DAILY CURRENT AFFAIRS ANALYSIS

26 MARCH 2024

1 - Rani Chennamma:

GS I

Modern Indian History

- **Context:**

- On February 21, a number of social groups in India are organising a nationwide campaign called Naanoo Rani Chennamma, which means "I am Rani Chennamma too," to commemorate 200 years of Rani Chennamma's uprising against the British East India Company.

- The Campaign aims to honour Chennamma's legacy by demonstrating that women can lead the charge in defending justice and dignity. The nation's women are inspired by Rani Chennamma's fortitude.
- She is clearly committed to defending her kingdom, as evidenced by her rapid thinking and determined steps to save her home.

- **Who was Chennamma Rani?**

- On October 23, 1778, Chenamma was born in Kagati, a small village in the modern-day Karnataka district of Belagavi.
- She wed Kittur's Raja Mallasarja at the age of 15, and he controlled the province until 1816.
- Shivalingarudra Sarja, Mallasarja's eldest son, succeeded to the throne upon his death in 1816. However, Shivalingarudra's health quickly began to decline.
- For Kittur to live, she required a presumed successor. But Chennamma had also lost her son, and Shivalingarudra had no natural heir.
- Shivalingarudra designated a child, Shivalingappa, as his heir before his death in 1824. But according to the "Doctrine of Lapse," the British East India Company refused to acknowledge Shivalingappa as the kingdom's heir.
- Any princely state without a natural heir would fall under the concept and be absorbed by the Company.
- In October 1824, Kittur was attacked by the British administrator at Dharwad, John Thackery.

- **Combat with the British:**

- A flotilla of twenty thousand British soldiers attempted to conquer the former princely state of Karnataka in 1824, setting up shop on the Kittur fort's foothills.
- However, in retaliation, Rani Chennamma murdered a British officer in order to defend and preserve her country.
- She had military and martial arts training, making her a strong leader.

- Using guerilla warfare techniques to take the British forces by surprise, she led her men into combat.
- After several days of fighting, the British eventually won because of their greater firepower.

- **History:**

- Rani Chennamma's courage endured despite her kidnapping and confinement at Bailhongal Fort (Belagavi, Karnataka).
- Numerous others were motivated to revolt against British control by her uprising. She came to represent bravery and defiance.
- The Indian government honoured her with a postage stamp bearing her name in 2007.
- A number of Kannada folk songs known as lavanis are chanted, remembering Rani Chennamma with affection as a guardian and benefactor.
- With origins in Maharashtra's cultural legacy, lavani is a colourful and expressive folk art form that has also gained popularity in some regions of Karnataka. The Marathi word "lavanya," which meaning beauty, is the source of the English word "Lavani."
- The Dholki, a percussion instrument, provides the rhythmic beats for Lavani, a blend of traditional music and dance.

- **What is meant by the Lapse Doctrine?**

- As India's Governor-General from 1848 to 1856, Lord Dalhousie extensively pursued this annexation strategy.
- This meant that the East India Company would acquire any princely state that it controlled, either directly or indirectly, and whose king lacked a legitimate male successor.
- Accordingly, the Indian ruler's adopted sons were not eligible to be named heirs to the kingdom.
- Using the theory of lapse, Dalhousie annexed the following states:
- Jaitpur, Sambalpur, and Satara (1848–1848 AD), Baghat (1850 AD), Udaipur (1852 AD), Jhansi (1853 AD), and Nagpur (1854 AD) are some of the later AD cities.

- In India's ongoing quest for independence, the Rebellion of Kittur Rani Chennamma continues to hold great significance. Her steadfast leadership and fortitude serve as a lesson that bravery may triumph even in the face of extremely difficult circumstances.

Source → The Hindu

2 - India's Reforms for Senior Care: NITI Aayog:

GS II

Government Policies and Interventions

- **Context:**

- In a position paper titled "Senior Care Reforms in India: Reimagining the Senior Care Paradigm," published recently by the NITI Aayog, action is recommended regarding how to increase attention to senior care.

- **Which aspects of the report stand out the most?**

- **Ageing Population:**

- India's ageing population is growing exponentially in terms of both quantity and percentage, while life expectancy is rising (over 70 years) and fertility is falling (less than 2.0).
- Approximately 104 million people, or slightly more than 10% of the total population, are elderly in India today. The United Nations Population Fund (UNFPA) projects that by 2050, this group will account for 19.5% of the world's population.

- **Principal Findings:**

- Demographics and Trends: In the 2011 Census, the number of Indians aged 60 and above was estimated to be 103 million, or 8.6% of the country's total population.
- Health Status and Challenges: The elderly population now bears a disproportionately large burden of disease as a result of the shift from high to low death rates.
- Between 2011 and 2050, there will be a startling 340% growth in the population 75 years of age and older.
- 71% of senior citizens live in rural settings, according to the rural-urban divide.
- Life Satisfaction: According to about 32% of seniors, life satisfaction is low.

- **Absence of an All-encompassing Policy:**

- One major obstacle is the lack of an all-encompassing, integrated policy for senior care and assistance.

- Gaps in infrastructure, capacities, evidence-based knowledge repositories for managing geriatric illnesses, and enabling frameworks for monitoring procedures and emergency response systems result from the absence of a structured policy framework.
- For older persons in India, access to healthcare services might be difficult, especially if they live in rural areas.
- In 2017, there were 43 physicians per 100,000 people in rural areas, compared to 118 physicians per 100,000 people in metropolitan areas, according to the National Health Profile.

- **Problems and Consequences:**

- The ageing population problem affects every facet of society and bears a multitude of health, social, and economic consequences, encompassing shifts in the work and financial markets.
- According to the Longitudinal Ageing Study of India (LASI) 2021 report, a large proportion of the aged population experiences low life satisfaction, functional limits, depressive symptoms, and chronic diseases.
- One or more chronic diseases affect 75% of the senior population.
- It changes the burden of sickness, the rise in dependency ratios, the makeup of families, and the patterns of consumption.
- Among Indians over 60, poor health was reported by 4 out of 5 of them.
- Furthermore, because older persons are likely to require more healthcare services, medical costs are more than twice as high for this population segment.
- In India, almost 20% of the elderly suffer from mental health problems.

- **Which are the report's main recommendations?**

- The four main sectors of health, social, economic/financial, and digital are where the specific interventions required for inclusion, empowerment, and service delivery have been classified in the report.
- Health: Encouraging elders and their carers to be health literate, bolstering geriatric healthcare within the current healthcare system, and creating unique accommodations for seniors are ways to promote health empowerment and inclusion.
- This will include expanding teleconsultation services, improving the skilled workforce for the elderly, strengthening healthcare infrastructure with an emphasis on the needs of the elderly, improving comprehensive primary healthcare services through the Ayushman Bharat – Ayushman Arogya Mandir (Health and Wellness Centres), and building the capacity of the current workforce.
- Social: Particular measures, like raising awareness to educate the general public about the needs and difficulties faced by the elderly and starting peer support groups, are required to ensure social inclusion and empowerment.
- Increasing elderly people's knowledge of current legal protections, social programmes, and legislative changes like bolstering the social and Maintenance Act would also contribute to their empowerment.

- Economic and financial: Retraining the aged population, expanding public funding and infrastructure coverage, and requiring savings plans for those who can afford them are all necessary.
- Reverse mortgages are a way to help seniors have more liquidity, and GST (goods and services tax) amendments for senior care products will make them easier to use and protect the elderly from financial hardship.
- encouraging the private industry to provide specialised and all-inclusive senior health insurance plans.
- Digital: Seniors' access to digital devices has to be improved by lowering their cost, emphasising the development of digital literacy, and maximising the capabilities of current technology.
- Silver Economy: Of the older population, only slightly over one-third (34%) are employed at the moment.
- The government must make the right decisions in order to stimulate the "silver economy," or the economy fueled by the needs of the elderly for products and services.
- Additionally, employment possibilities that can give senior citizens a platform to apply and leverage their knowledge and skills across a range of industries.

Source → The Hindu

3 - Financial Devolution in India:

GS III

Internal Economy

- **Context:**

- Numerous Indian states have complained that the current tax devolution plan does not provide them their due share. They contend that their states pay more in taxes to the federal government than they get in return.

- **What is the state of tax devolution in India right now?**

- About: The transfer of financial resources and decision-making authority from the federal government to the states is known as financial devolution.
- Constitutional Framework: The Union government and the States share net tax revenues according to Article 270 of the Constitution.
- Reconstituted every five years, the Finance Commission (FC) makes recommendations about the vertical allocation of funds from the central government's divisible revenue pool (apart from the cess and surcharge).

- It also provides a formula for the distribution of these money horizontally among the various states.
- In addition to their tax contribution, States receive grants-in-aid based on the FC's recommendation.
- The aim of the 16th Finance Commission, led by Dr. Arvind Panagariya, is to provide recommendations for the years 2026–2031.
- Requirements for State-Level Devolution: In accordance with the 15th FC's suggestion, the current percentage of States in the divisible pool (vertical devolution) is 41%.

- **States' Share Compared to Devolution:**

- **Apprehensions about tax devolution:**

- Exclusion of Cess and Surcharge: There are concerns that the states' share of tax revenue will be reduced as a result of the exclusion of cess and surcharge from the divisible pool of revenue.
- The expected amount of cess and surcharge that the Union government will collect in 2024–2025 is roughly 23% of its gross tax collections; this amount is not divided with the States because it is not a component of the divisible pool.
- Insufficient Compensation for GST Implementation: A number of states have expressed dissatisfaction with the current system's handling of revenue deficits and have called for a more equitable approach.
- Lack of freedom in Fund Utilisation: In order to address local objectives, some States support having more freedom in how devolved funds are used.

- The difference in income between a state and the state with the highest per capita income is referred to as the "income distance."
- To maintain state parity, states with lower per capita incomes are given a larger share.
- Population: Indicates the number of people as of the 2011 Census. Population data from the 1971 Census was taken into consideration up until the 14th Finance Commission, but the 15th Finance Commission stopped doing so.
- Forest and Ecology: Takes into account the ratio of each state's dense forest area to the overall amount of dense forest area in all states.
- Demographic Performance: Designed to honour states' efforts at population control, better marks are awarded to those with lower fertility ratios.
- Tax Effort: A mechanism for rewarding states that collect taxes more efficiently.

- **The Way Ahead:**

- Evaluation of the Fiscal Federalism Framework: To find weaknesses and inefficiencies in the devolution process, a thorough evaluation of the fiscal federalism framework is required.
- This can entail forming a commission or committee to evaluate the performance of current systems and suggest improvements.

- Performance-Based Incentives: Encouraging responsible resource management may be achieved by tying further devolution to performance metrics in areas such as transparency, good governance, and development outcomes.
- Developing Institutions: By giving organisations like the Comptroller and Auditor General of India (CAG) more power, we can make sure that devolved money management is effectively supervised and held accountable.

Source → The Hindu

4 - Lab-Grown Diamonds:

GS III

Science and Technology

- **Context:**

- Synthetic diamonds, or lab-grown diamonds, have become a disruptive force in the conventional diamond business.

- These gems are made in labs using state-of-the-art methods that replicate the mechanisms that naturally make diamonds deep within the Earth.

- **What are Diamonds Grown in Laboratories?**

- Unlike natural diamonds, laboratory-generated diamonds are produced. Nonetheless, the two have the same chemical makeup in addition to other physical and visual characteristics.
- Natural diamonds are formed over millions of years by intense heat and pressure applied to carbon deposits buried beneath the surface of the planet.

- **Production:**

- Chemical Vapour Deposition (CVD) and High Pressure High Temperature (HPHT) methods are the two main procedures used in their manufacturing.
- A seed, or a slice of another diamond, is used in both the HPHT and CVD processes of artificial diamond growth.
- The seed and pure graphite carbon are subjected to temperatures and pressures as high as 1,500 degrees Celsius in the HPHT technique.

- The seed is heated to about 800 degrees Celsius in a sealed chamber that is filled with a gas that is rich in carbon during the CVD process. As the gas adheres to the seed, the diamond is progressively formed.

- **Uses:**

- Their increased strength and hardness make them perfect for use as cutters, and they are utilised in industrial settings in equipment and machinery.
- In electronics, high-power laser diodes, laser arrays, and high-power transistors are cooled using pure synthetic diamonds.
- They are also employed for opulent and decorative purposes.

- **Importance:**

- Compared to a naturally occurring diamond, a lab-grown diamond has a far smaller environmental impact.
- An environmentally conscientious LGD maker, Diamond Foundry, reported that the energy required to remove a natural diamond from the soil is ten times greater than that required to create one above ground.
- One of the most popular techniques for extracting natural occurring diamonds is open-pit mining, which requires moving large amounts of rock and dirt in order to reach the valuable gems.

- **What is the Indian situation with lab-grown diamonds?**

- Surat: The Centre for Polishing and Cutting Diamonds
- An important part of the world diamond commerce is Surat. Surat is where over 90% of the diamonds in the world are cut and polished.
- The Growth of India's Exports of Lab-Grown Diamonds
- India's exports of lab-grown diamonds tripled in value between 2019 and 2022.
- From April to October 2023, export volumes increased by 25%, compared to a 15% increase over the same time the previous year.
- Globally, lab-grown diamonds are becoming more and more well-liked because of their ethical appeal and reasonable price.
- "Blood-free diamonds" are lab-grown diamonds that promise no violence or violation of human rights.

- **Market Share and Effect on Industry:**

- From 3.5% in 2018 to 18.5% in 2023, the global market share of lab-grown stones increased dramatically.
- According to industry analysts, in 2024–2025, this proportion will probably surpass 20%.

- An industry already dealing with geopolitical issues and dwindling demand for natural diamonds is under further strain as a result of this rise.
- Note: The Democratic Republic of the Congo, South Africa, Botswana, Canada, and Russia are the main producers of diamonds.

- As of 2022, Russia is the world's leading producer of rough diamonds, with an estimated 42 million carats extracted.

- **What Ethical Issues Are Associated with Natural Diamonds?**

- **Conflict Diamonds, or Blood Diamonds:**

- In conflict areas, some natural diamonds are mined. These gems are referred to as conflict or blood diamonds.
- These diamonds are sold, and the proceeds are used for immoral purposes. Armed conflicts are financed by them. Additionally connected to violations of human rights are these jewels. Many people in the impacted areas have suffered as a result of it.

- **Labour conditions and exploitation:**

- There are instances where employees in natural diamond mines face unfavourable working conditions, inadequate pay, and unstable employment.
- The societal issue of this exploitation has garnered a lot of attention.
- In some areas where diamonds are mined, there are worries about child labour.

- **Effect on the Environment:**

- The effects of natural diamond mining on the environment are well-known.
- Large-scale open-pit mines have a number of negative effects, including soil erosion and deforestation.
- Additionally, hazardous chemicals are released into nearby ecosystems as a result of these practices. This has an impact on the local populations' means of subsistence in addition to the environment.
- Natural diamonds are said to be less harmful to the environment than synthetic diamonds as they don't require as many damaging mining techniques.

- **Corrupt practices and money laundering:**

- Money laundering and corruption have been connected to the diamond trade, undermining the social and economic advancement of nations that produce diamonds. To tackle these problems, more accountability, openness, and anti-corruption measures are needed.

Source → The Hindu

5 - Guinea Worm Disease:

GS II

Health related issues

- **Context:**

- The impending eradication of Guinea worm disease is a noteworthy milestone in worldwide public health, as revealed by a recent report from the World Health Organisation (WHO).

- Millions were afflicted by this parasite infection in the 1980s, but in recent years, cases have decreased to a small number, indicating the success of human tenacity and coordinated eradication efforts.

- **What Are the Crucial Details Regarding Guinea Worm Illness?**

- The severe parasitic ailment known as Guinea worm disease, or Dracunculiasis, is brought on by the Guinea worm (Dracunculus medinensis), a parasitic nematode that renders afflicted humans non-functional for weeks or months at a time.
- It mostly affects residents in remote, impoverished, and rural areas who get their drinking water from sources of stagnant surface water.
- An estimated 3.5 million cases of dracunculiasis, mostly in Africa and Asia, were reported in 20 different countries by the middle of the 1980s.

- **Transmission, Signs, and Effects:**

- Drinking stagnant water tainted by water fleas carrying parasites is how the parasite is spread.
- As the worm emerges, the condition causes excruciating skin sores that cause weeks of severe agony, swelling, and secondary infections.
- Over 90% of infections affect the legs and feet, making it difficult for people to move around, work, or carry out everyday duties.

- **Avoidance:**

- The illness known as Guinea worm disease cannot be cured, yet effective preventative measures have been implemented.
- Increased surveillance, treating and caring for wounds to stop the spread of the worms, purifying water before drinking, using larvicide, and health education are some of the strategies.

- **Path to Complete Elimination:**

- The 1980s saw the start of the campaign to eradicate Guinea worm disease, with major support from agencies such as the World Health Organisation.
- After reporting zero cases for at least three years in a row, a country is recognised free of the spread of dracunculiasis.
- 199 nations, territories, and regions have received WHO certification as being free of dracunculiasis transmission since 1995.

- **India's Triumphant Tale:**

- In the late 1990s, India was able to eradicate the guinea worm illness by implementing strict public health measures, such as community education and water safety treatments.
- In 2000, the World Health Organisation certified that Guinea worm disease was not present in the Indian government.
- Smallpox (1980), polio (2014), the plague, rinderpest (also known as the cattle plague), yaws, and maternal and neonatal tetanus (2015) have all been eradicated in India.

- **Continuous Monitoring and Difficulties:**

- In order to guarantee that no cases are overlooked and to stop the disease from reemerging, active surveillance is crucial.
- In places like Chad and the Central African Republic, where poverty and civil upheaval impede eradication attempts, difficulties still exist.
- The remaining cases must be located and contained, especially in isolated regions, and animal infections—dogs in particular—must be taken care of.

Source → The Hindu

6 - Antibody that Neutralises Snake Venom:

GS II

Health related issues

- **Context:**

- Scientists at Bengaluru's Indian Institute of Science (IISc) have discovered a synthetic human antibody that can neutralise a potent neurotoxin secreted by Elapidae snakes, which include the black mamba, king cobra, cobra, and krait.

- There are 300 species of elapids worldwide, a diverse family of venomous snakes with hollow front teeth that can inject poison.

- **What is the New Antibody for Neutralisation of Venom?**

- In order to synthesise a novel antibody, the scientists at IISc used a previously effective method for screening antibodies against HIV and Covid-19. This is the first time that this tactic has been used to treat snakebite.

- **Techniques:**

- Despite differences in the three-finger toxin (3FTx) between different elapid species, the team's antibody targets a conserved area in the toxin's core.
- Using animal models, the researchers tested their synthetic antibody against toxins from Taiwanese banded krait, monocled cobra, and black mamba. They discovered that the antibody was roughly 15 times more potent than standard antivenom, even when given after a venom injection delay.
- Because they are a mixture of several molecules with differing affinities and specificities to various epitopes of the antigen that initiated their creation, conventional antibodies are not homogeneous in their makeup.

- Every year, snakebites claim thousands of lives, mostly in sub-Saharan Africa and India.
- An Indian Council of Medical Research (ICMR) study estimates that between 2000 and 2019, snakebite fatalities in India amounted to over 1.2 million (12 lakh), or 58,000 deaths on average.
- India is responsible for about half of all snakebite deaths worldwide.
- As a neglected tropical disease of great priority, snakebite envenoming is categorised by the World Health Organisation (WHO).

- **Uses:**

- According to researchers, this development moves us one step closer to developing a universal antibody that can offer wide defence against a variety of snake venoms.

Source → The Hindu