The State of Food and Agriculture 2023

For Prelims: Food and Agriculture Organization (FAO), Ultra-processed foods, Food insecurity, Fit India Movement, Eat Right Movement

For Mains: Ultra-Processed Food Constraints and Challenges, Agricultural Marketing, Food Healthy Lifestyle Related Government Initiatives,

Source: DTE

Why in News?

A new report titled '**The State of Food and Agriculture 2023**', by the Food and Agriculture Organization (FAO) reveals the staggering hidden costs of unhealthy diets and ultra-processed foods, impacting both our health and the environment.

- These costs reach over USD 7 trillion annually and have far-reaching consequences.

Note:

- Hidden costs in the context of agrifood systems include **environmental expenses** from emissions and land use, **health costs related to dietary patterns, undernourishment and social costs associated with poverty** among agrifood workers.

What are the Key Findings of the State of Food and Agriculture 2023?

- **Hidden Costs of Unhealthy Diets:**
  - Unhealthy diets, characterized by the consumption of ultra-processed foods, fats, and sugars, lead to substantial hidden costs.
  - These costs exceed USD 7 trillion annually, reflecting the economic burden of **health-related issues like obesity and** non-communicable diseases.
    - Additionally, these diets result in **decreased** labour productivity, contributing to the overall hidden costs.
- **Global Impact and Economic Burden:**
  - The majority of hidden costs were generated in **upper-middle-income (39%)** and **high-income countries (36%)**, with **lower-middle-income countries at 22%** and **low-income countries at 3%.**
    - The report estimates that unhealthy diets result in hidden costs equivalent to at least USD 10 trillion annually, which accounts for nearly **10% of the global** gross domestic product (GDP).
    - The analysis encompasses 154 countries, emphasizing the widespread implications of these dietary patterns.
- **Impact on India:**

    - India's total hidden costs in agrifood systems were approximately USD 1.1 trillion, ranking as **the third-largest globally after China and the United States.**
    - **Major Contributors in India:**
        - The burden of disease **(productivity losses from dietary patterns) accounted for the largest share (60%)** of hidden costs in India, followed by **social costs of poverty (14%)** and **environmental costs from nitrogen emissions (13%).**
- **Rapid Spread of Processed Foods:**
    - The consumption of highly processed foods is on the rise in **peri-urban and rural areas worldwide.**
        - Factors driving this trend include **urbanization, shifts in lifestyles**, and **changes in employment profiles** for both women and men.
        - Longer commuting times also contribute to the increased consumption of processed foods in these areas.
- **Urban vs. Rural Consumption Patterns:**
    - The report challenges the conventional notion that consumption patterns differ significantly between urban and rural areas.
        - Findings indicate that the diffusion of processed foods is extensive and similar across the rural-urban continuum.
        - In both **high and low-food-budget countries**, processed foods make up a **substantial share of overall consumption**, with urbanization not being the sole driver.
- **Global Food Insecurity:**
    - Food insecurity, particularly moderate or severe food insecurity, remained largely unchanged globally for the second consecutive year.
        - These levels are, however, significantly higher than **Pre-Covid-19 pandemic** figures.
    - The report highlights that **approximately 29.6% of the global population, corresponding to 2.4 billion people**, experienced moderate or severe food insecurity in 2022.
        - Among them, roughly 900 million individuals **(11.3% of the global population)** faced **severe food insecurity.**
    - Among the nine South Asian countries, **India had the third highest prevalence of undernourishment (233.9 million**) in the total population, after Afghanistan and Pakistan, the analysis showed.
        - The share of undernourished people in India, however, had **come down from 21.4% of the population in 2004-06 to 16.6% in 2020-22.**
    - **Low-income countries were the hardest hit** by hidden costs of agrifood systems, which **represent more than a quarter of their GDP**, as opposed to less than 12% in middle-income countries and less than 8% in high-income countries.
- **Future Projections and Undernourishment:**
    - The report projects that by 2030, **nearly 600 million people** are expected to suffer from chronic undernourishment.

How can the Burden of Ultra-processed Foods be Reduced?

- The burden of ultra-processed foods can be reduced by **transforming current agrifood systems** to make them **more sustainable, healthy, and inclusive.**
    - Promoting the **production and consumption of more diverse**, nutritious, and less processed foods, such as fruits, vegetables, legumes, nuts, seeds, and whole grains.
- **Regulating** the marketing, labelling, and taxation of **ultra-processed foods**, and providing **subsidies and incentives for healthier foods.**
- Improving the **access and affordability of healthy foods,** especially for low-income and vulnerable groups, through social protection, food assistance, and public procurement.
- Educating and empowering consumers to **make informed and healthy food choices**, through nutrition education, behaviour change communication, and digital technologies.
- Enhancing the **efficiency and circularity of the agrifood systems**, by reducing **food losses and waste**, improving resource use efficiency, and adopting cleaner and renewable energy sources.
- **Strengthening the governance and coordination** of the agrifood systems, by engaging

multiple stakeholders, fostering innovation and research, and monitoring and evaluating the impacts and outcomes.

What are the Government Initiatives to Promote Healthy Lifestyle?

- The National Food Security Act (NFSA), 2013.
- PM-POSHAN Scheme.
- Fit India Movement.
- Eat Right Movement.
  - Eat Right Station Certification.
  - Eat Right Mela.

What is the Food and Agriculture Organization?

- **About:**
  - 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. The day is celebrated to mark the anniversary of the founding of the FAO in 1945.
  - With 194 member countries and the **European Union** including India, 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).
- **Flagship Publications:**
  - The State of World Fisheries and Aquaculture (SOFIA).
  - The State of the World's Forests (SOFO).
  - **The State of Food Security and Nutrition in the World (SOFI).**
  - The State of Food and Agriculture (SOFA).
  - The State of Agricultural Commodity Markets (SOCO).

UPSC Civil Services Examination, Previous Year Question (PYQ)

Prelims

Q. With what purpose is the Government of India promoting the concept of "Mega Food Parks"? (2011)

1. To provide good infrastructure facilities for the food processing industry.
2. To increase the processing of perishable items and reduce wastage.
3. To provide emerging and eco friendly food processing technologies to entrepreneurs.

Select the correct answer using the codes given below:

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

Ans: (b)

- The Scheme of "Mega Food Park" aims at providing a mechanism to link agricultural production to the market by bringing together farmers, processors and retailers, so as to ensure maximizing value addition, minimizing wastage, increasing farmers' income and creating employment opportunities, particularly in the rural sector. **Hence, 2 is correct.**
- It envisages creation of state-of-the-art support infrastructure in a well-defined agri/horticultural

zone for setting up of modern food processing units in the industrial plots provided in the park with wellestablished supply chain. **Hence, 1 is correct.**
- "Mega Food Park" scheme has no provision for providing eco-friendly food processing technologies to entrepreneurs. **Hence, 3 is not correct. Therefore, option (b) is the correct answer.**

Q. Aspartame is an artificial sweetener sold in the market. It consists of amino acids and provides calories like other amino acids. Yet, it is used as a low-calorie sweetening agent in food items. What is the basis of this use? (2011)

(a) Aspartame is as sweet as table sugar, but unlike table sugar, it is not readily oxidized in human body due to lack of requisite enzymes

(b) When aspartame is used in food processing, the sweet taste remains, but it becomes resistant to oxidation

(c) Aspartame is as sweet as sugar, but after ingestion into the body, it is converted into metabolites that yield no calories

(d) Aspartame is several times sweeter than table sugar, hence food items made with small quantities of aspartame yield fewer calories on oxidation

Ans: (d)

Mains

Q. Discuss the factors for localisation of agro-based food processing industries of North-West India. **(2019)**

Q. What are the challenges and opportunities of the food processing sector in the country? How can the income of the farmers be substantially increased by encouraging food processing? **(2020)**

India's Steel Sector

For Prelims: **India's Steel Sector**, ISA Steel Conclave 2023, Steel Shaping the Sustainable Future, **Carbon Border Adjustment Mechanism**, Iron.

For Mains: India's Steel Sector, Potential and Challenges, Indian Economy and issues relating to planning, mobilization of resources, growth, development and employment.

Source: TH

Why in News?

Recently, the 4th edition of **'ISA Steel Conclave 2023**' was held, nudging **Steel Firms** to ramp up their capacities so that India's output of the **critical infrastructure input doubles to 300 million tonnes a year by 2030.**

- The event was marked by discussions on the theme, **'Steel Shaping The Sustainable Future,**' underscoring the multifaceted role of the steel industry in India's growth and development.

What is the State of Steel Sector in India?

- **Present Scenario:**
  - India is the world's second-largest producer of crude steel, with an output of **125.32 million tonnes (MT) of crude steel** and 121.29 MT of finished steel production in FY23.
  - The steel industry in India has experienced substantial growth in the **past decade, with a 75% increase in production since 2008.**
  - The **per-capita consumption** of steel in India stood at 86.7 kilograms in FY23.
  - The Indian steel industry has been driven by the **availability of raw materials, such as iron ore, and cost-effective labor.**
  - As per the **National Steel policy**, launched in 2017, India projects crude steel capacity of 300 million tonnes (MT), production of 255 MT and a robust finished steel per capita **consumption of 158 Kgs by 2030-31.**
- **Significance:**
  - Steel is **one of the widely used materials** all over the world. The iron and steel industry is the bottom line producer industry.
    - The steel industry plays a pivotal role in crucial sectors such as construction, infrastructure, automobile, engineering, and defense.
  - Steel is a key sector for the Indian economy (responsible for **2% of the country's GDP in FY 21-22).**
- **Challenges Faced by the Steel Sector:**
  - **Barriers to Setting up Modern Steel Plants:**
    - One major hindrance is the significant investment required for establishing modern steel-making plants.
      - The high cost, around Rs 7000.00 crores for a 1-tonne capacity plant, poses **challenges for many Indian entities.**
    - Reliance on debt financing, coupled with expensive finances in India compared to other countries, **inflates product costs, making the final steel product less competitive globally.**
  - **Cyclical Demand and Monsoon Challenges:**
    - The cyclical demand for steel in India, influenced by factors like monsoons that slow down construction, creates financial challenges for steel plants.
    - During low-demand periods, steel plants must operate with minimal income, leading to financial strain and, in severe cases, closures.
  - **Low Per Capita Consumption:**
    - India's low per capita consumption of steel, at 86.7 kgs compared to the world average of 233 kgs, **reflects economic disparities.**
    - With low per-capita income and consumption, the incentive to establish **large-scale steel plants for economies of scale diminishes.**
    - China, with significantly higher per capita income, demonstrates a more robust demand for steel.
  - **Low Investment in Technology and Research:**
    - India historically **lags in investing in technology, research,** and development for the steel sector.
    - This results in dependence on international research and technology, incurring additional costs. Outdated and polluting technologies further contribute to the sector's unattractiveness.
  - **Slow Adoption of Steel in Construction:**
    - India's adherence to **traditional concrete-based construction methods,** rather than embracing steel, hinders the steel industry's growth.
    - Unlike the west, where steel is **extensively used in construction for its efficiency, strength,** and speed, India is yet to fully leverage steel in its construction practices.
  - **Environmental Concerns:**
    - The steel industry is among the three biggest **producers of carbon dioxide.** Consequently, steel players across the globe are increasingly facing a **Decarbonisation Challenge** to reduce its carbon footprint from both environmental and economic perspectives.
  - **Impact of EU's CBAM:**

- From 1th January 2026, the EU will start collecting the **Carbon Tax (Carbon Border Adjustment Mechanism)** on each **consignment of steel, aluminum, cement, fertilizer**, hydrogen and electricity. It will have an **adverse impact on India's exports of metals such as** Iron, Steel and aluminum products to the EU, because these will face extra scrutiny under the mechanism.
- CBAM is part of the **"Fit for 55 in 2030 package**", which is the EU's plan to reduce greenhouse gas emissions by at least 55% by 2030 compared to 1990 levels in line with the European Climate Law.

Government Initiatives for Steel Industry

- **National Steel Policy (NSP) 2017**
- **Steel Scrap Recycling Policy**
- Adoption of the Fourth Industrial Revolution (**Industry 4.0**)
- Steel Research and Technology Mission of India
- Draft Framework Policy
- **PLI Scheme For Specialty Steel**

Way Forward

- Investing in and adopting **green technologies** to reduce environmental impact and promote sustainable production practices.
    - There is a need to promote manufacturing of **Green Steel,** which can be done by **using low-carbon energy sources** such as hydrogen, **coal gasification**, or electricity instead of the traditional carbon-intensive manufacturing route of coal-fired plants.
- Implementing measures to enhance carbon efficiency **in steel production can help mitigate the impact of CBAM.** Adopting cleaner and more sustainable technologies is crucial to reducing the carbon footprint of steel products.
- Also engaging in dialogue with policymakers and international bodies to advocate for fair and realistic CBAM policies is essential. Collaborative efforts with other industries and countries can lead to the development of solutions that consider the unique challenges faced by the Indian steel sector.

UPSC Civil Services Examination Previous Year Questions (PYQs)

Prelims

Q. Which of the following are some important pollutants released by steel industry in India? (2014)

1. Oxides of sulphur
2. Oxides of nitrogen
3. Carbon monoxide
4. Carbon dioxide

Select the correct answer using the code given below:

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

Ans: (d)

Exp:

- Steel industry creates pollution as it uses coal and Iron ore whose combustion releases various Polycyclic Aromatic Hydrocarbons (PAH) compounds and oxides into the air.
- In steel furnace, coke reacts with iron ore, releasing iron and generating major environmental pollutants.
- The pollutants released from steel producing units are:
    - Carbon Monoxide (CO), hence, 3 is correct.
    - Carbon Dioxide (CO_2), hence, 4 is correct.
    - Oxides of Sulphur (SOx), hence, 1 is correct.
    - Oxides of Nitrogen (NOx), hence, 2 is correct.
    - PM 2.5,
    - Waste Water,
    - Hazardous waste,
    - Solid waste.
- However, technological interventions in the form of air filters, water filters and other water saving, power saving and closed container can reduce emissions.
- Therefore, option (d) is the correct answer

Mains

Q1. Account for the present location of iron and steel industries away from the source of raw material, by giving examples. **(2020)**

Q2. Account for the change in the spatial pattern of the Iron and Steel industry in the world. **(2014)**

Electric Power Transmission

For Prelims: Bhakra Nangal Dam, Alternating Current (AC), Direct Current (DC) , Distribution Substations**,** Transmission Substations**,** Nuclear Reactors

For Mains: Significance of streamlining the electricity generation and transmission to achieve the renewable energy targets.

Source: TH

Why in News?

With the rising demand for electricity in today's world, especially with increased individual and industrial needs, it's crucial to enhance the efficiency and reliability of **electric power transmission systems.**

What Are the Basics of Transmitting Electricity?

- **About:**
    - Any power supply system has three broad components: **generation, transmission, and distribution.** Electricity is generated at power plants as well as smaller renewable-energy installations.
    - Then it is transmitted using a distributed network of **stations, substations, switches, overhead and underground cables, and transformers,** among other elements.
- **Transmission Efficiency:**
    - The efficiency of electric current transmission is **higher at lower current and higher**

voltage. This is because **energy loss during transmission is proportional to the square of the current**, while voltage and current have a 1:1 relationship.
        - Transformers are used to increase voltage and reduce current for efficient transmission.
- **Resistance in Cables:**
    - Cables used for transmission still have some resistance, resulting in energy loss. **The thickness of the cable can be adjusted to control energy loss, with thicker cables losing less energy**, but at a higher cost.
- **Distance and Transmission Cost:**
    - **Longer transmission distances generally result in lower transmission costs** due to factors such as requirement of less transmission towers, substations, and maintenance efforts.
- **Alternating Current (AC):**
    - AC is preferred for transmission because **it can be easily modified using transformers and has higher efficiency.** However, higher AC frequencies increase resistance in the material.
        - AC power is the most common way to transfer electric power because voltage continuously changes polarity, causing the current to flow in alternating directions. **The AC frequency corresponds to the rate at which the voltage changes direction.**

Installed Electricity Generation Capacity (Fuelwise) as on May 2023:

- Total Installed Capacity (Fossil Fuel & Non-Fossil Fuel) is 417 GW.
- The share of various energy sources in the total Electricity Generation are:
    - Fossil fuel (including Coal) is 56.8%,
    - Nuclear fuel 1.60% and
    - Non-Fossil fuel is 41.4%.

How is Power Transmitted?

- **Power Transmission Infrastructure:**
    - In power transmission, **a three-phase AC circuit** is employed. Each wire carries AC current in a different phase. From a power station, the wires are routed to transformers that step-up their voltage.
    - The infrastructure is equipped with safety features, **such as insulators to divert excessive current** during surges and **circuit-breakers to disconnect the circuit** in case of overload.
    - Additionally, **grounding and arresters** are used to prevent voltage fluctuations caused by external factors like lightning strikes. **Dampers** help **mitigate vibrations that could affect the stability of the towers.**
- **Substation Network:**
    - The transmission wires ultimately lead to various types of **substations,** each serving a specific role in the power distribution system.
        - **Collectors** consolidate power from different sources and channel it to transmission substations.
    - **Distribution substations** play a vital **role in stepping down the voltage in power lines, preparing the electricity for consumption in households** and businesses.
    - **Transmission substations** act as hubs, merging or branching different lines and diagnosing issues within the network.
- **Diverse Functions and Infrastructure:**
    - To perform diverse functions, the infrastructure includes a wide array of support systems, from electrical engineering expertise to advanced computerized operations.
        - Safety measures, such as fire protection, are essential to safeguard critical infrastructure.

How Does an Electric Grid Function?

- **Grid Operation and Components:**
  - **Grids** are complex systems that play a vital role in the distribution of electrical power. They consist of three main components: **production, transmission, and distribution.**
    - The **transmission component** serves as the bridge between power production and delivery to end-users.
  - Some power sources, like coal-fired or nuclear reactors, can produce a continuous supply of energy, while renewable sources, such as wind and solar, are intermittent.
    - **In such cases, Grids become useful as Grids are equipped with storage facilities to store surplus electricity and release it when demand exceeds supply.**
- **Grid Resilience and Control:**
  - Grids must be resilient to **prevent failures in different parts of the network** from affecting others. They also need to manage voltage levels to meet varying demand and ensure a stable and reliable power supply which includes controlling the AC frequency and improving the power factor.
- **Wide-Area Synchronous Grids and Challenges:**
  - A wide-area synchronous grid is a network in which **all connected generators produce AC current at the same frequency.** An example of such a grid is the North Chinese State Grid is the world's most powerful, with a capacity of 1,700 GW. **India's national grid also operates as a wide-area synchronous grid.**
  - These grids have the advantage of lowering power costs due to **shared resources but require measures to prevent cascading failures** in the event of a local power supply failure.

Electric Grid of India

- The electric grid of India, also known as the **National Grid, is a high-voltage electricity transmission network** that connects power stations and major substations across the country. It ensures that electricity generated anywhere in India can be used to satisfy demand elsewhere.
- The National Grid is owned and maintained by the state-owned **Power Grid Corporation of India and operated by the state-owned Power System Operation Corporation.** It is one of the largest operational synchronous grids in the world with **417.68 GW** of installed power generation capacity as of 31 May 2023.

UPSC Civil Services Examination, Previous Year Questions (PYQ)

Prelims

Q. With reference to the Indian Renewable Energy Development Agency Limited (IREDA), which of the following statements is/are correct? (2015)

1. It is a Public Limited Government Company.
2. It is a Non-Banking Financial Company.

Select the correct answer using the code given below:

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

Ans: (c)

Mains

Q. “Access to affordable, reliable, sustainable and modern energy is the sine qua non to achieve Sustainable Development Goals (SDGs)”.Comment on the progress made in India in this regard. **(2018)**

India’s Falling Farm Exports

For Prelims: UN Food and Agriculture Organization’s (FAO), **Food Price Index (FPI)**, **Russia-Ukraine war**, **Inflation**, **Minimum Export Price (MEP)**, Non Basmati, Basmati,

For Mains: Concerns and Issues on economic growth and development due to falling farm exports in India.

Source: IE

Why in News?

According to recent Department of Commerce data, exports of farm commodities, at **USD 23.6** billion in April-September 2023, were below the **USD 26.7** billion for April-September 2022.

- There has been **a drop in imports as well,** from **USD 19.3 billion to USD 16.2 billion** resulting in a marginal dip in the agricultural trade surplus.

What are the Reasons Behind Falling Farm Exports?

- **Government’s Restrictions on Exports:**
  - In the April-September 2023 period, India's agricultural exports declined by 11.6% compared to the previous year. This drop can be **attributed to the government's implementation of bans and restrictions** on the export of several commodities, including **wheat, rice**, and **sugar.**
    - In September 2022, **exports of broken rice were prohibited and a 20% duty levied on all white (non-parboiled) non-basmati grain** shipments. In July 2023, exports of white non-basmati rice were banned altogether. **Henceforth, only exports of parboiled non-basmati and basmati rice were allowed.**
    - The government of India , in May 2022, moved sugar exports from the **“free” to “restricted” category and capped the** total quantity of the sweetener that could go out during any year.
- **Easing Global Prices:**
  - Additionally, global prices have **softened after reaching their highest levels** in the aftermath of Russia's invasion of Ukraine.

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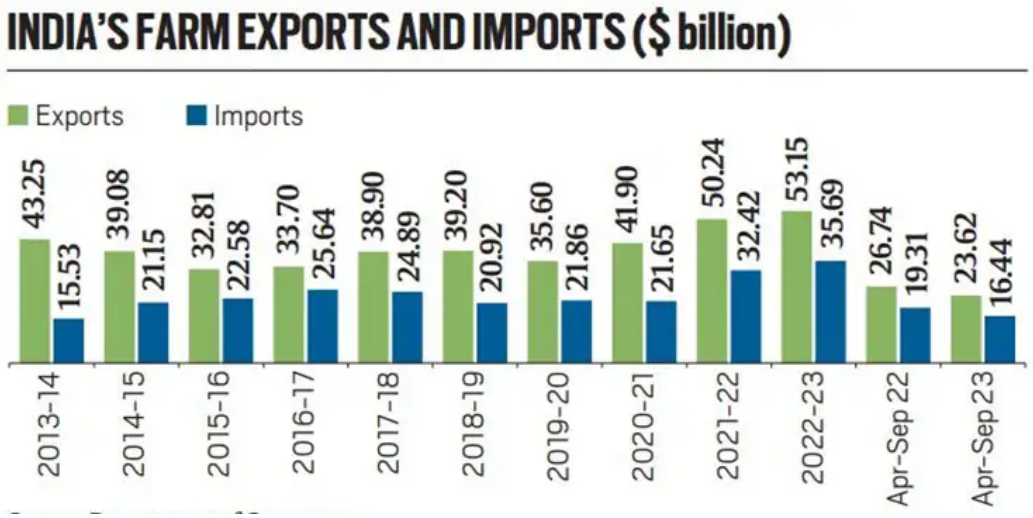

What is the Impact of Global Prices on Declining Food Export?

- **India's Farm Trade and Its Connection to World Prices:**
  - India's agricultural trade, particularly its exports, exhibits a strong correlation with global price trends. This relationship is closely tied to the fluctuations in the **UN Food and Agriculture Organization's Food Price Index (FFPI).**
- **FFPI Trends Impacting India's Agricultural Exports:**
  - The FFPI, reflecting international prices for a range of food commodities, has seen notable changes in recent years. India's agricultural exports tend to follow the FFPI's movements, **declining from USD 43.3 billion in 2013-14 to USD 35.6 billion in 2019-20,** along with the FFPI (from 119.1 to 96.5 points), and subsequently rising as the index reached unprecedented levels in **2022-23.**
- **Impact of Decreasing World Prices on India's Farm Trade:**
  - As global prices have receded, the value of **both agricultural exports and imports in India is expected to decrease in 2023-24.** This trend occurs despite the easing of supply disruptions resulting from the **Russia-Ukraine conflict.** The latest supply and demand brief from the Food and Agriculture Organisation (FAO) **projects global ending cereal stocks for 2023-24.**

INDIA'S TOP AGRI EXPORT ITEMS ($ million)

	2021-22	2022-23	Apr-Sep 22	Apr-Sep 23
Marine products	7772.36	8077.98	4119.63	3803.88
Non-basmati rice	6133.63	6356.71	3199.18	2706.58
Sugar	4602.65	5770.83	2636.25	1302.06
Basmati rice	3537.49	4787.65	2278.35	2589.98
Spices	3896.03	3785.36	1926.90	1949.78
Buffalo meat	3303.78	3193.69	1636.10	1734.40
Raw cotton	2816.24	781.43	435.87	393.82
TOTAL*	50240.21	53153.55	26736.48	23621.71

What are the Consequences of Declining International Prices for Indian Agriculture?

- **Reduces Farmers' Incomes:**
  - Declining international prices **not only lower the cost competitiveness of the**

country's agricultural exports, but also make its farmers more vulnerable to imports. This is being witnessed in cotton and edible oils.
    - The price crash has led to India's cotton exports not only plummeting, but also imports surging **2.5 times** between 2021-22 to 2022-23.
- **Impact on Edible Oil:**
    - The value of India's edible oil imports more than doubled between 2019-20 and 2022-23. This was primarily **due to skyrocketing global prices, particularly post the war in Ukraine.**
        - What is more concerning is prices have since collapsed, but imports of crude palm, soybean and sunflower oil are **still coming in at a low 5.5% duty.**
- **Procedural Concerns:**
    - The government's focus on controlling food inflation ahead of national elections – and prioritizing the interests of consumers over producers – **means that imports of edible oil and pulses will continue unhindered,** alongside restrictions on exports of cereals, sugar and even onion.
        - This amounts to neglecting concerns of manufacturers and producers, **which will impact** GDP growth **negatively.**

UPSC Civil Services Examination Previous Year Question (PYQ)

Prelims

Q. In India, which of the following can be considered as public investment in agriculture? (2020)

1. Fixing Minimum Support Price for agricultural produce of all crops
2. Computerization of Primary Agricultural Credit Societies
3. Social Capital development
4. Free electricity supply to farmers
5. Waiver of agricultural loans by the banking system
6. Setting up of cold storage facilities by the governments

Select the correct answer using the code given below:

(a) 1, 2 and 5 only
(b) 1, 3, and 4 and 5 only
(c) 2, 3 and 6 only
(d) 1, 2, 3, 4, 5 and 6

Ans:C

Q. What is/are the advantages/disadvantages of implementing the 'National Agriculture Market' scheme? (2017)

1. It is a pan-India electronic trading portal for agricultural commodities.
2. It provides the farmers access to nationwide market, with prices commensurate with the quality of their produce.

Select the correct answer using the code given below:

(a) 1 only
(b) 2 only
(c) Both 1 and 2
(d) Neither1 nor 2

Ans: C

Composite Water Management Index

Source: IE

Why in News?

The Composite Water Management Index **(CWMI)** has been a pivotal tool in India, serving as a significant **barometer for assessing states' efficacy in** water management.

- However, recent developments have **raised queries regarding its future, casting doubts on its continuity.**

What is the Composite Water Management Index?

- **About:**
  - The **Composite Water Management Index (CWMI)** is launched by **NITI Aayog** to provide an annual snapshot of the water sector status and **water management performance of the states and union territories (UTs) in India.**
- **Genesis and Evolution of the Report:**
  - Launched in **June 2018 by Niti Aayog,** the CWMI's debut edition spotlighted India's water challenges, rating states based on 28 parameters, utilizing data from 2015-16 and 2016-17. The second edition launched in August 2019 was for 2017-18.
    - The report was a result of collaborative efforts between **NITI Aayog and three key ministries: Water Resources, Drinking Water & Sanitation, and Rural Development.**
- **Themes and Indicators:**
  - The Index comprises **nine themes** (each having an attached weight) with 28 different indicators.
    - Source augmentation and restoration of waterbodies
    - Source augmentation (Groundwater)
    - Major and medium irrigation — Supply side management
    - Watershed development — Supply side management
    - Participatory irrigation practices — Demand side management
    - Sustainable on - farm water use practices — Demand side management
    - Rural drinking water
    - Urban water supply and sanitation
    - Policy and governance
- **Delay in Subsequent Editions:**
  - The NITI Aayog attributed delays in the third and fourth rounds of the CWMI to the unavailability of updated data caused by the Covid-19 pandemic.
    - Considerations were made to **combine rounds 3.0, 4.0, 5.0, and 6.0** to cover the years 2021-22 and 2022-23, while contemplating extending data coverage to the **district level.**

What is the Status of Water Resources in India?

- The **net amount of water that can be used in India in a year is estimated at 1,121 billion cubic meters (bcm)**. However, the data published by the Ministry of Water Resources shows that the total water demand will be 1,093 bcm in 2025 and 1,447 bcm in 2050.
  - This means that there will be a major water shortage in India within 10 years.
- As per the **Falkenmark Water Index** (used for measuring water scarcity throughout the world), wherever the amount of water available per capita is below 1,700 cubic meters in a year, there is water scarcity.

- Going by this index, **almost 76% of people are already living with water scarcity in India.**

What are the Government Initiatives Related to Water Management in India?

- **National Aquifer Mapping and Management Program**
- **Jal Shakti Abhiyan**
- **National Water Policy, 2012**
- **Atal Bhujal Yojana**

UPSC Civil Services Examination, Previous Year Questions (PYQs)

Prelims

Q. What are the benefits of implementing the 'Integrated Watershed Development Programme'? (2014)

1. Prevention of soil runoff
2. Linking the country's perennial rivers with seasonal rivers
3. Rainwater harvesting and recharge of groundwater table
4. Regeneration of natural vegetation

Select the correct answer using the code given below:

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

Ans: (c)

Q. On the planet earth, most of the freshwater exists as ice caps and glaciers. Out of the remaining freshwater, the largest proportion (2013)

(a) is found in atmosphere as moisture and clouds
(b) is found in freshwater lakes and rivers
(c) exists as groundwater
(d) exists as soil moisture

Ans: (c)

Mains

Q. Enumerate the National Water Policy of India. Taking river Ganges as an example, discuss the strategies which may be adopted for river water pollution control and management. What are the legal provisions of management and handling of hazardous wastes in India? **(2013)**

Q. "The ideal solution of depleting ground water resources in India is water harvesting system". How can it be made effective in urban areas? **(2018)**

Q. What is water stress? How and why does it differ regionally in India? **(2019)**

Rapid Fire Current Affairs

Battle of Surabaya

The 10th of November is celebrated as National Heroes Day in Indonesia to commemorate the heroism of Indonesian patriots during the 1945 Battle of Surabaya.

- The **Battle of Surabaya,** fought between **Indonesian nationalists and British and British Indian forces,** which lasted from 1945 to 1949.
- At the time of war, **Indonesia was a Dutch colony** and after Japan's surrender in **World War II,** Indonesian nationalists declared independence. However, **the Dutch did not recognize this declaration** and sought to regain control of their colony, **which led to war.**
- The outcome of the battle was a **victory for the British and British Indian forces,** who managed to capture the city of Surabaya after heavy fighting.

Read More: Indian National Army, Advent of Europeans In India

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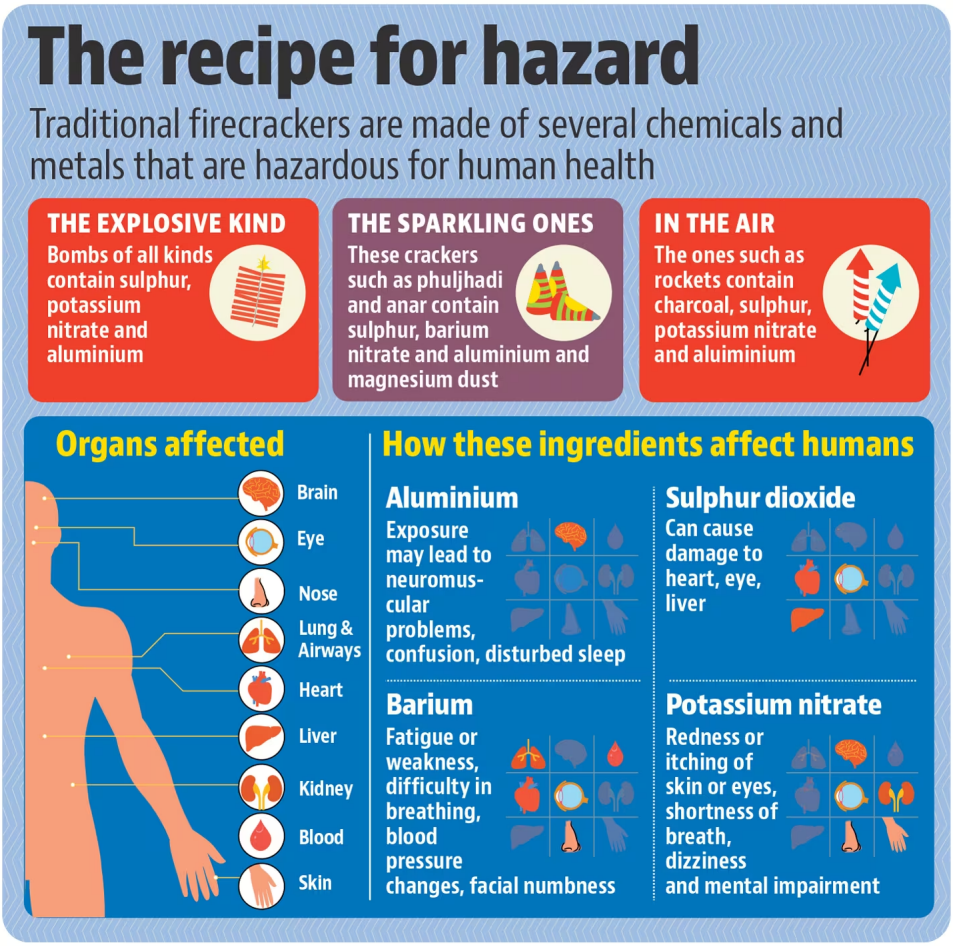
Supreme Court Orders on Firecrackers and Pollution

Recently, the **Supreme Court** restated its **directives to reduce air and** noise pollution resulting from **firecrackers.**

- Emphasizing that **its mandates are binding for all states,** the court stressed the necessity for ongoing endeavors to diminish pollution, **not only during festivities but consistently throughout the year.**
- It underlined the importance of responsible Diwali celebrations, **highlighting that joy should not compromise the environment's well-being.**



Read more: Green Crackers

Artificial Rain Project to Combat Delhi Pollution

Recently, the **Delhi government** has been considering **artificial rain** through **cloud seeding** as a measure to combat **escalating** pollution levels in the city.

- IIT-Kanpur has conducted pilot projects during monsoon months, and the focus is now on winter conditions.
- A minimum requirement of **40% cloud and moisture is necessary for cloud seeding.**
    - The potentially favorable conditions for artificial rain are projected on November 20 and 21, 2023.
- The project involves using **silver iodide and other components for cloud seeding via aircraft.**
- The effectiveness of artificial rain in reducing pollution levels depends on factors like moisture and rainfall.

Read more: Cloud Seeding

INDUS-X Investors Meet

The **Innovations for Defence Excellence (iDEX)** and the **US Department of Defence** organized the **inaugural INDUS-X Investors Meet in New Delhi,** fostering collaboration in defence innovation.

- The event featured the launch of the **INDUS-X Educational Series (Gurukul)** aimed at guiding innovators and startups in the **defence ecosystem of India and the US.**
    - The Gurukul Educational Series will offer sessions for startups by experts from both countries, facilitating **navigation in the defence ecosystems.**
- Panel discussions focused on **investment opportunities** in the defence sector, establishing a

sustainable commercial foundation for collaboration and co-production.

- The **India-US Defence Acceleration Ecosystem (INDUS-X) initiative,** launched in June 2023, aims to enhance strategic technology partnership and defence industrial cooperation between India and the US.

Read more: Innovations for Defence Excellence**,** India-U.S. Strategic Partnership

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