



UN-Habitat Plan For Jaipur

For Prelims: UN-Habitat, Green-Blue economy

For Mains: Key challenges associated with rapid urbanization and various recommendations

Why in News?

Recently, the [UN-Habitat](#) has identified issues associated with **Jaipur city** like multi hazard vulnerabilities, weak mobility and [Green-Blue economy](#) and has laid out a plan to increase sustainability in the city.

- The urban problems which persist in Jaipur are the same for other cities.
- UN-Habitat has based its findings on **sustainable cities integrated approach pilot project** and a “sustainable urban planning and management” component was implemented in partnership with the Jaipur Development Authority and Jaipur Greater Municipal Corporation.
 - The project has received funding from the **Global Environment Facility (GEF-6)** to estimate the carbon sequestration potential of Indian cities.

What is the Findings of the Project?

- Jaipur got an overall sustainability rating of three on the **Urban Sustainability Assessment Framework (USAF)** based on the information collected for 87 of its 131 parameters.
 - The Urban Sustainability Assessment Framework (USAF) developed under the **Sustainable Cities Integrated Approach Pilot (SCIAP) project, implemented by United Nations Industrial Development Organization (UNIDO) and UN-Habitat.**
- The UN-Habitat highlighted the following problems which are faced by the city:
 - Weak access to a public transportation system, with less number of buses and poor route delineation.
 - Extreme levels of [drought](#) during summer and also [urban floods](#).
 - Lack green cover which has resulted in the [urban heat island](#) effect that has disrupted biodiversity.

What are the Recommendations of UN-Habitat?

- Experts recommended measures that **increase the green cover, strengthen urban biodiversity**, and thereby enhance the quality of life for citizens.
- To **address the challenges of urban sprawling**, the UN-Habitat emphasised the idea of a compact city with re-development and re-densification of the existing urban areas.
 - Experts also recommended that linking the distance from the main city to the development charges imposed on citizens could be considered as an indirect measure to curb development on the city’s outskirts.
- To **improve the situation of public transportation**, fare integration for different modes of transport and enhancing the non-motorised transport infrastructure would make movement convenient and reduce traffic and vehicle emissions.
- The 800 dry wells in Jaipur’s Walled City could be used for **rainwater harvesting and raising**

- **the water table**, mitigating urban floods and ensuring efficient utilisation of water resources.
- **Eco-trails with plantations** along natural drainage channels and railway tracks are recommended in the city.
- Experts from the **Tourism & Wildlife Society of India (TWSI)** said that the urban development authorities should **measure oxygen produced and carbon dioxide released each day** in each urban complex and plan the green cover accordingly and also select the species of plants with utmost caution since only indigenous, broad-leaved and tap-root trees produce more shade and oxygen.

What is the UN-Habitat?

- The **United Nations Human Settlements Programme** is the United Nations programme for human settlements and sustainable urban development.
- It was established in 1978 as an outcome of the **First UN Conference on Human Settlements and Sustainable Urban Development (Habitat I)** held in Vancouver, Canada, in 1976.
- UN-Habitat maintains its **headquarters at the United Nations Office at Nairobi, Kenya.**
- It is mandated by the [United Nations General Assembly](#) to promote socially and environmentally sustainable towns and cities with the goal of providing adequate shelter for all.
- It is a member of the [United Nations Development Group](#). The mandate of UN-Habitat derives from the Habitat Agenda, adopted by the United Nations Conference on Human Settlements (Habitat II) in Istanbul, Turkey, in 1996.
- The **twin goals** of the Habitat Agenda are:
 - **Adequate shelter for all**
 - The development of **sustainable human settlements** in an urbanizing world

What is Global Environmental Facility(GEF)?

- It is an independently operating financial organization.
- GEF is a multilateral financial mechanism that provides grants to developing countries for projects that benefit the global environment and promote sustainable livelihoods in local communities.
- It was set up as a **fund** under [World Bank in 1991](#).
- In 1992, at the Rio Earth Summit, the GEF was restructured and **moved out of the World Bank** system to become a permanent, separate institution.
- Since 1994, however, the World Bank has served as the Trustee of the GEF Trust Fund and provided administrative services.
- It is based in **Washington DC**, United States.
- **It addresses six designated focal areas:**
 - [Biodiversity](#),
 - [Climate change](#),
 - [International waters](#),
 - [Ozone depletion](#),
 - [Land degradation](#) and
 - [Persistent Organic Pollutants](#).
- The program supports an active portfolio of over 200 investments globally.
- GEF serves as a financial mechanism for:
 - [Convention on Biological Diversity \(CBD\)](#)
 - [United Nations Framework Convention on Climate Change \(UNFCCC\)](#)
 - [UN Convention to Combat Desertification \(UNCCD\)](#)
 - [Stockholm Convention on Persistent Organic Pollutants \(POPs\)](#)
 - [Minamata Convention on Mercury](#)
- India is both **donor and recipient** of GEF.

Way Forward

- According to the Census of 2011 approximately 31% of population of India lives in cities and it is estimated that it contributes more than 60% in the GDP of India and in the upcoming years it is

estimated in different reports that it will comprise of approximately 70% population with increased GDP contribution.

- The increasing population of urban areas also increases urban challenges like congested space, proliferation of slums etc. Thus, there is a need to pursue sustainable model for the inclusive and healthy development of the cities.

UPSC Civil Services Previous Year Questions (PYQ)

Q. With reference to the role of UN-Habitat in the United Nations programme working towards a better urban future, which of the statements is/are correct? (2017)

1. UN-Habitat has been mandated by the United Nations General Assembly to promote socially and environmentally sustainable towns and cities to provide adequate shelter for all.
2. Its partners are either governments or local urban authorities only.
3. UN-Habitat contributes to the overall objective of the United Nations system to reduce poverty and to promote access to safe drinking water and basic sanitation.

Select the correct answer using the code given below:

- (a) 1, 2 and 3
- (b) 1 and 3 only
- (c) 2 and 3 only
- (d) 1 only

Ans: (b)

Exp:

- The United Nations Human Settlements Programme (UN-Habitat), established in 1978 by the United Nations General Assembly (UNGA), is the lead bagency within **the UN system for coordinating activities** in the field of human settlement development.It is headquartered in Nairobi, Kenya. **Hence, statement 1 is correct.**
- UN-Habitat partners comprises of national governments, local authorities, non-governmental organizations (NGOs), community organizations and the private sector. **Hence, statement 2 is not correct.**
- **UN-Habitat focuses on the following priority areas:**
 - Shelter and social services;
 - Urban management;
 - Environment and infrastructure;
 - Assessment, monitoring and information.
- UN-Habitat **aims to achieve the Millennium Declaration’s Goal** that envisages improvement of the lives of at least 100 million slum dwellers by the year 2020 through focusing on urban governance, housing, environmental management, disaster mitigation, post-conflict rehabilitation, urban safety,water management and poverty reduction. **Hence, statement 3 is correct.**

[Source:TH](#)

NTPC’s Biodiversity Policy

For Prelims: Biodiversity, NTPC, Biodiversity, Kunming Declaration, Convention on Biological Diversity, World Wide Fund for Nature

For Mains: Biodiversity and its significance, Initiatives taken for conserving biodiversity, Biodiversity and its Conservation

Why in News?

Recently, [National Thermal Power Corporation Limited \(NTPC Ltd.\)](#) has issued a renewed **Biodiversity Policy 2022** to establish a comprehensive vision and guiding principle for conservation, restoration, and enhancement of biodiversity.

- It is an **integral part of NTPC's Environmental Policy** and its objectives are **aligned with environmental and sustainability policies**.

What are the Objectives of the Policy?

- **Support Professionals to achieve Biodiversity Target:**
 - The policy is **designed to support all the professionals of the NTPC Group** to help them contribute toward the achievement of the targets set in this field.
 - NTPC has always been **mindful about avoiding operations in areas** with the highest biodiversity value and judiciously selecting project sites.
 - Company's efforts will be **further strengthened to ensure that biodiversity is not lost** at any of its currently operating sites and that there is a net positive balance wherever possible.
- **Mainstreaming the Concept of Biodiversity:**
 - The major aim is **to mainstream the concept of biodiversity** across NTPC's value chain.
 - It also **aims to adopt a precautionary approach** for sustainable management of biodiversity in all the decision-making processes to ensure the Earth's variety of life in and around the business units of NTPC.
- **Addressing Local Threats:**
 - The policy also **aims to adopt systematic consideration of local threats** to biodiversity beyond the company's business activities.

What are the other Related Steps taken by NTPC?

- **Raising Awareness:**
 - NTPC is **raising awareness among local communities**, employees, and its associates across the supply chain about biodiversity through project-specific and national level training in collaboration with experts.
- **Through Collaboration:**
 - NTPC is also **collaborating with local communities, organizations, regulatory agencies** and research institutes of national/international repute in the field of biodiversity.
- **Adhering to Legal Compliances:**
 - NTPC will be **adhering to legal compliances** with respect to biodiversity by complying with rules and regulations related to the environment, forest, wildlife, coastal zone, and green cover during planning and execution of its projects.
- **Related Agreement Signed:**
 - NTPC has signed a five-year agreement with Andhra Pradesh Forest Department for conservation of [Olive Ridley Turtles](#) in the coastline of Andhra Pradesh.

What is Biodiversity?

- **About:**

- It refers to the **variety of living species on Earth**, including plants, animals, bacteria, and fungi.
- While Earth's biodiversity is so rich that many species have yet to be discovered, many species are being threatened with extinction due to human activities, putting the Earth's magnificent biodiversity at risk.
- **Significance:**
 - **Biodiversity Hotspot:** India is home to **nearly 8% of global biodiversity** on just 2.3% of global land area and contains sections of four of the 36 global biodiversity hotspots.
 - **Staggering Economic Value:** While the precise economic value of all ecosystem services provided by biodiversity may not be known, estimates suggest that **India's forests alone may yield services worth more than a trillion rupees per year.**
 - Further, it can be imagined how much greater this value will be with grasslands, wetlands, freshwater, and marine can add.
 - **Protection From Natural Disasters:** The varied ecosystems across land, rivers, and oceans, feed our people, **enhance public health security, and shield us from environmental disasters.**
 - **Spiritual Enrichment:** Our biodiversity **also serves as a perpetual source of spiritual enrichment**, intimately linked to our physical and mental well-being.
- **Related Initiatives:**
 - **India's:**
 - **India Business & Biodiversity Initiative (IBBI):** It serves as a **national platform for businesses and its stakeholders** for dialogue sharing and learning, ultimately leading to mainstreaming sustainable management of biological diversity into businesses.
 - **Global:**
 - [Kunming Declaration](#)
 - [Convention on Biological Diversity](#)
 - [Convention on International Trade in Endangered Species of Wild Fauna and Flora](#)
 - [World Wide Fund for Nature](#)

What is NTPC Limited?

- NTPC is **India's largest power utility** with an installed capacity of 68,961.68 MW plans to become a 130 GW company by 2032.
- Established in 1975, NTPC aims to be the **world's largest and best power major.**
- NTPC has **comprehensive Rehabilitation & Resettlement** and **Corporate Social Responsibility (CSR)** policies well integrated with its core business of setting up power projects and generating electricity.
- The company is **committed to generating reliable power at competitive prices** in a sustainable manner by optimising the use of multiple energy sources with innovative eco-friendly technologies thereby NTPC is contributing to the economic development of the nation and upliftment of the society.

UPSC Civil Services Examination, Previous Year Question

Q Which of the following can be threats to the biodiversity of a geographical area? (2012)

1. Global warming
2. Fragmentation of habitat
3. Invasion of alien species
4. Promotion of vegetarianism

Select the correct answer using the codes given below:

- (a) 1, 2 and 3 only
- (b) 2 and 3 only
- (c) 1 and 4 only
- (d) 1, 2, 3 and 4

Ans: (a)

Exp:

- According to United Nations Earth Summit (1992), Biodiversity is defined as 'the variability among living organisms from all sources, including terrestrial, marine and other aquatic ecosystems and the ecological complexes of which they are a part, this includes diversity within species, between species and of ecosystems'.
- Threat to Biodiversity
 - Fragmentation, degradation and loss of habitat, hence, 2 is correct.
 - Shrinking genetic diversity,
 - Invasive alien species, hence, 3 is correct.
 - Declining forest resource base,
 - Climate change and desertification, hence, 1 is correct.
 - Over exploitation of resources,
 - Impact of development projects,
 - Impact of pollution. Therefore, option (a) is the correct answer

Q. Biodiversity forms the basis for human existence in the following ways: (2011)

1. Soil formation
2. Prevention of soil erosion
3. Recycling of waste
4. Pollination of crops

Select the correct answer using the codes given below:

- (a) 1, 2 and 3 only
- (b) 2, 3 and 4 only
- (c) 1 and 4 only
- (d) 1, 2, 3 and 4

Ans: (d)

Exp:

- Human life is inextricably linked to ecological services that directly or indirectly benefit humans in different ways. **Soil formation, waste disposal, air and water purification, solar energy absorption, nutrient cycling and food production** all depend on biodiversity. Hence, 1 is correct.
- **Microorganisms act on waste and degrading substance** to recycle them and purify the environment. Hence, 3 is correct.
- The **pollination (an ecosystem service) by bees and other organisms** help in food production. Hence, 4 is correct.
- The **faunal life is known to increase as well as to prevent the soil erosion**, while the plants and trees reduce the rate of erosion by protecting the soil from impact of rain, binding the soil, etc. Thus, in general, biodiversity is known to prevent the soil erosion. Hence, 2 is correct.
- In many environments, high diversity may help biological communities to withstand environmental stress better and to recover more quickly than those with fewer species. Therefore, option (d) is the correct answer.

Q. Consider the following regions: (2009)

1. Eastern Himalayas

2. Eastern Mediterranean region
3. North-western Australia

Which of the above is/are Biodiversity Hotspot(s)?

- (a) 1 only
- (b) 1 and 2 only
- (c) 2 and 3 only
- (d) 1, 2 and 3

Ans: (b)

Exp:

- To qualify as a biodiversity hotspot, an area must meet two strict criteria:
- Contain at least 1,500 species of vascular plants found nowhere else on Earth (known as “endemic” species).
- Have lost at least 70% of its primary native vegetation. The **Eastern Himalayas extend from eastern Nepal across northeastern** India, Bhutan, Tibet Autonomous Region to Yunnan in China and northern Myanmar. It is widely considered a biodiversity hotspot that contains exceptional freshwater biodiversity and ecosystems that are of vital importance to local and regional livelihoods. Hence, 1 is correct.
- The **Eastern Mediterranean Region (Eastern Turkey) is known as the Mediterranean Basin biodiversity hotspot** and is identified as one of the world’s 36 biodiversity hotspots, earth’s most biologically rich yet threatened areas. Hence, 2 is correct.
- **North Western Australia is not a biodiversity hotspot.** South Western Australia is a biodiversity hotspot. Hence, 3 is not correct. Therefore, option (b) is the correct answer.

Source: PIB

Bharat Drone Mahotsav 2022

For Prelims: Bharat Drone Mahotsav 2022, Applications of Drone Technology, Drone Rules 2021, PIL Scheme for Drones, Drone Shakti Scheme, Swamitva Scheme, i-Drone

For Mains: Government Initiatives to Promote the Use of Drone Technology

Why in News?

Recently, India's biggest Drone Festival - **Bharat Drone Mahotsav 2022** was inaugurated in **New Delhi** by the Prime Minister.

- **A virtual award of drone pilot certificates, panel discussions, product launches, display of a ‘Made in India’ Drone Taxi prototype, flying demonstrations, among others** were the key events.

What are Drones?

- **Drone** is a layman terminology for **Unmanned Aircraft (UA)**.
- Originally developed for the military and aerospace industries, drones have found their way into the mainstream because of the enhanced levels of safety and efficiency they bring.
- A drone's autonomy level can range from remotely piloted (a human controls its movements) to advanced autonomy, which means that it relies on a system of sensors and **LIDAR detectors** to calculate its movement.

What are the Applications of Drone Technology?

- **Agriculture:** In the agriculture sector, micronutrients can be spread with the help of drones.
 - It can also be used for performing surveys for identifying the challenges faced by the farmers.
- **Defence:** Drone system can be used as a symmetric weapon against terrorist attacks.
 - Drones can be integrated into the national airspace system.
 - Deployment of drones for combat, communication in remote areas, counter-drone solutions can be done.
- **Healthcare Delivery Purposes: Indian Council of Medical Research (ICMR) devised [Drone-Based Vaccine Delivery Model, i-drone. Telangana and North-east states have been approved to use this drone technology for delivering vaccines](#) in remote areas.**
- **Monitoring:** The drone technology in the **SVAMITVA scheme** launched by the Government of India, within less than a year, has helped about half a million village residents to get their property cards by mapping out the densely-populated areas.
 - Drones can be used for **real-time surveillance** of assets and transmission lines, theft prevention, visual inspection/maintenance, construction planning and management, etc
 - They can be used for **anti-poaching actions, monitoring of forests and wildlife, pollution assessment, and evidence gathering.**
- **Law Enforcement:** Drones are also significant for the law enforcement agencies, the fire and emergency services wherever human intervention is not safe and the healthcare services.

What is the significance of Drone Mahotsav?

- Promotion of drone technology is **another medium of advancing our commitment to [good governance and ease of living](#).**
- We have got a **smart tool in the form of drones that is going to be part and parcel of common people's lives.**
- As drone technology has its application in diverse areas such as defence, **[disaster management](#)**, agriculture, healthcare, tourism, film and entertainment, there is a **great possibility of a major revolution creating immense opportunities for employment.**
- Villages are witnessing the arrival of roads, electricity, optical fibre and digital technology. However, agriculture work is still being conducted in old ways, leading to hassles, low productivity and wastage.
 - Drone technology is going to play a major role in empowering farmers and modernize their lives.
- Government is making efforts towards creating a strong drone manufacturing ecosystem in India through schemes like **[Production-Linked Incentive \(PLI\)](#).**

What are the Drone Rules, 2021?

- In 2021, the Ministry notified **[liberalized drone rules](#) with the aim to encourage R&D and to make India a drone hub.**
 - It abolished several permissions and approvals. The number of forms that need to be filled was reduced from 25 to five and the types of fee brought down from 72 to 4.
 - No permission is required for operating drones in green zones and no remote pilot license is necessary for non-commercial use of micro and nano drones.
 - Payloads up to 500kg have been allowed so the drones can be used as unmanned flying taxis.
 - Further, foreign ownership of companies operating drones has also been permitted.

What is the PLI Scheme for Drones?

- The government **also approved a [Production-Linked Incentive \(PLI\) scheme for Drones](#)** and their components with an allocation of Rs. 120 crore for three financial years.
- The PLI Scheme for the drones and drone components industry addresses the strategic, tactical, and operational uses of this revolutionary technology.

What is the Drone Shakti Scheme?

- The Union Budget **pushed for promotion of drones through startups and skilling at Industrial Training Institutes (ITIs).**
- Startups will be promoted to facilitate **'Drone Shakti'** through varied applications and for **Drone-As-A-Service (DrAAS)**. Courses for skilling will also be started in selected ITIs across all States.
 - DrAAS allows enterprises to avail various services from drone companies, removing the need for them to invest in drone hardware or software, pilots, and training programmes.
 - Sectors where drones can be employed are endless. These include photography, agriculture, mining, telecom, insurance, telecom, oil & gas, construction, transport, disaster management, geo-spatial mapping, forest and wildlife, defence and law enforcement to name a few.
- Drones **will also be promoted for crop assessment, digitisation of land records, spraying of insecticides and nutrients (Kisan Drones).**
- The drone services industry **is expected to grow to over Rs 30,000 crore in next three years and generate over five lakh jobs.**

Way Forward

- A few months earlier, there were a lot of restrictions on drones. However, most of the restrictions have now been removed in a very short span of time.
- Easy access to technology will help in furthering the vision of saturation and in ensuring last-mile delivery.
- Government is trying to make technology available to the masses to impart new strength, speed and scale to the country.

UPSC Civil Services Examination, Previous Year Question

Q. Consider the following activities: (2020)

1. Spraying pesticides on a crop field
2. Inspecting the craters of active volcanoes
3. Collecting breath samples from spouting whales for DNA analysis

At the present level of technology, which of the above activities can be successfully carried out by using drones?

- (a) 1 and 2 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Ans: (d)

Exp:

- **Unmanned Aerial Vehicles (UAV) or drones are aircrafts that can be navigated without a**

human pilot on board. Drones can be navigated via control from the ground, using a **GPS tracking system**.

- Initially, drones have been developed **mostly for military applications**. However, its use has **expanded to scientific, recreational, commercial and other applications including peacekeeping and surveillance, product delivery, aerial photography, agriculture, etc.**
- They are now **increasingly used to spray pesticides in agricultural fields to protect standing crops from pests**. Hence, **statement 1 is correct**.
- Scientists have also been **using drones to study active volcanoes**. The drone can both **collect breath samples and take high-resolution photos of the whales from the air to assess general health conditions**. Hence, **statements 2 and 3 are correct**.
- **Therefore, option (d) is the correct answer.**

[Source: PIB](#)

West Nile Virus

For Prelims: West Nile Virus, Flavivirus, Transmission cycle of West Nile Virus, WHO

For Mains: Prevention and Control of virus-associated diseases

Why in News?

Recently, a 47-year-old man in Thrissur, Kerala died due to [West Nile Virus \(WNV\)](#). This has caused the Kerala health department to be on alert.

- Malappuram's 6-year-old boy also died of the same infection, earlier in 2019.
- WNV was **first reported in the state of Alappuzha in 2006**. Later in 2011, it was also reported in Ernakulam, Kerala.

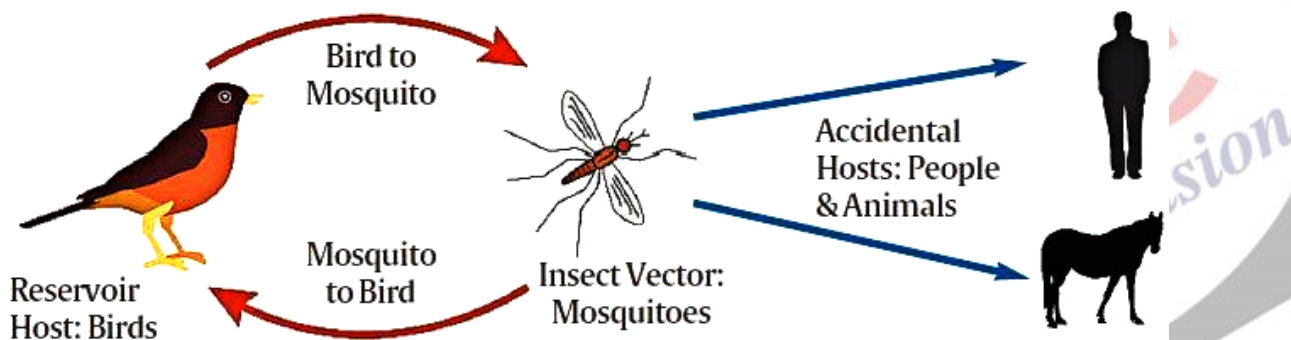
What is WNV?

- **About:**
 - The West Nile Virus is a **flavivirus related to the viruses** that are also **responsible for causing St. Louis encephalitis, Japanese encephalitis, and yellow fever**.
 - It is a **mosquito-borne, single-stranded RNA virus**.
- **Global Prevalence:**
 - **Along all major bird migratory routes**, WNV outbreak sites are found.
 - **Africa, Europe, the Middle East, North America, and West Asia** are the regions where the virus is commonly found.
 - Usually, WNV **infections peak during the period when mosquito vectors are most active and the ambient temperature is high** enough for virus multiplication for most of the countries.
- **Prevalence in India:**
 - In Mumbai in the year 1952, the **antibodies against WNV were first detected in humans**.
 - Since then, the virus activity has been reported in **southern, central, and western India**.
 - In **Andhra Pradesh and Tamil Nadu**, WNV was isolated from **Culex vishnui**

mosquitoes.

- In **Maharashtra**, it was isolated from **Culex quinquefasciatus** mosquitoes.
 - In **Karnataka**, it has been isolated from **humans**.
 - Further, WNV neutralizing antibodies were found to be present in human serum collected from **Tamil Nadu, Karnataka, Andhra Pradesh, Maharashtra, Gujarat, Madhya Pradesh, Odisha, Rajasthan and Assam**.
 - In **1977, 1978 and 1981**, serologically confirmed cases of WNV infections were reported in **Vellore and Kolar districts**, and in **West Bengal in 2017**.
 - During an **acute encephalitis outbreak in Kerala**, the complete [genome sequence of WNV](#) was isolated in **2013**.
 - The **association of WNV with eye infection in Tamil Nadu** had been clearly established during an **epidemic of mysterious fever in the first half of 2010**.
- **Origin:**
- WNV was first isolated in a woman in the **West Nile district of Uganda in 1937**.
 - It was **identified in birds** in the Nile delta region in **1953**. Before 1997, WNV was not considered pathogenic for birds.
 - **Human infections** attributable to WNV have been reported in many countries for over **50 years**.

TRANSMISSION CYCLE OF WEST NILE VIRUS



▪ **Transmission Cycle:**

- **Principal vector** for transmission is the **culex species of mosquitoes**.
- **Birds** act as the **reservoir host** of the virus.
- Infected mosquitoes **transmit WNV between and among humans and animals, including birds**.
- When a **mosquito feeds on infected birds**, they become **infected**.
- The **virus circulates in the blood** of those infected mosquitoes for a **few days, eventually getting into the mosquito's salivary glands**.
- The virus **may get injected into humans and animals during later blood meals (when mosquito bites)**. Therein, WNV can **multiply and possibly cause illness**.
- WNV can also get transmitted from an **infected mother to her child through blood transfusion** or via exposure to the virus in laboratories.
- **No instance of transmission by contact with infected humans or animals** has been reported.
- It **does not spread "through eating infected animals, including birds**.
- Generally, **the incubation period for WNV disease is 2-6 days**. However, this **may range from 2-14 days**, and can also be **several weeks in people whose immunity is compromised**.
- According to the [World Health Organization \(WHO\)](#), **no human-to-human transmission of WNV through casual contact has been reported till date**.

▪ **Symptoms:**

- In **80%** of the infected people, the disease is **asymptomatic**.
- In the rest of the **20% cases, West Nile fever or severe WNV is observed with symptoms such as fever, headache, fatigue, body aches, nausea, rash, and swollen glands**.

- Severe infection may even cause **neurological diseases** like **West Nile encephalitis or meningitis or West Nile poliomyelitis or acute flaccid paralysis**.
- Also, there are reports of **WNV-associated Guillain-Barré syndrome** and **radiculopathy**.
- Around **1 in 150 individuals** with WNS is likely to develop a more **severe form of disease**.
- It may take **several weeks or months to recover from severe illness**.
- **Nervous system damage can last forever**.
- In persons with **co-morbidities and immuno-compromised persons** (such as transplant patients), the disease may turn out to be **fatal**.
- **Measures of Prevention:**
 - The establishment of **an active animal health surveillance system** to detect new cases in birds and horses should be essentially established.
 - As WNV outbreaks in animals precede human cases, it is necessary to **provide early warning for veterinary and human public health authorities**.
 - The **European Centre for Disease Control and Prevention (ECDC)** has suggested that **28-day blood donor deferral or nucleic acid testing of prospective donors** who have visited or lived in an affected area should be implemented by the **European Union (EU)**.
 - Besides, **testing for WNV infection must be done for the donors of organs, tissues and cells, who are living in or returning from an affected area**.
- **Treatment:**
 - As of now, **no treatment/vaccine for WNV is available**.
 - Only supportive treatments can be provided to neuroinvasive WNV patients.

UPSC Civil Services Examination, Previous Year Question

Q. Consider the following statements: (2017)

1. In tropical regions, Zika virus disease is transmitted by the same mosquito that transmits dengue.
2. Sexual transmission of Zika virus disease is possible.

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

Ans: (c)

Exp:

- **Zika virus is a flavivirus** which was first discovered in 1947 in monkeys and then in humans in Uganda in 1952.
- Both Zika and Dengue have similarities in terms of symptoms of fever, skin rashes, conjunctivitis, muscle and joint pain, malaise, and headache. In addition to this, **the mode of transmission is also same for both the diseases, i.e., both are spread by Aedes aegypti and Aedes albopictus species of mosquitoes. Hence, statement 1 is correct.**
- **Modes of Zika Transmission:**
 - **Mosquito bites**
 - **From mother to child during pregnancy**, which can cause microcephaly and other severe fetal brain defects. Zika virus has also been found in breast milk.
 - **Sexual transmission** from infected partner. Hence, statement 2 is correct.
 - **Through blood transfusion.**
- **Therefore, option (c) is the correct answer.**

Cheetah Relocation in India

Why in News?

India will be soon releasing cheetahs from South Africa and Namibia into the wild at **Kuno Palpur** in Sheopur district of Madhya Pradesh.

- It will initiate **India's ambitious plan of transcontinental relocation of cheetahs.**
- The country's last spotted cheetah died in Chhattisgarh in 1947 and it was declared extinct in the country in 1952.
- The [Wildlife Institute of India \(WII\)](#) some years back prepared a cheetah reintroduction project.

What are the Key Points Related to Cheetahs?

- **About:**
 - The cheetah is one of the oldest of the big cat species, with ancestors that can be traced back more than five million years to the Miocene era.
 - The cheetah is also the world's fastest land mammal that lives in Africa and Asia.

- **African Cheetah:**



- **Scientific Name:** *Acinonyx Jubatus*
 - **Characteristics:** They have slightly brownish and golden skin which is thicker than the Asiatic Cheetahs.
 - They have much more prominent spots and lines on their face as compared to their Asian cousins.
 - **Distribution:** Found all over the African continent in thousands of numbers.
 - **Protection:**
 - **IUCN Red List:** Vulnerable.
 - **CITES:** Appendix 1.
 - **WPA:** Schedule-2.
- **Asiatic Cheetah:**



- **Scientific Name:** *Acinonyx Jubatus Venaticus*
- **Characteristic:** Slightly smaller than the African Cheetahs.
 - They have pale yellowish fawn coloured skin with more fur under their body, specifically on the belly. Inserting image...
- **Distribution:** Found only in Iran with less than 100 individuals left.
- **Protection:**
 - **IUCN Red List:** critically endangered.
 - **CITES:** Appendix 1.
 - **WPA:** Schedule-2.

What are the Threats?

- Human-wildlife conflict, loss of habitat and loss of prey, and illegal trafficking.
- Deforestation and **agriculture eventually led to less forest land and Cheetah habitat.**
- The advent of climate change and growing human populations have only made these problems worse.

What are the Indian Conservation Efforts?

- The Wildlife Institute of India had prepared a Rs 260-crore cheetah **Re-introduction project** seven years ago.
- This could be the world's first inter-continental cheetah translocation project.
- The Ministry of Environment had in the 19th meeting of the **National Tiger Conservation Authority (NTCA)** released an **“Action Plan for Introduction of Cheetah in India”**.
- The National Tiger Conservation Authority (NTCA) has decided to bring 50 African Cheetah from Namibia within the next 5 years.

What are the Key Points of Kuno National Park?

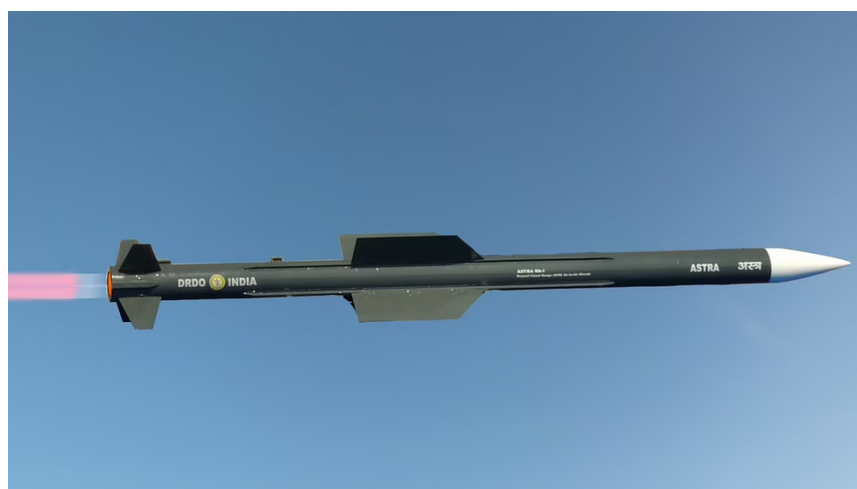
- Kuno National Park of Madhya Pradesh is **one the most unique destinations** for all wildlife lovers and enthusiasts.
- It has a **healthy population of chital, sambar, nilgai, wild pig, chinkara and cattle.**
- Currently, the leopard and striped hyena are the only larger carnivores within the National Park, with the lone tiger having returned to Ranthambore earlier this year.

Astra Mk-1 Missile

Why in New?

Recently, the Ministry of Defence has signed a contract with the Hyderabad-based public-sector Bharat Dynamics Ltd (BDL) for supply of the **Astra Mark-1**.

- Contract was signed at a **cost of Rs 2,971 crore**, for deployment on fighter jets of the Indian Air Force and Indian Navy.



What are the Astra Missile and its Variants?

- The Astra project was **officially launched in the early 2000s** with defined parameters and proposed future variants.
- Around 2017, the development phase of the Mk-1 version was complete.
 - Several successful tests have been conducted since 2017 from Sukhoi-30 MKIs.

What are the Key Highlights of the Astra Mk-1 Missile?

- **About:**
 - The Astra Mk-1 is a **Beyond Visual Range (BVR)**, Air-to-Air Missile (AAM).
 - BVM missiles are **capable of engaging beyond the range of 20 nautical miles** or 37 kilometers.
 - AAMs are fired from an airborne asset to destroy an airborne target.
- **Range:**
 - The range for **Astra Mk-1 is around 110 km.**
 - The Mk-2 with a **range over 150 km** is under development and Mk-3 version with a longer range is being envisaged.
 - One more version of Astra, with a range smaller than Mk-1 is also under development.
- **Designed and Developed by:**
 - [Defence Research and Development Organisation \(DRDO\)](#)

What is the Strategic Significance?

- **Reduce Dependency on Foreign Sources:**
 - The missile has been designed based on requirements specified by the [Indian Air Force \(IAF\)](#) for BVR as well as close-combat engagement, reducing the dependency on foreign sources.
 - AAMs with BVR capability provides **large stand-off ranges to own fighter aircraft** which can neutralise adversary airborne assets without exposing themselves to adversary air defence measures.
 - Stand-off range means the **missile is launched at a distance sufficient** to allow the attacking side to evade defensive fire from the target.
- **Technologically and Economically Superior:**
 - Astra is **technologically and economically superior to many** such imported missile systems.
 - The missile can **travel at speeds more than four times that of sound** and can reach a maximum altitude of 20 km, making it extremely flexible for air combat.
- **Can be Integrated with other Fighter Aircraft:**
 - The missile is **fully integrated on the Sukhoi 30 MKI I** and will be integrated with other fighter aircraft in a phased manner, including the [Light Combat Aircraft \(LCA\) Tejas](#).
 - It will **integrate the missile on the MiG-29K fighter aircraft** which are deployed on the Navy's aircraft carriers, thus adding to the lethality of India's Aircraft carriers.

UPSC Civil Services Examination, Previous Year Question

Q. With reference to Agni-IV Missile, which of the following statements is/are correct? (2014)

1. It is a surface-to-surface missile.
2. It is fuelled by liquid propellant only.
3. It can deliver one-tonne nuclear warheads about 7500 km away.

Select the correct answer using the code given below:

- (a) 1 only
- (b) 2 and 3 only
- (c) 1 and 3 only
- (d) 1, 2 and 3

Ans: (a)

Exp:

- Agni-IV is a nuclear-capable long-range ballistic missile of India, with a strike range of 4,000 km.
- The indigenously developed Agni-IV is a two-stage surface-to-surface missile. It is 20 metres long with a weight of 17 tonnes. Hence, statement 1 is correct.
- It is a two stage solid fuelled system that can carry a one-tonne nuclear warhead over a distance of 4,000 kilometres. Hence, statements 2 and 3 are not correct. Therefore, option (a) is the correct answer.

Q. In the context of Indian defence, consider the following statements: (2009)

1. The Shourya missile flies with a speed of more than 8 Mach.
2. The range of Shourya missile is more than 1600 km.

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

Ans: (d)

Exp:

- Shourya is a hypersonic surface-to-surface tactical missile developed by the Defence Research and Development Organisation (DRDO) for use by the Indian Armed Forces.
- Its speed is Mach 7.5. Hence, statement 1 is not correct.

[Source: IE](#)

World Milk Day

Why in News?

June 1 is observed as [World Milk Day](#) every year.

What are the Key Highlights?

- **About**
 - World Milk Day is a day established by the [Food and Agriculture Organization \(FAO\)](#) of the [United Nations](#) in 2001 to recognize the importance of milk as a global food.
 - The day is intended to provide an opportunity to bring attention to activities that are connected with the dairy sector.
- **Theme:**
 - This year's theme will highlight the work already being done to **accelerate climate action** and **help reduce the dairy sector's impact** on the planet.
 - Using the World Milk Day platform, awareness of the messaging and action will be raised towards **Dairy Net Zero**.
- **Features:**
 - It is encouraged to talk about the important contributions of the dairy sector to:
 - Good food, health and nutrition
 - Farmers caring responsible for their communities, the land and their animals
 - Sustainability practices in the dairy sector
 - How dairy contributes to economic development and livelihood
- **Indian Dairy Sector:**
 - **India is the world's largest milk producer**, with 22% of global production, followed by the **United States of America, China, Pakistan** and Brazil.
 - Milk production in the country has grown at a **compound annual growth rate of about 6.2%** to reach 209.96 mn tonnes in 2020-21 from 146.31 mn tonnes in 2014
 - The top 5 milk-producing states are: **Uttar Pradesh (14.9%), Rajasthan (14.6%), Madhya Pradesh (8.6%), Gujarat (7.6%) and Andhra Pradesh (7.0%)**.

What are the Initiatives of the Government of India related to Dairy Sector?

- **Rashtriya Gokul Mission:** This mission is launched to improve productivity and enhance milk production through genetic upgradation of bovine population and development and conservation of indigenous bovine breeds.
- **Gopal Ratna Award 2021:** Gopal Ratna Award is given to encourage all individual farmers, artificial insemination technicians and Dairy cooperative societies working in this sector.
- **Nationwide Artificial Insemination Programme:** Under this programme, **Artificial Insemination** services delivered free of cost at farmers' doorstep.
- **e-GOPALA app:** A comprehensive breed improvement marketplace and information portal for

direct use of farmers in the form of the e-GOPALA app (Generation of Wealth through Productive Livestock)

- **National Programme for Dairy Development (NPDD):** “National Programme for Dairy Development (NPDD)” is launched across the country since 2014 with an objective of strengthening of infrastructure for Production of quality milk, Procurement, Processing and Marketing of Milk & Milk Products through State Implementing Agency (SIA) i.e State Cooperative Dairy Federation.
- **Dairy Processing and Infrastructure Development Fund (DIDF) Scheme:** DIDF Scheme was launched in 2017 to modernize the milk processing & chilling plants including value addition.
- **Supporting Dairy Cooperatives and Farmer Producer organizations engaged in dairy activities” (SDC&FPO):**
 - Department of Animal Husbandry and Dairying has introduced a new component “**interest subvention on Working capital loans for Dairy sector**” as one of the components under its scheme SDC&FPO.
 - **Kisan Credit Card (KCC)** for Animal Husbandry & Dairying Farmers: Through Kisan Credit Cards, farmers are enabled to gain access to institutional credit at concessional interest rate for working capital expenditure.

UPSC Civil Services Examination, Previous Year Question

Q. Under the Kisan Credit Card scheme, short-term credit support is given to farmers for which of the following purposes? (2020)

1. Working capital for maintenance of farm assets
2. Purchase of combine harvesters, tractors and mini trucks
3. Consumption requirements of farm households
4. Post-harvest expenses
5. Construction of family house and setting up of village cold storage facility

Select the correct answer using the code given below:

- (a) 1, 2 and 5 only
- (b) 1, 3 and 4 only
- (c) 2, 3, 4 and 5 only
- (d) 1, 2, 3, 4 and 5

Ans: (b)

Exp:

- The Kisan Credit Card (KCC) scheme was introduced in 1998 for providing adequate and timely credit support from the banking system under a single window with flexible and simplified procedure to the farmers for their cultivation and other needs like purchase of agriculture inputs such as seeds, fertilizers, pesticides etc. and draw cash for their production needs.
- The scheme was further extended in the year 2004 for the investment credit requirement of farmers viz allied and non-farm activities.
- Kisan Credit Card is provided with the following objectives:
 - The short term credit requirements for cultivation of crops,
 - Post harvest expenses, hence 4 is correct.
 - Produce marketing loan,
 - Consumption requirements of farmer household, hence 3 is correct.
 - Working capital for maintenance of farm assets and activities allied to agriculture, like dairy animals, inland fishery, etc., hence, 1 is correct.
 - Investment credit requirement for agriculture and allied activities like pumpsets, sprayers, dairy animals, etc. However, this segment forms the long term credit limit portion.
- The Kisan Credit Card Scheme is implemented by Commercial Banks, RRBs, Small Finance Banks and Cooperatives.
- The short term credit support is not given to farmers for Purchase of combine harvesters, tractors and mini trucks and Construction of family house and setting up of village cold storage facility.

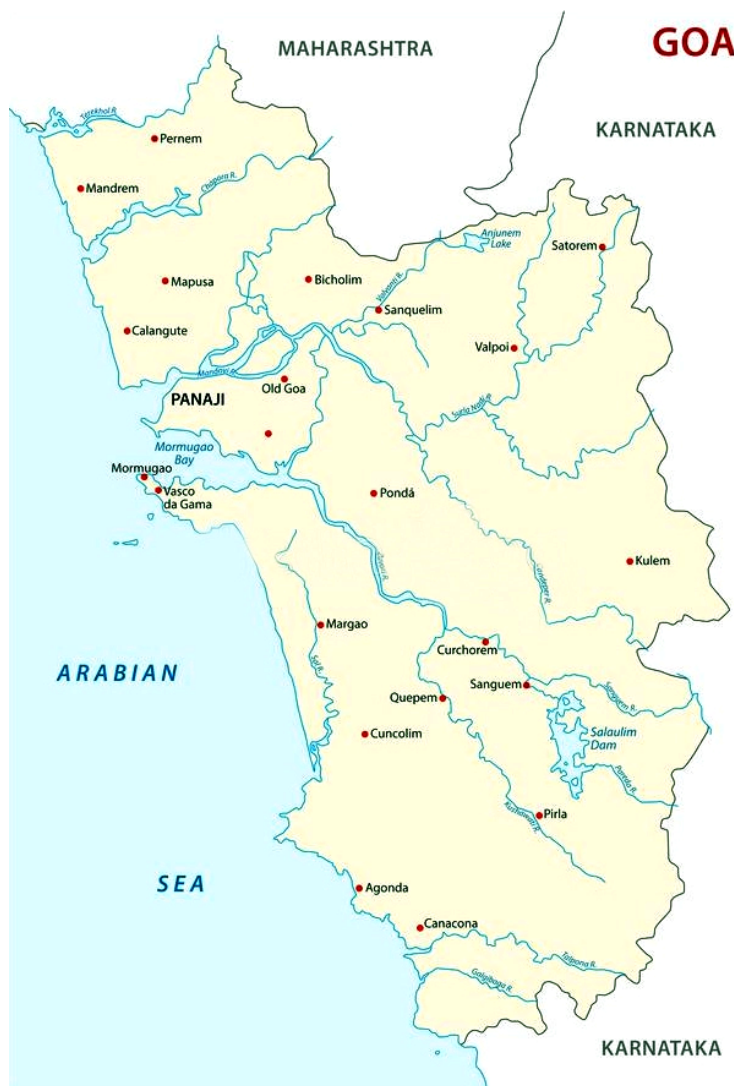
Hence, 2 and 4 are not correct. Therefore, option (b) is the correct answer.

[Source: IE](#)

Statehood Day of Goa

Why in News?

On the [Statehood Day of Goa](#) (30th May), the Prime Minister greeted the people of the state.



What are the Key Highlights about Goa?

- **About:**
 - Goa is located on the **southwestern coast of India** within the region known as the Konkan, and geographically separated from the Deccan highlands by the [Western Ghats](#).
- **Capital:**
 - Panji.

- **Official Language:**
 - **Konkani** which is one of the 22 languages from the [Eight Schedule](#).
- **Borders:**
 - It is surrounded by **Maharashtra to the north and Karnataka to the east** and south, with the Arabian Sea forming its western coast.
- **History:**
 - As India gained independence on 15th August, 1947, it requested the Portuguese to cede their territories. However, Portuguese refused.
 - In 1961, Indian Government launched [Operation Vijay](#) and annexed Daman and Diu islands and Goa with the Indian mainland.
 - [Goa Liberation Day](#) is observed on 19th December every year in India.
 - It can be noted that the Portuguese were the first Europeans to come to India (1498) and were also the last to leave this land (1961).
 - On 30th May, 1987, the territory was split and Goa was formed. Daman and Diu remained Union Territory.
- **Geography:**
 - The **highest point of Goa is Sonsogor**.
 - Goa's seven major rivers are the Zuari, [Mandovi](#), Terekhol, Chapora, Galgibag, Kumbarjua canal, Talpona and the Sal.
 - Most of Goa's soil cover is made up of laterites.
- **Wildlife Sanctuaries and National Parks:**
 - **Dr. Salim Ali Bird Sanctuary**
 - [Mhadei Wildlife Sanctuary](#)
 - [Netravali Wildlife Sanctuary](#)
 - [Cotigao Wildlife Sanctuary](#)
 - [Bhagwan Mahaveer Sanctuary](#)
 - **Mollem National Park**

[Source: PIB](#)

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