

GOVERNANCE**MSB for NetNeutrality**

Recently, the Telecom Regulatory Authority of India (TRAI) has recommended the creation of a multi-stakeholder body (MSB) to ensure that Internet access providers adhere to the provisions of net neutrality.

- The MSB should be set up as a non-profit entity.

Key Points**Roles and Responsibilities:**

- To provide advice and support to the Department of Telecommunications (DoT) in the monitoring and enforcement of net neutrality principles.
- To investigate complaints regarding the violation of net neutrality.
- To help DoT in the maintenance of a repository of reasonable traffic management practices.

Stakeholders:

- It could include telecom service providers, Internet service providers, content providers, researchers, academic and technical community, civil society organisations, and the government.

Net Neutrality in India: The DoT accepts TRAI's recommendations in favour of net neutrality which:

- Bars telcos from discriminatory treatment on the web, based on content, sender, receiver, protocols or equipment.
- Penalises for violation of license rules on net neutrality.
- Includes exceptions for critical services such as remote healthcare diagnostics, self-driving cars, etc.
- Exempts content delivery networks, which do not use public Internet from open web rules.
- Applies equally to 5G technology as well because the principles are technology-neutral.

Net Neutrality

- Net neutrality has been defined as a principle that Internet Service Providers (ISP) also called Internet Access Providers (IAP) should enable access to all content and applications regardless of the source, and without favouring or blocking particular products or websites.
- This means when the customers pay an ISP for a data plan, they should be able to access all content online (news, social media, videos, games, etc.) at the same broadband speed which they had opted for.

Arguments in Favour:

- It democratises the internet space as the telecom provider cannot charge differently for different websites and allows everyone on the internet to participate in it.
- It does not let ISPs to act as "gatekeepers" and control, filter or block data according to their will without a court order.
- It provides a level playing field to all the big and small companies in the Information Technology (IT) sector and does not let a handful of companies control the internet.
- It ensures that all people and websites have equal access to each other, regardless of their ability to pay hence fosters the principle of freedom of speech.

Arguments Against:

- It will stifle innovation on the internet as it will not be possible to explore consumer choices and create content accordingly.
- ISPs will not be able to make an investment in Broadband services.
- It will kill competition as every data packet will be treated the same and content providers will not get a chance to advance their data at a better rate by paying the telecom providers.

A QUICK REMINDER

What is net neutrality?

All traffic on the Internet should be treated equally.

NO BLOCKING

Your internet access provider (IAP) cannot block you from accessing legal content of your choice.

NO THROTTLING

Your IAP cannot intentionally throttle legal internet traffic to slower speeds than other traffic.

NO PAID PRIORITIZATION

Your IAP cannot sell 'fast lane' service to content providers who can pay more than others.



SCIENCE AND TECHNOLOGY

Jasmonate Hormone and Rice Productive

A new study by a team of scientists at National Institute of Plant Genome Research (NIPGR), New Delhi suggested that targeting a specific plant hormone Jasmonate (JA) would help rice plants have greater tolerance to potassium (K) deficiency and improve productivity.

Key Points

Findings:

- The overexpression of a gene called OsJAZ9 helped make rice plants more tolerant of potassium deficiency.
- There was an enhanced accumulation of JA-Ile — a bioactive form of the hormone Jasmonate (JA), in OsJAZ9 overexpressing rice, on potassium deficiency.
- The JA-Ile helps in modulating various K transporters and root system architecture.
- JA-Ile contributes to several aspects of plant growth and development and levels increase under stress conditions.
- The study suggests that targeting research towards JA could help achieve both, nutrient- efficient crops and protection against pests.
- JA is often associated with the plant's defence against biotic factors like insects, pests and other pathogens.
- Potassium. Potassium (K) is considered a macronutrient for plants and is the most abundant cation within plant cells.

Significance of Potassium:

- Plants require, among other things, a high and stable concentration of potassium ion to activate many enzymes that are involved in respiration and photosynthesis.
- Potassium is also involved in key cellular processes such as energy production, and cell expansion.
- Cell expansion is the process of taking cells extracted from tissue, culturing them in the lab and encouraging them to reproduce.

Potassium Deficiency: It affects plants by inhibiting the growth of the roots and the shoots.

- Studies have shown that plants that are deficient in potassium are more susceptible to salt, drought, chilling and other abiotic and biotic stresses.
- Potassium deficiency occurs frequently in plants grown on sandy soils resulting in a number of symptoms including curling of leaf tips and yellowing (chlorosis) of leaves, as well as reduced growth and fertility.

Potassium Availability to plant Roots: Despite being among the most abundant minerals in the soil, its availability to plants is limited.

- This is because most of the soil potassium (about 98%) is in bound forms and its release into the soil solution is far slower than the rate of its acquisition by the roots.
- The availability of potassium in the soil solution or exchangeable form depends on multiple factors like soil acidity, presence of other monovalent cations like sodium and ammonium ions and the type of soil particles.

ENVIRONMENT AND DIVERSITY

EPCA on Early Burning of Crop Residue

- The Supreme Court-appointed Environment Pollution (Prevention and Control) Authority (EPCA) raised concerns about early burning of crop residue in Punjab and Haryana.

Key Findings

- According to a SAFAR (System of Air Quality and Weather Forecasting and Research) under the Central government estimate which uses the INSAT-3, 3D and the National Aeronautics and Space Administration (NASA) satellite, the fire counts have increased from zero to 42 in a few days.
- In 2019, about 9.8 million tonnes of the total estimated crop residue of 20 million tonnes were burnt in Punjab.
- Similarly, in Haryana, of the total 7 million tonnes, 1.24 million tonnes of stubble were burnt.

Stubble Burning

- It is a traditional practice in Punjab and Haryana to clean off the rice chaff to prepare the fields for winter sowing.
- It begins around October and peaks in November, coinciding with the withdrawal of southwest monsoon.
- The pollutants and the Particulate Matter (PM) from the chaff, along with other sources of pollution in Delhi, makes winter air quality worse in Delhi and proximity.

Reasons:

- **Increase in Rice Acreage:** Subsidies and assured procurement of rice have led to a rise in the rice acreage.
- Delayed sowing of paddy to late June to discourage groundwater extraction as per the Punjab Preservation of Subsoil Water Act 2009.
- This led to a delayed harvesting, stubble burning coincides perfectly with the withdrawal of southwest monsoon.
- This time the southward shift of subtropical jet stream happens causing a westward wind pattern in the northern part of India and thus spread of pollutants.
- **Technology:** Increased and modernised farm mechanisation extract the rice grains only and leave large quantities of rice stubble behind. Earlier, this excess crop was used by farmers for cooking, as hay to keep their animals warm or even as extra insulation for homes.
- **High Silica Content:** Rice straw is considered useless as fodder in the case of non-basmati rice, because of its high silica content.

Effects:

- The stubble burning emits large amounts of toxic pollutants in the atmosphere which contain harmful gases like methane (CH₄), Carbon Monoxide (CO), Volatile organic compound (VOC) and carcinogenic polycyclic aromatic hydrocarbons.
- The burning of wheat straw reduces the soil fertility, besides polluting the environment.
- Additionally, the heat generated by stubble burning penetrates into the soil, leading to the loss of moisture and useful microbes.

Way Forward

- A centralized control room must be set up to issue directions both for ensuring that appropriate technology to tackle this issue is within the reach of farmers and also ensure enforcement of non-compliance.
- The establishment of the Farm Machinery Banks (FMB) for custom hiring of in-situ crop residue management machinery.
- The most efficient technology is the Turbo Happy Seeder (THS) machine. It not only cuts and uproots the stubble but can also drill wheat seeds in the soil that have just been cleared up. The straw is simultaneously thrown over the sown seeds to form a mulch cover.

- Stopping crop residue burning will aid the National Clean Air Programme (NCAP), which aims to reduce pollution by 20-30% in annual PM concentration by 2024.
- An expansion of schemes like the Mahatma Gandhi National Rural Employment Guarantee Act (MGNREGA) for harvesting and composting of stubble will help to resolve the dual problem of unemployment and stubble burning.
- In the long-term, shifting the cropping pattern away from paddy to maize, cotton, fruits or vegetables in Punjab, Haryana and UP is required.

Additional Information:

Environment Pollution (Prevention and Control) Authority

- EPCA was constituted under section 3 of the Environment (Protection) Act, 1986 for the National Capital Region in compliance with the Supreme Court order dated January 1998.
- It has the power to take action suo-moto, or on the basis of complaints made by any individual, representative body or organization functioning in the field of environment.
- It takes all necessary steps for controlling vehicular pollution, ensuring compliance of fuel quality standards, monitoring and coordinating action for traffic planning and management.

INSAT

- The Indian National Satellite (INSAT) system is a constellation of operational communication satellites placed in Geo-stationary orbit.
- Established in 1983 with commissioning of INSAT-1B.
- The constellation of INSAT System consists of operational satellites, namely – INSAT-3A, 3C, 3D, 4A, 4B, 4CR, 3DR.

SAFAR

- The System of Air Quality and Weather Forecasting and Research (SAFAR) is a national initiative introduced by the Ministry of Earth Sciences (MoES) to measure the air quality of a metropolitan city, by measuring the overall pollution level and the location-specific air quality of the city.
- The system is indigenously developed by the Indian Institute of Tropical Meteorology (IITM), Pune and is operationalized by the India Meteorological Department (IMD).

INDIAN ECONOMY

The Essential Commodities (Amendment) Bill, 2020.

Recently, the Parliament passed the Essential Commodities (Amendment) Bill, 2020. The Bill replaces an Ordinance promulgated in June 2020 and amends the Essential Commodities Act (ECA), 1955.

Key Points

Features of the Bill:

- Removes commodities like cereals, pulses, oilseeds, edible oils, onion and potatoes from the list of essential commodities.
- Aims to remove fears of private investors of excessive regulatory interference in their business operations.
- Ensures that interests of consumers are safeguarded by regulating agricultural foodstuff in situations such as war, famine, extraordinary price rise and natural calamity.
- However, the installed capacity of a value chain participant and the export demand of an exporter will remain exempted from such regulation so as to ensure that investments in agriculture are not discouraged.

Background:

- The ECA 1955 was used to curb inflation by allowing the Centre to enable control by state governments of trade in a wide variety of commodities.
- The states imposed stock limits to restrict the movement of any commodity deemed essential. It helped to discourage hoarding of items, including food commodities, such as pulses, edible oils and vegetables.
- However, the Economic Survey 2019-20 highlighted that government intervention under the ECA 1955 often distorted agricultural trade while being totally ineffective in curbing inflation.
- Such intervention does enable opportunities for rent-seeking and harassment.
- Rent-seeking is a term used by economists to describe unproductive income, including from corruption.
- Traders tend to buy far less than their usual capacity and farmers often suffer huge losses during surplus harvests of perishables, since large stocks held by traders can be outlawed under the ECA 1955 anytime.

- This led to farmers being unable to get better prices due to lack of investment in cold storage, warehouses, processing and export.
- Also with the Food Corporation of India (FCI) controlling stocks before, there were less investment and buyers.

Benefit:

- The freedom to produce, hold, move, distribute and supply will lead to harnessing economies of scale and attract private sector/foreign direct investment into the agriculture sector.
- Investment in cold storages and modernization of the food supply chain will increase.
- It will create a competitive market environment and also prevent wastage of agri-produce that happens due to lack of storage facilities.
- It will help both farmers and consumers while bringing in price stability.

Issues Involved:

- It will be a highly centralized law and will infringe upon the States' powers, as they will not be able to regulate let say the menace of hoarding, black marketing etc.
- The stock limit relaxations under the ECA may lead to black marketing and hoarding rather than benefiting the producers. This will lead to increase in inflation and monopoly of few individuals over prices of certain goods.

Way Forward

- The ECA 1955 was brought when India was not self sufficient in food grains production. But now India has become surplus in most agri-commodities, and the amendments in the ECA 1955 is an important step by the government to achieve its target of doubling farmers' income and also for ease of doing business.

AGRICULTURE

REPORT for the 2020-21 Kharif Marketing Season: CACP

The Commission for Agricultural Costs and Prices (CACP) has released the latest report for the 2020-21 kharif marketing season.

Key Points

Present Scenario:

Overflowing Stocks of Foodgrains: The central pool had 73.85 million tonnes of food grains on 2nd April, 2020. This is not only the highest-ever stock available but also over 300% of the strategic and operation reserve norm of 21.04 million tonnes. This year's kharif crop production is also estimated to be record-high.

Failure of Open Market Sale Scheme (OMSS): The Union government had decided in April 2019 to sell wheat and rice in the open market via e-auction through OMSS. It aimed to divert extra stock. But the government could just sell one-fifth of the target of a five-million tonne sale.

Increase in food business registration: There has been a 65% year-on-year jump in registration applications for new food businesses, indicating that private players are eager to invest in agri business and the rural economy as a result of the reforms by Agricultural ordinances.

Traders moving out-of Mandi: As there would be no fees on buying outside the Mandi (unlike before the agri ordinances), many of the traders would prefer to buy outside. In June to August, there was a 20-40% drop in sale volume of non-perishables within the mandis. This will adversely impact the farmers.

Increase in MSP for Rabi Crops: Recently, the Cabinet Committee on Economic Affairs marginally increased the Minimum Support Price (MSP) of six rabi crops for 2021-22. This is in line with the principle of fixing the MSPs at a level of at least 1.5 times of the All-India weighted average Cost of Production as announced in Union Budget 2018-19.

Challenges:

Unavailability of Physical Space for Storage: This can cause foodgrains to perish.

Reduction in Demand due to More Supply: Release of high buffer stock in the market, would lead to a collapse in prices. This, in turn, will lead to farmers again losing on fair price for their bumper harvest.

Farmer's protest: Recently, there have been strong protests from farmers, especially from the states of Punjab and Haryana, against three farm bills passed in the parliament. This has posed a challenge in front of the government to assure farmers of routine procurements and fair prices.

Recommendations of CACP Report:

Excess Stocks need to be urgently liquidated:

This will help ease storage capacity constraints and save large carrying costs of excessive stocks.

Excess rice stocks should be liquidated through increased allocation under the National Food Security Act and Other Welfare Schemes.

The government should divert old stocks for ethanol production and cattle feed purposes.

Review open-ended procurement policy (OEPP):

- The central government should review OEPP for rice and wheat.
- Major policy changes should be introduced in pricing, procurement and use of other crops like oilseeds, pulses, maize nutri-cereals to encourage farmers to shift to these crops, which have great potential for crop diversification.

More Procurement from States like UP and Bihar:

- Strengthen procurement from states like Bihar, Uttar Pradesh and Rajasthan and restrict procurement from states like Punjab and Haryana where substantial groundwater depletion has occurred and other states that give bonus.

In all those states that impose high fees and incidental charges and pay bonus, procurement of rice and wheat should be restricted.

- The state governments should discontinue the bonus above the minimum support price (MSP) as it distorts the market and discourages private sale.
- More than 95% of paddy farmers in Punjab are covered under the government procurement system while it is 70% in case of Haryana. In case of other major paddy producing states like Uttar Pradesh and Bihar, it is 3.6% and 1.7% respectively.
- Reserve Price for open Market Sale of Pulses and oilseeds
- The government should not sell these stocks in the open market below the MSP, particularly during the procurement season as it depresses market prices and discourages the private sector to procure directly from farmers.

Way Forward

Given the forecast for food grains like paddy, the prices would be subdued due to large stocks and also less demand globally. If the government decides to flood the market with its excessive stock, it would lead to more supply, thus reducing the price. In such a scenario, implementing the bold recommendations of CACP may help in dealing with the stocks.

IMPORTANT FACTS FOR PRELIM

SHUCHI SCHEME: KARNATAK

The Karnataka government has not allocated funds to the Shuchi Scheme (a menstrual hygiene project), in its budget for 2020-21.

As a result, the distribution of sanitary napkins has come to halt under the Scheme, affecting over 17 lakh school and college girls.

Key Points

- The Shuchi Scheme, started in 2013-14, was initially a Centrally-sponsored one. However, the Centre asked States to take over the scheme from 2015-16.
- The central government has supported the States/UTs through National Health Mission (NHM) in their programme implementation plans for decentralised procurement of sanitary napkin packs.
- It is aimed at instilling awareness about menstrual hygiene among adolescent girls.
- A national level scheme- Kishori Shakti Yojana (KSY) of the Union Ministry of Women & Child Development seeks to empower adolescent girls, so as to enable them to take charge of their lives.
- The broad objectives of the Scheme are to improve the nutritional, health and development status of adolescent girls, promote awareness of health, hygiene, nutrition and family care, link them to opportunities for learning life skills, going back to school, help them gain a better understanding of their social environment and take initiatives to become productive members of the society.

Abhyas High-speed Expendable Aerial Target (HEAT)

Recently, the Defence Research and Development Organisation (DRDO) conducted successful flight-tests of the indigenously-designed Abhyas High-speed Expendable Aerial Target (HEAT) in Balasore (Odisha).

Two demonstrator vehicles of Abhyas cleared all the evaluation parameters like 5 km flying altitude, vehicle speed of 0.5 mach (half the speed of sound), endurance of 30 minutes etc.



Key Points

Designed and developed by: Aeronautical Development Establishment (ADE) of DRDO.

- Aeronautical Development Establishment (ADE) is a key Aeronautical Systems Design Laboratory under DRDO.
- It is involved in the design and development of the state-of-the-art Unmanned Aerial Vehicles (UAV) and Aeronautical Systems and technologies to meet the requirements of the Indian Armed forces.

Features:

- It is a drone (UAV) that will be used as a target for various missile systems.
- It is powered by a small gas turbine engine.
- Navigation by Micro-electromechanical (MEMS) systems based Inertial Navigation System (INS) for navigation.
- MEMS is a process technology used to create tiny integrated devices or systems that combine mechanical and electrical components.
- It is lightweight and reliable, consumes less power and is cost-effective.
- Programmed for fully autonomous flight.

Uses: As a target for evaluation of various Missile systems.

Background: This is the second time that the target vehicle was flight-tested successfully. The first successful test was in May 2019.

Others: Recently, the DRDO successfully flight tested the Hypersonic Technology Demonstrator Vehicle (HSTDV).

DAILY ANSWER WRITING PRACTICE

Qns. "India needs smart urbanization". in light of this, discuss issues and challenges associated with urbanization in India. (250 words)

Ans.

Urbanisation in India is taking place at a faster rate with over 34% of India's current population living in urban areas (UN World Urbanisation Prospects Report 2018). It has expanded rapidly as an increasing number of people migrate to towns and cities in search of economic opportunity. Smart urbanisation involves effective integration of physical, digital and human systems in the built environment to deliver sustainable, prosperous and inclusive future for its citizens.

Issues associated with urbanisation in India:

- **Urban sprawl or real expansion of the cities**, both in terms of population and geographical area, which has encroached upon the agricultural and forest lands.
- **Overcrowding and haphazard development of urban areas** which has led to annually recurring instances of floods, diseases and fire in many cities.
- **Rising demands for basic services** such as clean water, public transportation, sewage treatment and housing.
- **The proliferation of slums** due to policy, planning, and regulatory deficiencies.

- **Huge quantities of garbage generated by the cities** which are posing a serious health problem.
 - **Environmental concerns** such as urban areas becoming heat islands, rising air pollution, groundwater pollution and persistent water crisis.
 - **Rising urban poverty**, inequality and unemployment.
 - **Urban Crimes** such as human trafficking, sexual assault, child labour etc.
- Several smart urbanisation measures like **Smart Cities Mission**, **AMRUT** etc are being taken up by the government to address these issues. However, there are various challenges which impede progress such as:
- Many urban local governments **lack a modern planning framework** which limits effective land utilisation and cities' abilities to grow in accordance with changing needs.
 - 74th Amendment Act has been implemented half-heartedly by the states, which have not fully empowered the Urban Local Bodies (ULBs). **ULBs need clear delegation of functions, functionaries and funds.**
 - **The state governments have not given enough autonomy to ULBs** to generate revenues and at the same time, the ULBs have failed to utilize even those tax and fee powers that they have been vested with.
 - On the 'Smart City' front, while over 90 'Smart Cities' have identified 2,864 projects, **India lags on implementation**, with about 148 projects completed and over 70% still at various stages of preparation.
 - **Low level of urban infrastructure investment** and capacity building.
 - **Wide inter-state disparity in urbanization levels** also poses a challenge to the urban planners. An urban area that has an advanced model of technology but is badly planned, with outdated legal frameworks or lacking a good financial model, will only aggravate the dysfunction in the area.

Conclusion

The announcement of a new urbanisation policy that seeks to rebuild Indian cities around clusters of human capital, instead of considering them simply as an agglomeration of land use, is a welcome transition. We need to empower our cities, with a focus on land policy reforms, granting urban local bodies the autonomy to raise funds and enforce local land usage norms.

DAILY QUIZ

1. With reference to Brucellosis, consider the following statements:
 1. Brucellosis is a viral disease which mainly infects cattles.
 2. The disease cannot be transmitted from infected animals to humans.
 Which of the statements given above is/are correct?

a) 1 only b) 2 only c) Both 1 and 2 **d) Neither 1 nor 2**
2. Which of the following statements is/are correct regarding 'Modern Grand Solar Minimum'?
 1. The solar minimum will completely offset the rising temperatures due to global warming.
 2. The surface temperatures on Earth may go down due the reduction in solar magnetic activity.
 Choose the correct option using code given below:

a) 1 only **b) 2 only** c) Both 1 and 2 d) Neither 1 nor 2
3. Consider the following statements:
 1. Cess is a permanent source of revenue for the government.
 2. The proceeds of a cess are not shared with the state governments.
 Which of the statements given above is/are correct?

a) 1 only b) 2 only c) Both 1 and 2 **d) Neither 1 nor 2**
4. With reference to World Risk Index 2020, consider the following statements:
 1. It assesses the vulnerability of the external debt of a country.
 2. It is released by the World Economic Forum.
 Which of the statements given above is/are correct?

a) 1 only b) 2 only c) Both 1 and 2 **d) Neither 1 and 2**
5. Consider the following statements:
 1. Plasticulture is the use of plastics in agriculture and allied activities.
 2. The Plastic Parks Scheme has been launched to set up industrial zones of plastic enterprises.
 Which of the statements given above is/are correct?

a) 1 only b) 2 only **c) Both 1 and 2** d) Neither 1 and 2