

GOVERNANCE**World Food Day**

World Food Day is celebrated to commemorate the establishment of the United Nation's Food and Agriculture Organisation (FAO) on 16th October 1945.

- The Prime Minister of India released a commemorative coin of Rs. 75 denomination to mark the 75th Anniversary of the FAO.
- FAO is a specialised agency of the United Nations that leads international efforts to defeat hunger.

Key Points**About World Food Day:**

- It is observed annually on 16th October to address the problem of global hunger.
- It emphasises on the Sustainable Development Goal 2 (SDG 2) i.e. Zero Hunger.
- Theme for 2020: "Grow, Nourish, Sustain. Together."
- There has been a renewed focus on food, nutrition, health, immunity and sustainability due to the unprecedented challenges posed by the Covid-19 pandemic.

75th Anniversary of FAO:

- Over the years, FAO has helped to increase agricultural production and eradicate hunger all over the world, including India and has played an important role in increasing nutrition.
- 2020's Nobel Peace Prize to the World Food Programme is also a major achievement for the FAO as the programme was started by FAO.

Indian Context:

- FAO has closely watched India's fight against malnutrition in the past decades but its scope had many constraints.
- Due to reasons such as pregnancy at a young age, lack of education and information, inadequate access to drinking water, lack of cleanliness, etc. India is lagging behind in achieving the expected results of "malnutrition free India" by 2022, envisaged under the National Nutrition Mission (POSHAN Abhiyaan).
- FAO supported India's proposal to declare 2023 as the International Year of Millets.
- The move will encourage intake of nutritious food, increase their availability further and benefit small and medium farmers who mostly grow coarse grains on their land where there is a problem of water and the land is not so fertile.
- **Highlighted Indian Initiatives**
- Eat Right India and Fit India Movement along with Swachh Bharat Abhiyan, Jal Jeevan Mission and other efforts will improve the health of Indians and heal the environment.
- Introduction of 17 new biofortified varieties of crops to overcome the shortcomings of the common variety of crops which lacks important micronutrients.
- Example: MACS 4028 Wheat, Madhuban Gajar, etc.
- Increased ambit and effective implementation of the Food Security Act, 2013.
- Amendments to the APMC (agricultural produce market committee) Acts to make them more competitive.
- Steps to ensure that farmers get one and a half times the cost as Minimum Support Price (MSP), which along with the government procurement, is an important part of ensuring the country's food security.
- Development of a large network of Farmer Producer Organisations (FPOs).
- Amendments in the Essential Commodities Act, 1955 to deal with the issue of grain wastage in India.
- Government is making efforts to make India Trans Fat free by 2022, a year ahead of the World Health Organisation (WHO) target, in synergy with the vision of New India @75 (75 years of India's independence).
- Trans Fat is a food toxin present in Partially Hydrogenated Vegetable Oils (PHVOs) (e.g. vanaspati, shortening, margarine, etc.), baked and fried foods.
- It is a major contributor to the rise in non-communicable diseases in India and also a modifiable risk factor for cardiovascular diseases (CVD). Eliminating CVD risk factor is especially relevant during Covid-19 as people with CVD are predisposed to have serious conditions having an impact on mortality.

SCIENCE AND TECHNOLOGY

Bioremediation mechanism for Oil Spills

The National Institute of Ocean Technology (NIOT), Chennai has developed an eco-friendly crude oil bioremediation mechanism technology using consortia (group of two or more species) of marine microbes wheat bran (WB) immobilized (microbes controlled degradation) on agro-residue bacterial cells.

Wheat bran is the hard outer layer of the wheat kernel. It's stripped away during the milling process.

Key Points

- Eco-friendly Crude Oil Bioremediation Mechanism Technology
- **Bioremediation:** It can be defined as any process that uses microorganisms or their enzymes to remove and or neutralize contaminants within the environment to their original condition.
- In the marine ecosystem, deep sea hydrocarbonoclastic (ability to degrade hydrocarbon) microbial consortium plays an important role in breaking down oil in the event of a spill.
- The microbial community serves as energetic primary degraders of a complex mixture of petroleum hydrocarbons into various aldehydes, ketones and acidic metabolites.
- These hydrocarbon degrading bacteria don't depend on hydrocarbons for survival, but have a metabolic mechanism where they use petroleum products as carbon and energy source and thus, help cleaning up oil spills.
- The complete breakdown and degradation of crude oil is achievable using wheat bran marine bacterial consortia (which are low-cost non-toxic agro-residues) in an environmentally sustainable manner.

Advantages of Immobilized State:

- They are more effective in their immobilised state than the free bacteria cells in degrading the oil spills.
- They could remove 84% of the oils within 10 days. The free bacterial cells degraded a maximum of 60% of the crude oil at optimised conditions.
- They are more versatile and resistant to adverse conditions.
- They have efficacy in treating accidental bulk discharge of oil in marine environments through non-toxic clean-up technology.

Oil Spill

- It is an accidental/uncontrolled release of crude oil, gasoline, fuels, or other oil by-products into the environment. Oil spills can pollute land, air, or water, though it is mostly used for oceanic oil spills.
- The recent MV Wakashio spill off Mauritius — about 1,000 tonnes of oil spilled into a sanctuary for rare wildlife after the Japanese ship struck a coral reef in 2020.
- **Cause:** They have become a major environmental problem, chiefly as a result of intensified petroleum exploration and production on continental shelves and the transport of large amounts of oils in vessels.
- **Measure:** Cleaning up of the oil spillage from the oceans without damaging the marine ecosystem is becoming an increasingly challenging task.
- **Containment Booms:** Floating barriers, called booms are used to restrict the spread of oil and to allow for its recovery, removal, or dispersal.
- **Skimmers:** They are devices used for physically separating spilled oil from the water's surface.
- **Sorbents:** Various sorbents (e.g., straw, volcanic ash, and shavings of polyester-derived plastic) that absorb the oil from the water are used.
- **Dispersing agents:** These are chemicals that contain surfactants, or compounds that act to break liquid substances such as oil into small droplets. They accelerate its natural dispersion into the sea.

SOCIAL JUSTICE

India and its Sex Ratio

Recently, C Rangarajan (former Chairman, Prime Minister's Economic Advisory Council) argued that there is an urgent need to reach young people both for reproductive health education and services as well as to cultivate gender equity norms.

- His arguments are based on the Sample Registration System (SRS) Statistical Report (2018) and United Nation Population Fund (UNFPA) State of World Population 2020.

SRS Report

- SRS is the largest demographic sample survey in the country that among other indicators provide direct estimates of sex ratio, fertility rate etc. through a nationally representative sample.
- It is brought by the Office of Registrar General.

United Nation Population Fund

- The UNFPA is aimed at improving reproductive and maternal health worldwide. It is headquartered in New York.

Key Points

Sex Ratio at Birth:

- Biologically normal sex ratio at birth is 1,050 males to 1,000 females or 950 females to 1,000 males.
- The SRS Report 2018 shows that sex ratio at birth in India, declined marginally from 906 in 2011 to 899 in 2018.
- Sex ratio is measured as the number of females per 1,000 males.
- The UNFPA State of World Population 2020 estimated the sex ratio at birth in India as 910, which is on the lower side of index.
- This is a cause for concern because this adverse ratio results in a gross imbalance in the number of men and women and its inevitable impact on marriage systems as well as other harms to women.

Total Fertility Rate (TFR):

- According to SRS Report 2018, TFR has been declining in India for some time now. It declined from 2.4 to 2.2 during the period between 2011 and 2018.
- In 2011, 10 states had a fertility rate below the replacement rate. This increased to 14 states in 2020.
- Fertility is likely to continue to decline and it is estimated that replacement TFR of 2.1 would soon be reached for India as a whole.
- TFR is the number of children a mother would have at the current pattern of fertility during her lifetime.
- Replacement rate is the average number of children born per woman—at which a population exactly replaces itself from one generation to the next, without migration.
- Many people believe that the population would stabilise or begin to reduce in a few years once replacement fertility is reached.
- However, this is not so because of the population momentum effect, a result of more people entering the reproductive age group of 15-49 years due to the past high-level of fertility.
- For instance, the replacement fertility level was reached in Kerala around 1990, but its annual population growth rate was 0.7% in 2018, nearly 30 years later.

Challenges Involved:

- **Regressive Mindset:** There is considerable son preference in all states, except possibly in Kerala and Chhattisgarh. This son's preference is derived from a regressive mindset. E.g.: People associate girls with dowry.
- **Misuse of Technology:** Cheaper technology like ultrasound helps in sex selection.
- **Failure in Implementation of Law:** The Prenatal Conception and Prenatal Determination Act (PC-PNDT), 1994 which punishes healthcare professionals for telling expectant parents the sex of a child with imprisonment and hefty fines, has failed to control the sex selection.
- Reports found major gaps in the training of personnel implementing PC-PNDT. Poor training meant that they were unable to prepare strong cases against violators to secure convictions.
- **Illiteracy:** Illiterate women in the reproductive age group of 15-49 years have higher fertility than literate women.

Government Initiative- Beti Bachao Beti Padhao Scheme:

- The sharp decline in sex ratio as pointed by Census 2011 data called for urgent action. Beti Bachao Beti Padhao Scheme was launched in 2015 in Panipat, Haryana to address the issue of decline in child sex ratio and related issues of empowerment of girls and women over a life cycle continuum.
- It is a triministerial effort of the ministries of Women and Child Development, Health & Family Welfare and Human Resource Development (now Ministry of Education).

Suggestions Made:

- Increasing female education and economic prosperity will help to improve the ratio.
- Rollout campaigns on sensitisation towards women and children, making women safety cells, ensuring the safety of women on public transport systems, making cyber-crime cells are some other initiatives that need to be taken.

- In view of the complexity of son preference resulting in gender-biased sex selection, government actions need to be supplemented by improving women's status in the society.
- Reaching out to young people could reduce the effect of population momentum and accelerate progress towards reaching a more normal sex-ratio at birth.

Way Forward

- Despite several policies and programmes, lower health outcomes for women and girl children still persist in India. Certain forms of discrimination, especially the son preference, reinforced by the techno-economic forces are eliminating the girl child (even from the womb).
- Effective implementation of the existing women- and children-related policies, including women's property ownership, are required to empower women, to ensure girl child's survival, and to reduce gender gap in access to healthcare.

ENVIRONMENT AND DIVERSITY

Increased Emissions of N₂O

According to a recent research paper, human emissions of nitrous oxide (N₂O) have increased by 30% between 1980 and 2016.

- The research was conducted through an international collaboration between the International Nitrogen Initiative (INI) and the Global Carbon Project of Future Earth, a partner of the World Climate Research Programme.

Key Points

Nitrous Oxide (N₂O):

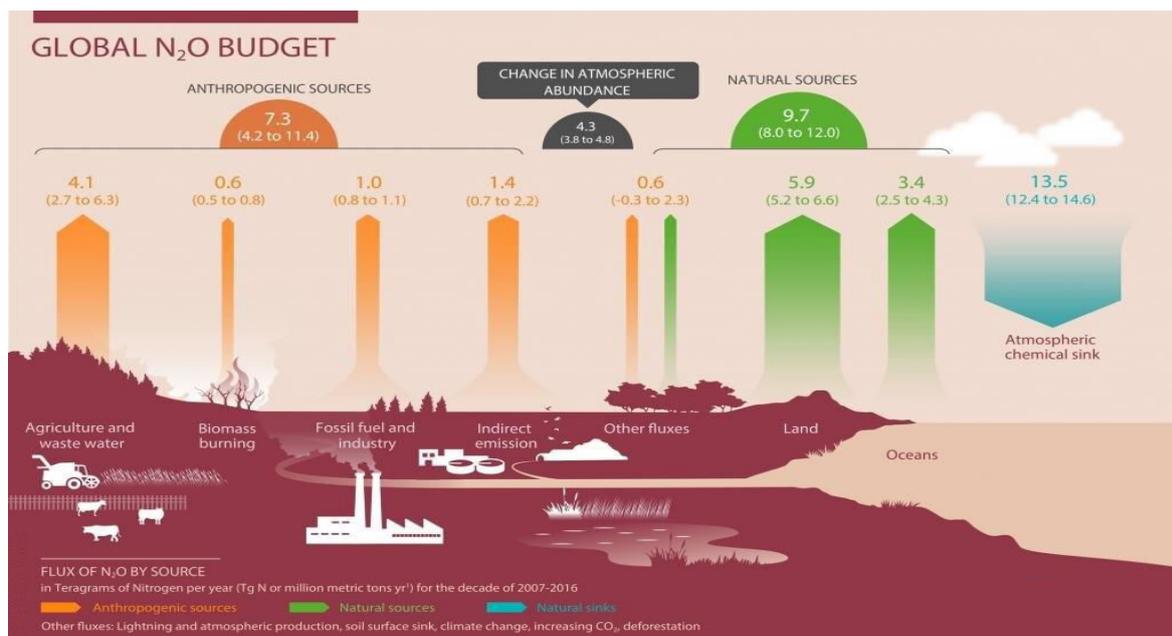
- It is a greenhouse gas (GHG) 300 times more potent than carbon dioxide (CO₂).
- It has the third-highest concentration, after CO₂ and methane (CH₄), in Earth's atmosphere among GHGs responsible for global warming.
- N₂O is also the only remaining threat to the ozone (O₃) layer, for it accumulates in the atmosphere over a long period of time, just like CO₂.
- It can live in the atmosphere for up to 125 years.
- Its global concentration levels have increased from 270 parts per billion (ppb) in 1750 to 331 ppb in 2018, a jump of 20%.
- The growth has been the quickest in the past five decades because of human emissions.

Research and the Study:

- This is the most comprehensive study of global N₂O emissions ever published, as it combines both natural and anthropogenic (man-made) sources.
- The study found that 43% of the total emissions came from human sources and most N₂O emissions came from emerging countries like India, China and Brazil.
- Increase in its emissions means that the climatic burden on the atmosphere is increasing from non-carbon sources as well, while the major focus of global climate change negotiations is currently centred on carbon, its emissions and mitigation.
- It also highlighted the dichotomy of the climate crisis and global food security.
- A major proportion of the N₂O emissions in the last four decades came from the agricultural sector, mainly because of the use of nitrogen-based fertilisers.
- The growing demand for food and feed for animals will further increase its global emissions, leading to a direct conflict between the way countries are feeding people and stabilising the climate.

Suggestions:

- There are well-established practices and technologies like crop and manure management, the use of bio-fertilisers, to mitigate N₂O emissions which need to be utilised to their full extent.
- Revised industrial and agricultural policies at the global level will reduce such emissions considerably.
- Reducing GHGs emissions will also have the co-benefits of reduced air and water pollution.
- There is a need to bring the non-carbon sources under the major global climate change negotiations.
- It is possible to slow down N₂O emissions if countries implement the United Nations Global Campaign on Sustainable Nitrogen Management, 2019 held in Colombo, Sri Lanka.
- The focus of the event was to finalise the Colombo Declaration, a follow up on the UNEA 4 Resolution on



INTERNATIONAL AFFAIRS

Pro-Democracy Protests in Thailand

Recently, Thailand's government banned gatherings of more than five people in the face of three months of escalating demonstrations that have targeted the King as well as the Prime Minister.



Key Points

- Initially, the government allowed peaceful and lawful protests but now stringent control, due to anarchy in protests.
- Background: The roots of the current discontentment go back to the 2014 coup which brought the junta (military dictatorship) in power which tightened its grip on power and introduced more and more restrictions on the public.
- In 2017, the military introduced a new Constitution, which allowed the military to appoint a 250-member Senate that would play a role in selecting the Prime Minister.
- The country held the delayed Parliamentary election in 2019, which was seen as a mere exercise to transfer power from the junta to an elected government.
- Role of Monarchy: Thailand's royal family has considerable influence over the country's political system and is revered by citizens.
- Many, particularly young Thais, have increasingly started questioning the monarchy's role, its privileges, and the power it has exerted in the country for years.
- Latest Cause: Anti-government protests emerged last year after courts banned the most vocal opposition party.

- This political party was relatively new, and had been formed in 2018, with the goals to restrain the military's powers and interference in the political spectrum and to tackle social and economic inequality in the country.

The Protest:

- Most of the protestors are students and young people in their 20s. There is no overall leader.

Key Groups:

- The Free Youth Movement, which was behind the first major protest in July.
- The United Front of Thammasat and Demonstration, a student group from Bangkok's Thammasat University, which has championed calls for monarchy reform.
- The Bad Student Movement of high-schoolers, which seeks education reform.

Demands:

- Reforms to the Monarchy: Students submitted 10 demands to the government, asking for a separation of the King's assets and the Crown Property Bureau (quasi-government institution to manage the monarch's property in Thailand).
- They also wanted to cut the Palace's share in the national budget, a ban on the King from expressing his political views, and safeguards to prevent him from endorsing future coups.
- Some protesters want to reverse a 2017 increase in the king's constitutional powers, made the year after he succeeded his widely revered late father King Bhumibol Adulyadej.
- The Lese Majeste Laws: The monarchy is protected by Section 112 of the Penal Code, which says whoever defames, insults or threatens the king, queen, heir-apparent or regent shall be jailed for three to 15 years.
- This law has remained virtually unchanged since the creation of the country's first criminal code in 1908, although the penalty was toughened in 1976.
- Protesters also seek the scrapping of lese majeste laws.
- Pro-democracy activists say that Thailand is backtracking on the constitutional monarchy established when absolute royal rule ended in 1932.
- Also, the monarchy is too close to the army and argue that this has undermined democracy.
- Other Demands: The students have also called for the Prime Minister's resignation; a new Constitution; fresh, free and fair elections; and an end to attacks on dissidents and opposition parties such as the Future Forward Party.

Way Forward

The democratic voice must be heard in Thai Protests not merely a promise of superficial democracy. For India also, it is a critical time to observe the outcome of the protest but wiser is to engage constructively with the regime in regard to democracy and human rights.

IMPORTANT FACTS FOR PRELIM

36th NSG Raising Day

- National Security Guard (NSG) Raising Day is celebrated on 16th October.

Key Points

- **Formation:** The decision to form an anti-terror federal contingency force was taken in 1984 when militancy in Punjab was at its peak. The NSG came into existence through the National Security Guard Act, 1986.
- **Anti Terrorist Force:** The NSG is an anti-terrorist force. They are given the specific role to handle all the facets of terrorism in any part of the country as a federal contingency force.
- They are also informally referred to as the 'Black Cats' because of their menacing, all-black uniforms.

It has two complementary elements:

- Special Action Group (SAG) comprising Army personnel.
- Special Rangers Group (SRG) comprising personnels drawn from State Police and Central Armed Police Force.
- **Model:** It is modelled on the elite anti-terror forces GSG-9 of Germany and SAS of the United Kingdom.
- **Deployment:** Since its raising the NSG has been used in Punjab in 1986 and Jammu & Kashmir. It played a significant role in thwarting Mumbai terror attacks (26/11 attacks).
- **Not For VIP:** In January 2020, the Centre decided to remove the NSG from providing security to VIPs, a task which it was not supposed to perform when it was originally formed.

DAILY ANSWER WRITING PRACTICE

Qns. Covid-19 looks like a “bend but won’t break crisis” for globalization. Discuss how isolationism forced by Covid-19 pandemic has paused the growth of globalization in the world. (250 words)

Ans.

Globalisation envisages a borderless world or seeks the world as a global village. It may be attributed by accelerated flow of goods, people, capital, information, and energy across borders, often enabled by technological developments.

On the negative side, globalization has been criticised on account of exacerbating global disparities, the spread of international terrorism and cross-border organised crime, and allow for the rapid spread of disease. These trends pave way for an anti-globalization or protectionism sentiment, which may further amplify due to the spread of the Covid-19 pandemic.

Effect of Covid-19 on Globalization

- The ongoing phase of globalisation hasn’t fully recovered from systemic shocks given by the Global Financial Crisis (GFC) of 2008-09. However, the spread of Covid-19 pandemic presents a challenge of a different magnitude.
- Global Economic Crisis: United Nations Economic and Social Commission for Asia and the Pacific (UNESCAP) in its annual Economic and Social Survey, held that the Covid-19 crisis is a challenge never seen before and it is going to be a bigger shock for the world economy than the GFC.
- This may act as a severe blow to liberal world order dominated by globalisation.
- Problem faced by Emerging and Developing Economies: The United Nations Conference on Trade and Development held that emerging and developing economies which rely on export-led growth, will now be severely impacted as the global economy contracts and the world opts protectionism policies.
- Disruption of Global Value Chain: Covid-19 crisis is having devastating repercussions for corporations and businesses that have benefited from economic interdependence supported by cross-border supply chains.
- China is the world’s largest production base and lies at the heart of many supply chains. Since the outbreak of this coronavirus, many companies that had come to depend on China were hard hit.
- Bringing Back Import Substitution: From a risk analysis perspective, we could at the very least see a rapid trend towards moving from globally dispersed production bases back in favour of domestic facilities.
- Countries are reconfiguring their economies to look at import substitution with greater clarity now, as the perils and pitfalls of overdependence on foreign supplies become clear.
- Restriction on People to People Movement: National governments will have to weigh the risks of contagious diseases against the benefits of ease of travel or may have to consider stronger safeguards.
- In the short run, the World’s Tourism industry will get affected even after the crisis gets over.

Prospects of Globalisation after the Pandemic

- For the global growth patterns, the key lesson is that international flows tend to swing dramatically with macroeconomic cycles. In good times, they usually grow faster than GDP, and in bad times they shrink faster, too, as people and firms hunker down behind borders.
- Thus, after the pandemic as the economies grow, the trade patterns and globalisation will again become near normal.
- Although there may be some challenges in the global Supply chain, after the pandemic smooth business and transaction will again make a stronger supply chain with some changes in it.
- To make globalisation work even better, advanced economies like the United States can consider donating or lending (on concessionary terms) to a trust fund dedicated to helping poorer countries.
- At the same time, there is a need to work towards eliminating problems such as social and economic disparities caused by globalization.
- Once the world recovers from the crisis, it is crucial to create mechanisms to respond to disease through effective international cooperation.

Conclusion

While the heat against globalisation has been simmering for a while, the pandemic has added fuel to the fire. However, we need to realise that globalisation has brought more good than harm. Therefore, nations must work together for a better future through globalisation, as climate change, pollution and global warming issues can only be tackled through collective action.

DAILY QUIZ

1. With reference to Jal Jeevan Mission (JJM), consider the following statements:
1. It envisages the unlimited water supply to all rural households through Functional Household Tap Connections (FHTC) by 2024.
 2. The fund sharing pattern between the centre and states is 60:40.

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. With reference to Nitrous Oxide (N₂O), consider the following statements:

1. As a Green House Gas (GHGs), it is more potent than carbon dioxide.
2. Among GHGs, it has the third-highest concentration, after carbon dioxide and methane in the earth's atmosphere.

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

3. Consider the following statements regarding 'National Security Guard (NSG)':

1. It is an anti-terrorist force which is given the specific role to handle all the facets of terrorism in any part of the country.
2. It comprises personnels drawn from State Police and Central Armed Police Force only.

Select the correct answer using the given code below:

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

4. With reference to the Global Hunger Index, consider the following statements:

1. It is annually published by the United Nations Development Programme.
2. The level of hunger in India has continuously improved in the last decade.

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**

5. With reference to Bioremediation, consider the following statements:

1. In this process microorganisms are used to neutralize contaminants.
2. It can be used to treat oil spills in the ocean.

Which of the above statements is/are correct?

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