

JULY

14

# CRUX 10

10 News. 10 Sources. One Place



MK Yadav Sir

# Table of Contents

---

- 1 India-ASEAN FTA
- 2 AT1 Bonds
- 3 Wheat Production
- 4 PMSYM
- 5 The Path that Ends AIDS Report
- 6 G20 Sherpa
- 7 Op Southern Readiness 2023
- 8 Legion of Honour
- 9 Kaas Plateau
- 10 Nasa's Perseverance Rover

# Govt. curbs gold imports to check rising shipments through Indonesia

**Suresh P Iyengar**  
MUMBAI

A sudden spurt in duty-free imports of gold jewellery from Indonesia under the India-ASEAN free trade agreement was a key reason for the Indian government's decision to ban shipments of certain gold jewellery products.

The Centre suspects that gold is being re-routed into India from other countries without payment of any duty under the FTA as Indonesia was never known for exporting gold jewellery to India.



Indonesia shipped out 3-4 tonnes of gold articles and jewellery in the last 2-3 months, which raised alarm bells among authorities trying to curtail the current account deficit by restricting non-essential imports.

The government on Wednesday imposed restrictions on imports of certain gold jewellery and articles. In a notification, the Directorate General of Foreign Trade amended the import policy for unstudded jewellery made of gold and other gold articles to 'restricted' from 'free'.

However, it said import under the India-UAE CEPA would be allowed without any license.

Kumar Jain, spokesperson, Indian Bullion and Jewellers Association, said that when shipments from other countries were at-

tracting 15% duty, imports from Indonesia were cheaper and there was a gradual rise in imports from Jakarta.

The government has now plugged the loophole at a time when gold jewellery demand is looking up with the deadline for withdrawal of ₹2,000 coming closer, said Mr. Jain.

In the first two-months of FY24, India imported articles made of gold worth \$112 million and of this \$76 million was from Indonesia, trade sources said.

*(The writer is with The Hindu businessline)*

**Context:** The sudden spurt in **duty-free imports of gold jewellery from Indonesia** under the free trade agreement was one of the main reasons for the Indian Government's decision to ban shipments of certain gold jewellery products.

- The Government suspects that gold is being re-routed into India from other countries without payment of any duty under the **India-ASEAN free trade agreement** as Indonesia was never known for exporting gold jewellery to India.
- Import under the **India-United Arab Emirates Comprehensive Economic Partnership Agreement** would be allowed without any license.

## ASEAN-India Free Trade Area

- It is a free trade area **among the ten member states of the Association of Southeast Asian Nations (ASEAN)** and the Republic of India.
- The ASEAN-India Free Area emerged from a mutual interest of both parties to expand their **economic ties in the Asia-Pacific region**.
- The signing of the ASEAN-India Trade in Goods Agreement paves the way for the **creation of one of the world's largest FTAs** – a market of almost 1.8 billion people with a combined GDP of US\$2.8 trillion.
- The ASEAN-India FTA promote **tariff liberalisation** of over 90 percent of products traded between the two dynamic regions, including the so-called "special products," such as palm oil (crude and refined), coffee, black tea and pepper.

## Imbalance Check

Trade with Asean (\$ billion)

	Export	Import	Trade deficit
FY10	18.1	25.8	7.7
FY14	33.1	41.2	8.1
FY19	37.4	59.3	21.9



### FTA impact

**India complains of disproportionate benefits to Asean**

**Industry wants more goods to be protected**

**High costs to meet complex origin norms**

**Cars, textiles, sugar, wheat, vegetable oil, dairy not in FTA**

**Low utilisation rate by Indian exporters**

### What does a review mean

#### Analysis of the FTA

**India, Asean can relook the duty cuts**

**Review plan comes at a time when RCEP talks are in final stages**

# SBI raises ₹3,101 cr via AT1 bond at 8.1%

ABHIJIT LELE

Mumbai, 13 July

The country's largest lender, State Bank of India (SBI), has raised ₹3,101 crore capital via Additional Tier-I bonds (AT1) at a coupon rate of 8.1 per cent. This is 15 basis points lower than the pricing for its previous AT1 bond issued at 8.25 per cent in March.

The base issue size for AT1 bonds was ₹3,000 crore, with green shoe of ₹7,000 crore. Rating agency CRISIL has assigned an "AA+" rating to AT1 bonds (Under Basel III regulations). Bond market dealers said while lenders got bids worth ₹5,900 crore, investors were asking for higher levels of yields (up to 8.25 per cent). So the bank decided to take up the portion of demand at yields it was comfortable with. Thus, the amount raised would be just over the base issue size.

There is no pressure for lenders to raise capital at any price. Its capital adequacy is comfortable, and it can wait for better pricing in the coming months. According to CRISIL, SBI (standalone) had adequate capitalisation as indicated by Tier-I of 12.1 per cent and overall capital adequacy ratio of 14.7 per cent as of March 31.

When SBI raised money in March at 8.25 per cent, the system was still in the phase of rate-hardening. Now, the market is looking for stability with one or two rate hikes by the US Federal Reserve. Back home in India, the

## A LOOK BACK

Select AT1 bond issuances by SBI in FY22 & FY23 (Amount in ₹ cr)



Reserve Bank of India has been in "pause" mode as far as decisions about the policy repo rate are concerned, dealers said.

Out of the total ₹50,000 crore bond issuance plan for FY24, ₹20,000 crore will be from AT1 bonds, including this week's proposed offering. It also has plans to issue tier-II bonds worth ₹10,000 crore and the balance would be through infrastructure bonds in 2023-24.

**Context:** The State Bank of India (SBI) has raised ₹ 3,101 crore capital via **Additional Tier I bonds (AT1)** at a coupon rate of 8.1 per cent. Rating agency CRISIL has assigned an "AA+" rating to AT1 bonds (Under Basel III regulations).

### Additional tier I bonds (AT1) bonds

- **About:** AT1 bonds are a type of perpetual debt instrument that banks use to augment their core equity base and thus comply with Basel III norms.
- **Origin:** These bonds were introduced by the Basel accord after the global financial crisis to protect depositors.
- **Different from other debt instruments:** These bonds are perpetual in nature - they **do not carry any maturity date.**
  - They offer higher returns to investors but compared with other vanilla debt products, these instruments carry a higher risk as well.
  - These bonds are subordinate to all other debt and senior only to equity.
  - Banks have a call option that permits them to redeem these bonds after a certain period.
- **High-risk instruments:** Since these bonds can be written down by banks under the directions of the Reserve Bank of India (RBI) in the event of an institutional failure, they are seen as high-risk instruments.
  - If the bank reaches the point of non-viability, AT1 bonds are the first part of debt that will be written down.
- **Regulation:** AT-1 bonds are regulated by the Reserve Bank of India (RBI).

**HOW RUSSIA HAS BECOME THE  
WORLD'S TOP WHEAT EXPORTER  
AT UKRAINE'S EXPENSE**



Awheat field in Ukraine's Lviv region. Wikimedia Commons

**HARISH DAMODARAN**  
NEW DELHI, JULY 13

RUSSIA IS consolidating its position as the world's top wheat exporter, even as Ukraine's shipments are projected to more than halve from their peak and production plunge to a 11-year-low.

The US Department of Agriculture (USDA) has estimated Russia's wheat exports at a record 45.5 million tonnes (mt) in 2022-23 (July-June), up from 33 mt, 39.1 mt and 34.5 mt in the preceding three marketing years. In the process, it has left behind the European Union, which had exported 39.8 mt in 2019-20, before slipping to 29.7 mt, 32 mt and 34 mt in the following three years.

Moreover, Russia's wheat exports are expected to touch a new high of 47.5 mt in 2023-24, way ahead of the EU (38.5 mt), Canada (26.5 mt), Australia (25 mt) and Argentina (11 mt). Russia has gained largely at the expense of Ukraine. The war-torn nation's exports fell from 21 mt in 2019-20 to 16.8 mt in 2022-23 and are forecast to further decline to 10.5 mt in the new marketing year. USDA has pro-

jected the country's production, too, to dip to 17.5 mt, the lowest since 2022-13.

The primary destinations for Russian wheat are the Middle East, North Africa and Central Asia, led by Egypt, Iran and Algeria. While the Black Sea Grain Initiative helped Ukraine export 16.8 mt in 2022-23, about 39% of its wheat actually moved via the land route to Eastern Europe, instead of the specially-created corridors for shipping from the three designated ports of Odesa, Chornomorsk and Yuzhny. Ukraine's markets have shifted dramatically from Asia and North Africa before the war to mainly Europe, mostly due to ease of shipment, according to the USDA.

Ample supplies from Russia have helped soften global wheat prices. Russian wheat is now being exported at around \$235 per tonne, as against \$275 three months ago, \$310 six months ago and \$375 a year ago. The relatively low international prices of wheat can be a comfort factor for countries like India; it might have to consider that option if the kharif rice crop does not turn out too good due to poor monsoon rain in major paddy-growing states.

**Context: Russia** is consolidating its position as the **world's top wheat exporter**, even as Ukraine's shipments are projected to more than halve from their peak and production plunge to a 11-year-low.

- The primary destinations for Russian wheat are the **Middle East, North Africa and Central Asia, led by Egypt, Iran and Algeria.**
- The **relatively low international prices of wheat** can be a comfort factor for countries like India; it might have to consider the option of wheat imports if the kharif rice crop does not turn out too good due to poor monsoon rain in major paddy-growing states.

**Wheat Production**

- **Global Status:** China is the top producer.
  - **Top 3 wheat producer:** China>India>Russia.
    - Ukraine is the world's eighth-largest producer of wheat.
  - **Largest exporter:** Russia is the world's largest exporter of wheat.
  - **Top five exporting countries:** Russia > United States > Canada > France > Ukraine.
  - **Largest importer:** Egypt is the world's biggest importer of wheat.
- **India's Status:** India is the **second largest producer of wheat** (Around 13.5% of world total production).
  - **Total production:** India produces around 107 MT of wheat annually while a major chunk of it goes towards domestic consumption.
  - **Less export:** India accounts for even less than 1% in world wheat export.
    - Its share has increased from 0.14% in 2016 to 0.54% in 2020.
  - **Under MSP:** Wheat is covered under Minimum Support Price.
  - **Cereal Crop:** Second most important cereal crop in India after rice.
  - **Top Wheat Producing States:** Uttar Pradesh > Punjab > Haryana>Madhya Pradesh > Rajasthan> Bihar>Gujarat

# 21% Unorganised Workers Exit PM Pension Scheme

Raises questions over viability of PM-SYM; experts blame inflation

**Yogima.Sharma**  
@timesgroup.com

**New Delhi:** The government's pension scheme for unorganised workers, Pradhan Mantri Shram Yogi Maan-dhan (PM-SYM), saw the exit of about 21% subscribers in less than six months, raising questions on the viability of the scheme.

The total number of subscribers under the scheme fell to 4.43 million on July 11, down 1.19 million from an all-time high of 5.62 million on January 31, as per government data.

Experts attributed this to high inflation and rise in cost of living which has made it difficult for unorganised workers to continue contributing to this voluntary pension scheme or may even compel them to withdraw their share of contribution.

"Stubbornly high prices have raised the actual cost of living, making it difficult for these workers to sustain the burden of monthly contribution under the scheme," said labour economist KR Shyam Sundar. "It would not be surprising if these are permanent exits, with workers actually withdrawing their contribution along with the interest earned on it as high prices continue to pinch on their pockets."

As per the scheme guidelines, in case a subscriber exits the scheme within a period of less than 10 years, the beneficiary will be allowed to withdraw his share of contribution with sa-

## Worker Woes

Number of PM-SYM subscribers down to **4.43 m** on July 11

Jan 31 saw highest no of subscribers at **5.62 m** | High cost of living has hit household budgets



Dip could be temporary as workers are unable to contribute

But possibility of permanent exit not ruled out

**SCHEME ALLOWS WORKERS TO WITHDRAW THEIR SHARE OF CONTRIBUTION**

However, if a subscriber exits after 10 years or more but before superannuation at the age of 60 years, the beneficiary's share of contribution along with accumulated interest as actually earned by fund or at the savings bank interest rate, whichever is higher, will be credited to the beneficiary.

PM-SYM is a voluntary contributory pension scheme launched with an aim to bring millions of unorganised workers into the social security net. It caters to unorganised sector workers in the 18-40 age group and earning less than ₹15,000

**Context:** The government's pension scheme for unorganised workers, **Pradhan Mantri Shram Yogi Maan-dhan (PMSYM)**, saw the exit of about 21% subscribers in less than six months, raising questions on the viability of the scheme.

- Experts attributed this to **high inflation and rise in cost of living** which has made it difficult for unorganised workers to continue contributing to this voluntary pension scheme or may even compel them to withdraw their share of contribution.

### Pradhan Mantri Shram Yogi Maan-dhan (PMSYM)

- PM-SYM is a **voluntary contributory pension scheme** launched with an aim to bring millions of unorganised workers into the social security net.
- It caters to unorganised sector workers in the **18-40 age group** and earning less than ₹15,000 per month.
- As per the scheme guidelines, in case a subscriber exits the scheme within a period of less than 10 years, the beneficiary will be **allowed to withdraw his share of contribution with savings bank interest rate**.
- However, if a subscriber exits after 10 years or more but before superannuation at the age of 60 years, the **beneficiary's share of contribution along with accumulated interest** as actually earned by fund or at the savings bank interest rate, whichever is higher, will be credited to the beneficiary.

#### Main features :

- Assured pension of ₹3000 per month after the age of 60 years.
- Voluntary and contributory pension.
- Government of India will also contribute equally.
- Monthly contribution ₹55 - ₹200.
- Payment of pension by LIC.

#### Eligibility :

- For aged 18-40 years.
- Annual turnover less than ₹1.5 crore.
- Should not be a member of EPFO, ESIC, NPS (Government-funded), PM-SYM or should not be a Income tax payer.

#### Enrollment Process



The entire enrollment process takes only 3 to 5 minutes.

**THE PATH THAT ENDS AIDS REPORT****(Syllabus: GS Paper 2 - Health)**

# India can end AIDS epidemic: UNAIDS

**D**avid Bridger, UNAIDS country director for India, on Thursday expressed confidence that India has the potential to achieve the end of the AIDS epidemic as a public health threat.

He emphasized the need to capitalize on the progress made thus far, saying that India has the opportunity to eradicate AIDS if efforts are sustained.

Bridger's remarks come in response to a new report released by UNAIDS titled 'The Path that Ends AIDS', which underscores the political and financial choices involved in ending AIDS and highlights the remarkable achievements of countries and leaders who have pursued this path.

The report revealed that several nations, including Botswana, Eswatini, Rwanda, the United Republic of Tanzania, and Zimbabwe, have attained the ambitious "95-95-95" targets.

STAFF WRITER

**Context:** UNAIDS country director for India expressed confidence that India has the potential to achieve the end of the AIDS epidemic as a public health threat.

- He remarks come in response to a new report released by UNAIDS titled 'The Path that Ends AIDS', which underscores the political and financial choices involved in ending AIDS and highlights the remarkable achievements of countries and leaders who have pursued this path.

**Key Finding of the report**

- The report revealed that several nations, including Botswana, Eswatini, Rwanda, the United Republic of Tanzania, and Zimbabwe, have attained the ambitious "95-95-95" targets.
  - These targets aim to ensure that 95% of people living with HIV are aware of their HIV status, 95% of those aware receive life-saving antiretroviral treatment, and 95% of people on treatment achieve viral suppression.
- Turning the focus to India, the 2022 HIV Estimates indicate that around **2.47 million people are living with HIV in the country**, with an adult HIV prevalence of 0.2%.
- Although there were approximately 66,000 new HIV infections in 2022, there has been a decline of slightly over 42% since 2010, slightly exceeding the global average of 38%.
- AIDS-related deaths in 2022 stood at approximately 39,000, marking a significant decline of nearly 77% since 2010.
- Despite numerous competing health priorities during the COVID-19 recovery period, the fifth phase of the **National AIDS and STI Control Programme (2021-2025)** received a substantial budget allocation of approximately USD 1934 million.
- Notably, 95% of the overall budget for the program is financed domestically, exemplifying India's dedication to combating the epidemic.
- **Efficient and effective utilization of resources**, along with the availability of granular data from systems such as **NACO's Surveillance and Epidemiology Framework**, are vital for achieving desired outcomes.
- In 2022, India witnessed encouraging progress, with 79% of people living with HIV aware of their status.
- Of those aware, 86% of all people living with HIV are receiving antiretroviral treatment.
- Moreover, 93% of those on treatment who **underwent viral load testing achieved viral suppression**.
- A key priority for India is reaching individuals who are aware of their status but not on treatment.
- The **concept of Undetectable=Untransmittable (U=U)** reinforces the importance of achieving an undetectable viral load through antiretroviral therapy, rendering individuals unable to transmit the virus.
- India's strategic focus includes leveraging innovative solutions like **pre-exposure prophylaxis (PrEP)** and virtual interventions, removing barriers to access services, and implementing policy reforms that create an enabling environment.
- The planned establishment of welfare boards for **transgender people** in all states is a promising initiative that could be expanded to benefit other populations.

# G20 sherpas discuss 'digital public infra' fin structure

Surojit.Gupta@timesgroup.com

**Hampi:** The third G20 sherpas' meeting underway here in this historic town in Karnataka is discussing the financing structure to help low and middle-income countries in their digital transformation, a top official said, asserting that India will focus on the development agenda.

"The financing structure is being discussed," India's G20 sherpa **Amitabh Kant** told a news conference. India is showcasing its success in digital public infrastructure and wants it to be replicated in developing countries. New Delhi is of the view that there exists a gap in the global governance architecture in relation to digital public

infrastructure (DPI). The sherpas are drafting the leader's declaration for the September summit in the national capital.



Kant had earlier said that the Digital Economy Group has been discussing the proposal of setting up a fund for low-and middle-income countries to assist them with their digital transformation through open source, open APIs, and interoperable digital public infrastructure.

India had earlier floated a draft communique and has now moved a revised draft and the focus in Hampi has been on issues that New Delhi wants to flag under its presidency such

as growth, development, accelerating sustainable development goals, addressing the debt crisis and issues confronting the global south. Kant made it clear that the effort for now is to keep contentious issues such as the reference to war in Ukraine out of the discussions.

"Our priority is developmental issues. Our priority is growth, progress, our priority is inclusive growth. Our priority is more finance from multilateral institutions," Kant said.

"Our priority is sustainable development goals. Our priority is technological transformation. Our priority is gender equality. Our priority is not war," he said, but added that bilaterally the issue would be discussed.

- The **Sherpas' Track** involves **technical and policy analyses** by working groups comprising officials from each member country and international organisations.
  - It focuses on development-oriented issues such as agriculture, fighting corruption, employment, etc.
- The **Finance Track** is composed of all **Finance Ministers and Central Bank Governors of G20 members**, who also meet regularly during the year to analyse global economic problems and to take coordinated actions towards their resolution.

**Context:** The third **G20 sherpas' meeting** underway here in this historic town in Karnataka is discussing the financing structure to help low and middle-income countries in their digital transformation, a top official said, asserting that India will focus on the development agenda.

## G20 sherpa

- A Sherpa is a **personal representative of the leader of a member country** at an international Summit meeting such as the G8, G20 or the Nuclear Security Summit.
- The term is derived from the Nepalese Sherpa people, who serve as guides for mountaineers in the Himalayas.
- The Sherpa engages in **planning, negotiation and implementation tasks** through the Summit.
- They **coordinate the agenda, seek consensus** at the highest political levels, and participate in a series of pre-Summit consultations to help negotiate their leaders' positions.
- Sherpas are **career diplomats or senior government officials** appointed by the leaders of their countries.
- There is **only one Sherpa per Summit** for each member country; he/she is assisted by several sous Sherpas.
- Sherpas meet much before the start of the Summit to iron out differences on various issues.
- At the G20 Summit, work progresses through broadly two channels: the **Finance Track and Sherpas' Track**.
- Towards the end of the process, the Sherpas, along with the Finance Track representatives, prepare the Leaders' **"Declaration" or "Communique"**, which is the final outcome of the G20 Summit.

**INS SUNAYNA PARTICIPATES IN CMF EX 'OP SOUTHERN READINESS - 2023'**

**Context:** INS Sunayna was at Seychelles to participate in **Op Southern Readiness 2023** conducted by Combined Maritime Forces(CMF).

- The visit was aimed at **strengthening multilateral ties and enhancing cooperation through CMF exercise** which is a multinational initiative aimed at enhancing maritime security, countering piracy to ensure safety and freedom of navigation in the region.

**Op Southern Readiness 2023**

- It is a **capacity building exercises** conducted by Combined Maritime Forces (CMF).
- CMF is a multinational **naval partnership**.
- CMF is **Commanded by a U.S. Navy Vice Admiral**.
- Aim: To **promote security, and prosperity** across international waters.
- **4 Main focus areas:** defeating terrorism, preventing piracy, encouraging regional cooperation, and promoting a safe maritime environment.
- **India is NOT a member** country of CMF.
- It reinforces Indian Navy's commitment to maritime security in the Indian Ocean Region.
- It marks the maiden participation of an Indian Navy ship in CMF exercise.

**COMBINED MARITIME FORCES**  
World's largest multinational naval partnership

**34 MEMBER-NATIONS**

**Established in 2001** to counter the threat of international terrorism, CMF began with 12 like-minded countries. The organization later expanded to include counter-piracy operations and added a 34th member-nation in 2021.

**Headquartered in** Manama, Bahrain with U.S. Naval Forces Central Command and U.S. 5th Fleet.

**4 Combined Task Forces (CTFs)**

- CTF 150 - Maritime security in the Gulf of Oman & Indian Ocean
- CTF 151 - Counter-piracy
- CTF 152 - Maritime security in the Arabian Gulf
- CTF 153 - Maritime security in the Red Sea & Gulf of Aden (established April 17, 2022)

**Deter      Strengthen      Advance      Reassure**

# Prime Minister conferred with the Grand Cross of the Legion of Honour

**Context:** Prime Minister was conferred with the **Grand Cross of the Legion of Honour**, France's highest award by President of the Republic of France.

- **Other personalities** who received this honour include former South African President Nelson Mandela, King Charles - the then Prince of Wales, Former German Chancellor Angela Merkel, and Former United Nations Secretary-General Boutros Boutros-Ghali, and Russian President Vladimir Putin.

## Grand Cross of the Legion of Honour

- The Legion of Honour is the **highest French decoration** given to the most deserving citizens in all fields of activity.
- It has been conferred to **prominent personalities** for two centuries.
- Established by former **French emperor Napoleon Bonaparte in 1802**, the Legion of Honour is divided into five degrees (lower to higher) – Knight, Officer, Commander, Grand Officer and Grand Cross.
- The PM was awarded the fifth honour.
- The **color of the ribbon is red** and the badge is a five-armed Maltese asterisk hung on an oak and laurel wreath.
- On the obverse is the effigy of the Republic and on the reverse two tricolor flags surrounded by the motto '**Honor and Fatherland**' written in French.
- Although the membership to **Legion of Honour is restricted to French nationals**, foreign nationals who serve France or uphold its ideals may also be given a distinction of the Legion.
- Over 79,000 members are there so far and France decorate around 300 foreign nationals with this honour each year.

## State honours given to **NARENDRA MODI**



The 'Order of the Nile' award is the 13th state honour that PM Modi has received during his 9-year tenure

**EGYPT**  
Order of the Nile

**SAUDI ARABIA**  
Order of Abdulaziz Al Saud

**BHUTAN**  
Order of the Druk Gyalpo

**PALESTINE**  
Grand Collar of the State of Palestine

**UAE**  
Order of Zayed Award

**RUSSIA**  
Order of St. Andrew Award

**AFGHANISTAN**  
State Order of Ghazi Amir Amanullah Khan

**MALDIVES**  
Order of the Distinguished Role of Nishan Izzuddin

**BAHRAIN**  
King Hamad Order of the Renaissance

**USA**  
Legion of Merit by the US Government

**REPUBLIC OF PALAU**  
Ebaki Award by the Republic of Palau

**FIJI**  
Companion of the Order of Fiji

**PAPUA NEW GUINEA**  
Companion of the Order of Logohu



## Sediments decode climate and environmental changes on Kaas Plateau around 8664 years BP

**Context:** A new study of the **sediments from a seasonal lake in the Kaas Plateau** in the Satara district of Maharashtra has indicated a major shift in the Indian Summer Monsoons towards dry and stressed conditions with low rainfall during the Early-Mid-Holocene, around 8664 years BP.

- Kaas Plateau, nestled in the **Western Ghats** is about 140 km from Pune, was included in the UNESCO World Natural Heritage Site in 2012.
- Known as Kaas Pathar in Marathi, its name is derived from the Kaasa tree, botanically known as *Elaeocarpus glandulosus* (rudraksha family).
- **Designated as a biodiversity hotspot**, the Kaas Plateau comes to life with various seasonal flowers forming a floral carpet over the entire lateritic crust during August and September.

### Key Findings of the study

- **Sediment profile dating** back to 8000 years which helped decode climatic signatures indicated a relatively reduced rainfall and weak southwest monsoon during the late Holocene (around 2827 years BP).
- The observations from the study revealed that the seasonal lake is probably a **product of an erosional localized shallow depression** on a pediment (rock debris) developed over the crust.
- As noted by UNESCO, the present "**Flower Wonder**" is located on a lake that dates back to the Early-Mid-Holocene period, which means it is an ancient lake that has been preserved over a long time.
- The signatures of **diatoms, mites, thecamoebians, and sediment characteristics** provided better resolutions regarding the hydrological processes and modification of the seasonal lake.
- The study suggests that **southwest Monsoon intensified during the Early Holocene**, approximately 8000 years ago, and the northeast monsoon relatively weakened around 2000 years ago.
- It is very likely that the '**Flower Wonder**' might have existed for a longer duration, up to March-April, during the early-mid-Holocene (8000–5000 years), when the monsoon rainfall (more than 100 rainy days) was undoubtedly better than today.

### KAAS PLATEAU

LOCATED **125 KM** FROM PUNE



**2012:** The UNESCO World Heritage Committee recognised it as a heritage site

**HOME TO** around 350 flowering plants, including species listed as 'rare, endemic and threatened'

**APONOGETON** Satarensis and *Rotala Ritchiei*: For

these species, the plateau is one of the last remaining hopes for survival

**NO. OF VISITORS** between August and October last year: Nearly 1.28 lakh

**TICKET RATES:** Rs 100 on weekends and holidays, Rs 50 on weekdays

## NASA'S PERSEVERANCE ROVER

(Syllabus: GS Paper 3 - Sci & Tech)

### Life beyond Earth? NASA's Perseverance rover finds diverse organic matter on Mars

A high possibility for past habitability exists at the rover's landing site in Jezero Crater

By Arya Rohini

Published: Thursday 13 July 2023



## NASA'S ROVERS ON MARS



**Context:** The United States National Aeronautics and Space Administration's (NASA) Perseverance rover has discovered evidence of organic compounds in a Martian crater, offering clues on the potential habitability of the planet.

### Key Points

- **Organic compounds** are carbon-based molecules. Other elements, such as hydrogen, oxygen, nitrogen, phosphorus and sulphide, are often found in them.
- The study found **molecules associated with aqueous processes**, suggesting that water may have been a significant factor in Mars's vast range of organic matter.
- Organic matter can be formed by a variety of biological and non-biological processes.
- These possible **Martian organics** could have originated from geological processes or chemical reactions, which can also produce organic molecules.
- Organic compounds can be created by processes not related to life.
- So far, only the **Mars Phoenix lander and the Curiosity rover** have been able to detect organic carbon using **cutting-edge methods** like evolved gas analysis and gas chromatography-mass spectrometry.

### Perseverance rover

- Perseverance, **nicknamed Percy**, is a car-sized Mars rover designed to explore the Jezero crater on Mars as part of NASA's Mars 2020 mission.
- It was manufactured by the Jet **Propulsion Laboratory** and launched on July 30, 2020.
- Confirmation that the rover successfully landed on Mars was received on February 18, 2021.
- As of 11 July 2023, **Perseverance has been active** on Mars for 850 sols (873 Earth days, or 2 years, 4 months and 23 days) since its landing.
- Following the rover's arrival, NASA named the landing site Octavia E. Butler Landing.
- Perseverance has a similar design to its predecessor rover, Curiosity, although it was moderately upgraded.
- It carries **seven primary payload instruments**, nineteen cameras, and two microphones.
- The rover's goals include identifying **ancient Martian environments** capable of supporting life, seeking out evidence of former microbial life existing in those environments, collecting rock and soil samples to store on the Martian surface, and testing oxygen production from the Martian atmosphere to prepare for future crewed missions.

# Secure Top Rank with the IAShub Courses

## Prelims 2023 Courses

01

Prelims Crash Course  
Score Enhancement  
Program (SEP)

02

INA Current Affairs  
(Prelims)

03

TACKLE - Prelims  
Test Series

04

Geography - Prelims  
Crash Course

## Quality Enrichment Courses (Mains 2023)

01

Quality Enrichment Program (QEP)

02

Science of Answer Writing (SAW)

## Prelim Cum Mains 2024 Courses

01

NEEV GS Foundation 2024/25

02

INA Current Affairs Pre Cum Mains - 2024

**FREE**



**Download PDF**



Login to [theiashub.com](http://theiashub.com)



**Aaj Ka  
Quality Enrichment**  
(Toppers' Favourite PDF)



**News-CRUX-10**  
(10 News. 10 Sources. One Place)



**Monthly Editorials**  
(The Hindu & Indian Express)



**Daily Quiz (Prelims)**



**Government Schemes &  
Ministry Wise Year End  
Review**



**Free Enrichment PDFs**  
(Tailor Made Crisp Study Material)

**FREE**

**India's Best Answer Writing Sessions**  
*with*



Ritika Jindal



Simi Karan



Gaurav Budania



Mridul Shivhare

**IAS OFFICERS**

Log On To Our Unique  
**Free Answer Writing Sessions with Toppers (FAST) Portal**  
& Start Practicing!



**SCAN  
HERE**



**9560082909**



[t.me/theiashub](https://t.me/theiashub)



[www.theiashub.com](http://www.theiashub.com)



[/mkyadav](https://www.youtube.com/mkyadav)



[www.theiashub.com](http://www.theiashub.com)