

INTERNATIONAL RELATIONS

1. INDIA-FRANCE DEFENCE COOPERATION

In Context: India approved plans to buy 26 Rafale fighter aircraft and three Scorpene class conventional submarines for the Indian Navy from France. The proposals were approved by the Defence Acquisition Council (DAC).

Details

- ✓ As per the proposals, the Indian Navy will get 22 single-seated Rafale Marine aircraft along with four trainer aircraft.
- ✓ The Navy has been pressing for acquiring these fighter aircraft and submarines urgently as the force has been facing shortages in view of the security challenges around the country.
- ✓ The aircraft carriers INS Vikramaditya and Vikrant have been operating the MiG-29s and need the Rafales for operations on both carriers.
- ✓ The three Scorpene class submarines would be acquired under the repeat clause by the Navy as part of Project 75 and would be built at the Mazagon Dockyards Limited in Mumbai.
- ✓ India would be insisting on having more 'Make-in-India' content in the plan.

Defence Cooperation

- ✓ Cooperation in defence is the cornerstone of the India-France strategic partnership.
- ✓ Although France became India's second-largest defence supplier from 2017-2021, it has been a reliable partner for India in the military aircraft domain since the 1950s.
- ✓ From the procurement of the first-generation Dassault Ouragan fighter, named 'Toofani' in the Indian Air Force (IAF), to the recent submarine and Rafale-M deal — the defence sector has emerged as a crucial pillar of the India-France relationship.
- ✓ The Dassault Mirage 2000s, which were received in 1985, continue to be India's go-to aircraft whenever it calls for an air strike. The super fighters proved to be a gamechanger as they pounded Pakistani positions on the Kargil hilltops during the 1999 war. The Mirages were also used to carry out airstrikes in Pakistan's Balakot in 2019.
- ✓ The two countries have a Ministerial level Defence dialogue, which has been held annually since 2018.
 - ✓ The three services also have regular defence exercises; viz.
 - Exercise Shakti (Army; the last one took place in November 2021 in France),
 - Exercise Varuna (Navy; Last conducted in Arabian Sea from 30th March to 3rd April 2022),
 - Exercise Garuda (Air Force; November 2022 in India).
- ✓ The Indian Navy also participated in the French-led La Pérouse exercise, along with other Quad members in April 2021.
- ✓ Various staff courses, training programmes etc. also take place regularly.
- ✓ The defence equipment purchase and joint development is a key aspect of the partnership, of which the purchase of 36 Rafale aircraft and the Contract for six P-75 Scorpene Projects are the most visible examples.
- ✓ Moreover, France has also been instrumental in assisting India's defence modernisation efforts through technology transfers, enabling indigenous production capabilities, and joint ventures

2. Chandrayaan-3 :

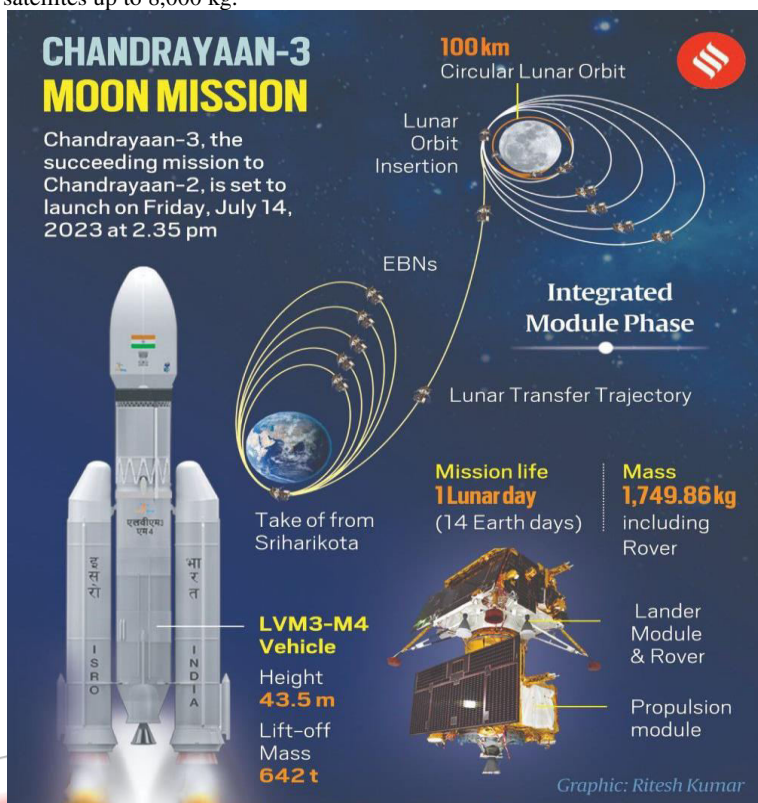
IN CONTEXT: With the launch of Chandrayaan-3 today (July 14), the Indian Space Research Organisation (Isro) is set to make its second attempt to land a spacecraft on the moon.



What is Chandrayaan-3 Mission?

- ✓ Chandrayaan-3 is India's third moon mission and is a follow-up of Chandrayaan-2 (2019) which aimed to land a rover on the lunar South Pole. The Mission will have three major modules- the
- ✓ Propulsion module (will carry the lander and rover configuration till 100 km lunar orbit)
- ✓ Lander module (capability to soft land and deploy Rover)
- ✓ Rover (will carry out in-situ chemical analysis of the lunar surface)

- ✓ **About LVM3:** Launch Vehicle Mark 3 (LVM3) (previously known as GSLV-MK III) is a three-stage launch vehicle consisting of two solid propellants S200 strap-ons on its sides and a core stage comprising L110 liquid stage and C25 cryogenic stage. The vehicle is also dubbed as one of the heaviest for its ability to carry satellites up to 8,000 kg.



Challenges of landing on the South Pole:

- ✓ Previous spacecraft have mostly landed near the equatorial region of the Moon, a few degrees latitude north or south of the lunar equator. Landing near the equator is easier and safer due to the hospitable terrain, smooth surface, absence of steep slopes, and ample sunlight for solar-powered instruments.
- ✓ The lunar south pole, on the other hand, presents a challenging terrain with extreme temperatures and areas that are in permanent shadow, receiving no sunlight.

Why ISRO wants to explore the Moon's south pole?

- ✓ **Water Resources:** The south pole region is believed to have water molecules in substantial amounts, possibly trapped as ice in the permanently shadowed craters.
- ✓ Exploring and confirming the presence of water is essential for future human missions and the potential utilization of lunar resources.
- ✓ **Scientific Discoveries:** The extreme environment and the presence of permanently shadowed regions provide a preserved record of the Moon's history and the early Solar System.
- ✓ **Clues to Earth's History:** The Moon is thought to have formed from debris generated by a giant impact between a Mars-sized object and the early Earth.
- ✓ By studying the lunar south pole, scientists can gain insights into the materials and conditions that existed during the formation of the Earth-Moon system.
- ✓ **Global Collaborations:** ISRO-NASA successfully confirmed the presence of water from the data taken by Chandrayaan-1. Indo-Japan collaboration, LUPEX aims to send a lander and rover to the Moon's south pole around 2024.
- ✓ **Technological Advancements:** By undertaking missions to this region, ISRO can develop and demonstrate innovative technologies for soft landing, navigation, resource utilization, and long-duration operations that can be applied in future space missions.

What are the Chandrayaan missions?

Chandrayaan mission -1

- ✓ India's Chandrayaan missions are aimed at lunar exploration, beginning with Chandrayaan-1 that launched on October 22, 2008. It made more than 3,400 orbits around the moon and was operational for at least 312 days, until August 29, 2009, when radio contact with the spacecraft was lost.
- ✓ However, the fact that it used indigenously developed technology was a major achievement. On November 14, 2008, a payload named MIP (Moon Impact Probe) carried by the spacecraft was separated and it struck the lunar South Pole in a controlled manner. India was then able to make discoveries related to the detection

of water (H₂O) and hydroxyl (OH) on the lunar surface. The data also revealed their enhanced abundance towards the polar region. It further found ice in the North polar region of the Moon.

Chandrayaan mission -2

- ✓ The Mission brought together an Orbiter, Lander and Rover with the goal of exploring the south pole of the Moon.
- ✓ It aimed at studying not just one area of the Moon but all the areas combining the exosphere, the surface as well as the sub-surface of the moon in a single mission.

What happened to Chandrayaan-2?

- ✓ The Chandrayaan-2 mission, which was lost after it hard- landed on the dark side of the Moon in 2019, remains active in the form of its orbiter hovering over the Moon.
- ✓ The lander and rover malfunctioned in the final moments and crash-landed, getting destroyed in the process.
- ✓ The primary objective of Chandrayaan 2 was to demonstrate the ability to soft-land on the lunar surface and operate a robotic rover on the surface.
- ✓ However, the Orbiter and other instruments of Chandrayaan-2 mission have, in two years, gathered a wealth of new information that has added to our knowledge about the Moon and its environment.

GEOGRAPHICAL FEATURES

The lesson from a monsoon-battered North India

In Context: Recently, parts of North India witnessed heavy rains that triggered flash floods and left a trail of destruction. Several places in Haryana, Punjab and Himachal Pradesh reported record rainfall. The rains triggered landslides which caused more damage.

About Flash Floods

- ✓ Flash Floods are highly localized events of short duration with a very high peak and usually have less than six hours between the occurrence of the rainfall and peak flood.
- ✓ The flood situation worsens in the presence of choked drainage lines or encroachments obstructing the natural flow of water.
- ✓ Flash floods have a different character than river floods, notably short time scales and occurring in small spatial scales, which make forecasting of flash floods quite a different challenge than traditional flood forecasting approaches.
- ✓ Urban areas are more likely to experience this type of "surface water" flooding because they have a lot of hard surfaces.
- ✓ When rain hits them it can't soak into the ground as it would do in the countryside.

Causes of recent flash floods in Northern India

- ✓ Three main factors can trigger such heavy rains in the region and the Himalaya.
- ✓ An active monsoon with strong winds in the lower air layers, bringing moisture into the region from the Bay of Bengal or the Arabian Sea.
- ✓ A large-scale atmospheric forcing in the form of outflows in the upper layers of the atmosphere moving eastward through mid-latitude troughs. These troughs can also direct the flow of moisture towards the Himalaya.
- ✓ Deep convection triggered by orographic uplift combined with the steep terrain of the Himalaya.
- ✓ All these conditions were present in the recent incident. The synoptic conditions were conducive to heavy rainfall.

More examples:

- ✓ The floods in Uttarakhand in 2013 were caused by similar synoptic conditions.
- ✓ Another good example is the 2010 floods in Pakistan.
- ✓ Changing trends of rainfall

Extreme Rainfall:

- ✓ Recent studies show an increasing trend in extreme rainfall in many parts of the country, especially central India.
- ✓ The number of extreme rainfall events (more than 15 cm in 24 hours) has tripled in the region.

Duration of rainstorms: The duration of rainstorms over central India has also tripled. The observations also indicate that during the monsoon, the total number of rainy days and rainy hours decreases. This indicates that when it rains, it rains very heavily.

Rainfall in Himalayan region:

- ✓ The Himalayan region, with its complex topography and varied weather patterns, is prone to extreme rainfall events.
- ✓ A recent study shows that 65 percent of areas in the region have a positive trend in the frequency of daily rainfall extremes.
- ✓ Another study on the 2013 floods in Uttarakhand identified this region as one where deep, intense convective clouds are most likely to form.

Causes of changing trends of rainfall

- **Climate Change:**
 - ✓ Instances of deep convection have increased over time. Climate change is thought to be one of the main causes of this.
 - ✓ Warmer temperatures lead to increased evaporation, which, in turn, leads to more moisture in the atmosphere.
 - ✓ This extra moisture leads to heavy rainfall when weather systems coincide with the unique geography of the region.
- **Changes in land use and land cover:** Changes in land use and land cover also appear to be reasons for the increase in extreme monsoon rainfall, especially its intensity.
- **Warming Arctic:**
 - ✓ We know that the Arctic is warming and sea ice is receding due to human influence.

- ✓ There is growing evidence of the impact of Arctic warming on the monsoon climate through mid-latitude circulation.
- ✓ Observations and models suggest that due to Arctic warming, the frequency of occurrence of blocking highs and deep mid-latitude troughs (like the one last weekend) is likely to increase.

➤ **Mitigating floods**

- ✓ Extreme rainfall events like the one last weekend can occur anywhere in India during the monsoon season.
- ✓ To mitigate floods, we need a multi-pronged approach that includes both proactive measures and reactive strategies. These include:
 - ✓ A robust early warning system that alerts people about heavy rains and possible flash floods.
 - ✓ This system can include meteorological observations including a Doppler weather radar (DWR) and a high-resolution numerical weather prediction model.
 - ✓ Advanced methods such as AI/ML could be used to interpret the DWR and model forecast data.
 - ✓ Continuous monitoring of rainfall patterns, river levels and an advanced flood warning system.
 - ✓ Flood risk maps that take into account factors such as topography, historical flood data and hydrological modelling to assess vulnerability, identify high-risk zones and target actions.
 - ✓ Improving and maintaining climate-resilient infrastructure, such as drainage systems and channels to prevent waterlogging.
 - ✓ Proper implementation of land use planning and zoning regulations.
 - ✓ For example, areas prone to flash floods can be designated as non-residential or restricted areas.
 - ✓ The protection and restoration of natural ecosystems, such as forests and wetlands.
 - ✓ Vegetation acts as a natural buffer, absorbing rainfall and reducing runoff.
 - ✓ Awareness campaigns can influence people to take the right actions during floods, including arranging evacuation, providing first aid and getting information from reliable sources.

Way ahead

- ✓ The IPCC's scenarios for climate change indicate that these trends will continue.
- ✓ Multi-day flood events are projected to increase faster than single-day events in the future — this can have severe consequences.
- ✓ By recognising the increasing threat of extreme precipitation and implementing proactive measures, India can improve its resilience to extreme weather events

PRELIM FACTS

1. Banks Heralding Accelerated Rural & Agriculture Transformation (BHARAT)

In-Context: Recently, Ministry of Agriculture & Farmers Welfare launched a new campaign for banks under Agriculture Infrastructure Fund titled BHARAT.

About BHARAT

- ✓ The one month-long Campaign was launched with a target of Rs 7200 crore.
- ✓ The aim of the campaign is to get active involvement and support of members of commercial Banks in the public and private sector, Regional Rural Banks, Small Finance Banks, NBFCs and select cooperative Banks to promote the Scheme of Agriculture Infrastructure Fund

Agriculture Infrastructure Fund

- ✓ It is a financing facility launched in 2020 for farm-gate infrastructure for farmers.
- ✓ Under this scheme, Rs 1 lakh crore is to be disbursed by the financial year 2025-26 and the interest subvention and credit guarantee assistance will be given till the year 2032-33.

Objectives

- ✓ Improved marketing infrastructure to allow farmers to sell directly to a larger base of consumers and hence, increase value realization for the farmers. This will improve the overall income of farmers.
- ✓ Investments in logistics infrastructure so that farmers will be able to sell in the market with reduced post-harvest losses and a smaller number of intermediaries. This further will make farmers independent and improve access to the market.
- ✓ Modern packaging and cold storage system access to allow farmers to decide when to sell in the market and improve realization.
- ✓ Community farming assets for improved productivity and optimization of inputs.

Achievement

- ✓ This Scheme has resulted in creation of more than 31, 850 agri infra projects in the country with 24750 crore as loan amount under AIF with an outlay of 42,000 crores.

Concluding Remarks

- ✓ The role of infrastructure is crucial for agriculture development and for taking the production dynamics to the next level.
- ✓ Development of such infrastructure shall also address the vagaries of nature, the regional disparities, development of human resource and realization of the full potential of our limited land resource.

2. Amrit Bharat Station Scheme (ABSS)

In Context: Southern Railway has identified 90 stations for development under the Amrit Bharat Station Scheme (ABSS).

About Amrit Bharat Station Scheme (ABSS):

- ✓ It envisages development of stations on a continuous basis with a long-term vision.
- ✓ The scheme will subsume all previous redevelopment projects where work is yet to begin.
- ✓ The scheme aims at preparation of Master Plans of the Railway stations and implementation of the Master Plan in phases to enhance the facilities including and beyond the Minimum Essential Amenities.

- ✓ However, plans and consequent budgets will only be approved on the basis of factors such as footfall and inputs from stakeholders.
- ✓ Zonal railways have been given the responsibility of selecting stations, which will then be approved by a committee of senior railway officials.
- ✓ The model envisages low-cost redevelopment of stations which can be executed timely.
- ✓ The scheme shall cater for introduction of new amenities as well as upgradation and replacement of existing amenities.

Facilities Planned under Amrit Bharat Station Scheme:

- ✓ Provision for Roof Plaza to be created in future.
- ✓ Free Wi-Fi, space for 5G mobile towers.
- ✓ Smooth access by widening of roads, removal of unwanted structures, properly designed signages, dedicated pedestrian pathways, well planned parking areas, improved lighting etc.
- ✓ Attempts shall be made to club different grades/types of waiting halls and provide good cafeteria/retail facilities as far as possible.
- ✓ Better furniture will be installed in waiting rooms, platforms, rest rooms and offices.
- ✓ High level platforms(760-840 mill meter) shall be provided at all categories of stations.
- ✓ Special amenities for the disabled as per guidelines issued by the Railway Board from time to time.

3. Non-Fungible Tokens (NFTs)

In context: Google recently said it will allow developers to offer games on the Play Store where players can buy, sell and earn tokenized digital assets—like non fungible tokens.

About Non-Fungible Tokens (NFTs):

- ✓ NFTs are unique cryptographic tokens that exist on a blockchain and cannot be replicated.
- ✓ They can represent digital or real-world items like artwork, photograph, song, video, real estate, individuals' identities, property rights, and more.
- ✓ Thus, NFTs are assets that have been tokenized via a blockchain. They are assigned unique identification codes and metadata that distinguish them from other tokens.
- ✓ The term 'non-fungible' simply means that each token is different as opposed to a fungible currency such as money (a ten-rupee note can be exchanged for another and so on).
- ✓ NFTs can be traded and exchanged for money, cryptocurrencies, or other NFTs—it all depends on the value the market and owners have placed on them.
- ✓ NFT transactions are recorded on blockchains, which is a digital public ledger, with most NFTs being a part of the Ethereum blockchain.
- ✓ NFTs became popular in 2021, when they were beginning to be seen by artists as a convenient way to monetise their work.

What is Blockchain Technology?

- ✓ A blockchain is essentially a digital ledger of transactions that is duplicated and distributed across the entire network of computer systems on the blockchain.
- ✓ Each block in the chain contains a number of transactions, and every time a new transaction occurs on the blockchain, a record of that transaction is added to every participant's ledger.
- ✓ Decentralized blockchains are immutable, which means that the data entered is irreversible.
- ✓ This means if one block in one chain was changed, it would be immediately apparent it had been tampered with.

ANSWER WRITING

Q. Enumerate the demographic factors that propelled the elderly population in India. Discuss various associated issues faced by them along with major initiatives taken by the government to improve their conditions.

Introduction: There are nearly 138 million elderly persons in India in 2021, including 67 million men and 71 million women, according to the report titled 'Elderly in India 2021' by the Ministry of Statistics and Programme Implementation. In addition, a report released by the United Nations Population Fund and HelpAgeIndia suggests that the number of elderly persons is expected to grow to 173 million by 2026.

Demographic factors responsible for rise in elderly population are:

- Longevity of life: The rise in the elderly population may be due to the longevity of life achieved because of economic well-being, better healthcare and medical facilities.
- Reduction in fertility rates: Declining fertility rates due to improved access to contraceptives; increasing age at marriage particularly among women, declining infant mortality due to universal immunisation; and nutritional support programmes etc has led to reduction in fertility rates. Though ageing is the natural stage of human life, it brings with it innumerable problems for the people who have grown old.

The major problems of the aged people, as found in the various studies, are given below:

- Non-Communicable Diseases (NCDs): Two in every three senior citizens in India suffer from some chronic disease. Around 23 per cent of the elderly population (age 60 years and above) have multi-morbidities.
- Feminisation of aging: The sex ratio of the elderly has increased from 938 women to 1,000 men in 1971 to 1,033 in 2011 and is projected to increase to 1,060 by 2026. It also became a key issue for policy makers.
- Economic Problems: With increasing age, persons increasingly have to move out of the labour force leading to loss of employment and income.
- Psychological issues: With growing age, older persons experience various anatomical and physiological changes. These changes bring many psychological, behavioral and attitudinal changes in them. Loss of physical strength and stamina become more acute as a person grows older and requires systematic handling.
- Violence against the elderly: Aged persons are facing many problems such as murder, theft, hurt, cheating and bag snatching by the both known and unknown persons. Policies and schemes for elderly in India:

• National Policy on Older Persons (NPOP), 1999: The National Policy on Older Persons (1999), following a UN General Assembly resolution, envisaged state support to ensure financial and food security, shelter, healthcare and other needs, an equitable share in development, and services to improve the quality of their lives and protect them from abuse and exploitation.

• National Action Plan for the Welfare of Senior Citizens (NAPSrC)

• Rashtriya Vayoshri Yojana (RVY): Under this, aids and assistive living devices are provided to senior citizens belonging to BPL category who suffer from age-related disabilities such as low vision, hearing impairment, loss of teeth and locomotor disabilities

• Senior Citizens Welfare Fund

• Indira Gandhi National Old Age Pension Scheme (IGNOAPS): Under this, financial assistance is provided to person of 60 years and above and belonging to BPL family.

• Pradhan Mantri Vaya Vandana Yojana (PNVVY): It is a Pension Scheme announced by the Government of India exclusively for the senior citizens aged 60 years and above

Conclusion: Our country spends just 0.032% of GDP on the welfare of the elderly — even weaker economies spend three to eight times more. There is an urgent need to expand geriatric healthcare facilities in our hospitals, a concept that has remained a neglected area of medicine in the country. Also, the National Programme for the Health Care of the Elderly should be effectively implemented

MCQ

1. Considered the following statement regarding Kaas Plateau:

1. It is located in the Western Ghats
2. It is also known as valley of flowers.

Which of the above statement is/ are correct/

- a) Only 1
- b) Only 2
- c) **Both 1 and 2**
- d) None

2. Recently, which ministry launched a new campaign called BHARAT.

- a) **Ministry of Agriculture & Farmers Welfare**
- b) Ministry of corporate society
- c) Ministry of culture
- d) None of the above

3. With reference to the Chavin de Huantar, consider the following statements:

1. Chavin de Huantar is located around northeast of Lima, Peru.
2. It is known for advanced art, depictions of birds and felines.

Which of the above statement is/ are incorrect?

- a) Only 1
- b) Only 2
- c) Both 1 and 2
- d) **None**

4. Which one of the following is the best description of 'Hwasong-18', that was in the news recently?

- a) It is an asteroid.
- b) **It is an intercontinental ballistic missile (ICBM).**
- c) It is a satellite launch vehicle.
- d) It is a nuclear-powered submarine.

5. Consider the following statements regarding the Amrit Bharat Station Scheme (ABSS):

1. It envisages development of railway stations on a continuous basis with a long term vision.
2. The scheme shall cater for introduction of new amenities as well as upgradation and replacement of existing amenities.

Which of the statements given above is/are correct?

- a) Only 1
- b) Only 2
- c) **Both 1 and 2**
- d) None

6. Consider the following statements regarding Non-Fungible Tokens (NFTs):

1. They are unique cryptographic tokens used to represent only digital assets.

2. NFTs can be traded and exchanged for money, cryptocurrencies, or other NFTs

Which of the statements given above is/are correct?

- a) 1 only
- b) **2 only**
- c) Both 1 and 2
- d) Neither 1 nor 2

7. Recently, Leopard 2 is a main battle tank developed by which country?

- a) **Germany**
- b) USA
- c) France
- d) Britain

8. What is/are the main objectives of the Chandrayaan-3 mission?

1. To explore the lunar South Pole.
2. To collect samples from the lunar surface
3. It used Launch Vehicle Mark 3 (LVM3)

How many of the above statements is/are correct?

- a) Only 1
- b) Only 2
- c) **Only 3**
- d) None

9. Which of the following exercise are related to India and France?

1. Exercise Shakti
2. Exercise Varuna
3. Exercise Garuda

Code:

- a) Only 1
- b) 1 and 2
- c) Only 3
- d) **1,2, and 3**

10. With reference to the Section 144 of CrPC, consider the following statements:

1. An order can remain in force for a period of 2 months only under the section.
2. It is imposed only to prevent chaos and public movement in big groups.

Which of the statements given above is/are correct?

- a) Only 1
- b) Only 2
- c) Both 1 and 2
- d) **Neither 1 nor 2**