

WEEKLY UPDATES – (16th Oct-22nd Oct)

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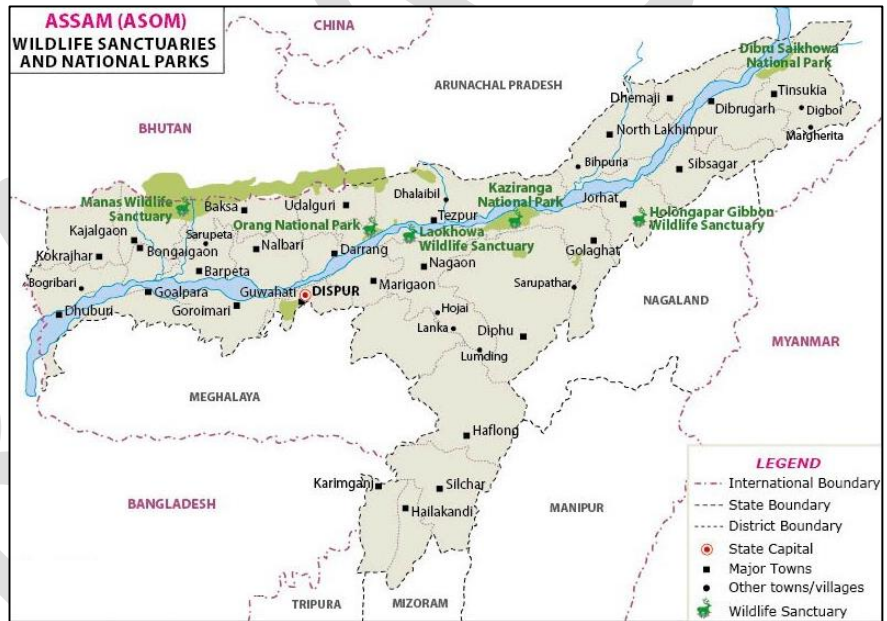
ENVIRONMENT

Kaziranga Sanctuary Reopens

Context: The Kaziranga National Park and Tiger Reserve reopened with a literary tribute to a British-era forest officer who rid its name of any hunting connotations.

Key Highlights

- The 1,300-sq.km reserve, the world’s safest address for the one-horned rhinoceros, opens annually for tourists in October.
- The plan for a nature and wildlife-specific library at the Centenary Convention Centre in the Kohora area of Kaziranga, could not materialise in 2020 because of COVID outbreak.
- Named after Patrick D. Stracey, the library was.
 - Stracey, who was born in Andhra Pradesh’s Kakinada, served as an Indian Forest Service officer in Assam.
 - He played a key role in renaming the Kaziranga Game Sanctuary as a wildlife sanctuary in 1950.
 - He also established the Assam Forest School, a training institute catering to the northeastern region.
- “The PD Stracey Library offers readers books and magazines on the world of nature apart from merchandise to take memories of Kaziranga home. The initiative is a tribute to a legendary forest officer.



Kaziranga Wildlife Sanctuary

Location	<ul style="list-style-type: none"> • It is located in the State of Assam and covers 42,996 Hectare (ha). • It is the single largest undisturbed and representative area in the Brahmaputra Valley floodplain.
Legal Status	<ul style="list-style-type: none"> • It was declared as a National Park in 1974. • It has been declared a tiger reserve since 2007. <ul style="list-style-type: none"> • It has a total tiger reserve area of 1,030 sq km with a core area of 430 sq. km.
International Status	<ul style="list-style-type: none"> • It was declared a UNESCO World Heritage Site in 1985. • It is recognized as an Important Bird Area by Bird Life International.
Important Species Found	<ul style="list-style-type: none"> • It is the home of the world’s most one-horned rhinos. <ul style="list-style-type: none"> • Pobitora Wildlife Sanctuary has the highest density of one-horned rhinos in the world and second highest number of Rhinos in Assam after Kaziranga National Park.

	<ul style="list-style-type: none"> • Much of the focus of conservation efforts in Kaziranga are focused on the ‘big four’ species— Rhino, Elephant, Royal Bengal tiger and Asiatic water buffalo. <ul style="list-style-type: none"> • The 2018 census had yielded 2,413 rhinos and approximately 1,100 elephants. • As per the figures of tiger census conducted in 2014, Kaziranga had an estimated 103 tigers, the third highest population in India after Jim Corbett National Park (215) in Uttarakhand and Bandipur National Park (120) in Karnataka. • Kaziranga is also home to 9 of the 14 species of primates found in the Indian subcontinent.
Flora	<ul style="list-style-type: none"> • It is a mix of eastern wet alluvial grasslands, semi-evergreen forests and tropical moist deciduous forests. • It is primarily famous for its dense and tall elephant grasses intermixed with small swamplands. • It also includes an abundant cover of water lilies, water hyacinths and lotus.
Rivers and Highways	<ul style="list-style-type: none"> • The National Highway 37 passes through the park area. • The park also has more than 250 seasonal water bodies, besides the Diphlu River running through it.

Estivation: Summer Urge to Nap

Context: Some animals feel the need to sleep to beat the heat, but for a whole season. This is called estivation (or aestivation).

- It is a biological phenomenon whereby the animal enters a long period of dormancy, or inactivity, in response to high temperature or maybe even drought-like conditions.
- It is a survival strategy that helps the animal conserve energy and water in a difficult time.
- During estivation, the animal often seeks shelter in a cool underground burrow, crevice or cocoon, where it will remain in a state of reduced metabolic activity, which in turn reduces the rate at which the body consumes energy.
- Estivation can also be a way to avoid desiccation – extreme dryness of the skin – and also lower the risk of being preyed on by a predator.

Example

- The West African lungfish (*Protopterus annectens*) burrows into the mud of a drying water body and secretes a cocoon of mucus around itself during a drought.
- Desert tortoises (*Gopherus agassizii*) dig burrows and retreat into them in hot summer months.
- Many land snails seal themselves in their shells with a mucous plug, and stay inactive until the conditions outside improve.

Aestivation vs Hibernation

Hibernation	Aestivation
Also known as “winter sleep”.	Also known as “summer sleep”.
Longer duration.	Short duration.
Animals look for a warm place to sleep.	Animals look for a moist, cool and shady place to sleep.
It prevents any internal body damage due to low temperatures.	It prevents excessive water loss and internal body damage due to high temperatures.
Hibernation takes place in warm and cold-blooded animals like bats, mammals, birds, etc.	Aestivation takes place in cold-blooded animals like snails, earthworms, frogs, etc.

Paintbrush Swift Butterfly

Context: Butterfly makes a rare call in Himachal. The paintbrush swift (*Baoris farri*) butterfly has been photographed for the first time in Himachal Pradesh.



- Paintbrush swift is rarely found in the State, home to 25% of the butterfly species found in India; 120 species of butterflies have been documented by the **Wild Bhattiyat Project in 2022**.
- It has been noticed first time in Himachal Pradesh's **Chamba district**.
- The paintbrush swift (*Baoris farri*), a butterfly species of the HesperIIDae family, was sighted and photographed in the second week of October during a field survey conducted under the Wild Bhattiyat Project initiated by the Bhattiyat Forest Range of the Dalhousie Forest Division of the Himachal Pradesh Forest Department in 2022.
 - Since the launch of the project, the department has so far documented 120 butterfly species.
- The species has never been photographed in Himachal Pradesh since its discovery in 1878.
- We have recorded and documented various uncommon butterfly species like the anomalous nawab, blank swift, tailed jay, siren, etc., which are frequently sighted, but the paintbrush swift has been sighted and photographed for the first time in the lower hills of the **Dhauladhar mountain range**.

About Paintbrush Swift Butterfly

- The paintbrush swift is **identified based on** two separated spots in the upper forewing cell.
- Other closely related species like the blank swift have no cell spot while the figure-of-eight swift has two conjoined cell spots. The species' larvae feed on bamboo and some other grass species.
- The paintbrush swift's **habitat distribution** is common in northeast, central and south India, and rare in Uttarakhand.
- This species is legally protected in India under **Schedule IV of the Wildlife (Protection) Act, 1972**.

GEOGRAPHY

Why Are Earthquakes Frequent In Afghanistan?

Context: An earthquake of magnitude 6.3 struck western Afghanistan on October 15, barely a few days after multiple earthquakes of similar strength killed at least a thousand people in the Herat province.

- Multiple earthquakes have destroyed entire villages in the country.

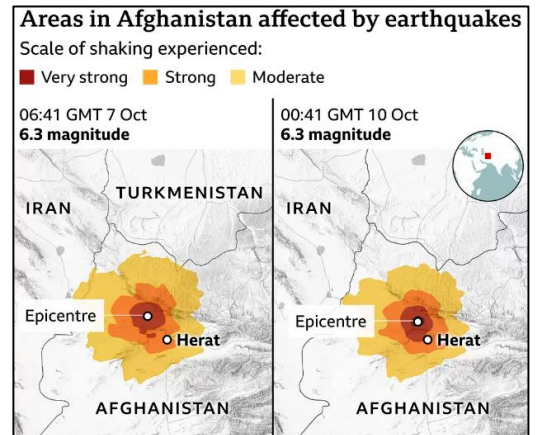
Key Highlights

Afghanistan has faced widespread destruction from intense earthquakes over the years.

THE GIST

- An earthquake of magnitude 6.3 struck western Afghanistan on October 15, barely a few days after multiple earthquakes of similar strength killed at least a thousand people in the Herat province.
- The earth is made up of chunks of solid rocks called tectonic plates. Discontinuities in these rock masses, along which they have moved, are called fault lines.
- Afghanistan is located over multiple fault lines in the region where the Indian and the Eurasian tectonic plates meet. These plates collide often, leading to significant tectonic activity.

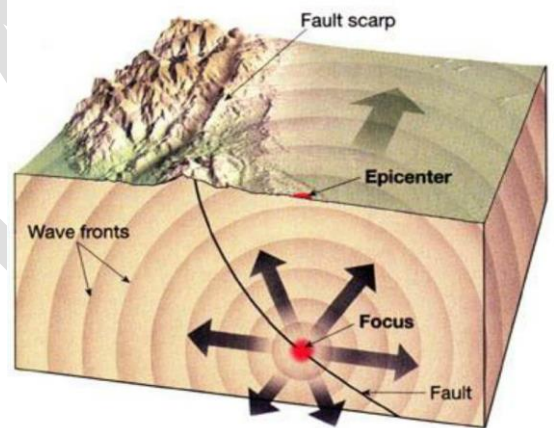
- In June 2022, more than 1,000 people were killed when an earthquake of magnitude 6.1 struck Khost and Paktika provinces.
- In 2015, a major earthquake that struck the country's northeast killed over 200 people in Afghanistan and neighbouring northern Pakistan.
- A 6.1-magnitude earthquake in 2002 killed about 1,000 people in northern Afghanistan.
- In 1998, another earthquake and subsequent tremors in northeast Afghanistan killed at least 4,500 people.



How Do Earthquakes Occur?

The earth is made up of chunks of solid rocks called tectonic plates. Discontinuities in these rock masses, along which they have moved, are called fault lines.

- These fractures are a result of tectonic forces and stress that builds up in the earth's lithosphere, causing the rocks to break and slip.
- An earthquake occurs when blocks of lithosphere suddenly slip past one another, releasing energy and sending seismic waves through the ground.
- The surface where the lithosphere chunks slip becomes a fault plane.
- The point within the earth where the fault rupture starts and produces an earthquake is called the **focus or the hypocentre**.
- The point on the surface of the earth directly above it is called the epicentre.



Tectonic plates are slow moving but are always in motion, mostly due to the heat energy generated inside the earth. The edges of these plates are called **plate boundaries** and consist of faults— this is where most earthquakes occur.

Why Do Frequent Earthquakes Occur In Afghanistan?

Afghanistan is located over **multiple fault lines** in the region where the **Indian and the Eurasian tectonic plates meet**.

- These plates collide often, leading to significant tectonic activity.
- Afghanistan is located on the Eurasian plate.



- Towards western Afghanistan, the Arabian plate subducts northward under Eurasia, and towards eastern Afghanistan the Indian plate does the same.
- In southern Afghanistan, the Arabian and Indian plates adjoin and both subduct northward under the Eurasian plate.
- The **Hindu Kush mountain range** and the **Pamir Knot** are geologically complex regions where tectonic plates meet.
- The collision and convergence of the Indian Plate and the Eurasian Plate result in the folding and faulting of the Earth's crust.

This geological complexity contributes to the occurrence of earthquakes in the region.

- The ongoing northward movement of the Indian Plate towards the Eurasian Plate also results in compression, leading to the uplift of the Himalayas and the transmission of tectonic stress across the entire region, including Afghanistan.
- The compression causes the crust to deform, and creates faults and fractures that can slip and generate earthquakes.
- These interactions at plate boundaries generate significant tectonic stresses and result in earthquakes.
- Afghanistan is also criss-crossed by various active fault systems like the Chaman Fault and the Main Pamir Thrust. These faults are the sources of many earthquakes in the region.

POLITY

Dam Safety

Context: India has almost 6,000 large dams and about 80% of them are more than 25 years old and carry safety risks.

- A new Dam Safety Act (DSA) was passed in late 2021.
- On October 4 this year, a glacial lake outburst flood (GLOF) in North Sikkim's South Lhonak Lake washed away one of the biggest hydropower projects in India, the Teesta III dam at Chungthang.
- Reports have since revealed there were no early warning systems, no risk assessment or preventive measures in place as required under the Act.

Dam Safety

Dam safety is a function of many parts:

Designing And
Constructing Dams
That Adhere To Safety
Margins

Maintaining And
Operating Them Per
Guidelines

Recording Data In
Real-time In An
Accessible Format

Forecasting Hazardous
Events And Instituting
Emergency Plans

Provisions of the Act

The Dam Safety Act was tabled in the Rajya Sabha in December 2021, as a response to deficient surveillance and maintenance causing dam failure-related disasters. The Act listed key responsibilities and mandated that national and State-level bodies be established for implementation.

- It said a **National Committee on Dam Safety** would oversee dam safety policies and regulations.

- A **National Dam Safety Authority** would be charged with implementation and resolving State-level disputes.
- The **Chairman of the Central Water Commission (CWC)** would head dam safety protocols at the national level.
- A **State Committee on Dam Safety (SCDS)** and **State Dam Safety Organisation (SDSO)** would be set up.
- Hazard profiling and regular assessment are also mandated by the Act.

REGULATORY FRAMEWORK/INITIATIVES FOR DAM SAFETY IN INDIA:

DAM SAFETY ACT 2021:

Setting up an empowered institutional framework for dam safety at the Central & State level.

- National Committee on Dam Safety at national level
- State Committee on Dam Safety at state level
- Dam safety organizations: Conduct pre-monsoon and post-monsoon inspections of the dams.

NATIONAL DAM SAFETY AUTHORITY:

Maintain standards related to dam safety, prevent dam-related disasters and resolve inter-State issues.

DAM REHABILITATION AND IMPROVEMENT PROJECT (DRIP):

World Bank program, improves the safety and operational performance of selected dams, coupled with institutional strengthening.

NATIONAL HYDROLOGY PROJECT:

It will help in gathering Hydro-meteorological data on real-time basis. Components include

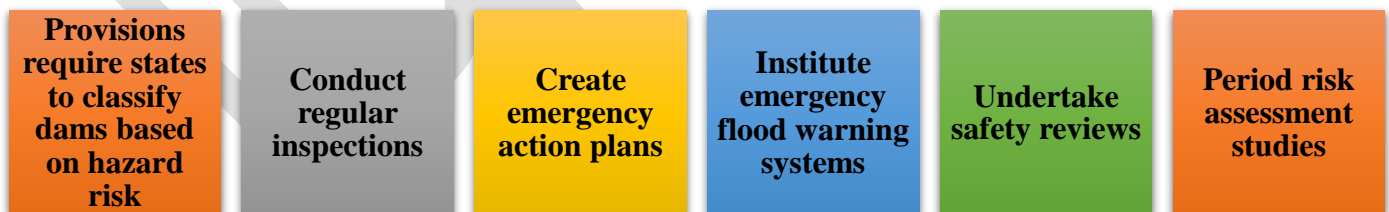
- In Situ Hydromet Monitoring System and Hydromet Data Acquisition System
- Setting up of National Water Informatics Centre (NWIC)
- Water Resources Operation and Management System
- Water Resources Institutions and Capacity Building

- Hazard risk fluctuates at the slightest touch, responding to climate change, urbanisation, and the way people/companies use water or where they are located.
- Periodic reviews are expected to bring forth fresh inundation maps and new rule curves (which determine the capacity of dam reservoirs), all of which contribute towards the safety of the downstream areas.
- Spillway capacity and other metrics should be reviewed every five years or so, but periodic reviews are often not conducted or if they are, their findings are not easily available in the public domain.

Failure to comply with any provision of the Act is punishable with imprisonment and/or fines, and “if such obstruction or refusal to comply with directions results in loss of lives or imminent danger thereof, [entity] shall be punishable with imprisonment for a term which may extend to two years.

- The Act requires dam builders to conduct comprehensive dam safety evaluations, but “there is no standardisation of how the failure is analysed and reported.

What Do The States Need To Do?



- Importantly, States were asked to report and record incidents of dam failures.
- Until now, no statutory provision required systemic reporting of failures and no single agency was tasked with tracking this data.
- The CWC keeps a record but the list is not updated regularly.

GOVERNANCE

A Draft: Menstrual Hygiene Policy

Context: The Centre’s Menstrual Hygiene Policy was recently hosted online for comments from the public and experts seems to remedy that.

- The debate about whether menstrual leave must be given or not occupied space, time and effort, more recently, traditionally, menstrual hygiene or the access or affordability of menstrual products and private and clean toilets have always been in debate.

Key Highlights

The Menstrual Hygiene Policy officially **aims** at addressing the long-standing challenges associated with menstruation in our country.

- The document records:
 - Historically, this biological phenomenon has been overlooked, resulting in negative impact on girls, women, families and the environment. With time, awareness has increased, but we need more investment to comprehensively address the diverse requirements of all individuals who menstruate.
 - India, with its vast and diverse population, acknowledges the critical importance of this issue and places great emphasis on framing a comprehensive menstrual hygiene policy.
 - This policy is essential for effectively addressing the needs of all who menstruate and promote a positive transformation within our society.
- The number of women who have no access to the restroom, access to napkins, or other menstrual products is staggering.
- First and foremost it affects the mental health of the women, impacts on their confidence, development and So, if there is a policy that will be seriously implemented, and improve women’s access to hygiene and privacy.
- The policy will adopt a **“life cycle” approach** and attempt to provide comprehensive support through out the menstrual journey — from menarche to menopause.
 - So, when and if, fully implemented, it might just break down the barriers that women and girls face today.
- The Menstrual Hygiene Policy document online reiterates its commitment to align with India’s aspirations to achieving the Sustainable Development Goals —particularly in relation to good health and well-being, quality education, gender equality, and clean water and sanitation.
- It has also pledged to make menstrual products more accessible and affordable, in addition to creating hygienic toilets in public areas, workplaces, and schools.
- The policy vows to serve as a catalyst to raise awareness, challenge societal norms and foster a society that embraces menstrual hygiene as a natural and normal part of life.

Challenges To Menstrual Hygiene

Since sanitary pads contain plastics the disposing via incinerators causes emissions.

Various challenges in the scheme implementations such as lack of funds, poor quality and irregular supply of sanitary pads.

Non uniformity of the schemes across India.

The nominal rate of the pads is not affordable by marginalized girls.

Prevailing stigma in the society adding to low awareness about menstrual hygiene.

Awareness programs face administrative challenges too.

Lack of female teachers at school to distribute the sanitary napkins to girls.

Other Measures Taken By Governments For Menstrual Hygiene

Menstrual Hygiene Scheme

- Launched in 2011 to provide sanitary pads to girls aged 10 to 19 at a nominal rate.

Suvidha scheme

- Launched in 2019 to distribute eco-friendly and biodegradable pads at a subsidized rate.
- As of 2021-22 over 1,128 lakh pads are distributed under this scheme.

Rashtriya Kishor SwasthyaKaryakram

- Focuses on promoting sexual and reproductive wellness for all adolescents.

Mini incinerators

- The Union Government in 2013 issued guidelines for setting up mini incinerators in schools to burn sanitary waste.

Railways Develops Anti-Freeze Flushes and Fuel Tanks

Context: Railways develops anti-freeze flushes and fuel tanks for journeys in J&K. The process of linking Kashmir to Kanniyakumari, through the new Udhampur-Srinagar-Baramulla Rail Link (USBRL) project, poses a unique challenge to the Railways in maintaining water and fuel in liquid form in sub-zero temperatures during the winters.

Key Highlights

- To circumvent the problem of water freezing in toilets and fuel tanks, engineers at the Rail Coach Factory (RCF) in Kapurthala have designed and implemented indigenous innovations.
- While the LHB coach design is prominently used by the Railways, it did not have temperature control systems.
- In winter, temperatures in the J&K region plummet to minus-eight to minus-12 degrees Celsius.
 - There is a problem if the water freezes in the tanks.
 - The flushes and the toilets won't work as the water won't get circulated.
 - There will be no supply of water in the taps.
- Another major challenge is that if the water tank is full, there is a hazard that it will develop cracks and burst, as ice has the tendency to expand.

About RCF

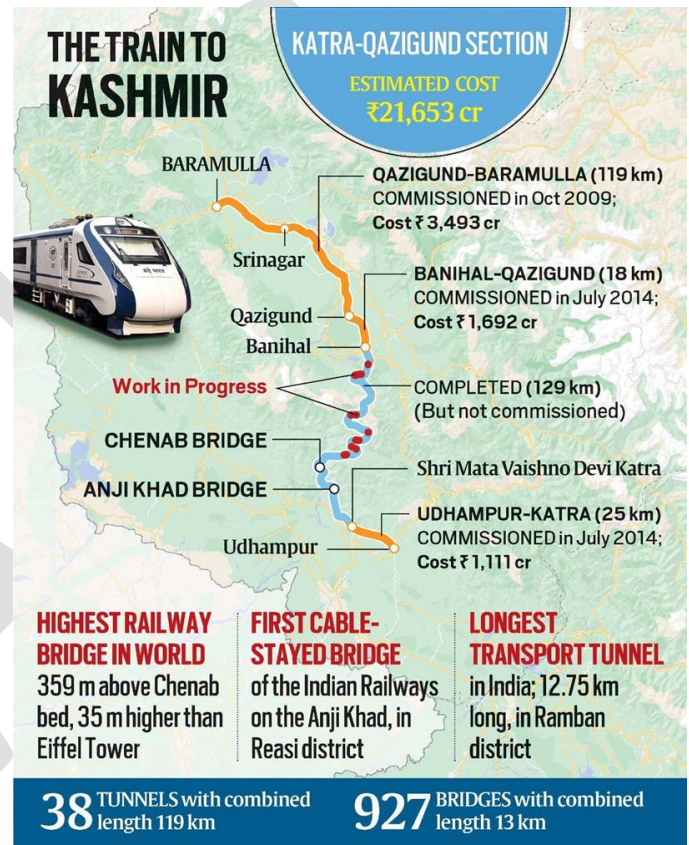
The RCF had designed double-walled composite insulated water tanks of capacities ranging between 450 litres and 685 litres.

- The water tank mimics thermoplastic bottles with two walls and an insulation layer of foam in the middle, which traps the air.

- This will maintain water in liquid form in sub-zero conditions from 16 to 20 hours. The water may remain cold but it won't freeze.
- In another innovation, the RCF has borrowed technology from the defence services to tackle the problem of freezing water in the supply pipelines.
 - They are using heated pipes with a distributed heating system covered by insulation. The water will remain cold at five to eight degrees Celsius in liquid form.
- To contain energy loss, geysers will be deployed at the point of use in toilets, where only as much water as is needed by the users will be heated. A similar technology is being deployed in the fuel tanks for locomotives by the RCF.

Udhampur- Srinagar-Baramulla Rail Link (USBRL) Project

- Udhampur-Srinagar-Baramulla Rail Link Project(USBRL) is 272 km-long. The project connects Udhampur to Baramulla.
- It aims to connect Kashmir Valley with the rest of the country by a railway line.
- It includes 38 tunnels with a combined length of 119 kilometers.
- The longest tunnel in the project is Tunnel T-49, which is 12.75 kilometers long making it India's longest transportation tunnel.
- There are 927 bridges in total. One of the bridges is Chenab Bridge which will be the highest railway bridge in the world.
- Indian railway's first cable-stayed bridge is also being constructed on Anji Khad.



Namo Bharat

Context: Prime Minister Narendra Modi flagged off the country's first Regional Rapid Transit System (RRTS), calling the Namu Bharat train a glimpse of India's promising future.

Key Highlights

- The RRTS is a new rail-based, semi-high-speed, high-frequency commuter transit system.
- With a design speed of 180 kmph, it is a regional development initiative, which is designed to provide high-speed trains for intercity commuting every 15 minutes, going up to a frequency of every five minutes when required.
- Developed at a cost of more than ₹30,000 crore, the train will allow a commuter to travel between Delhi and Meerut in less than an hour.
- A total of eight RRTS corridors have been identified for development in the National Capital Region.

- Three RRTS corridors have been prioritised for implementation in the first phase: Delhi-Ghaziabad-Meerut; Delhi-Gurugram-SNB-Alwar; and Delhi-Panipat.
- Officials in the Housing and Urban Affairs Ministry said the rapid transit system being developed in the country is a state-of-the-art regional mobility solution, comparable to the best in the world.

FASTER THAN METROS, MORE FREQUENT THAN TRAINS



180 km/hr
DESIGN SPEED

160 km/hr
OPERATION SPEED

100 km/hr
AVERAGE SPEED



Praveen Khanna



60 Min

TIME TO TRAVEL 100KM

CORRIDORS- UNDER RRTS PHASE I

- ① Delhi – Ghaziabad – Meerut Corridor
- ② Delhi – Gurugram – SNB – Alwar Corridor
- ③ Delhi – Panipat Corridor



— RRTS Phase-I --- RRTS Phase-II

OTHER CORRIDORS

- ④ Delhi – Faridabad – Ballabhgarh – Palwal
- ⑤ Ghaziabad – Khurja
- ⑥ Delhi – Bahadurgarh – Rohtak
- ⑦ Ghaziabad-Hapur
- ⑧ Delhi-Shahadra-Baraut

DEFENCE

Radiation Detection Equipment

Context: Radiation detection equipment (RDE) will soon be installed at eight land crossing points along India's borders with Pakistan, Bangladesh, Myanmar and Nepal to check the trafficking of radioactive materials for its possible use in making nuclear devices, officials said.

- The RDE will be installed at the integrated check posts and land ports of Attari (Pakistan border), Petrapole, Agartala, Dawki and Sutarkandi (all on the Bangladesh border), Raxaul and Jogbani (Nepal) and Moreh (Myanmar).
- The Union government has taken the initiative to install the RDE so that the trafficking of radioactive materials across international borders can be checked.

Radiation Detection Equipment (RDE)

Radiation detectors, also known as **particle detectors**, are instruments designed for the detection and measurement of subatomic particles.

- Radioactive materials emit subatomic particles (i.e., electrons, protons, neutrons, alpha particles, gamma rays, and numerous mesons and baryons) as they decay.

How RDEs Work?

RDEs are equipped with the following capabilities to detect and address potential threats effectively.

- **Raise Alarms:** RDEs can raise alarms in the presence of specific types of radiation: Gamma radiation & Neutron radiation.
- **Generate Video Frames:** RDEs have the capability to generate video frames, allowing for visual inspection of suspected objects.
- **Differentiation Abilities:** RDEs can differentiate between special nuclear material and naturally occurring radiation.
 - This is essential to prevent false alarms triggered by harmless substances like fertilizers and ceramics.
- RDEs can also detect high-energy gamma isotopes, a characteristic attribute of recycled uranium, further enhancing their detection capabilities.

IMPORTANT DAYS

World Food Day

Context: World Food Day is celebrated to commemorate the establishment of the United Nations Food and Agriculture Organisation (FAO) on 16th October 1945.

About World Food Day

- World Food Day, **celebrated on October 16th every year**, is a global event that aims to raise awareness about hunger, food security, and agricultural issues around the world.
- The day was **established** in 1979 by the Food and Agriculture Organization (FAO) of the United Nations and has since been observed in more than 150 countries.
- **The theme for World Food Day 2023**, "Water is life, water is food. Leave no one behind," underscores the critical role of water in sustaining life on Earth.

World Food Day's Mission

- ✓ **Appreciate the food we eat:** Emphasising the need for mindful consumption and reduced wastage to ensure a sustainable future for all
- ✓ **Encourage healthy, nutritious, and quality diets for all.**
- ✓ **To raise awareness** about the problem of hunger affecting 9.2% of the world population.
- ✓ **Discuss emerging challenges** to world food production systems like climate change, land degradation, water shortage.

Significance of Theme

- Only 2.5% of total water is fresh.
- **Water Management in Agriculture:** On World Food Day, it is important to note that agriculture alone accounts for 72% of global freshwater withdrawals, underscoring the critical role of water in food production and the significance of its sustainable management
- Freshwater resources per person have declined by 20% in the past decade.
- 2.4 billion people live in water stressed countries .
- On world food day it is important to understand that around 600 million people who depend, at least partially, on aquatic food systems are suffering effects of pollution, ecosystem degradation, and climate change.

Importance of World Food Day

World Food Day educates people globally about hunger, food security, and malnutrition, fostering empathy and understanding.

It provides a platform for governments, NGOs, and institutions to advocate policies enhancing food security, leading to improved agricultural practices and poverty reduction.

World Food Day emphasizes sustainable practices like crop rotation and conservation farming, promoting long-term food security while preserving natural resources.

It inspires individuals and communities to volunteer, support local farmers, and promote nutrition education, making a significant impact against hunger.

Emphasizes diverse diets rich in fruits, vegetables, and whole grains, reducing malnutrition and related health problems.

Provides a platform for discussions on climate change's impact on agriculture, food distribution inequalities, and the need for farming innovations.

Encourages collaboration between nations, NGOs, and organizations, leading to innovative solutions and joint efforts against global hunger.

Acts as a catalyst for year-round efforts, inspiring NGOs and community groups to carry out sustained programs, making hunger eradication a continuous priority.

Challenges in Achieving Global Food Security

Poverty

- Poverty and hunger both fuel and reinforce each other. Poverty prevents access to adequate food resources that inhibits human development.

Increasing population

- Population growth along with increased income has been an important driver of increased food demand.

Inequality

- Hunger is more prevalent in rural areas at 33.3% compared to 26% in areas. The Gender Hunger Gap is still 2.4%.

Dietary Choices

- Preference for meat and exotic foods has led to increased demand for land, water and fertilisers.

Food wastage

- Almost 1 billion tonnes of food- 17% of all food available to consumers worldwide is thrown away each year.

Land use Change

- On World Food Day, it is critical to address that Urbanisation, desertification, salinization, deforestation, commercial plantation are all reducing the availability and variability of food.

Climate Change

- Submergence of coastal lands, land degradation and erratic weather events have reduced food availability.
- Since 2000, flood-related disasters have increased by 134% and the number and duration of draughts increased by 29%

Conflict

- Episodes like Russia-Ukraine conflict, political instability in West Asian and Africa has led to severe malnourishment in these regions and also affected global food supply leading to lower availability and higher prices.

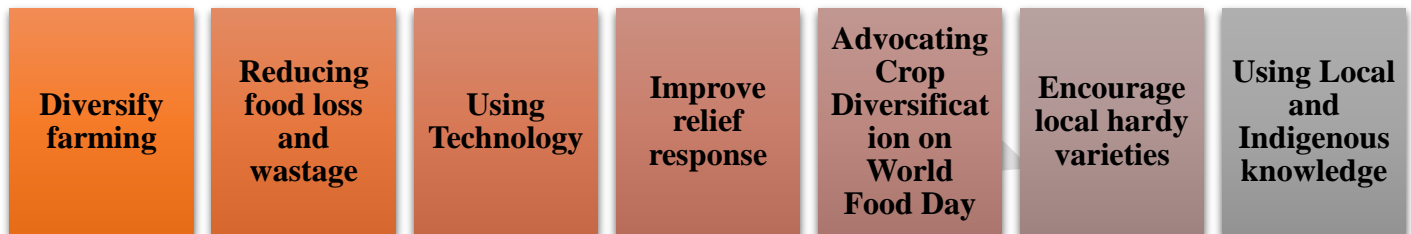
Related Indian Initiatives

Eat Right India and Fit India Movement	Swachh Bharat Abhiyan, Jal Jeevan	Biofortified Varieties	Food Security Act, 2013	APMC (agricultural produce market committee) Acts
Minimum Support Price (MSP)	Farmer Producer Organisations (FPOs)	Amendments in the Essential Commodities Act, 1955	Make India Trans Fat free by 2022	New India @75
	International Year of Millets		Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY)	

- **Eat Right India and Fit India Movement** along with **Swachh Bharat Abhiyan, Jal Jeevan Mission** and other efforts will improve the health of Indians and heal the environment.
- Introduction of 17 new **biofortified varieties** of crops to overcome the shortcomings of the common variety of crops which lacks important micronutrients.
 - Example: MACS 4028 Wheat, Madhuban Gajar, etc.
- Increased ambit and effective implementation of the **Food Security Act, 2013**.
- Amendments to the **APMC (agricultural produce market committee) Acts** to make them more competitive.
- Steps to ensure that farmers get one and a half times the cost as **Minimum Support Price (MSP)**, which along with the government procurement, is an important part of ensuring the country's food security.
- Development of a large network of **Farmer Producer Organisations (FPOs)**.
- **Amendments in the Essential Commodities Act, 1955** to deal with the issue of grain wastage in India.
- The government is making efforts to **make India Trans Fat free by 2022**, a year ahead of the World Health Organisation (WHO) target, in synergy with the vision of **New India @75** (75 years of India's independence).
 - **Trans Fat** is a food toxin present in Partially Hydrogenated Vegetable Oils (PHVOs) (e.g., vanaspati, shortening, margarine, etc.), baked and fried foods.
- FAO supported India's proposal to declare 2023 as the **International Year of Millets**.

- For improving food access, especially for vulnerable populations, the Government of India drives programmes such as the **Pradhan Mantri Garib Kalyan Anna Yojana (PMGKAY)**.

Way Forward



- **Diversify farming:** Farmers should be encouraged to engage in non-crop agriculture (eg. Poultry, fishing, beekeeping) to insure against loss of income.
- **Reducing food loss and wastage:** This helps in stabilising availability even if overall production is reduced.
- **Using Technology:** Technological tools like Early Warning Systems, sensors, drones can help in better decision making by farmers and governments.
- **Improve relief response:** Improved insurance schemes for crops and animals and rapid relief during natural calamities can help reduce distress.
- **Advocating Crop Diversification on World Food Day:** Moving ahead of present monoculture practice to a much more diversified cultivation practice.
- **Encourage local hardy varieties** like coarse cereals and promote research for flood, draught, and salt resistant seed varieties.
- **Using Local and Indigenous knowledge:** Need to respect and catalogue traditional knowledge and develop best practices eg. Kuttanad Below Sea Level Farming system of Kerala.