Prelim Bits 11-05-2023 | UPSC Daily Current Affairs

Indian Space Policy 2023

The Indian Space Research Organisation (ISRO), released the Indian Space Policy 2023.

- The 'Vision' is to enable, encourage and develop a flourishing commercial presence in space economy.
- It defines the role of ISRO in socio-economic development, protection of environment, pursuing peaceful exploration of outer space, stimulation of public awareness and scientific quest.
- The policy creates 4 distinct entities that will facilitate greater private sector participation in activities that have usually been the traditional domain of the ISRO.
- **Indian National Space Promotion and Authorisation Centre (InSPACe)** – It will be a single window clearance and authorisation agency.
- It will provide clearance for space launches, establishing launch pads, buying and selling satellites, and disseminating high-resolution data among other things.
- It will also share technologies, products, processes and best practices with non-government entities (NGEs) and this will include private companies and government companies.
- **New Space India Limited (NSIL) –** It will be responsible for commercialising space technologies and platforms created through public expenditure.
- It is also responsible for manufacturing, leasing, or procuring space components, technologies, platforms and other assets from the private or public sector.
- **Department of Space –** It will provide overall policy guidelines and be the nodal department for implementing space technologies.
- It will also co-ordinate international cooperation and coordination in the area of global space governance and programmes in consultation with the Ministry of External Affairs.
- It will also create an appropriate mechanism to resolve disputes arising out of space activity.

References

1. The Hindu │A ground view of the Indian Space Policy 2023
2. ISRO │ Indian Space Policy - 2023

Pokhran-II

25 years ago India carved out a new future for itself by conducting underground nuclear tests at Pokhran.

- On May 11, 1998, the veil was finally lifted. After conducting three underground tests at Pokhran, followed by two more on May 13.

- Pokhran-II consisted of five detonations, of which the first was a fusion bomb and the remaining four were fission bombs.
- **Sanctions –** For nearly two months, the U.S. refused to have any dialogue with India and implemented the Glenn Amendment for the first time.

Under the Glenn Amendment, if the U.S. President determines that a non-nuclear weapon state detonates a nuclear explosive device, certain sanctions apply.

Nuclear Organisations

- **Comprehensive Test Ban Treaty (CTBT) –** It prohibits any nuclear weapon test explosion or any other nuclear explosion anywhere in the world.
- The treaty was opened for signature in September 1996, and has been signed by 186 nations and ratified by 176.
- The treaty cannot formally enter into force until it is ratified by 44 specific nations, eight of which have yet to do so: China, India, Pakistan, North Korea, Israel, Iran, Egypt, and the United States.
- **International Atomic Energy Agency (IAEA) –** Also known as the world's Atoms for Peace and Development organization within the United Nations.
- It is the international centre for cooperation in the nuclear field.
- The Agency works with its Member States and multiple partners worldwide to promote the safe, secure and peaceful use of nuclear technologies.
- **Nuclear Suppliers Group (NSG) –** It is a group of nuclear supplier countries that seeks to contribute to the non-proliferation of nuclear weapons.
- The NSG Guidelines also contain the so-called Non-Proliferation Principle, adopted in 1994.
- India is not a member of the Nuclear Suppliers Group.

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1. The Hindu │ Pokhran-II: A moment of profound epiphany
2. Times of India │ Pokhran-II was the right security call

UN Report on Maternal and Newborn Deaths

The report on improving maternal and newborn health and survival and reducing stillbirth placed India at the top of the list of global maternal deaths, stillbirths and neonatal births.

Findings

- **MMR –** Maternal mortality ratio observed an annual reduction rate of 2.8% during 2000-2009, which decreased to 1.3% during 2010-2020.
- An improvement of reducing this indicator by 11.9% is required in the next decade to meet global targets of an MMR equivalent to 70 deaths per 1,000 live births.
- **SBR –** Between 2000 and 2009, the stillbirth rate was reduced by 2.3 per cent and by 1.8 per cent between 2010 and 2021.
- A 5.2 per cent reduction is required between 2022 and 2030 to meet global targets of

less than 12 stillbirths per 1,000 live births.

- **NMR –** Neonatal mortality rate (NMR) records a similar trend; a 3.2% reduction between 2000 and 2009, 2.2% reduction in 2010 and 2021.
- NMR needs to be reduced by another 7.2% between 2022 and 2030 to meet the global target of ending newborn mortality.
- **Rankings –** India tops the list of 10 countries which bear 60% of global maternal deaths, stillbirths & newborn deaths burden.
- Following India are Nigeria, Pakistan, Democratic Republic of Congo, Ethiopia, Bangladesh, China, Indonesia, Afghanistan and Tanzania.

Quick Facts

- **The maternal mortality ratio (MMR) –** It is defined as the number of maternal deaths during a given time period per 100,000 live births during the same time period.
- **The stillbirth rate (SBR) –** It is defined as the number of babies born with no signs of life at 28 weeks or more of gestation, per 1,000 total births.
- **Neonatal mortality rate (NMR) –** It is the rate of deaths per 1,000 live births at which babies of either less than four weeks or of one year of age die, respectively.
- It is also known as Infant Mortality Rate (IMR).

References

1. Down To Earth | Progress in tackling maternal as well as newborn deaths stagnant since 2015
2. WHO | Improving maternal and newborn health and survival and reducing stillbirth

Sahel Region

The ongoing fighting in the Sudan threatens the entire Sahel region.

- The Sahel region of Africa is a 3,860-kilometre arc-like land mass lying to the immediate south of the Sahara Desert and stretching east-west across the breadth of the African continent.
- It is a largely semi-arid belt of barren, sandy and rock-strewn land.
- The Sahel marks the physical and cultural transition between the continent's more fertile tropical regions to the south and its desert in the north.
- Geographic definitions of the Sahel region vary.
- Sahel stretches from Atlantic Ocean eastward, from Senegal to Sudan.
- In between, it covers southern Mauritania, the great bend of the Niger River in Mali, Burkina Faso (formerly Upper Volta), southern Niger, north-eastern Nigeria, and south-central Chad.
- It forms a transitional zone between the arid Sahara (desert) to the north and the belt of humid savannahs to the south.
- Culturally and historically, the Sahel is a shoreline between the Middle East and sub-Saharan Africa.
- This means it is the site of interaction between Arabic, Islamic and nomadic cultures from the north, and indigenous and traditional cultures from the south.

References

1. The Indian Express | The Sudan crisis threatens the entire Sahel
2. UN | The Sahel: Land Of Opportunities

Fomalhaut

Webb telescope spots three debris belts around luminous star Fomalhaut.

- Scientists' unveiled observations by the James Webb Space Telescope showing new details about such features around a luminous star called Fomalhaut.
- It is located in the neighbourhood of the Milky Way galaxy.
- These observations of three concentric dusty rings of debris orbiting Fomalhaut provide the fullest view to date of such structures outside our solar system.
- Fomalhaut, one of the brightest stars in our night sky and the brightest in the southern constellation Piscis Austrinus, is located 25 light years from Earth.

  A light year is the distance light travels in a year, 5.9 trillion miles (9.5 trillion km).

- Astronomers first discovered a single belt of debris around Fomalhaut in 1983.
- These three belts appear to be populated by objects called planetesimals, some of which are thought to join together early in a star system's history to form planets while others remain as debris like asteroids and comets.

  Planetesimals are a minute planet, which could come together with many others under gravitation to form a planet.

- Fomalhaut is 16 times more luminous than the sun and almost twice as massive.
- It is about 440 million years old, less than a tenth the age of the sun, but is probably nearly halfway through its lifespan.

References

1. The Indian Express | Webb spots 3 three debris belts around Fomalhaut
2. NASA | Webb Looks for Fomalhaut's Asteroid Belt