, the demand for SCS to Andhra is again gaining attention.

### What is the history?

Shortly after the reorganisation, in a debate in the Rajya Sabha on February 20, 2014, the then Prime Minister Manmohan Singh had said that “SCS would be extended to the State of Andhra Pradesh for a period of five years”. This was appreciated and seconded by Bharatiya Janata Party (BJP) leader M. Venkaiah Naidu. But after Prime Minister Narendra Modi took over the reigns of the National Democratic Alliance (NDA)-led Union Government, the SCS was put on the back burner.

When it was raised in both Houses by the Telugu Desam Party (TDP) and opposition MPs, it was said that Andhra Pradesh does not qualify for the SCS, firstly as per norms and secondly due to the dissolution of the Planning Commission in August 2014. The 14th Finance Commission had equated SCS with the general category status and had annulled SCS for new States.

### Why does AP not qualify for the SCS?

The concept of SCS was first brought into existence through the recommendations made by the Fifth Finance Commission in 1969. It was done to benefit a few States through special grants from the Centre. The focus was on States that had socio-economic issues and geographical disadvantages, such as hilly States.



Five factors stood as the qualifying benchmark for the granting of SCS — States that comprise a majority tribal population, low density of population, hilly States and close to international borders, States that have socio-economic and industrial backwardness, and lack of adequate State finances. At present, the States that have the SCS include Arunachal Pradesh, Assam, Himachal Pradesh, Jammu and Kashmir, Manipur, Meghalaya, Mizoram, Nagaland, Sikkim, Tripura, and Uttarakhand.

Does Andhra still qualify for SCS?

N.K. Singh, Chairman of the 15th Finance Commission, in his book Portraits of Power, stated that the 14th Finance Commission had never said that SCS cannot be given and that it was up to the Union Government to take a call.

The 14th Finance Commission instead of SCS had increased tax devolution to the State to 42% and also introduced revenue deficit grants for States facing a revenue gap, which Andhra had already received. SCS, which has an arrangement of funding States in a ratio of 90:10 (90% the Centre and 10% the State), may not be a ruled out chapter for Andhra Pradesh. The Union Government can take a call and refer it to the 16th Finance Commission and the NITI Aayog, and can get back to the arrangement.

## INTERNATIONAL RELATIONS

## India welcomes Egypt, Iran, UAE, Saudi Arabia and Ethiopia joining BRICS

**CONTEXT:** India on Monday welcomed Egypt, Iran, UAE, Saudi Arabia and Ethiopia joining the BRICS as their representatives attended for the first time a key meeting of the grouping hosted by Russia. Senior diplomat Dammu Ravi led the Indian delegation at the BRICS Foreign Ministers' Meeting in Nizhny Novgorod, in western Russia.

The ministers reiterated their commitment to multilateralism and upholding the international law, including the Purposes and Principles enshrined in the Charter of the United Nations (UN) as its indispensable cornerstone, and the central role of the UN in an international system in which sovereign states cooperate to maintain international peace and security, advance sustainable development, ensure the promotion and protection of democracy, human rights and fundamental freedoms for all. They voiced their support for a comprehensive reform of the UN, including its Security Council, with a view to making it more democratic, representative, effective and efficient.



**What is BRICS?**

- BRICS is an acronym for the grouping of the world's leading emerging economies, namely Brazil, Russia, India, China, and South Africa.
- In 2001, the British Economist Jim O'Neill coined the term BRIC to describe the four emerging economies of Brazil, Russia, India, and China.
- The grouping was formalized during the first meeting of BRIC Foreign Ministers in 2006.
- South Africa was invited to join BRIC in December 2010, after which the group adopted the acronym BRICS.
  - The Johannesburg declaration, 2023 issued after the summit, said Argentina, Egypt, Ethiopia, Iran, Saudi Arabia and the United Arab Emirates (UAE) had been invited to become full members from January 1, 2024.
- The BRICS (prior to expansion) represented 41% of the global population, 24% of the global GDP, and 16 % of the global trade.
- Since 2009, its summits are held annually.

**What Geostategic Significance do the Newly Added BRICS Members Hold?****Energy Resources:**

The addition of new BRICS members from West Asia, such as Saudi Arabia and Iran, holds particular significance due to their

substantial energy reserves. Saudi Arabia, a major oil producer, directs a significant portion of its oil output to BRICS nations like China and India.

Despite facing sanctions, Iran has increased its oil production and exports, primarily targeting China, emphasizing the importance of energy cooperation and trade among BRICS members.

**Diversification of Energy Suppliers:**

Russia has traditionally been a major oil supplier to China and India. With the inclusion of new members, Russia is exploring additional markets for its energy exports, showcasing the potential for diversified energy sources within the BRICS framework.

**Strategic Geographical Presence:**

Egypt and Ethiopia, strategically positioned in the Horn of Africa and the Red Sea region, hold immense geostrategic importance due to their proximity to crucial maritime trade routes. Their inclusion enhances the geopolitical significance of BRICS in this region.

**Latin American Economic Influence:**

Argentina, as one of the largest economies in Latin America, brings substantial economic influence to the BRICS coalition. Latin America has historically attracted the interest of global powers, and Argentina's inclusion strengthens BRICS' presence in this part of the world.



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ENVIRONMENT

## Particulate air pollution linked to 135 million premature deaths over 4 decades, finds study

**CONTEXT:** Pollution from man-made emissions and other sources like wildfires have been linked to around 135 million premature deaths worldwide between 1980 and 2020, a Singapore university said on Monday. Weather phenomena like El Nino and the Indian Ocean Dipole worsened the effects of these pollutants by intensifying their concentration in the air, Singapore's Nanyang Technological University (NTU) said, unveiling the results of a study led by its researchers.

The tiny particles called particulate matter 2.5 (PM 2.5), are harmful to human health when inhaled because they are small enough to enter the bloodstream. They come from vehicle and industrial emissions as well as natural sources like fires and dust storms. The new particulate matter "was associated with approximately 135 million premature deaths globally" from 1980 to 2020, the university said in a statement on the study, published in Environment International.

### Particulate Matter

Also called particle pollution, it is a term for a mixture of solid particles and liquid droplets found in the air.

**It includes:**

**PM10:** inhalable particles, with diameters that are generally 10 micrometers and smaller; and

**PM2.5:** fine inhalable particles, with diameters that are generally 2.5 micrometers and smaller.

**Sources of PM:** Some are emitted directly from a source, such as construction sites, unpaved roads, fields, smokestacks or fires.

Most particles form in the atmosphere as a result of complex reactions of chemicals such as sulfur dioxide and nitrogen oxides, which are pollutants emitted from power plants, industries and automobiles.

**Harmful Effects:** Small particles less than 10 micrometers in diameter pose the greatest problems, because they can get deep into the lungs, and some may even get into the bloodstream. Particle pollution exposure has been linked to a variety of problems, including irregular heartbeat, aggravated asthma, decreased lung function and increased respiratory symptoms, such as irritation of the airways, coughing or difficulty breathing.

### National Clean Air Programme

The Centre had launched the National Clean Air Programme in 2019 to address air pollution in 122 cities. These cities are referred to as non-attainment cities as they did not meet the national ambient air quality standards for the period of 2011-15 under the National Air Quality Monitoring Programme.

Air Quality Index - Particulate Matter	
301 - 500	Hazardous
201 - 300	Very Unhealthy
151 - 200	Unhealthy
101 - 150	Unhealthy for Sensitive Groups
51 - 100	Moderate
0 - 50	Good

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