

## World Bank approves \$250 mn loan for road safety

(GS Paper 3, Economy)

### Why in news?

- Recently, the **World Bank has approved a \$250 million loan** to support the Government of **India's road safety programme for seven States** under which a single accident reporting number will be set up to better manage post-crash events.
- The \$250 million variable spread loan from the International Bank for Reconstruction and Development (IBRD) has a maturity of 18 years including a grace period of 5.5 years.



### States covered:

- The **India State Support Program for Road Safety**, financed by the World Bank, will be implemented in **Andhra Pradesh, Gujarat, Odisha, Tamil Nadu, Telangana, Uttar Pradesh and West Bengal.**

### India State Support Program for Road Safety:

- The project will also establish a national harmonised crash database system in order to analyse accidents and use that to construct better and safer roads.
- It will also fund network expansion of basic and advanced life support ambulances and training of first responder caregivers to road crash victims on the spot.
- The project will also provide incentives to the States to leverage private funding through Public Private Partnership (PPP) concessions and pilot initiatives.

### Burden of road crashes on Indian economy:

- According to a World Bank study, road crashes are estimated to cost the Indian economy between 5% to 7% of GDP a year.

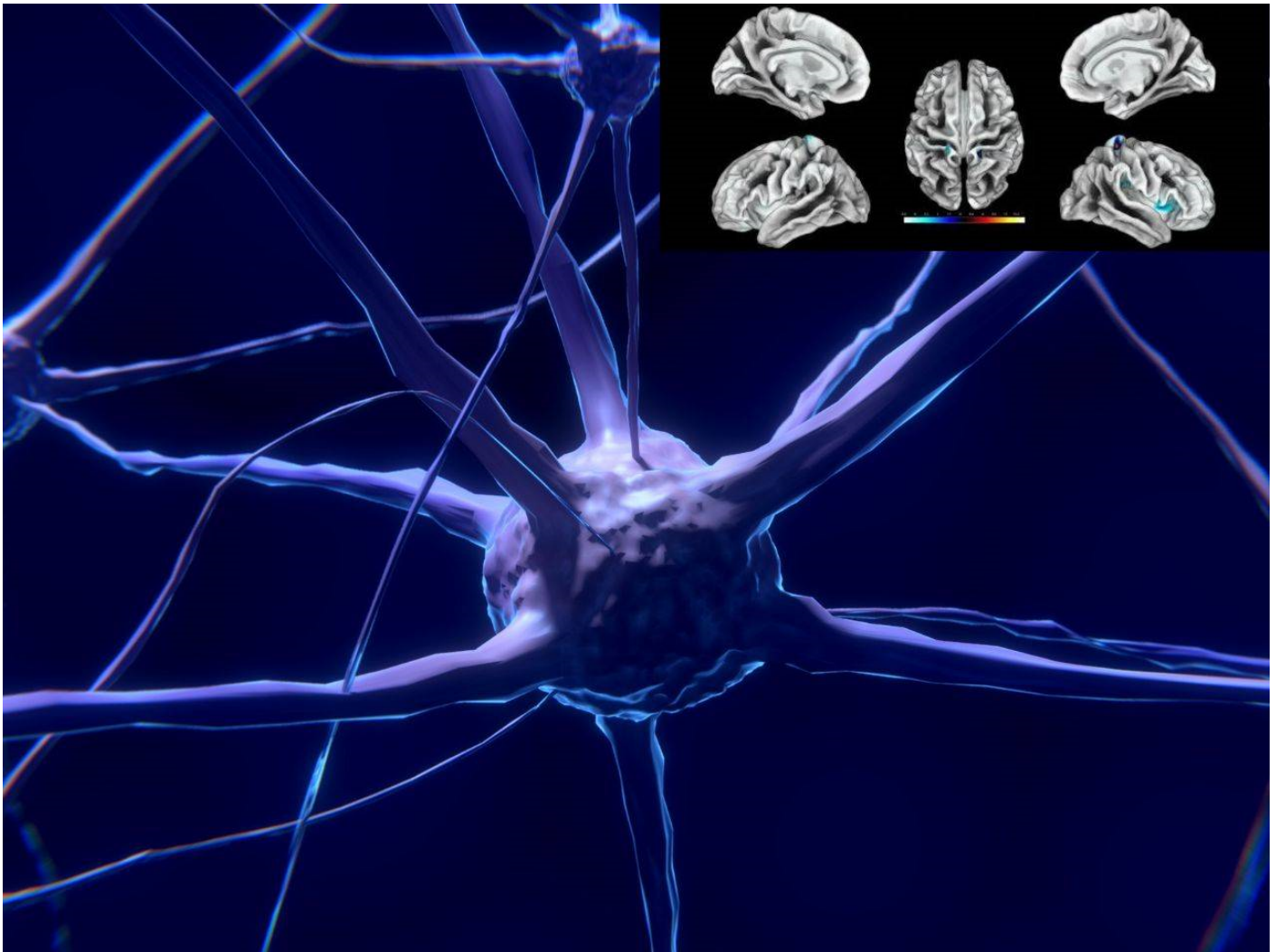
- Each year road accidents in India kill about 1,50,000 people and injure another 4,50,000. More than half of the victims are pedestrians, cyclists, or motorcyclists and almost 84% of all fatalities are among road users between the working ages of 18-60 years.
- **Poor households that account for over 70% of crash victims** bear a higher proportion of the socio-economic burden of road crashes due to loss of income, high medical expenses and limited access to social safety nets.

## Researchers at IISc. develop algorithm to study connectivity in brain

(GS Paper 3, Science and Tech)

### Why in news?

- Researchers at Indian Institute of Science (IISc.) have developed a new **graphic processing unit (GPU)** based machine learning algorithm called **Regularised, Accelerated, Linear Fascicle Evaluation (ReAI – LiFE)**.
- It will help to obtain a better understanding and in the prediction of connectivity between different regions of human brain.



### Use of ReAI – LiFE:

- This algorithm can help analyse extensive data generated from diffusion Magnetic Resonance Imaging (dMRI) scans which helps scientists study the **connectivity in the brain at a speed, which is 150 times higher than a regular desktop computer** or existing state-of-the-art algorithms.
- With the study, researchers tried to study the wiring of different parts of the brain which helps in performing various computations.
- While these patterns can be studied in animals through invasive techniques, in humans, dMRI is used to infer white matter patterns.

- Through it, scientists can track the movement of molecules to create a comprehensive map of connectome, which is a **network of fibres across the brain**.
- The accurate identification of information networks, conventional algorithms matched the predicted dMRI signals from the inferred connectome with the observed dMRI signal.

**Upgradation of LiFE (Linear Fascicle Evaluation):**

- A similar algorithm called **LiFE (Linear Fascicle Evaluation)** was developed earlier to carry out optimisation, but since it worked on traditional CPUs, the computation was time-consuming.
- In the new study, they tweaked their algorithm to cut down the computational effort involved in several ways, including removing redundant connections, thereby improving upon LiFE’s performance significantly.
- To speed up the algorithm further, the team also redesigned it to work on specialised electronic chips which helped them analyse data at speeds 100-150 times faster than previous approaches.

**Way Forward:**

- This algorithm will have various applications in the field of health, including disease diagnosis and behavioural studies.
- While certain patterns of brain connectivity can explain the inter-individual differences in the attention test scores which help determine behaviours, a previous version of the same algorithm can also help distinguish between Alzheimer’s patients and healthy age matched controls just by measuring brain connectivity.

**National e-Governance Service Delivery Assessment (NeSDA) 2021 report**  
**(GS Paper 2, Polity and Governance)**

**Why in news?**

- Recently, the National e-Governance Service Delivery Assessment (NeSDA) 2021 report was released.
- It is an initiative of the Centre’s Department of Administrative Reforms and Public Grievances.
- Rajasthan has been rated a leading state in delivering online services to citizens Grievances.



**National e-governance service delivery assessment (NeSDA) R**

### Parameters:

- NeSDA 2021 covers services in seven sectors: finance, labour and employment, education, local governance and utility services, social welfare, environment, and tourism.

### The portals assessed were classified into two categories:

- One is the **state/UT/central ministry portal**: the one that provides single-window access to information and service links. These portals were assessed on **four parameters**: accessibility, content availability, ease of use and information security, and privacy.
- The second category comprises the **state/UT/central ministry services portals**, which focus on the digital delivery of services and give service-related information.
- They were assessed on **three additional parameters**: end-service delivery, integrated service delivery, and status and request tracking.
- The categories in 2021 were “North-East & Hill States” (10), “Union Territories” (8), “Remaining States -- Group A” (10), and “Remaining States -- Group B” (8).

### Rajasthan top ranker:

- **Rajasthan ranks first in state/UT service portals** in Group B across all sectors (55 services provided online). The score in 2019 was 0.61, which increased to 0.76 in 2021.
- The sectors that saw improvement include finance, labour and employment, education, local governance and utility services, and environment.
- The state ranks second in finance (14 services provided online) with a score of 0.68, and first in labour and employment (seven services provided online) with 0.91.
- Similarly, it ranks first in education (four services provided online) with 0.64.
- It stands first also in social welfare (including health, agriculture, and home security) with 0.61; second in local governance and utility services (13 services included online) with 0.75; third in environment (four services provided online) with 0.84, and first in tourism (two services provided online) with 0.88.
- Rajasthan comes eighth in the state portal overall score, which from 0.36 in 2019 increased to 0.50 in 2021.

### Other winners:

- Nagaland was in first position in “North-East and Hill” states.
- Jammu & Kashmir was ranked first among the Union Territories.
- Kerala was first in “Remaining States - Group A.
- Odisha came on top among “Remaining states - Group B.

## Sterlite Copper plant in Thoothukudi

(GS Paper 3, Economy)

### Why in news?

- The teams from **Sterlite Copper, a part of the Vedanta Group** have been running around to get its legal issues fixed in order to re-open its plant at Thoothukudi which was closed in 2018.
- But now even as the case is in the Supreme Court, the company suddenly announced that it is selling off the plant.
- Vedanta, in conjunction with Axis Capital, has invited expression of interest (EOI) for the sale of its copper plant along with its other units, which includes the smelter complex (primary and secondary), sulphuric acid plant and copper refinery among others.

### Why is the Sterlite copper plant up for sale?

- Ever since the **plant was sealed in 2018 by the Tamil Nadu government** after seeking advice from the Tamil Nadu Pollution Control Board (TNPCB), the company has been running from pillar to post to re-open the plant.
- Sterlite Copper has also been incurring a loss of five crore per day since it went under lock and key. Even if the Supreme Court allowed them to re-open the company, it would need around ₹800 to ₹1,000 crore to revamp the plant.

### Why was the plant under lock and key?

#### Fisherman Issue:

- The fishermen were worried that the effluents discharged by the plant would pollute the sea which will in turn ruin their livelihoods.
- In **2010, the Madras High Court ordered immediate closure of the plant** for not complying with environmental norms. The Supreme Court later stayed the High Court's order.



#### **Sulphur dioxide leak:**

- The company got into troubled waters again in 2013 after a sulphur dioxide leak.
- But the Supreme Court allowed them to function after the payment of a **fine of ₹100 crore for polluting land and water** by running the company without approval for a considerable period of time.

#### **Protest by local:**

- In 2018, after the company announced that it would be enhancing its capacity, large-scale protests from local and neighbouring localities broke out.
- In May, the protests turned violent and the police open fired which led to the death of 13 civilians. A week later the Tamil Nadu government sealed the plant.

#### **What was the impact of the closure of the plant?**

- India has shifted from being a large net exporter of refined copper to now being a **net importer of copper during the last four years** since the shutdown of the Tuticorin plant.
- According to data provided by Care Ratings, **India is now importing copper at a historically higher price close to around \$9600 per tonne** which is around 50% higher as compared to the average prices of copper when India was a net exporter of the same (around \$6500 per tonne).
- **Sterlite was a major domestic supplier of phosphoric acid** with a capacity of 2,20,000 metric tonnes, which is a key raw material for fertilizer manufacturing companies. These fertilizer units were impacted due to stoppage of supplies and had to start importing.
- While operational, it was the largest supplier of sulphuric acid (used in detergent and chemical industries) in Tamil Nadu, and had a 95% share of the market.

#### **Why was a part of the Sterlite plant allowed to function during the COVID-19 pandemic?**

- On April 27, 2021, when the second wave of the pandemic was at its peak the Supreme Court granted permission to re-open two oxygen plants at Sterlite Copper's Thoothukudi plant.
- While granting permission, it noted that this was done because of national need and that it does not mean they are favouring the Vedanta Group.
- The Tamil Nadu government immediately constituted a seven-member committee headed by the then district collector to oversee proper functioning of the oxygen plants.