1. State ranking index to assess implementation of the Targeted Public Distribution System (TPDS)

Topic: Reports and Indices

IMPLEMENTING FOOD SECURITY

How the 20 'general category' states ranked in terms of NFSA implementation

TOP THREE

Rank	State	Index score
1	Odisha	0.836
2	Uttar Pradesh	0.797
3	Andhra Pradesh	0.794

BOTTOM THREE

18	Delhi	0.658
19	Chhattisgarh	0.654
20	Goa	0.631

In News: The Government of India has come up with a first-ever state ranking index to capture the implementation of the Targeted Public Distribution System (TPDS) under the National Food Security Act (NFSA).

More on the Topic:

- Overall, Odisha, Uttar Pradesh and Andhra Pradesh scored the highest and secured the top three positions in the Index.
- Tripura, Himachal Pradesh and Sikkim secured the top positions among special category states.

The states and UTs were ranked for 2022 on the basis of three parameters:

- **NFSA coverage, rightful targeting and implementation** of all provisions under the Act
- **The delivery platform** while considering the allocation of food grains, their movement and last-mile delivery to fair price shops
- **Nutrition initiatives** of the department

National Food Security Act (NFSA):

- NFSA is **a crucial policy instrument** to ensure food security. It covers nearly 800 million people.
- "However, NFSA's implementation through TPDS has not been uniform in the country. While some states and Union territories lead, others are yet to pick up in terms of coverage, beneficiary satisfaction, digitisation and overall system efficiency.

Important Provisions of the Act:

- The TDPS covers **50% of the urban population and 75% of the rural population,** with uniform entitlement of 5 kg per person per month.

- However, the poorest of the poor households will continue to receive 35 kg of food grains per household per month under Antyodaya Anna Yojana (AAY).
- The identification of eligible households is to be done by States/UTs under TDPS determined for each State.
- Children in the age group of **6 months to 14 years and pregnant women and lactating mothers will be entitled to meals as per prescribed nutritional norms** under Integrated Child Development Services (ICDS) and Mid-Day Meal (MDM) schemes.
- Pregnant women and lactating mothers will also be receiving maternity benefit of Rs. 6,000.
- For the purpose of issuing of ration cards, **eldest woman of the household of age 18 years or above is to be the head of the household.**
- In case of non-supply of entitled food grains or meals, **there is a provision for food security allowance to entitled beneficiaries.**
- In order to ensure transparency and accountability, provisions have been made for disclosure of records relating to PDS, social audits and setting up of Vigilance Committees.

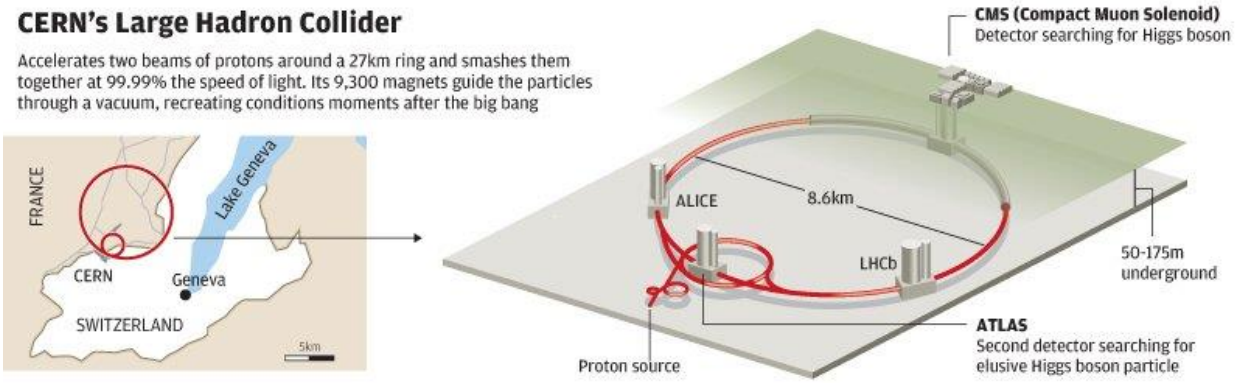
Targeted Public Distribution System (TPDS):

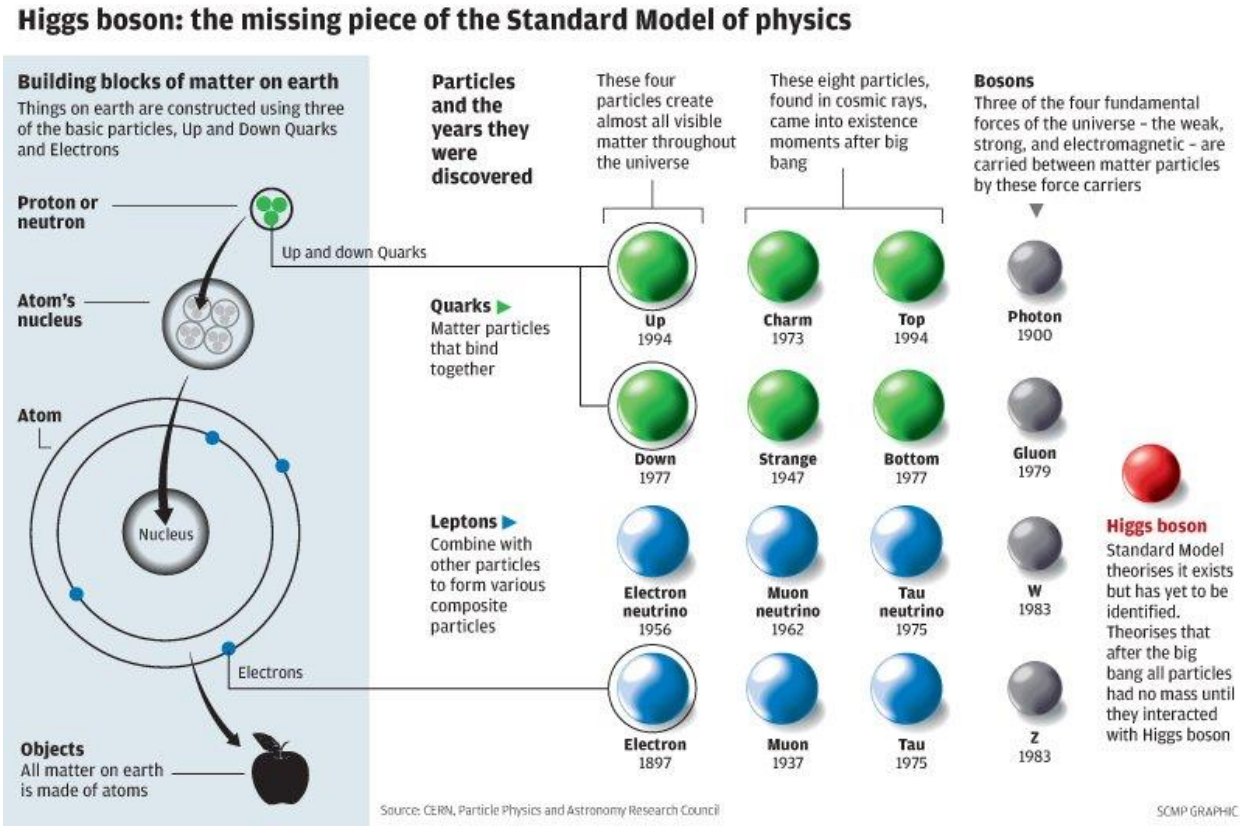
- The Targeted Public Distribution System (TPDS) came into operation in June 1997 under the Government of India with a focus on the poor. Under the operations of TPDS, the beneficiaries were divided into two categories: Households Below the poverty line (BPL) And Households Above the poverty line (APL)
- The objectives of the Targeted Public Distribution System (TPDS) **aims at providing food security to poor and vulnerable people.**
- It also provides **subsidized fuel for household use in cooking and lighting.**
- It is the largest food distribution programme in the world—which alone accounts for 34 per cent of all cardholders in our sample.

Source: Indian Express

2. Large Hadron Collider

Topic: Science and Technology





In News: Scientists working with the Large Hadron Collider (LHC) have discovered three subatomic particles never seen before as they work to unlock the building blocks of the universe, the European nuclear research centre CERN.

More on the Topic:

- The 27 kilometre-long (16.8 mile) LHC at CERN is the machine that found the Higgs boson particle, which along with its linked energy field is thought to be vital to the formation of the universe after the Big Bang 13.7 billion years ago.

- Present findings include a new kind of "pentaquark" and the first-ever pair of "tetraquarks", adding three members to the list of new hadrons found at the LHC.
- They will help physicists better understand how quarks bind together into composite particles.

About Quaks:

- Quarks are elementary particles **that usually combine in groups of twos and threes to form hadrons** such as the protons and neutrons that make up atomic nuclei.
- More rarely, however, **they can also combine into four-quark and five-quark particles, or tetraquarks and pentaquarks.**

Large Hadron Collider:

- The Large Hadron Collider is a giant, complex machine built to study particles that are the smallest known building blocks of all things.
- Structurally, it is a 27-km-long track-loop buried 100 metres underground on the Swiss-French border.
- In its operational state, **it fires two beams of protons almost at the speed of light in opposite directions inside a ring of superconducting electromagnets.**
- Scientists will record and analyse the data, which are expected to throw up evidence of "new physics" — or physics beyond the Standard Model of Particle Physics, which explains how the basic building blocks of matter interact, governed by four fundamental forces.

Source: Indian Express

---

3. Lancang-Mekong Cooperation (LMC)

Topic: Reports and Indices

(Source: State Bureau of Surveying and Mapping, designed by Pamela Tobey)

In News: Myanmar held its first multinational ministerial meeting, of LMC countries, since military takeover.

More on the Topic:

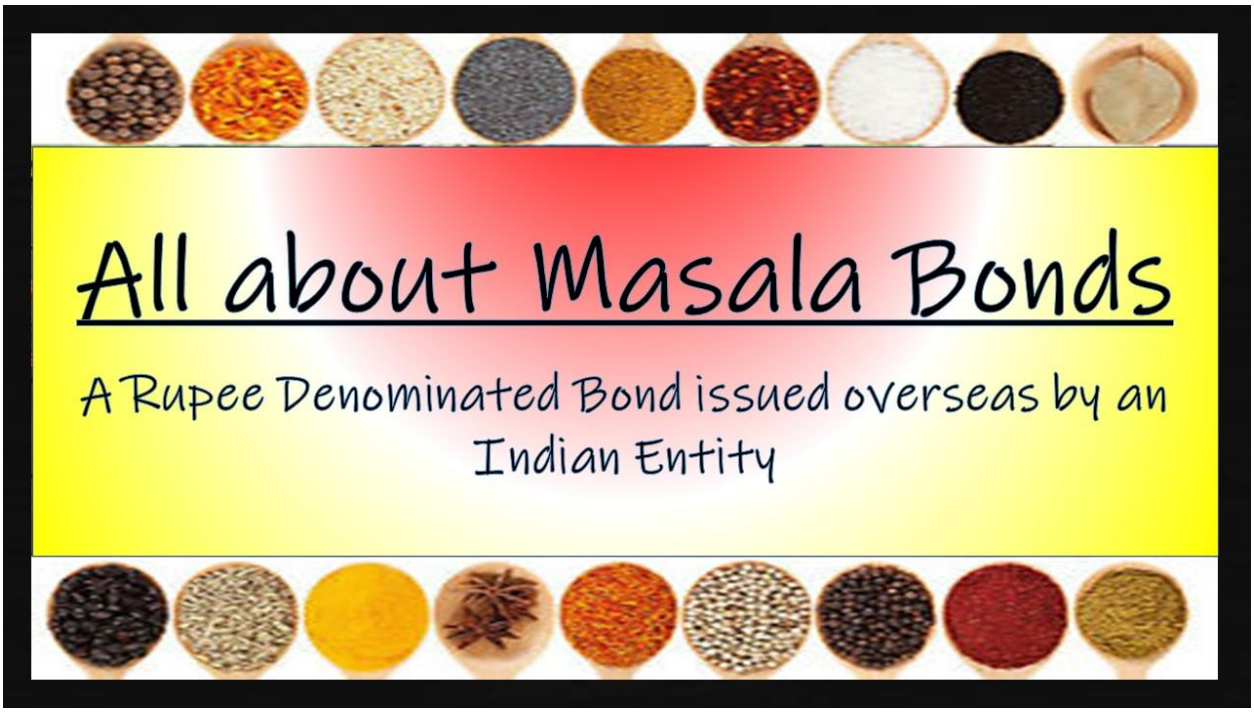
- Lancang-Mekong Cooperation grouping is **a Chinese led initiative.**
- It was established in 2016 for **cooperation between the riparian states of the Lancang River and Mekong River.**
- The Lancang is the part of the Mekong that flows through China.
- Cambodia, Laos, Myanmar, Vietnam and Thailand are five downstream countries of the Mekong River.
- The central purpose of the format is for **China to manage water flow from its hydropower dams with the other riparian states.**
- **It aims to push forward pragmatic projects to benefit the six countries.**
- **China has built seven mega dams on the Lancang-Mekong** and according to the US-based NGO International Rivers, 20 are under construction or planned in Yunnan, Tibet and Qinghai.
- LMC Special Fund was created in 2016 to aid in small and medium-sized projects by the Lancang-Mekong countries.

Source: Indian Express

---

4. Masala Bonds

Topic: Environment and Ecology



In News: The Reserve Bank of India has recommended that the government approach the Brics Bank, now known as the New Development Bank (NDB), to sell rupee-denominated bonds in overseas markets.

More on the Topic:

- Masala Bonds were introduced in India in 2014 by **International Finance Corporation (IFC).** The IFC issued the first masala bonds in India to fund infrastructure projects.
- **They are debt instruments** which help to raise money in local currency from foreign investors.
- **Both the government and private entities can issue these bonds.** Investors outside India who would like to invest in assets in India can subscribe to these bonds.
- Any resident of that country can subscribe to these bonds which are members of the Financial Action Task Force.

How it Benefits the Issuer?

- Indian entities or companies issue masala bonds outside India to raise money. The issue of these bonds is in Indian currency rather than local currency.
- Thus, if the rupee rate falls, the investor will bear the loss.

Source: Indian Express

---

5. Autonomous Navigation facility, TiHAN

Topic: Science and Technology

In News: India's first Autonomous Navigation facility, TiHAN was at the IIT Hyderabad campus recently.

More on the Topic:

- Developed at a budget of Rs. 130 crores by the Union Ministry of Science & Technology, TiHAN (Technology Innovation Hub on Autonomous Navigation) is a multidisciplinary

initiative that will make India a global player in the futuristic and next generation 'smart mobility' technology.

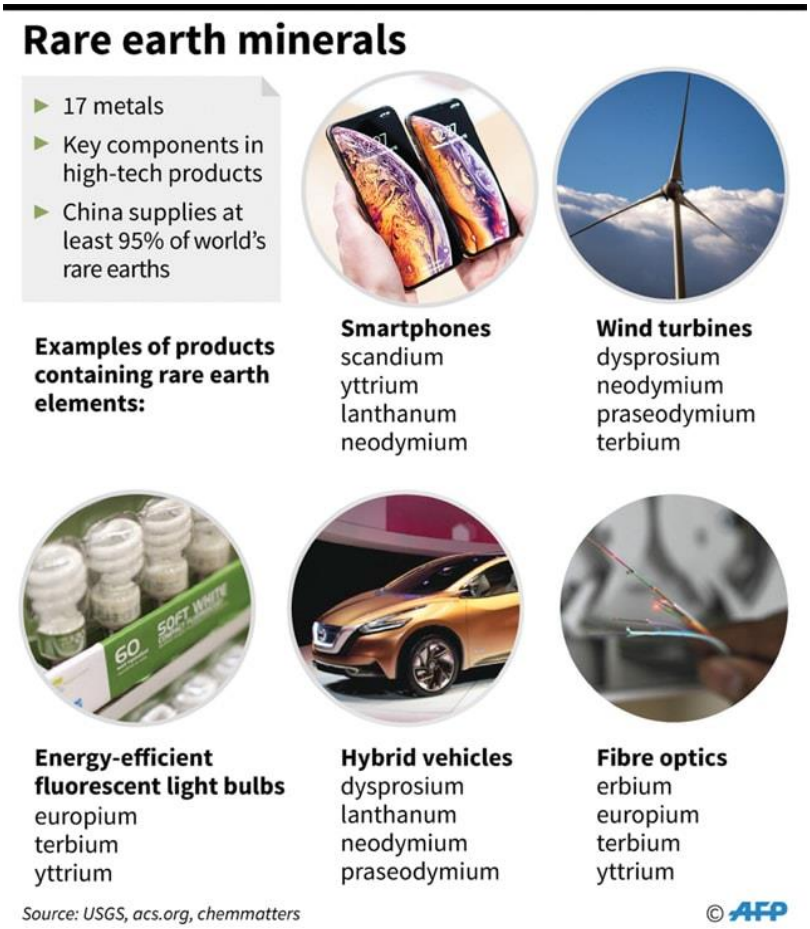
- **TiHAN is a Testbed that will provide a unique platform for high quality research** between academia, industry and R&D labs both at the national and international level, thus making India a global leader in autonomous navigation technologies.
- This testbed includes simulation platforms that allow for non-destructive testing of algorithms and prototypes. Several real-world scenarios can be emulated on the testbed.
- In terrestrial systems, a few examples of these scenarios are Smart Cities, Signalised Intersections, Autonomous Vehicle Interactions with Cyclists and Pedestrians, Wireless Networking among vehicles and Road-Side Units, etc.
- The autonomous vehicle testbed also provides dummy signboards, pedestrians, overpasses, and bikers to test all real-world conditions.

Source: Business Standard

---

6. Rare Earth Minerals

Topic: Science and Technology



In News: India and Australia has discussed about the cooperation in rare earth minerals, especially lithium.

More on the Topic:

- Rare earth elements (REE) are a group of seventeen chemical elements that occur together in the periodic table, 15 lanthanides (Z=57 through 71), Scandium and Yttrium.
- **They are not rare in quantity, in fact, some of them are very abundant in earth's crust for example cerium is more abundant than copper and lead. However, their extraction is very difficult.**
- All are metals and have many similar properties which often cause them to be found together in geologic deposits. That is why they are also known as rare earth metals.
- They are also referred to as "rare earth oxides" because many of them are sold as oxide compounds.
- Samarium (Sm), scandium (Sc), terbium (Tb), thulium (Tm), ytterbium (Yb), yttrium (Y), cerium (Ce), dysprosium (Dy), erbium (Er), europium (Eu), gadolinium (Gd), holmium (Ho), lanthanum (La), lutetium (Lu), neodymium (Nd), praseodymium (Pr), promethium (Pm).

Significance of Rare Earth Minerals:

- They have **distinctive electrical, metallurgical, catalytic, nuclear, magnetic and luminescent properties.**
- They are strategically very important **due to their use of emerging and diverse technologies which cater to the needs of current society.**
- Its usage range from daily use (e.g., lighter flints, glass polishing mediums, car alternators) to high-end technology (lasers, magnets, batteries, fibre-optic telecommunication cables).
- Even **futuristic technologies** need these REMs (For example high-temperature superconductivity, safe storage and transport of hydrogen for a post-hydrocarbon economy, environmental global warming and energy efficiency issues).
- The global demand for REMs has increased significantly in line with their expansion into high-end technology, environment, and economic areas

Source: Hindu
