Open Network for Digital Commerce

For Prelims: Open Network for Digital Commerce (ONDC), Micro, Small and Medium enterprises (MSMEs), Unified Payments Interface (UPI).

For Mains: Open Network for Digital Commerce (ONDC), its potential, challenges and way forward

Source: TOI

Why in News?

Recently, **Open Network for Digital Commerce (ONDC)** recorded an all-time high of **8.9 million transactions** across retail and ride-hailing segments in May 2024, representing a **23% month-on-month increase** in total transaction volume.

What is ONDC?

- **About:**
  - Open Network for Digital Commerce (ONDC) is a network of **interconnected e-marketplaces** through which sellers, including brands, can list and sell their products **directly to customers bypassing any middlemen** or intermediaries.
    - It allows transitioning from a platform-centric model to an **open source network for buying and selling goods and services.**
  - It was launched in **2021** under the Department for Promotion of Industry and Internal Trade (DPIIT) by the **Ministry of Commerce** as part of the Digital India initiative.
  - It offers delivery services for groceries, home decor, cleaning essentials, food delivery and other products.
  - It is a **not-for-profit organisation** that provides a network enabling local digital commerce stores across various industries to be discovered and engaged by any network-enabled applications.
  - Similar to the Unified Payments Interface (UPI), ONDC aims to level the **operational playing field** among e-commerce platforms.
  - The Quality Council of India has been tasked with **integrating e-commerce platforms through this open-source technology network**, allowing users to modify, enhance, or improve the original code.

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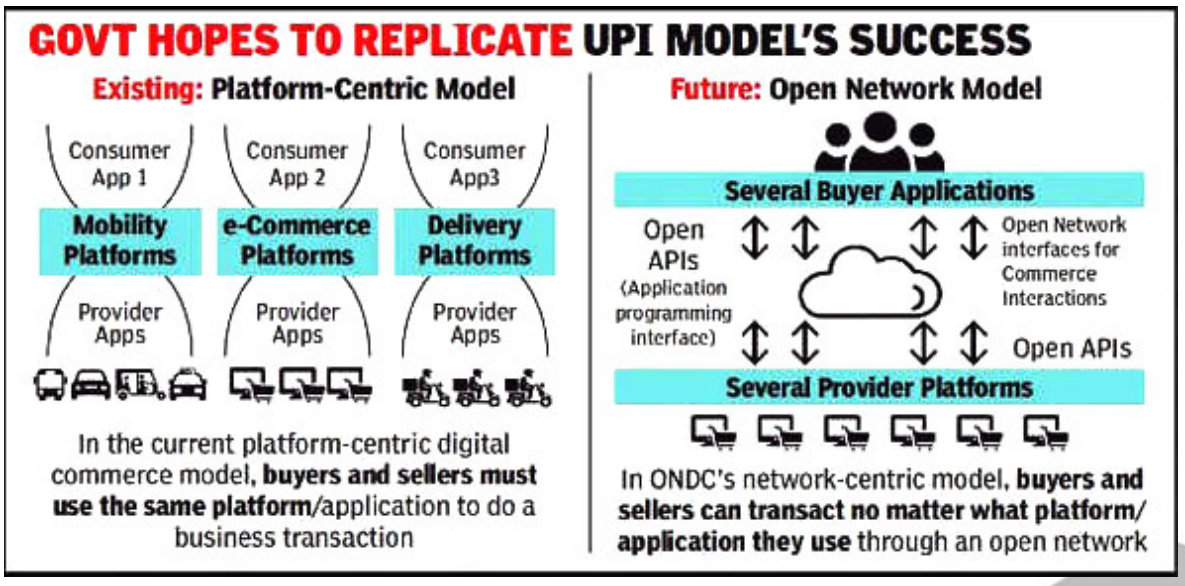


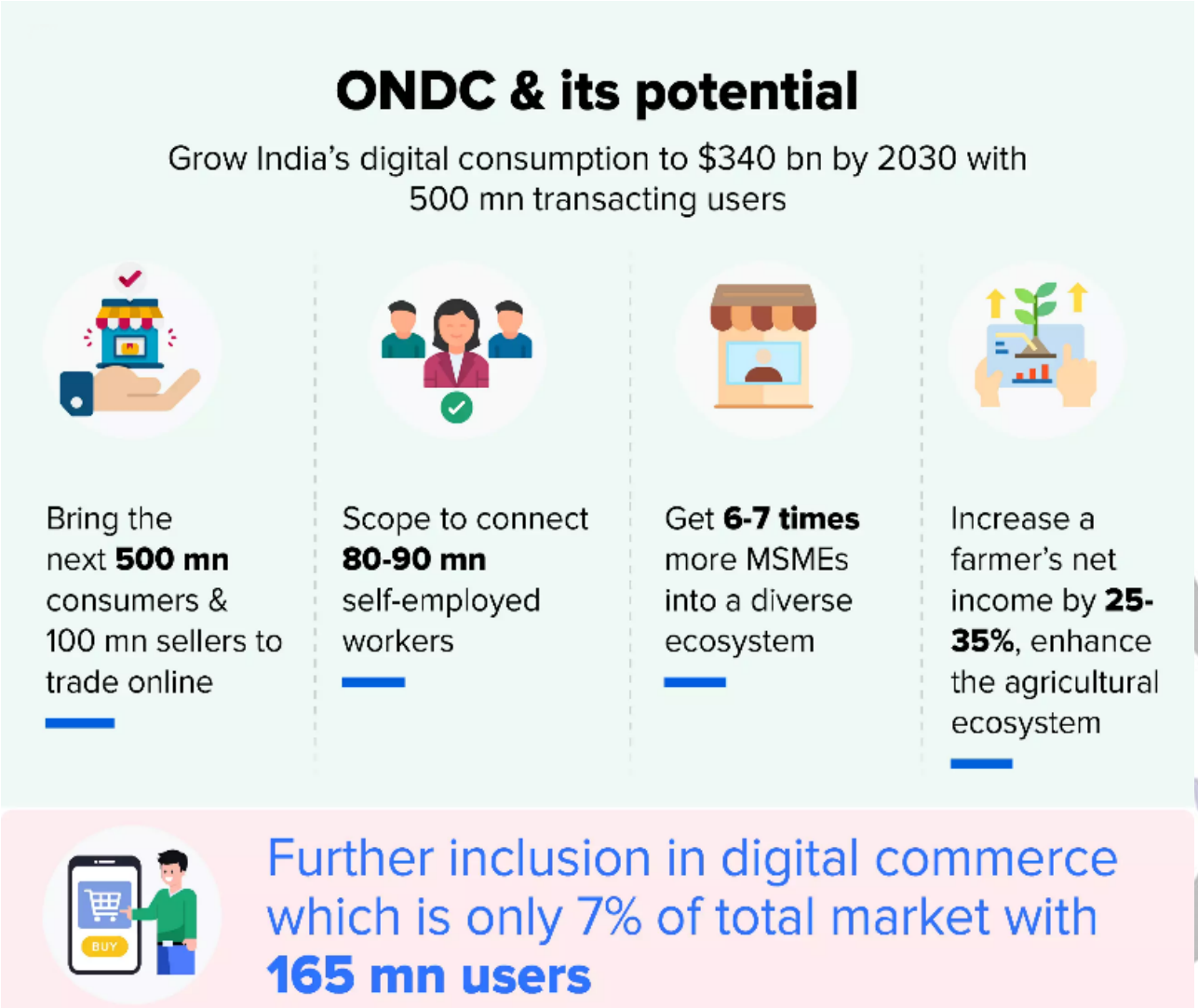
- **Objectives:**
  - **Democratisation and decentralisation** of e-Commerce
  - **Inclusivity and access for sellers**, especially small and medium enterprises as well as local businesses
  - **Increased choices** and **independency** for consumers
  - Making goods and services **cheaper.**
- **Working Mechanism:**
  - ONDC functions on the basis of an open network where it will not be a single platform similar to Amazon or Flipkart but rather in the form of a gateway where buyers and sellers across different platforms will be able to connect.

What is Open Source?

- Open source implies that the **technology** or code deployed for the process is **freely made available for everyone to use, redistribute, and modify.**
- For instance, the **operating system of iOS is closed source,** it cannot be legally modified or used.
    - Whereas, the android operating system **is open source**, making it possible for smartphone manufacturers, such as Samsung, Nokia, Xiaomi, etc., to modify it for their respective hardware.

What are the Potential Advantages of ONDC?

- **Empowering Consumers:** ONDC fosters a **more transparent environment** by potentially increasing access to information.
    - This **empowers consumers** to make informed choices and benefit from a wider array of sellers, potentially leading to lower prices.
- **Boosting Competition**: By breaking **down the dominance of existing platforms,** ONDC creates a level playing field. This **incentivizes competition among sellers,** ultimately translating into a wider variety of products and potentially lower prices for consumers.
- **Innovation:** The open-source architecture of ONDC **fosters innovation.**
- **Cost Efficiency:** ONDC's decentralised structure has the potential to **streamline operations and reduce redundancies** and lead to significant cost savings.
- **Boosting Small Businesses:** ONDC removes entry barriers for small and medium-sized enterprises (MSMEs) **and local vendors.** This paves the way for greater participation in the digital marketplace, fostering a more inclusive e-commerce ecosystem.



What are the Challenges to ONDC?

- **Complexity Factor:** Compared to user-friendly systems like UPI, **ONDC's underlying mechanisms are intricate.** The ease of adoption witnessed with UPI might not be easily replicated with ONDC.
- **Breaking Established Habits:** Consumers are accustomed to the existing e-commerce platforms' user interfaces and functionalities. ONDC will **need to provide a seamless and user-friendly experience** to compete effectively.
- **Dispute Resolution Concerns:** Unlike traditional platforms that manage the entire transaction lifecycle, **ONDC focuses solely on online buying and selling.**
    - This separation might lead to an **increase in disputes related to deliveries,** product quality, or after-sales service, **as ONDC doesn't function as a direct intermediary.**
- **Lack of a Robust Grievance Redressal Mechanism:** The lack of clarity on **responsibility for customer service and handling complaints** may deter people from joining the platform.
- **Challenges from Existing E-commerce Platforms:** Existing e-commerce giants have fostered **strong relationships with consumers through loyalty programs,** bundled services, and other incentives.
    - ONDC will need to develop compelling strategies to attract and retain customers in this competitive landscape.
- **Price Advantage Uncertainty**: As a facilitator, **ONDC might not be able to directly influence product pricing or offer discounts on the scale** of established players who leverage bulk deals and partnerships.

Note

The **Nandan Nilekani committee, formed by the Department for Promotion of Industry and Internal Trade (DPIIT)**, recommended the following for the ONDC:

- **Open Network Protocols**: Establish open protocols for digital commerce operations.
- **Interoperability:** Ensure seamless interaction across different platforms.
- **Standardisation:** Develop uniform standards for e-commerce.
- **Decentralisation:** Reduce reliance on a few large platforms to foster competition.
- **Inclusivity:** Make the network accessible to small and medium enterprises.
- **Transparency and Security:** Ensure data privacy and fair operations.
- **Regulatory Framework:** Create robust regulations for compliance and consumer protection.
- **Capacity Building:** Train small businesses to participate effectively.
- **Consumer Choice:** Expand product and service options through competition.
- **Tech-Driven Innovations:** Utilize advanced technologies to improve digital commerce.

Way Forward

- **Enhancing Digital Infrastructure:** The government can play a crucial role in fostering a **robust digital infrastructure** that supports ONDC.
    - This may involve investments in **broadband connectivity and initiatives** to bridge the digital divide in rural and remote areas.
- **Promoting Digital Literacy:** A comprehensive **digital education policy that caters to diverse regional languages** is crucial.
    - This will empower both consumers and sellers, particularly small businesses and local vendors, to **navigate the ONDC platform effectively.** User-friendly interfaces that prioritise ease of use will further enhance adoption.
- **Targeted Outreach Programs:** Extensive outreach programs with adequate funding are necessary to attract and onboard small sellers, especially micro, small, and **medium enterprises (MSMEs)** and kirana stores.
    - **Incentives and handholding support** can be instrumental in overcoming initial hurdles and promoting platform adoption.
- **Dispute Resolution Framework**: Establishing a **secure and efficient single window mechanism for addressing issues** like information asymmetry, opaque pricing, quality concerns, and buyer-seller disputes is essential.
    - This will build trust and confidence among stakeholders in the ONDC ecosystem.

Conclusion

The success of **ONDC hinges on a collaborative effort between the government, industry players, and civil society.**

By **prioritising digital infrastructure** development, promoting **digital literacy,** facilitating seller onboarding, and establishing a robust grievance redressal mechanism, ONDC can usher in a new era of inclusivity, transparency, and competition in the Indian e-commerce landscape.

Drishti Mains Question:

Discuss the potential of Open Network for Digital Commerce (ONDC) in the Indian e-commerce landscape. Discuss the key challenges it faces and suggest a roadmap for its successful implementation.

UPSC Civil Services Examination, Previous Year Question (PYQ)

Q. With reference to 'Quality Council of India (QCI)', consider the following statements: (2017)

1. QCI was set up jointly by the Government of India and the Indian Industry.
2. Chairman of QCI is appointed by the Prime Minister on the recommendations of the industry to the

Government.

Which of the above statements is/are correct?

(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither 1 nor 2

Ans c

Q. Consider the following: (2022)

1. Aarogya Setu
2. CoWIN
3. DigiLocker
4. DIKSHA

Which of the above are built on top of open-source digital platforms?

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

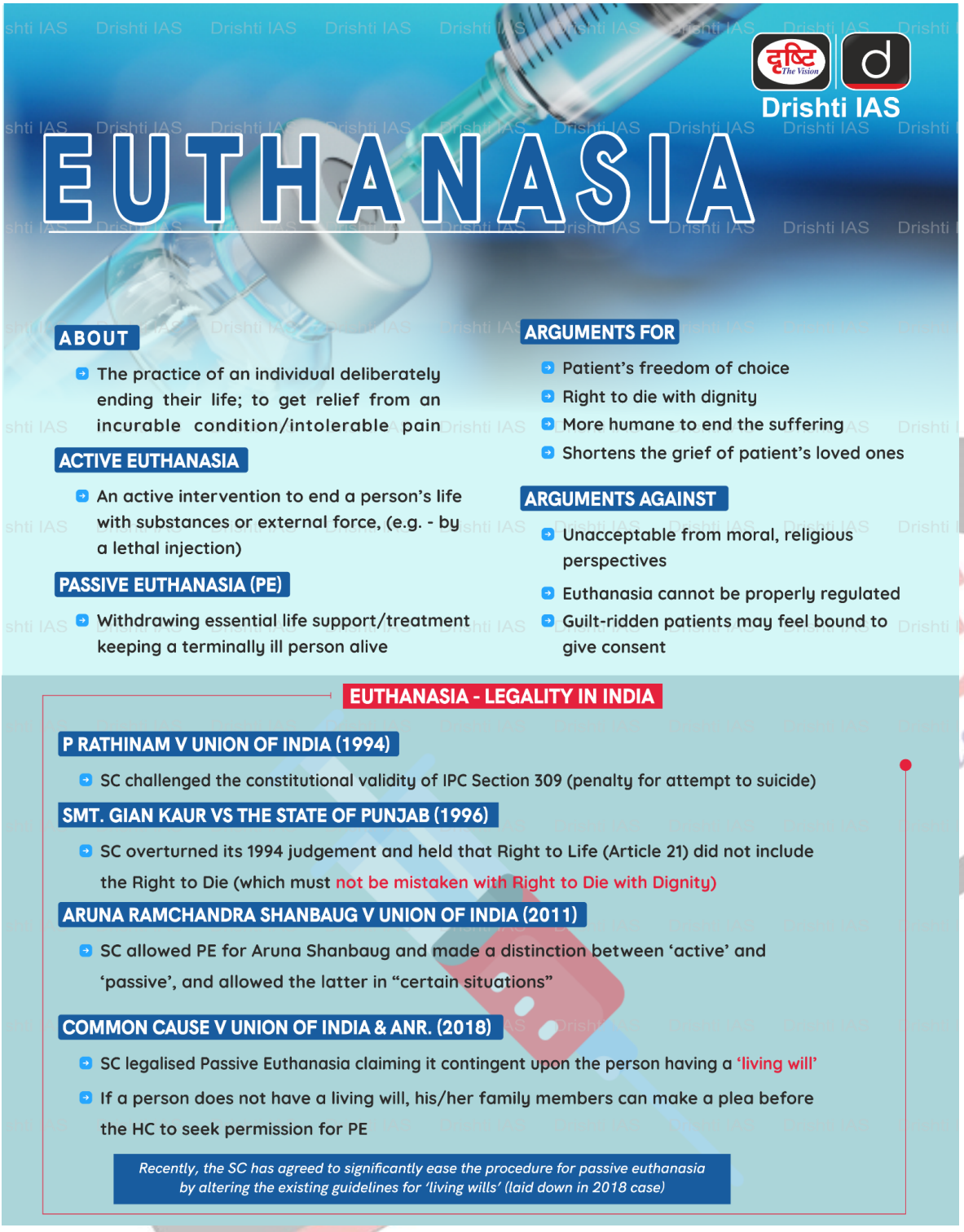
Ans: (d)

Living Will and Passive Euthanasia

Source: IE

Recently, a judge serving on the **Goa Bench of the Bombay High Court,** registered a living will' - an advanced medical directive for his family for when he cannot make his own decisions.

- The background of **"Living Wills"** can be traced back to the Supreme Court ruling in the case ***Common Cause vs Union of India (2018).***
  - In 2018, the SC reaffirmed the right to die with dignity as a **fundamental right under Article 21 (**passive euthanasia **contingent upon 'living will').**
    - Previously in 2011, the SC recognised passive euthanasia in the Aruna Shanbaug case for the first time.
  - **Passive euthanasia** refers to the practice of allowing a person to die by **withholding or withdrawing medical treatments** that are necessary to maintain life.
- In **2023,** the Supreme Court eased the process for passive euthanasia by changing certain existing guidelines for living wills. According to the guidelines, a person who wants to make a "living will" must draft it as per the reference format in the presence of two witnesses.
  - The will then has to be duly certified by a **gazetted officer or a notary** and forwarded to the main Mamlatdar of the taluka, who shall then send it to the nodal officer appointed by the **District Collector** for safe custody.



Read More: SC Eases Norms for Passive Euthanasia

Role of Nuclear Technology in Global Food Safety

For Prelims: Food irradiation, Nuclear energy, Food and Agriculture Organization (FAO) International Atomic Energy Agency (IAEA) , nuclear technologies, Polymerase Chain Reaction (PCR), intellectual property rights

For Mains: Significance of Nuclear Energy in the food and processing sector.

Source: FAO

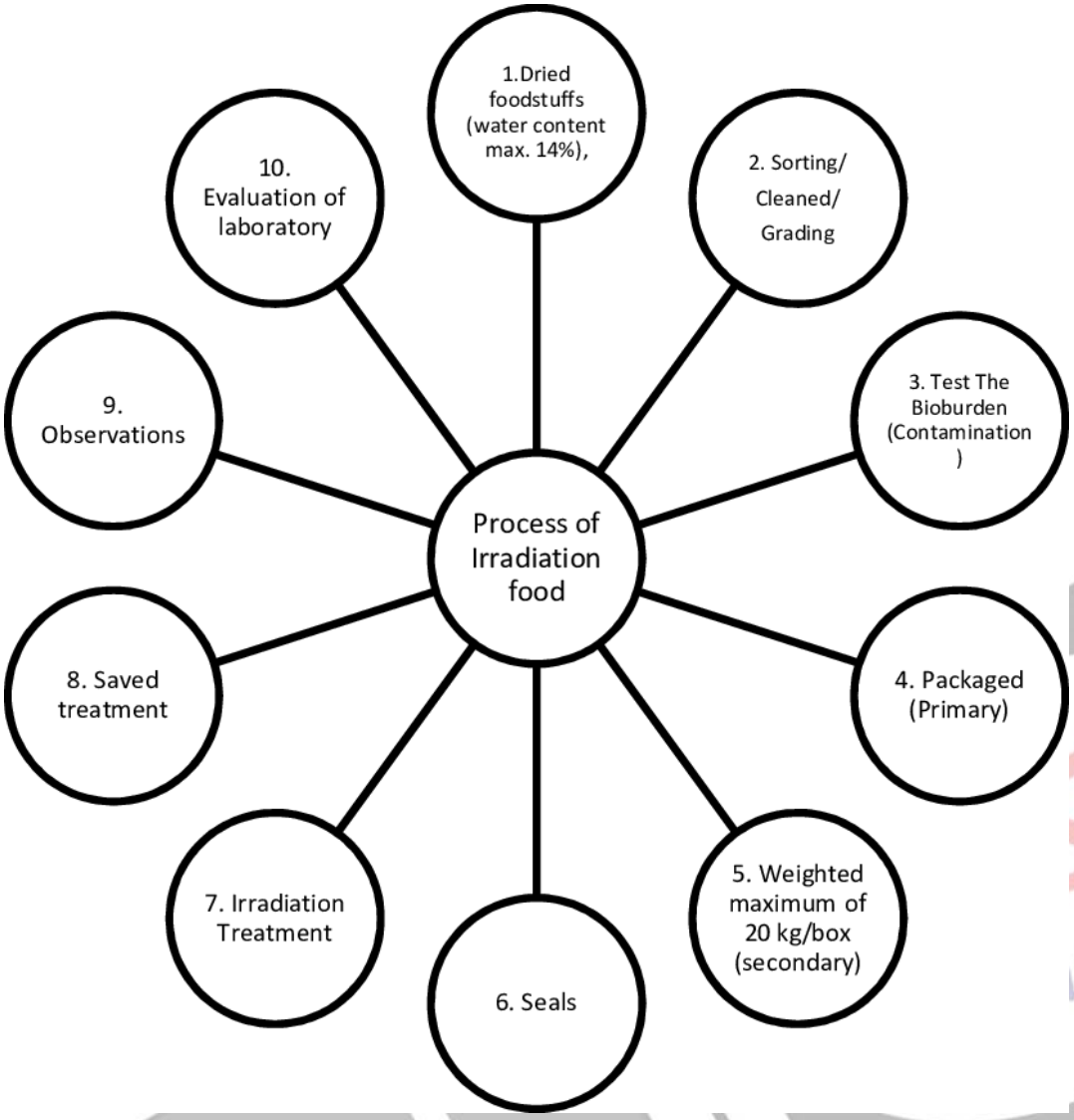
Why in News?

Recently, an International Symposium on **"Safe Food for a Better Life"**, jointly organised by the **Food and Agriculture Organisation (FAO)** and the **International Atomic Energy Agency (IAEA)** emphasised the importance of **nuclear technologies** for measuring, managing and controlling food safety.

- Furthermore, the symposium highlighted the potential use of nuclear technology in ensuring food security.

What is the Application of Nuclear Technology on the Food Safety Standard?

- **Complementary to One Health Approach:**
  - The One Health approach recognises the interconnectedness of human, animal, and environmental health; nuclear techniques can be used to detect and monitor contaminants, pathogens, and toxins in food and the environment.
  - **Polymerase Chain Reaction (PCR)** tests is a molecular nuclear technique, to rapidly detect animal diseases in less than a day.
- **Food Irradiation:**
  - **Food irradiation** is a process of **exposing food to ionising radiation** to eliminate harmful bacteria, pathogens, and pests; nuclear technology helps to **extend the shelf life** of food products and ensure their safety for consumption.
  - **Stable isotope analysis** is a nuclear technique that is used to determine the origin and authenticity of food products and this helps to **detect adulteration and verify labelling claims.**
- **Improved Soil and Water Management:**
  - Past nuclear fallouts are actually helping scientists when it comes to measuring and assessing soil erosion, radioactive nuclides left behind after nuclear events can help scientists determine the **health of soils and rate of erosion.**
- **Pest Control:**
  - Nuclear techniques, such as the **Sterile Insect Technique (SIT),** are used for pest control in agricultural production systems.
  - This technique limits reproduction and suppresses insects and pests, thereby reducing the need for chemical pesticides, which can negatively impact food safety.
- **Plant Breeding and Genetics:**
  - Nuclear technology applied in crop breeding facilitates the development of enhanced varieties capable of adapting to climate change.
  - By subjecting seeds to irradiation by **gamma rays, X-rays, ions, or electron beams,** genetic alterations are initiated, expanding the genetic diversity available for breeding purposes.



What is the Need for Tech-Related Advancements in Food Security?

- **Climate Change:** Climate-induced challenges such as **droughts, floods,** and temperature fluctuations, can adversely affect crop production and food availability so **climate-smart agriculture (CSA)** needs to be promoted.
- **Food Waste:** According to the **FAO**, roughly **1/3rd of food** produced for human consumption is lost or wasted globally, which amounts to about 1.3 billion tons per year and approximately **3.1 billion people** could not afford a healthy diet in 2020 (FAO, 2022).
- **Increasing Population**: The world's population is projected to reach **9.7 billion by 2050 (UN World Population Prospects, 2019)**, putting immense pressure on food production systems, thereby technological advancement is required.
- **Limited Resources:** With limited arable land and freshwater resources, technology can help maximise productivity through vertical farming, hydroponics, and efficient irrigation systems.

Note:

- **Atoms 4Food** is a joint initiative of the **International Atomic Energy Agency (IAEA)** and the FAO to tackle global hunger and enhance food security.
    - It was showcased at the **2023 World Food Forum in Rome.**
    - This project aims to leverage nuclear processes and cutting-edge technologies, tailoring solutions to address the specific needs of different countries.
- These technologies are employed to boost agricultural and livestock productivity, manage natural resources more effectively, reduce food losses, ensure food safety standards, improve nutritional value, and mitigate the challenges posed by climate change.

- The **Joint FAO/IAEA Centre** of Nuclear Techniques in Food and Agriculture assists in safe and effective application of nuclear technologies for global food security and sustainable agricultural development.

What Challenges are Associated with using Nuclear Technology for Food Safety?

- **Geographical and Regional Variations:**
  - **Diverse agro-climatic regions** and farming practices, can pose challenges in the uniform application and adaptation of nuclear techniques across the globe.
  - The application of **isotopic techniques** for soil and water management may require **region-specific calibration** and adaptation due to variations in soil types, climatic conditions, and irrigation practices.
- **Limited Funding and Investment and Technology:**
  - The development of **irradiation facilities** for food preservation and pest control requires significant capital investment, which may be a challenge due to budget constraints.
  - Accessing advanced techniques like **accelerator-based mutation breeding** or specialised analytical equipment for food traceability may be difficult due to **technology transfer restrictions or high costs.**
- **Regulatory Challenges:**
  - The use of nuclear technology in agriculture is subject to strict regulations and guidelines to ensure safety and security obtaining necessary approvals, licences, and compliance with regulatory requirements can be a **lengthy and complex process.**
  - Various factors, including **intellectual property rights** and **technology transfer barriers**, hinder the adaptation.
- **Lack of Allied Infrastructure:**
  - Lack of specialised laboratories and research facilities, to effectively utilise nuclear techniques in agriculture and shortage of trained personnel and expertise in this field, limiting the widespread application of these techniques.

What is Nuclear Technology?

- It is a form of energy released from the **nucleus, or core, of atoms.**
- It is known for its high energy density, meaning a **small amount of nuclear fuel can produce a large amount of energy.**
  - There are two primary methods for harnessing nuclear energy:
- **Nuclear Fission:** This process involves splitting the nucleus of an atom into two **smaller nuclei,** releasing a large amount of energy.
  - Nuclear power plants primarily use this method, **utilising uranium-235 or plutonium-239 as fuel.** When the nuclei of these heavy isotopes are bombarded with neutrons, they become unstable and split into smaller nuclei, releasing additional neutrons.
  - This chain reaction generates significant heat, which is used to produce steam, drive turbines, and ultimately generate electricity.
- **Nuclear Fusion**: This process involves combining the **nuclei of two light atoms to form a heavier nucleus,** which is the process that powers the sun and other stars.
  - While nuclear fusion holds great potential for providing clean and virtually limitless energy, achieving controlled nuclear fusion on Earth remains extremely challenging.

What is the Food and Agriculture Organization (FAO)?

- FAO is a specialised agency of the **United Nations** that leads international efforts to defeat hunger.
- **World Food Day** is celebrated every year around the world on 16th October to mark the anniversary of the founding of the FAO in 1945.
- With 194 member countries (including India) and the European Union, FAO works in over 130

countries worldwide.
- It is one of the UN food aid organisations based in Rome (Italy). Its sister bodies are the **World Food Programme** and the International Fund for Agricultural Development (IFAD).

Way Forward

- **Developing Infrastructure and Facilities**: Allocate funds and resources to set up **irradiation facilities, analytical labs**, and equipment for nuclear technology, such as a food irradiation facility to **preserve perishable produce**, reduce losses, and ensure food safety.
- **Regulatory Reforms and Streamlining Processes:** Create guidelines for the **safe handling, transport, and disposal of radioactive** agricultural materials and form a regulatory body to oversee the approval and commercialization of radiation-induced mutant crops.
- **Promoting Public-Private Partnerships:** Promote collaborations between **research institutions, the private sector, and the industry** for nuclear technology transfer, and offer incentives for companies to invest in developing and commercialising nuclear-based agricultural products.
- **International Cooperation and Knowledge Sharing:** Foster international collaborations, such as partnering with the **Joint FAO/IAEA** Centre for expertise and technology transfer.

Drishti Mains Question:

"Technology has the potential to significantly contribute to the growth and sustainability of Indian agriculture by improving crop yields, farmer incomes, and the ability to withstand challenges faced by the agricultural sector." Critically analyse.

UPSC Civil Services Examination Previous Year's Question (PYQs)

Prelims:

Q. Consider the following statements: (2019)

1. According to the Indian Patents Act, a biological process to create a seed can be patented in India.
2. In India, there is no Intellectual Property Appellate Board.
3. Plant varieties are not eligible to be patented in India.

Which of the statements given above is/are correct?

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

Ans: (c)

Mains:

Q. What are the present challenges before crop diversification? How do emerging technologies provide an opportunity for crop diversification. **(2021)**