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## Current Affairs - 18 October 2024

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### SARTHI SYSTEM



Recently, the National Institute of Food Technology Entrepreneurship and Management, Kundli (NIFTEM-K) has introduced Solar Assisted Reefer Transportation with Hybrid Controls and Intelligence (SARTHI) system.

- It is an innovative solution to **reduce post-harvest losses** in **perishable food transportation**.
  - **Features**
    - It features **dual compartments** designed to store fruits and vegetables at different temperatures, **addressing their unique storage needs**.
    - It is an integration of IoT and real-time monitoring.
    - The data acquired from the **sensors is integrated with IoT** (Internet of Things) and sent to the cloud which can be downloaded using a mobile app for getting a real time information about the quality parameters and physiological changes occurring during transportation of fresh fruits and vegetables.
    - Its sensors measure temperature, **humidity, ethylene, and CO2 levels**, sending data to a mobile app for quality assessment.
    - The system also includes a solar-powered air handling unit that ensures temperature control during halts.
  - **Significance:**
    - This design helps **extend shelf life** and reduces losses due to chilling injury or moisture loss.
    - This technology allows transporters to make **informed decisions**, potentially rerouting produce to closer markets if spoilage is detected, cutting energy waste and reducing carbon footprints.
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### HAND-IN-HAND INITIATIVE



It was launched in 2019, is a flagship of Food and Agricultural Organisation (FAO).

- It prioritizes countries and territories where poverty and hunger are highest, national capacities are limited, or operational difficulties are greatest due to natural or man-made crises.
- It seeks to **eradicate poverty** (SDG1), **end hunger and malnutrition** (SDG2), and **reduce inequalities** (SDG10) by accelerating market-based transformation of agri-food systems to raise incomes, improve nutrition, empower poor and vulnerable populations, and strengthen resilience to climate change.
- **Approach:** It uses **geospatial, biophysical and socio-economic data**, as well as advanced analytics to identify territories where agricultural transformation and sustainable management of forest and fisheries have the greatest potential for alleviating poverty and hunger.
- Its area of intervention includes developing value chains for priority commodities, building agro-industries and efficient water management systems, introducing digital services and precision agriculture
- **Member countries:** 72 countries have joined this Initiative.

### What is FAO?

- It is a **specialized agency of the United Nations (UN)** that leads international efforts to defeat hunger.
- It is the oldest permanent specialized agency of the UN, established in October 1945.
- **Mandate:** To improve nutrition, increase agricultural productivity, raise the standard of living in rural populations, and contribute to global economic growth.
- **Members:** It currently has **194 Member States** plus the **European Union** (member organization).
- **Headquarters:** Rome, Italy.



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### WORLD ENERGY OUTLOOK 2024



India is poised to face a higher increase in energy demand than any other country over the next decade, according to the World Energy Outlook 2024.

- It is an annual report published by the **International Energy Agency (IEA)**.
- It is the most authoritative global source of **energy analysis and projections**.
- It identifies and explores the biggest **trends in energy demand and supply**, as well as what they mean for energy security, emissions, and economic development.
- **Highlights of 2024 Report:**
  - Projections based on current policy settings indicate that the world is entering a new energy context, marked by persistent geopolitical hazards but also an abundance of various fuels and technologies.
  - This includes a **surplus of oil and liquefied natural gas (LNG)** expected **in the second half of the 2020s**, alongside a **significant increase in manufacturing capacity for key clean energy technologies**.
  - The report finds that **low-emissions energy sources are set to generate more than half of the world's electricity by 2030**.
  - Meanwhile, **demand for coal, oil, and gas is expected to peak** by the end of this decade.
  - Global electricity demand growth is projected to accelerate further, adding the equivalent of Japan's annual electricity consumption to global use each year.
- **Highlights Related to India:**
  - India is **poised to face a higher increase in energy demand than any other country over the next decade**, mainly because of its size and the scale of rising demand from all sectors.

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- According to the Stated Policies Scenario (STEPS), India is on **track to add over 12,000 cars daily** to its roads over the period to 2035.
  - **Built-up space is set to increase by over 1 billion square metres annually**. This is larger than the total built space in South Africa.
  - **By 2035, iron and steel production is on track to grow by 70%. The cement output is set to rise by nearly 55%.**
  - The **stock of air conditioners is projected to grow by over 4.5 times**, resulting in electricity demand from air conditioners in 2035 more than Mexico's total expected consumption that year.
  - The **total energy demand** in India is **set to increase** by nearly **35% by 2035**, and **electricity generation capacity nearly tripled to 1400 GW**.
  - **Coal is set to retain a strong position in the energy mix** in India over the next decades, with the country projected to **add about 60 gigawatts of new coal-fired power capacity by 2030**.
  - Coal-based electricity generation is projected to increase by over 15 per cent.
  - Coal provided 40 percent of the energy used in industries like steel, cement, and manufacturing in 2023. **By 2035, coal use in industry is expected to grow by 50 percent.**
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### CENTRE CLAIMS FORTIFIED RICE IS SAFE FOR CONSUMPTION FOR EVERYONE

#### Why in news?

The Centre defended its initiative to supply fortified rice, aimed at combating micronutrient deficiencies, amid safety concerns and claims that it benefits multinational companies.

The Union Food Ministry emphasized that iron-fortified rice is safe, following World Health Organization (WHO) guidelines, and is globally recognized.

#### Rice fortification

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- The Food Safety and Standards Authority of India (FSSAI) defines fortification as the deliberate addition of essential micronutrients to food to improve nutritional quality and provide public health benefits, with minimal health risks.
- **Need for fortification of rice**
  - **Malnutrition in India, especially among women and children**
    - According to the National Family Health Survey (NFHS-5), anaemia affects a significant portion of the population, with every second woman being anaemic and every third child stunted.
    - Deficiencies in iron, Vitamin B12, and folic acid are widespread, affecting health and productivity.
  - **Fortification of Rice as a Solution**
    - Rice, a staple food for two-thirds of India's population, is considered an ideal candidate for fortification to address malnutrition.
    - Per capita rice consumption in India is 6.8 kg per month, and fortifying it with micronutrients can help supplement the diet of the poor.
- **Fortification Process**
  - Fortification technologies include coating, dusting, and extrusion, with extrusion being the most suitable for India.
  - In extrusion, dry rice flour is mixed with micronutrients and water, then passed through an extruder to create fortified rice kernels (FRKs), which resemble regular rice.
  - These kernels are blended with regular rice in a 10g FRK to 1 kg rice ratio to produce fortified rice.
- **Nutrient Content in Fortified Rice**
  - According to FSSAI standards, 1 kg of fortified rice contains:
    - Iron: 28 mg-42.5 mg
    - Folic acid: 75-125 micrograms
    - Vitamin B12: 0.75-1.25 micrograms

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- It may also be fortified with other micronutrients like zinc, vitamin A, and various B vitamins.
  - **Cooking and Consumption of Fortified Rice**
    - Fortified rice is cooked and eaten just like regular rice, and it retains its micronutrient levels after cooking.
    - Packaging is marked with a logo ('+F') and labeled as "Fortified with Iron, Folic Acid, and Vitamin B12."
  - **Progress of the Rice Fortification Initiative**
    - In 2015, PM Modi announced that rice distributed under government schemes, such as the Public Distribution System (PDS) and Mid-Day Meal Scheme, would be fortified by 2024.
    - The Centre implemented the initiative in phases:
      - **Phase 1:** Integrated Child Development Services and PM POSHAN by March 2022.
      - **Phase 2:** PDS and welfare schemes in 112 Aspirational Districts by March 2023.
      - **Phase 3:** Full nationwide coverage by March 2024.
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### CENTRE'S DIRECT TAX COLLECTION PERFORMANCE GOES UP

- Direct tax is a tax paid directly by the taxpayer to the government and cannot be shifted.
- This is the opposite of indirect tax, which is a tax levied on goods and services and can be passed on to another entity or individual.
- The direct rules are framed such that taxes turn out to be a method to redistribute money in the country.
- **Examples**
  - The more common types of direct tax are: Individual income tax; Corporate income tax; Capital gains tax; Estate tax; Property tax etc.





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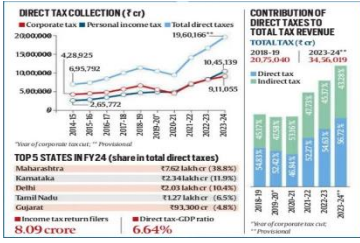
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### Key highlights of the data released by the CBDT

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  - Record Contribution of Direct Taxes in 2023-24**
    - In FY24, the contribution of direct taxes to total tax revenue reached 56.72%, the highest in 14 years.
    - This marks an increase from 54.63% in FY23, reducing the share of indirect taxes to 43.28%.
- Direct tax-to-GDP ratio**
  - The direct tax-to-GDP ratio also hit a **two-decade high of 6.64%**.
    - A "direct tax-to-GDP ratio" is an economic indicator that measures the proportion of a country's total direct tax revenue relative to its Gross Domestic Product (GDP).
    - It essentially shows how much direct tax is collected compared to the overall size of the economy.
    - A higher ratio indicates the government is effectively collecting more direct taxes from its citizens, allowing for greater funding of public services and investments.
- Surge in Personal Income Tax Collections**
  - For the second consecutive year, personal income tax collections exceeded corporate tax collections.
    - Corporate tax is a direct tax imposed by the government on the income or profits earned by a corporation.
    - Unlike individual income tax, which is levied on personal earnings, corporate tax is specifically targeted at business entities, including both domestic and multinational companies.
  - In FY24, personal income tax collections stood at ₹10.45 lakh crore, surpassing corporate tax collections of ₹9.11 lakh crore.
    - This shift began after the corporate tax rate cut in September 2019.

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- **Cost of Tax Collection at a Record Low**
  - The cost of tax collection dropped to 0.44% of total tax collections, the lowest since 2000-01.
  - However, in absolute terms, the cost increased to ₹8,634 crore.
- **Increase in Tax Filers and Taxpayers**
  - Income tax return filers grew from 7.4 crore in FY23 to 8.09 crore in FY24.
  - Taxpayers, defined as those filing returns or having tax deducted at source, increased from 9.37 crore to 10.41 crore.
- **State-Wise Direct Tax Contributions**
  - Maharashtra contributed 39% of the total direct tax revenue (₹7.6 lakh crore), followed by Karnataka (12% or ₹2.34 lakh crore) and Delhi (10.4% or ₹2.03 lakh crore).

### KARAKORAM WILDLIFE SANCTUARY



- **Location:** It is located in the **Union Territory of Ladakh** along the territory's border with Jammu and Kashmir.
- It is situated just to the **north of Hemis National Park** and to the **east of Deosai National Park**.
- It is well known for its diverse landscape, featuring snow-covered peaks, alpine fields, and deep ravines.
- **Climatic condition:** The average temperature during the warmest month is lower than 0 degrees Celsius in some heights and remains below 10 degrees Celsius in other parts.
- **Major Peaks:** Major peaks within this Wildlife Sanctuary include **Saltoro Kangri, Saser Kangri I, and K12**.
- **Rivers:** **Shyok and Nubra Rivers** are the major water sources of this sanctuary.
- **Vegetation:** It is rich in **alpine vegetation, medicinal plants, cold desert flora, endemic and rare species, and glacier vegetation**.





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- **Fauna:** Ural, the argali, Tibetan gazelle, **Siberian ibex**, the **bharal** (blue sheep), and the snow leopard, **Tibetan antelope** (chiru) and Bactrian camel
- **Flora:** It comprises broad-leaved shrubs namely the Rosia webbiana, Ephedra, Caragianae and several other bushes.

### AFRICAN PENGUIN



A new study by an international team of researchers from South Africa and the United Kingdom has found that artificial nests can enhance the breeding success of African penguins.

- **Appearance:** It has a black stripe and a pattern of **unique black spots on its chest**, as well as pink glands above its eyes that become pinker as the penguin gets hotter. Males are larger than females and have larger beaks.
- **Habitat:** It is usually found within 40 kilometers of the shore, coming onshore to a variety of coastal habitats to breed, molt, and rest.
- **Distribution:** This penguin breeds on the African mainland from Hollams Bird Island, Namibia to Bird Island, Algoa Bay, South Africa.
- The species breeds **naturally in burrows dug into guano** (a natural substance composed of the excrement of birds, bats, and seals), which protects them from the extreme heat of their environment.
- This penguin's average lifespan in the **wild is 20 years**.
- It feeds on pelagic schooling fish, particularly sardine and anchovy.
- **Conservation status**
  - **IUCN:** Endangered
- **Threats:** Global-warming-induced shifts in the marine and atmospheric environment are destructive to the African penguin's habitat and comprise a major threat to the bird.