

STRENGTHENING INDIA'S EASTERN ARM: TRANSFORMING THE REGION WITH A MAJOR INFRASTRUCTURE UPGRADE

Context

- The state of West Bengal and the eastern Indian recently got its first Vande Bharat Express train connecting Howrah to New Jalpaiguri, which will bring down travel time between Kolkata and Siliguri - the gateway to the Northeast India, considerably.
- As a result, the article concentrates on the Purvodaya program, which aims to upgrade important infrastructure in Eastern India in order to support national progress.

Vande Bharat Express

- Also known as Train 18, it is a semi-high-speed, intercity, electric multiple-unit train operated by the Indian Railways.
- Its advanced version is much lighter and capable of reaching higher speed in shorter duration, i.e., accelerates to 100 km per hour in just 52 seconds.

Purvodaya - Accelerated Development of Eastern Region

- **Background:** The Eastern region of India is rich in **resources** like coal, bauxite with **locational advantage** with the presence of **major ports** such as Paradip, Haldia, Vizag, Kolkata.
 - But it **lags** behind other states in terms of Gross State Domestic Product (**GSDP**) **per capita** and Human Development Index (**HDI**) majorly due to poor infrastructure, lack of governance and connectivity.
- **Mission Purvodaya:** It was kickstarted in 2020 to accelerate the development of Eastern India with the establishment of an **integrated steel centre** in Kolkata, West Bengal.
 - It was focused on the **eastern states** of India, namely Odisha, Jharkhand, Chhattisgarh, West Bengal, and northern Andhra Pradesh, which own chromite, bauxite, and dolomite reserves.
- **Focus area:** Mission Purvodaya has now become a framework to transform logistics, infrastructure and multi-modal connectivity in the eastern part of India.
 - **For example**, projects like the **freight corridor**, **Bharatmala** for roadways, and **Sagarmala** for waterways will further drive economic growth and employment opportunities in the eastern region.

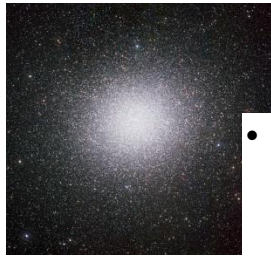
- **The outlay for projects:** In the state of West Bengal, Rs 10,262 crore has been earmarked in FY 22-23 which is more than double compared with Rs 4,380 crore on average between FY 2009-10 and FY 2013-14.
- **Progress:** The progress is evident as West Bengal, Bihar, Jharkhand and Odisha combined have more than 4,700 km of **railway track commissioned** and 7,277 km of **railway lines electrified** in the last eight years.
 - Also, **37 world-class stations** being developed in the eastern region will revolutionise the transportation of people and goods in tune with the surge in future demand.
 - Also, the highest number of terminals are planned in the Kolkata-Haldia stretch.

A rising east

- **Logistics growth: Bharatmala Pariyojana** will develop 2,500 km of new, greenfield, access-controlled **expressways** in the eastern region in the next three to four years.
 - Around 1,200 **flyovers** over rail and underpasses are facilitating seamless road movement.
- **Maritime India Vision (MIV) 2030:** Under this, **ports** on the east coast and **Ro-Ro services** will bring new economic opportunities and benefit the local farming community across West Bengal, Bihar and Jharkhand by transporting goods like mango, milk, silica sand and fish.
 - MIV 2030 visions an overall investment of INR 3 lakh– 3.50 lakh crore across ports, shipping, and inland waterways categories.
- **Boosting digital connectivity:** Robust digital infrastructure networks are being envisioned in eastern states to ensure full saturation of telecom services in India.
 - **Bharat Net** implementation strategy was also revised to improve the internet connectivity in the Northeast states.
 - It includes creation, operation, upgradation, utilisation and maintenance of digital infrastructure in India's inhabited villages and other remote places.
- **Infrastructure development:** 100 lakh crore infrastructure investment was announced by the Government in 2020 for the next 5 years.
 - It will result in an additional boost to construction and infrastructure through various initiatives such as **Pradhan Mantri Awas Yojana** (Housing), **Jal Jeevan Mission** (Piped drinking water), etc.

OMEGA CENTAURI

Astronomers and scientists at the Indian Institute of Astrophysics (IIA), while studying the Omega Centauri found that hot stars and white dwarfs emitted less ultraviolet radiation than expected.



About:

- A team of Scientists at the Indian Institute of Astrophysics detected strange hot stars in the Globular clusters using the Ultra Violet Imaging Telescope (UVIT) images on AstroSat (India's first dedicated space observatory, which has been operating since 2015).

What are Globular clusters?

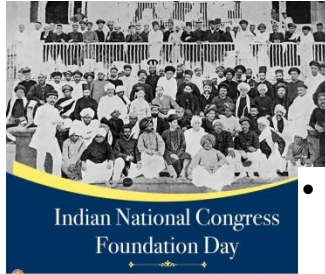
- Globular clusters are spherical **aggregates of several thousand to millions of stars** bound by gravity. These systems are thought to have formed early on in the Universe and can serve as perfect astrophysical laboratories for astronomers to understand how stars evolve through various phases.
- Omega Centauri is a globular cluster in the constellation of Centaurus that was first identified as a non-stellar object by **Edmond Halley** in 1677.
- Located at a distance of 17,090 light-years, it is the largest-known globular cluster in the Milky Way at a diameter of roughly 150 light-years.

What is Galaxy?

- A galaxy is a **huge collection of gas, dust, and billions of stars** and their solar systems bound together by gravity.
- Milky Way, is stuffed with between 100 billion and 400 billion other stars, many of them with planets of their own. The Milky Way got its name from the way it looks from the ground: like a streak of spilt milk across the sky

CONGRESS FOUNDATION DAY

The Indian National Congress (INC), India's largest opposition party, marked its 138th foundation day on December 28.



About:

How the Congress was founded?

- The English bureaucrat **Allan Octavian Hume** or **AO Hume** is credited as the founder of the organisation.
- On December 28, 1885, 72 social reformers, journalists and lawyers congregated for the **first session of the INC at Gokuldas Tejpal Sanskrit College, Bombay.**
- At that point, the aim of this group was not to demand independence from the ongoing colonial rule but to influence the policies of the British government in favour of Indians.

Transformation towards the demand for independence

- Over the next few years, the party's work continued, to shift the colonial administrators' attitudes and policies on the rights and powers allowed to Indians.
- The party largely consisted of educated, upper-class people who were likely to have studied abroad. But with time, this **grouping became more diverse, as the organisation began setting up provincial organisations.**
- **At its Eleventh Session in 1895**, there was an increase in the number of delegates from 1,163 the previous year to 1,584. **President Surendranath Banerjea** congratulated the Congress for bringing together "the scattered element of a vast and diversified population."

Splits and reconvening

- **In Surat in 1906**, the divisions between the 'moderates' led by Gopal Krishna Gokhale and Surendranath Banerjea, and the 'extremists' led by Bal Gangadhar Tilak came to the fore and there was a split. While Tilak and Lala Lajpat Rai wanted the Congress to boycott the visit of the Prince of Wales in protest against the Bengal Partition a year prior, the moderates opposed any such move.
- But by 1915, the **Bombay session saw these two groups coming together again as one.**

PRALAY MISSILE

In a major boost to the striking capabilities of the Indian armed forces, the defense ministry has recently cleared a proposal to purchase 120 Pralay missiles for the Indian Air Force and Army.



About:

- Pralay is an **indigenous short-range ballistic surface-to-surface missile**. The missile will be **India's first tactical quasi-ballistic missile** and will give the armed forces the capability to hit enemy positions and key installations in actual battlefield areas.
- **Developed by:** The solid-fuel, battlefield missile developed by the Defence Research Development Organisation (DRDO) is based on Prithvi Defence Vehicle from the Indian ballistic missile programme.
- **Features:**
 - Pralay' is powered with a solid propellant rocket motor and other new technologies. The missile guidance system includes state-of-the-art navigation and integrated avionics, according to the DRDO.
 - The advanced missile has been developed in a way to be able to defeat interceptor missiles. It has the ability to change its path after covering a certain range mid-air.
 - It is capable of **carrying a conventional warhead of about 350 kg to 700 kg**, which gives it a deadly punitive capability.
- **Range:** The canisterised Pralay missile, has a range of **150-500 kilometres**.
- **Ballistic missiles:** They are initially powered by a rocket or series of rockets in stages, but then follow an unpowered trajectory that arches upwards before descending to reach its intended target at high speed. Unlike intercontinental ballistic missiles that exit the Earth's atmosphere, short-range ballistic missiles stay within it.

BRAHMOS

Recently, The Indian Air Force (IAF) successfully test-fired the extended Range Version of Brahmos missile.



About:

- The missile achieved the desired mission objectives in the Bay of Bengal region. With this, IAF has achieved a significant capability boost to carry out precision strikes from SU-30MKI aircraft **against land or sea targets** over very long ranges.
- The capability of **striking the targets** located at **around 350 kilometres** compared to around 290 kilometres for the initial version.
- **The first test** of the initial version of the Brahmos Air Launched Cruise Missile was **conducted in 2017**.

What are Brahmos missiles?

- Brahmos is a joint venture between the **Defence Research and Development Organisation of India and NPOM of Russia**. It is named after the rivers **Brahmaputra and Moskva**.
- It is a **two-stage**, solid propellant engine in the first stage and a liquid ramjet in the second.
- **It can be launched from land, air, and sea** and multi a capability missile with pinpoint accuracy that works both day and night irrespective of the weather conditions.
- It operates on the "**Fire and Forgets**" **principlee** it does not require further guidance after launch.
- These are called "**standoff range weapons**",e fired from a range far enough to allow the attacker to evade defensive counter-fire.
- Brahmos is one of the fastest cruise missiles currently operationally deployed with the speed of Mach 2.8, which is nearly 3 times more than the speed of sound.

REMOTE VOTING FOR MIGRANT WORKERS

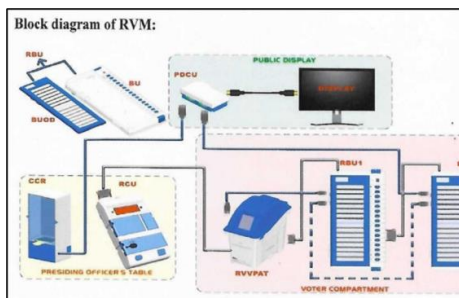
Why in news?

- The Election Commission (EC) announced that it is ready to pilot remote voting for domestic migrants, so they don't have to travel back to their home states to vote.
- For this, the commission has developed a prototype for a Multi-Constituency Remote Electronic Voting Machine (RVM).
- The ECI will demonstrate the functioning of the remote EVM on January 16 to the eight national and 57 state political parties.

What is Remote Electronic Voting Machine (RVM)?

- In order to enable remote voting for domestic migrants, a technological solution was proposed in the form of Remote Electronic Voting Machine (RVM).
- RVM relies on the creation of a robust electoral roll and identification mechanisms (to stop duplicate voting), and allow voters to vote remotely, in a safe and controlled environment.
- It was developed with the assistance of Bharat Electronics Limited (BEL) and the Electronics Corporation of India Limited (ECIL). It is based on the currently used EVM system.

How does RVM work?



- The RVMs are stand alone, non-networked systems, effectively providing the voter the same experience as currently used EVMs.
- They will be set up in remote locations outside the state under similar conditions as current polling booths.
- The unique feature of RVMs is that a single Remote Ballot Unit (RBU) will be able to cater to multiple constituencies (as many as 72) by using a dynamic ballot display board instead of the usual printed paper ballot sheet on EVMs.
- The Ballot Unit Overlay Display (BUOD) will show the requisite candidates based on the constituency number read on the voter's Constituency card.
- A barcode scanning system will be used to read these cards.

Proposed remote voting process	
<p>Registration of remote voter:</p> <ul style="list-style-type: none"> ➤ Remote voter has to pre-register for remote voting facility by applying online/offline ➤ Voter details will be verified at home constituency and remote voting request approved ➤ Special multi-constituency remote voting polling stations will be set up in places of current residence. <p>After verifying identity of the voter, presiding officer scans his/her constituency card</p> <ul style="list-style-type: none"> ➤ Ballot sheet details for the 	<p>respective constituency are displayed on using public display unit and also on RBU</p> <ul style="list-style-type: none"> ➤ Display will change dynamically based on the constituency card read by CCR ➤ Remote voter presses candidate button of his choice on RBU ➤ Vote is recorded along with state code, constituency number and candidate number on RBU <p>RVPAT prints the state code and constituency code on the paper slip, along with candidate and symbol voted for</p>

What will be the voting process under RVM?

- The voting process will be as follows: after verifying a voter's identity, their constituency card will be read with a public display showing the constituency details and candidates.
- This will also be displayed privately, on the BUOD in the RVM's RBU.
- The voter will then vote and each vote will be stored constituency-wise in the control unit of the voting machine.
- The VVPAT system is expected to work along the same lines with the new technology.

News Summary

Why EC is keen on remote voting for domestic migrants?

- Migration based disenfranchisement is indeed not an option in the age of technological advancement.
- The voter turnout in General Elections 2019 was 67.4 % and the Election Commission of India is concerned about the issue of over 30 Crore electors not exercising their franchise and also differential voter turnout in various States/UTs.
- One key reason for low voter turnout could be migrants not going home to exercise their franchise.
 - As per Census 2011, 45.36 crore Indians, or 37% of the population are migrants, but 75% of them are migrants on account of marriage or other family-related reasons.
- The poll panel proposes to address this by using technology so that migrants can vote remotely and also stay connected with their roots.

What will be the benefits of RVM?

- Many times, migrants are reluctant to get themselves enrolled at their place of work for various reasons such as:
 - frequently changing residences,
 - not enough social and emotional connect with the area of migration,
 - unwillingness to get their name deleted in electoral roll of their home/native constituencies as they have permanent residence/property etc.
- The remote voting initiative, if implemented, can lead to a social transformation for the migrants and connect with their roots. It will also result in better voter turnouts.

What are the different challenges that would be faced by RVM?



CROSS & CLIMB ROHTAK



- There is no accurate number of migrants. Also, in 2017, the ECI had told the SC that it was not feasible to track movement of domestic migrants to allow remote voting.
 - Also, migrants are not a uniform and defined class, with fluid identities, locations and situations.
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