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ANALYSIS**



LAKSHYA ACADEMY®

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1 - 2+2 Ministerial dialogue:

GS II

International Issues

- **Context:**

- India and the United States of America have "2+2" ministerial talks.

- **How do 2+2 meetings work?**

- Since 2018, the leaders of the US have met annually during the 2+2 sessions.
- Two high-ranking delegates, Ministers responsible for both the foreign and defence portfolios, from each of the two nations participate in the 2+2 meetings in an effort to expand the range of communication between them.
- With a method like this, partners may more effectively comprehend and value one other's strategic concerns and sensitivities while accounting for political variables on both ends. This helps to forge stronger, more integrated strategic relationships in a world that is changing quickly.

- **Who are the 2+2 partners of India?**

- India's most important and oldest partner in 2+2 discussions is the United States.
- In September 2018, the two nations had their first 2+2 dialogue.
- The Strategic and Commercial Dialogue, which was conducted between the foreign and commerce ministers of the two nations during the previous Obama administration, was also thought to be replaced by it.
- India has also had two-plus-two meetings with ministers from Russia, Australia, Japan, and the United Kingdom.

- **Under 2+2, defence and strategic accords:**

- **India, the US, and the UK have inked three "foundational pacts" aimed at fostering close military cooperation:**

- the Memorandum of Agreement on Logistics Exchange (LEMOA) in 2016.

- 2018. The Communications Compatibility and Security Agreement
- 2020 saw the signing of the Basic Exchange and Cooperation Agreement (BECA).
- *Source → The Hindu*

2 - Ben Gurion Canal Project:

GS II

International Issues

- **Context:**
- There have been rumours that Israel wants to drive Hamas out of the Gaza Strip and take total control of the Palestinian enclave so that it can further investigate a significant economic opportunity.
- **Important information:**
- The plan is to drill a canal from the eastern arm of the Red Sea, the Gulf of Aqaba, which juts into the southern point of Israel and south-western Jordan, to the eastern Mediterranean coast across the Israeli-controlled Negev Desert.
- It will establish a substitute for the Suez Canal, which is under Egyptian authority and runs from the western arm of the Red Sea through the northern Sinai peninsula to the southeast Mediterranean.
- If the so-called Ben Gurion Canal Project—which was first conceived in the 1960s—were to come to pass, Egypt's stranglehold on the quickest route between Europe and Asia would be destroyed, completely altering the dynamics of the world's marine trade.
- **The importance of Suez Canal:**
- The Suez Canal, which opened in 1869, completely changed international maritime trade.
- It made sure that ships sailing between Europe and Asia wouldn't have to go around the entire continent of Africa by joining the Mediterranean and Red Seas via the Isthmus of Suez.
- The canal reduced the travel time by more than 41% between London and Bombay (now Mumbai).
- About 26,000 vessels passed through the Suez Canal in the fiscal year 2022–2023, making up almost 13% of all shipping worldwide.

- **Problems with the canal:**

- First, the largest maritime bottleneck in the world is the Suez Canal, which is 193 km long, 205 m wide, and 24 m deep.
- It has extended and deepened over time, yet it is still always crowded.
- An estimated \$9.6 billion worth of products were held up per day by the ensuing "traffic jam."
- The 1967 and 1973 Arab-Israeli Wars revolved around the Suez Canal, which was closed from 1967 to 1975.
- Of obviously, the canal is essential to Egypt's economy.
- In addition to the advantages it provides for the local economy, it collects all toll income.
- The Suez Canal Authority in Egypt recorded record toll receipts in the fiscal year 2022–2023, amounting to roughly 2 percent of the country's \$476.8 billion GDP.

- **What is preventing Israel from building the canal?**

- First and foremost, the complexity and cost of such a project would be almost unaffordable.
- Such a project might cost up to \$100 billion, which is significantly more than what would be required to enlarge the Suez Canal and address its traffic issue.
- The topography and topographical constraints are the main reason why the Ben Gurion Canal's projected course is more than 100 kilometres longer than the Suez Canal.
- Many ships may still prefer the previous, shorter path even if it is developed.
- A canal that has the capacity to carry goods worth billions of dollars every day cannot be built in an area where Israeli assaults and Hamas rockets pose a constant military danger.

- *Source → The Hindu*

3 - Baler machine:

GS III

Environmental Conservation

- **Context:**

- Punjab has seen a rise in demand for a device that makes ex situ (off site) stubble management easier since the Supreme Court took up the issue of farm fires.

- **Important information:**

- Since they have been in use for ten years, Punjab is home to about 2,000 "Baler" devices.
- 1,268 of them are heavily supported (between 50 and 80 percent) under the Crop Residue Management (CRM) programme of the Centre.

- **Requirement for the apparatus:**

- The paddy crop leaves behind stubble on the earth after harvest.
- Before the following crop is sown, farmers must remove this stubble.
- Around this time of year, farmers burn their stubble, releasing smoke into the air that ranks among the worst.
- Using devices like super seeders to incorporate the stubble into the soil is one of the more environmentally friendly techniques (in situ management).
- Farmers contend that this exposes fields to insect infestations and calls for the application of harmful pesticides.
- Baler machines are useful in ex situ management, which is preferred by many.
- How the devices operate:
 - Agricultural residue is compressed by balers into manageable, transportable bales.
 - Farmers use a tractor-mounted cutter to trim the crop residue prior to utilising a baler machine.
 - A rake is used to arrange the stubble in straight lines after it has dried for two days.
 - The stubble is subsequently compacted into bales by a tractor-mounted baler machine using netting.
 - These bales are shipped to landfills or factories.
 - Farmers that utilise balers in their fields can start ploughing right away and planting the following crop.

- **Issues:**
- **Price:**
 - Without subsidies, a single baler costs roughly Rs 14.5 lakh.
 - The rake and cutter come at an additional cost of approximately Rs 2.5-3 lakh.
- **Area covered:**
 - In a single day, a baler may cover 15 to 20 acres.
 - They are in operation for about 45 days, weather permitting.
 - There are currently over 32 lakh hectares of rice farms in Punjab.
 - The state's available balers can only cover 15–18% of this area, depending on how many days they run.
- **Source** → *The Hindu*

4 - Saturn's rings will disappear in 2025:

GS III

Science and Technology

- **Context:**
 - Saturn's rings will ostensibly vanish from view in 2025.
- **Important information:**
 - Saturn's axis of rotation is slanted 26.7 degrees, similar to Earth's axis of rotation, which is angled 23.5 degrees.
 - Its massive ring system is likewise inclined towards the orbital plane of Saturn.
 - Because of this, when Saturn orbits the Sun, it seems to nod up and down from Earth, and the view of its rings likewise varies.
 - Since the ring system circles around a fixed axis, Earth may view the ring disc from both sides during each of Saturn's circuits around the Sun.

- The orbit of Saturn around the Sun takes 29.5 years, and every 13 to 15 years, the edge of Saturn's rings aligns with Earth.
- The rings are nearly invisible at this location because they are so thin that they reflect very little light and are very difficult to perceive.
- Saturn's rings will be precisely aligned with our line of sight in March 2025, making them invisible from Earth. As the planet keeps rotating around the Sun, the rings will eventually come back into view.
- **Will Saturn's rings eventually truly vanish?**
- The National Aeronautics and Space Administration (NASA) predicted in 2018 that Saturn would most likely lose its rings entirely within the next 300 million years, if not sooner.
- It will most likely occur because Saturn's magnetic field is causing the rings, which are made of dusty ice particles, to be drawn into the planet by its gravity.
- Since the rings are just 100 million years old, the paper also stated that Saturn, which is four billion years old, acquired the rings considerably later in its existence.
- *Source → The Hindu*

5 - First vaccine against chikungunya virus:

GS II

Health related issues

- **Context:**
- The world's first chikungunya vaccine was been approved by US health officials.
- **Important information:**
- The vaccine was licenced for use in adults 18 years of age and older who are at elevated risk of exposure. It was created by Europe's Valneva and will be sold under the brand name Ixchiq.
- The approval of Ixchiq by the US drug agency is anticipated to expedite the vaccine's introduction in nations where the virus is most common.
- Up until now, the only method to guard against infection in the absence of preventative medication was to avoid getting bitten.

- As is customary with other vaccines, the chikungunya vaccine is administered as a single injection and contains a live, weakened strain of the virus.
- **About Chikungunya:**
- The chikungunya virus (CHIKV), an RNA virus of the alphavirus genus of the family Togaviridae, is the virus that causes chikungunya, an illness spread by mosquitoes.
- Mosquitoes are the primary carriers of the Chikungunya virus; these mosquitoes, *Aedes (Stegomyia) aegypti* and *Aedes (Stegomyia) albopictus*, are also capable of spreading the dengue and Zika viruses.
- The word "to become contorted" in the Kimakonde language is the source of the name "chikungunya."
- Most cases of chikungunya, which results in fever and excruciating joint pain, occur in tropical and subtropical regions of southeast Asia, parts of Africa, and the Americas.
- A chikungunya virus infection can cause serious illness and persistent health issues.
- Chikungunya has been reported in more than 110 countries since it was initially discovered in Tanzania in 1952.
- As a result of climate change pushing the mosquitoes that spread chikungunya into new areas, public health experts are concerned that the disease could pose a pandemic threat in the future.
- Because chikungunya has symptoms with dengue and zika, it can be easily misdiagnosed.
- With the exception of the recently licenced Ixchiq vaccine, there is presently no particular treatment or vaccine for chikungunya virus infections.
- For CHIKV infections, there is no specific antiviral medication treatment.
- **Source → *The Hindu***