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**1. 22 Nuclear Power Reactors Operational in the Country**

**Syllabus - GS3, Infrastructure; Energy.**

**Prelims - Nuclear Power Plants in India.**

**Context** - A quantum jump in India's nuclear power capacity since 2014.

**Details -**

- The annual nuclear power generation in the year 2021-22 was 47,112 Million Units which is around a 30-40% increase from the year 2013-14 when the capacity stood at 35,333 Million Units.
  - This information was provided by the Union Minister of State (Independent Charge) Science & Technology, Dr Jitendra Singh in the [Rajya Sabha](#).
- A number of initiatives taken by the government has led to a quantum jump in India's nuclear power capacity. In 2017, approval was given for 11 indigenous Pressurised Heavy Water Reactors (PHWR) under the Atmanirbhar Bharat package with a total capacity of 7,000 MegaWatts.
  - PHWR is a nuclear power reactor, commonly using unenriched natural uranium as its fuel. It uses heavy water (Deuterium oxide or D2O) as its coolant and moderator.
- The world's first uranium-based nuclear power plant - 'Bhavini' using Uranium-233 is being built at Kalpakkam, Tamil Nadu. The experimental Thorium plant 'Kamini' is already in Kalpakkam.
- To augment India's nuclear power programme, the government started allowing joint ventures with Public Sector Undertakings (PSUs) in 2015.
  - As per this decision, NPCIL (Nuclear Power Corporation of India Limited) is in two joint ventures - one with Indian Oil Corporation Limited (IOCL) and the other with National Thermal Power Corporation Limited (NTPC).

**Also read:** [List of Nuclear Power Plants in India](#)

## 2. India's Aviation Sector

**Syllabus - GS3, Infrastructure; Airports.**

**Prelims - NCAP 2016, MRO 2021, AAI**

**Context** - Liberalised FTO (Flying Training Organisation) Guidelines approved to encourage FTOs.

**Details -**

- India has the 3rd largest domestic aviation market and is one of the fastest-growing aviation markets in the world.
- Liberalised FTO guidelines have been approved wherein the concept of airport royalty (revenue share payment by FTOs to [AAI](#)) has been abolished and land rentals have been significantly rationalised to encourage the setting up of FTOs to address the shortage of pilots in the country.
- The GoI is proactively supporting the aviation sector in the country.
- In 2016, the [National Civil Aviation Policy \(NCAP\)](#) was released with a mission to provide safe, secure, affordable and sustainable air travel for passengers and air transport of cargo with access to various parts of the country and the world.
- The government announced new MRO (Maintenance, Repair and Overhaul) guidelines in September 2021 to create a congenial environment in the country for the development of the MRO industry for helicopters, aircrafts, drones and their engines and other parts.
- Helicopter operation policy was also formulated to encourage helicopter operations creating demand and growth.
- At present, there are 30 international airports in the country.
- The Ministry of Civil Aviation launched [Regional Connectivity Scheme - UDAN](#) (Ude Desh Ka Aam Nagrik) in 2016 to promote regional air connectivity and to make air connectivity affordable to the masses.
- The Airports Authority of India (AAI) and PPP ([Public-Private Partnership](#)) Airport Operators have embarked upon a capex plan of more than Rs 98,000 cr. for the upgradation, modernisation and development of various brownfield airports and greenfield airports.

## 3. Greenfield Airports

**Syllabus - GS3, Infrastructure - Airports.**

**Prelims - Greenfield Airports.**

**Context** - Since 2019, 6 Greenfield airports have been operationalised in India.

**Details -**

- In 2008, GoI formulated the Greenfield Airports (GFA) Policy which provides detailed guidelines, procedures and steps related to the construction of greenfield airports across the country.
- Greenfield projects are those that are initiated from scratch on undeveloped ground. They do not include the renovation or demolition of an existing building.
- Since 2019, six greenfield airports have been operationalised in the country. They are:
  - Kalaburagi
  - Orvakal (Kurnool)
  - Sindhudurg
  - Itanagar
  - Kushinagar
  - Mopa
- Kushinagar and Mopa airports are international airports.

**4. Global Quality Infrastructure Index (GQII)**

**Syllabus - GS3, Economy - Growth & Development.**

**Prelims - GQII, QCI, QI, BIS**

**Context** - India's accreditation system - QCI ranked 5th globally; overall quality infrastructure system in the top 10.

**Details -**

- India's national accreditation system under the [Quality Council of India \(QCI\)](#) has been ranked 5th in the world in the **Global Quality Infrastructure Index (GQII)** 2021.
- India's overall QI system ranking continues to be in the top 10 at the 10th position, with the standardisation system (under BIS) at 9th and the metrology system (under NPL-CSIR) at the 21st position in the world.

- QI is the technical backbone for international trade, with metrology, standardisation, accreditation and conformity assessment services providing reliability and trust between trading partners.
- In India, the National Physical Laboratory under the Council of Scientific & Industrial Research (NPL-CSIR) is the national metrology institute, the [Bureau of Indian Standards](#) (BIS) is the national standards body and the constituent national accreditation boards under the Quality Council of India support are the custodians of the national accreditation system.

### **About Global Quality Infrastructure Index (GQII):**

- The GQII program is an initiative of the independent consulting firms Mesopartner and Analyticar to research and disseminate data on Quality Infrastructure.
- The GQII ranks 184 economies in the world on the basis of Quality Infrastructure (QI).
- It is an initiative on metrology, standardisation, accreditation and related services, supported by Physikalisch-Technische Bundesanstalt (PTB) and the Federal Ministry for Economic Cooperation and Development (BMZ), Germany.
- A formula calculates a score for each country based on its position in the sub-rankings for metrology, standards and accreditation.
- The 2021 GQII rankings are based on data till the end of December 2021, collected and analysed through 2022.

## **5. Lahari Bai**

### **Syllabus - Miscellaneous**

#### **Prelims - International Year of Millets 2023**

**Context** - Shri Narendra Modi lauded the efforts of Lahari Bai for preserving more than 150 varieties of millet seeds.

#### **Details -**

- Lahari Bai is a 27-year-old tribal woman from Dindori, Madhya Pradesh. She has preserved more than 150 varieties of millet seeds thereby becoming the brand ambassador of millets.
  - 72 Nations and the United Nations General Assembly (UNGA) declared 2023 as the [International Year of Millets](#) in 2021.
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