

Environment FOR You 2021



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**GOOD
MORNING TIMES
Environment
(SEPTEMBER -2021)**

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17/10 Old Rajender Nagar N.Delhi

www.aspireias.com

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TOPIC GENERAL STUDIES 3: CONSERVATION, ENVIRONMENTAL POLLUTION AND DEGRADATION, ENVIRONMENTAL IMPACT ASSESSMENT

September -2021

1. Flaws in ESZ of Deepor Beel

- Local stakeholders have found flaws in recently notified Eco Sensitive Zone of Deepor Beel Wildlife Sanctuary
- Garbage dumps has been kept out of ESZ which is making the surroundings toxic.

Deepor Beel

- Assam's only Ramsar site
- Its a freshwater lake made from an earlier channel of Brahmaputra River
- Also a Wildlife Sanctuary, located in Rani Forests, Guwahati City, important to Store water from Storm Surges.

Eco Sensitive Zone

- Notified by Central Govt under Environment Protection Act 1986
- Usually demarcated within 10 kms of Protected Areas- can even go beyond this limit in certain cases including corridors and such
- Main aim to restrict certain activities in vicinity of Protected Areas (WS, NP) to maintain the fragile ecology in balance.

2. IUCN Reports talks about Endangered Raptor Species

- A new analysis by IUCN and Birdlife International has pointed about the threats to bird species. It says about 30% of 557 raptor species worldwide are threatened with extinction.

Findings-

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- Raptors prey on wide range of Vertebrates and hence become important for seed dispersal
- Habitat loss, Deforestation, Pollution, Human-Animal Conflict and Climate Change are mentioned as major threats
- Annobon Scops - Owl's population is now restricted to less than 250 globally and it has entered the Critically Endangered Category- living only over Annobon Island in West Africa.
- Population of Vultures in India declined over 95% mainly due to an anti-inflammatory drug Diclofenac

Raptors are birds of prey, located at top of Food chain such as Eagle, Hawk, Owl and Vulture. Mainly found in Equatorial regions with substantial populations in Indonesia, Colombia, Ecuador, Peru.

3. Global Award for Turtle Conservation

- Indian Biologist Shailendra Singh has been awarded Behler Turtle Conservation Award for improvement in status of 3 turtles.
- The award was given collectively by Turtle Survival Alliance, IUCN Tortoise and Freshwater Turtle Specialist Group, Turtle Conservancy and Turtle Conservation Fund
- The 3 species are- Red-crowned Roofed Turtle (Batagur Kachuga), Northern River Terrapin (Batagur Baska), Black Softshell Turtle (Nilssonina nigricans)

Northern River Terrapin

- Riverine Turtle, native to South East Asia
- One of the Asia's largest freshwater turtle
- Found in Sundarban Ecosystem
- IUCN- Critically Endangered
- WPA, 1972- Schedule 1

Red Crowned Rood Turtle

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- freshwater turtle endemic to South Asia
- Mainly in Chambal River System in Central India
- IUCN- Critically Endangered
- WPA, 1972- Schedule 1

Black Softshell Turtle

- found in temples of Assam
- IUCN- Critically Endangered
- No legal Protection under WPA, 1972.

Turtle Survival Alliance

- formed in 2001 partnering IUCN for captive management of Freshwater Turtles

Turtle Conservation Fund

- est on 2002 as partnership of Conservation International, IUCN, Turtle Survival Alliance.

5. Manda Buffalo of Koraput gets Unique Indigenous Tag

- Tag given by National Bureau of Animal Genetic Resources
- Manda Buffalo is found in Eastern Ghats (Koraput Region) and is the 19th unique buffalo breed.

Manda Buffalo

- Resistant to Parasitic infections
- Can live and reproduce with very low input requirements
- The buffaloes have grey coat with copper-coloured hair.

GI tag ensures that it is now also responsibility of Central and State govt to strategise their conservation. It will also help in marketing their produce.

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4 cattle breeds- Binjharपुरi, Motu, Ghumusari and Khariar; 2 Buffalo Breeds- Chilika and Kalahandi and 1 sheep breed- Kendrapara have received this recognition.

6. IUCN World Conservation Congress 2020

- Moved from 2020 to 2021, now held in Marseille, France
- Organised by IUCN, the congress is held every 4 years

Highlights

- calls to secure collective indigenous rights related to governance of lands, waters, coastal seas and even natural resources
- It lays down outcomes to be achieved under 5 themes- Indigenous Governance, biodiversity conservation, climate action, post covid recovery and food security, global policy settings.

IUCN Red List Update

- Improvement seen at species level globally but number of species at high risk continue to grow.
- 80 species are extinct in wild, some 8400 Critically Endangered, 14647 endangered.
- Of all the evaluated species, maximum fall under Least Concern category
- 4 out of 7 commercially fished tuna fishes have shown recovery- Atlantic Bluefin Tuna, Southern Bluefin Tuna, Albacore Yellowfin Tuna, Pacific Blue Fin Tuna.

7. River Bhogdoi in Assam

- In news because it is dying a slow death
- Originates from Nagaland (Mokokchung Hills) and is polluted due to Mining of Manganese in nearby places
- Declared one of the most polluted rivers in Assam by Ministry of Env.

8. New Island Discovered near Greenland

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- New island discovered has been named 'Qeqertaq Avannarleq'- Greenlandish for "the northern most island)
- Made of Moraines (glacial deposition) and does not have any vegetation
- Its emergence could be a result of Climate Change as other icesheets are melting rapidly
- This will make the battle for sea routes, fishing rights more intense among the Arctic nations.

7. India's Dugong Conservation

- Located across Palk Bay in TN.
- It is the only herbivorous mammal that is strictly marine.
- It is the state animal of Andaman & Nicobar Islands.
- Maximum amount of Dugongs are found in Australia due to presence of Coral Reefs & Planktons
- They are protected under Schedule 1 of WPA, 1972 which bans their killing and purchasing of their meat.
- Dugongs are long living species, have low reproductive rates and high gestation periods.

8. Generating Methane from Coal

- Methanol is a cleaner alternative fuel that finds its usage in powering shipping vessels, cooking vessels even motor fuel
- Worldwide production of Methane is done from Natural Gas- which India does not have in abundance
- India has coal reserves (high ash) and thus BHEL was tasked to work on High ash coal gasification with support from NITI Aayog as part of Methanol Economy programme.
- First such plant has now been opened in Hyderabad at BHEL R&D Centre.

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- Blending 15% methanol in gasoline can result in 15% reduction in import of Crude oil.
- Methanol is more economic to produce, has less energy content and has a lower risk of inflammability compared to Gasoline
- Methanol is also used in production of Di- Methyl Ether- very similar to diesel that will require minimal modifications in engine designs.

9. Vulture Conservation

- 8 Critically Endangered Oriental White- Backed vultures were released into the wild.
- These are native to India and were being conserved at Jatayu Conservation & Breeding Centre, Pinjore.
- Vulture Population declined due to uncontrolled used of Non Steroidal anti inflammatory drugs- Aceclofenac, Ketoprofen & Nimesulide.

10. World Rhino Day

- Announced by World Wildlife Fund and celebrated on 22nd September
- Theme 2021- Keep the Fight Alive
- In Kaziranga NP, a big pile of Rhino Hair (makes up the Horn) was burnt to dispel the myth that they have medicinal value
- Presently 5 species are in existence- White and Black Rhinos in Africa, Greater One-Horned, Javan and Sumatran Rhino
- Greater one-horned rhino is only found in India- Indo-Nepal Terai region, Duars of WB.
- Imp Areas- Kaziranga NP, Pobitora WLS, Orang NP, Manas NP, Jaldapara NP & Gorumara NP.
- IUCN Status- Vulnerable; Schedule 1, WPA, 1972.

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11. Blue Flag Certification to new Beaches

- Kovalam (TN), Eden Beach (Puducherry) recently awarded.
- Given by Denmark based Non-Profit Foundation for Environmental Education (FEE)
- It is a certification obtained by Beach, Sustainable Boating Tourism Operator that acts as an Eco Label.
- It is awarded to FEE member countries based on 33 Blue Flag Criteria. These are categorised in 4 heads- Environment Education & Information, Bathing Water Quality, Environmental Management, Conservation & Safety Services around the Beach.
- India now has 10 Blue Flag Certified Beaches.

12. WHO's New Air Quality Guidelines

- WHO has further lowered recommended levels that are considered safe for human health
- 6 pollutants mentioned with their recommended levels- PM 2.5, PM 10, Ozone, Sulphur Dioxide, Nitrogen Dioxide & Carbon Monoxide.
- Both Particulate matter & Outdoor Pollutants are considered Carcinogenic by WHO.
- The new guidelines are not binding.

National Ambient Air Quality Standards

- Lays standards for 12 pollutants, notified by CPCB under Air (Prevention & Control of Pollution Act), 1981
- SO₂, NO₂, PM 2.5, PM 10, OZONE, LEAD, Carbon Monoxide, Ammonia, Benzene, Arsenic, Nickel, Pyro Benzene

National Clean Air Programme aims at reducing PM levels by 20-30% by 2024, with 2017 as base year in 122 cities.

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13. Sea Cucumber

- These are marine invertebrates found on seafloor on in Tropical Regions
- These are echinoderms (show radial symmetry) that act as garbage collectors of Ocean
- They are integral to Coral Ecosystem as their by-product of digestion is Calcium Carbonate- needed for survival of coral polyps
- They use their tentacles to capture phytoplanktons and are themselves consumed as food and in medicine industry in China and South East Asia and thus prone to trafficking.
- Lakshadweep has World's First Conservation Area for Sea Cucumbers.
- They're endangered species and placed in Schedule 1 of WPA, 1972

14. Thawing Permafrost

- Permafrost is any region that remains frozen completely for 2 years straight. The Tundra is the treeless vegetation observed in the region.
- IPCC's latest reports warns about melting of the ice-sheets over Perma Frost regions.
- Arctic Countries will be the first to suffer due to development of infrastructure over these areas.
- Melting of ice sheets will give more land to microbes to degrade thus giving more scope to produce CO₂ and Methane.
- The forests after fires are expected to regrow in 50-60 years but Tundra is mainly Peat dominated- which takes millions of years to form.
- Thus it will take longer to restore this carbon.

15. Plant Discoveries

- Botanical Survey of India publishes Plant Discoveries 2020 in which it has added 267 new species.

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- Species of Balsams, Wild Banana from Darjeeling, Wild Jamun from Coimbatore and Fern Species from Orissa were recorded.
- Max discoveries were made from Western Ghats
- India is bound by CBD to work towards conservation of Plants as well.

16. Treat to Bhitarkanika NP

- Water from Brahmani River is being planned for diversion for industrial purposes and hence there's been concerns .

Concerns

- Will reduce fresh water discharge to sea
- Will induce saline ingression and affect local flora/fauna
- Reduce mangroves
- Induce more wild animal- man conflict as crocodiles and others would tend to shift upstreams too.
- Harm Nesting of Olive Ridley Turtles

Bhitarkanika NP

- located in Odisha on confluence of Brahmani and Bhaitarni rivers
- 2nd largest mangrove forest of India and a designated Ramsar Site
- Home to 70% salt water crocodiles

Brahmani River

- Formed by confluence of Sankh and South Koel River (both Chhota Nagpur plateau)
- Meets Mahanadi river at Palmyras point
- Forms a gorge at Rengali- where a dam is also built.

17. Ladakh's State Animal & Bird

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- Snow leopard and Black Necked Crane adopted as state animal and State bird of Ladakh respectively.

Snow Leopard

- Found in Western and Eastern Himalayas in all bordering regions of India
- Hemis NP is the snow leopard capital of the world.
- Illegal poaching, increased human habitat are concerns
- IUCN- Vulnerable; Schedule 1- WPA, 1972
- Also listed in Conservation of Migratory Species and CITES - Appendix 1

Black Necked Crane

- Has a Red Crown on Head
- Males are bigger in size than females
- Found in neighbouring areas of China's Tibet
- Comes to Arunachal Pradesh only during winters
- IUCN- Near Threatened, CITES- Appendix 1, WPA- Schedule 1

18. Crocodile Species in India

- Kendrapara becomes only district to house all 3 species of crocodile in India- Salt Water, Gharial, Mugger.

Mugger (Marsh Crocodile)

- Restricted to Indian subcontinent now
- Found in Freshwater and Saltwater
- Extinct in Bhutan & Myanmar
- IUCN- Vulnerable; WPA, 1972- Schedule 1, CITES- App. 1

Salt Water (Estuarine Crocodile)

- Man-eater, largest living crocodile

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- Found in Bhitarkanika NP, Sundarbans and Andaman & Nicobar Islands
- Found outside India too (Australia, South East Asia)
- IUCN- Least Concerned, WPA- Schedule 1

Gharial (Freshwater Crocodile)

- Found in Fresh Waters of Himalayan Rivers
- Indicator of fresh water, Chambal river is main habitat
- Native to Indian Subcontinent, relatively harmless to humans
- IUCN- Critically Endangered; WPA- Sch 1
- Crocodile conservation Project started in 1975 for conservation

19. Groundswell Report by World Bank

- 2nd edition Released by World Bank
- Talks about Internal Climate Migration
- First report published in 2018- focusing on 3 regions: SubSaharan Africa, South Asia and Latin America
- 2nd Report includes 3 more areas- Mashreq (Arab World), North Africa, East Asia & Pacific, Eurasia

Findings & Suggestions

- Almost 216 Million could be internally displaced due to climate change in these regions, maximum being from Sub-Saharan Africa.
- North Africa is projected to have max % (9%) of population affected.
- Thus suggestions been made include- Reducing Emissions, Inclusive and Resilient Development, Planning for Migration and Investment in associated Research.

20. India's Ground Water Extraction

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- 70 % of India's agriculture is dependent on irrigation which in turn is largely dependent on Ground Water
- Per UNESCO's Water Development Report, India is the largest Ground water extractor in the world.

Reasons

- Increased demand (household/industrial, agricultural)
- Rugged Hard Rock Terrain doesn't enable storage
- Unscientific Crop Cultivation specially after Green Revolution
- Excessive Subsidies & Water Contamination

21. India's Tallest Air Purifier in Chandigarh

- Inaugurated on 7th September i.e. International Day for Clean Air (Theme- Healthy Air, Healthy Planet)
- Air purifiers are structures designed that reduce pollution particles
- Chandigarh is a non attainment city as per National Clean Air Programme- it hasn't met targets regarding reduction in PM 2.5 & 10 levels.

22. Need for New Coal Based Power Plants

- As per a recent report published by EMBER and Climate Risk Horizon India, it is suggested that India does not need new Thermal based Power Plants to meet its energy demand.

Report Highlights:

- Peak demand expected to be at 301 GW by 2030- which India is capable to manage with its planned Solar capacity
- Adding more coal based plants will thus create "zombie" units- existing but not used at capacity
- India has a chance to free up ₹2.5 L cr by not investing in these coal based power plants

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- India also has set immediate targets of 2030 under INDC and carbon neutrality by 2070- which will be hampered if funds are not diverted to investment in Renewable Tech

Factors for High Solar Capacity

- downward trend of solar panel costs
- New technology related to solar battery storage systems
- Overall Environment consciousness
- India's self-imposed restraints in form of INDCs
- Institutional Effort via PM KUSUM, Rooftop Solar Scheme etc.

23. New Shark Species- Hybodant Shark

- Fossils have been found in Jaisalmer from Jurassic Era
- Existed in marine and fresh water
- Became extinct in Cretaceous period
- Adds to the impetus of Rajasthan being an emergent coast

24. Woolly Mammoths

- US scientists are discussing the possibility of resurrecting mammoths in the Siberian Tundra from genes of Asian Elephant using Crispr Cas9 gene editing method.
- The mammoths became extinct around 4000 years ago due to changing climate from Pleistocene to Holocene period.
- Reintroducing them could help Tundra ecosystem as they could compress shrubs and fertilise grasses with their faeces. (The idea is not to let the ice melt, so that it can reflect as much sunlight and minimum area being exposed to tropics)
- It will also prevent permafrost from melting as it will reflect more light and keep ground cooler.

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- However, bringing extinct species back would be against Darwinian's survival of the fittest and could disturb the ecosystem.

25. Global Methane Pledge

- Announced collectively by US& UK govt. to cut Methane emissions by 30% (from 2020 levels) by 2030.
- Methane is the simplest hydrocarbon and a very powerful Greenhouse Gas.
- About 60% Methane worldwide is generated from human-influenced sources (majority) and other 40% from natural sources.
- Methane is 80-85 times more potent in its global warming potential compared to carbon dioxide.

26. New Cotton Type Developed to Clean Oil Spills

- Researchers at IIT Roorkee have developed a hydrophobic type of cotton material that can be used to absorb oil from oil spills in oceans.
- This material can selectively separate oil from water at upto 95% efficiency.
- The material is reusable and can be used to absorb large quantities of oil.
- India presently has now law that covers oil spills, but has a contingency plan named 'National Oil Spill Disaster Contingency Plan'
- Indian Coast Guard assists in cleaning such operations.
- India has ratified the Bunker Convention (International Convention on Civil Liability for Bunker Oil Pollution Damage, 2001)

27. Report on Climate Indicators & Sustainable Development

- Published by World Meteorological Organisation
- The report studied 7 climate indicators- CO2 Concentration, Temperature, Ocean Acidification and Heat, Sea Ice Extent, Glacier Melt & Sea Level Rise. The
- The report highlights the impact of Climate change on Sustainable Development Goals and provides suggestions.

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Highlights:

- Rising CO₂ emissions, especially driven by humans, will impact all 17 SDGs
- The impact will be far ranging from- food insecurity to global poverty, oceanic acidification, threatened regional stability and higher risk of water scarcity.

Suggestions:

- WMO recommends improved education, global partnerships and sustainable consumption patterns to mitigate these risks.

28. Humboldt Penguin

- Recently brought to Mumbai Zoo
- Endemic to Chile Peru coast near cold waters of Humboldt current
- They can withstand warmer climates (adaptation)
- IUCN- Vulnerable, CITES- Appendix 1

29. World's First 5 Country Biosphere Reserve

- UNESCO recently declared the Mura-Drava-Danube (all rivers) world's first five country biosphere reserve.
- It covers area of a Million Hectares across Austria, Slovenia, Croatia, Hungary and Serbia (near Adriatic coast)
- This is the largest riverine protected area in Europe (also called Amazon of Europe) & is a part of EU Biodiversity Strategy that aims to revitalise 25,000km of rivers and protect 30% of EU's land area by 2030.
- The area is home to white-tailed eagle and endangered species like Little Tern, Black Stork, Otters, Beavers & Sturgeons

30. Blue Food

- Aquatic foods are also called Blue Foods (Animals or plants/algae)

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- A recent report by US & Sweden Based Researchers titled 'Environmental Performance of Blue Food' suggests that Blue Foods can be made more sustainable.
- It details that blue foods rank higher than terrestrial animal-source foods in terms of nutritional benefits.
- Producing blue food generates fewest Green House Gases & uses least land & water. Thus, lower environmental footprint.
- Thus, promoting blue food will fulfil SDG- 2 (Hunger & Nutrition) & SDG-14 (Sustainable use of Marine resources).

Down to Earth Special:

Wet-Bulb Temperatures-

- Heatwaves combined with high humidity
- Another rising climate induced challenge for human health and their resistance

Extreme Weather Events in 2021-

- Heatwaves in North in North America in form of Heat domes
- Anticyclone Lucifer that broke all time records of maximum temperatures recorded in Sicily, Italy at 48.8 celsius
- Wildfires in Mediterranean Regions (North Africa and South Europe- Italy, Spain, Greece etc)
- Rainfall at Greenland's most frozen point (indication of Low Pressure) due to warmer temperatures.
- Forest Fires in USA (California Region)

China's Tanset Satellite-

- Collects information on global Carbon exchange between world' carbon sinks
- Third country to do so after Japan and USA
- This data will help in formulating strategies for emission reduction

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Sweden's Mountain top Glacier-

- Kebnekaise Ice shelf- lost 2m height due to melting ice as a result of rising temperatures
- At one time, this peak was highest in Sweden but now slipped to 3rd.

Marburg Virus Disease-

- A viral disease belonging to Ebola Family
- Causes high fatality and can be transmitted human-humans (Bodily fluids) and animals-humans (monkeys, bats)
- No approved drug yet

Volcanic Activity & Threat to Communication Systems:

- Usually its the larger volcanic eruptions posing danger
- But delicate communication systems especially at 7 pinch points- China/Korea, Luzon (Phillipines), Malaysia, Taiwan, Mediterranean, North Atlantic & North West Pacific (Ring of Fire)
- The eruptions pose a follow up Tsunami warning, submarine landlines and emissions of tephra and lahars (rock fragments and debris flow)

Plastic Waste Management Rules, 2021:

- Released by Ministry, Environment and Climate Change
- Proposes ban of manufacture, use, sale, import and handling of some single use plastic items.

Read the Rules Here:

- <https://www.aspireias.com/daily-news-analysis-current-affairs/Plastic-Waste-Management-Rules-2021>

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Bill of Commission for Air Quality Management in National Capital Region & Adjoining Areas Act:

- Seeks to form a panel to regulate air quality in NCR region.
- Applicable to states of Rajasthan, Hr, Punjab and UP
- Provides for a statutory Commission for Air Quality Management in NCR.
- 3 sub committees to be formed- to assist the commission, on monitoring and identification and on Research and Development
- The commission replaces EPCA, decriminalises stubble burning but levies environment compensation fee on people engaged in such activities.

Composition/Powers & Functions of the Commission:

- 18 member commission, 5 ex officio members- secretaries of 4 states and Delhi.
- Chairperson to be a govt. official of rank of Sec. Or Chief Sec.
- Can hold the position till they turn 70 or complete 3 year term
- It brings together the Centre, states, and other stakeholders on one collaborative platform.
- Experts from ISRO, CPCB will also be consulted
- Will issue directions to state governments and lay parameters to control air pollution
- Will entertain complaints and suggestions and will also identify violators and enforce strict penalties including shutdowns
- Can overrule state govt directives that are violative of pollution norms

Wetlands Added under Ramsar Convention-

- Sultanpur NP (Hr), Bhindawas WS (Hr), Thol (Gj), Wadhawana (Gj)
- Makes total lists in India at 46

Swachh Surveykshan 2021

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- Indore is country's first water plus city
- Water Plus city is a city where all waste water (domestic + commercial) is treated before being released into environment.
- Indore also most clean city- 5th year in a row followed by Surat & Vijaywada
- Chattisgarh tops the list in terms of state whereas West Bengal fares worst.

National Mission on Edible Oils & Oil Palms:

- For self reliance in Oil Seeds production with focus on NE states and Andaman & Nicobar islands.
- Increase Oil cultivation to 10L Ha by 2025-26 and raise domestic production 3 times to 11L MT by 2025-26
- Farmers will get financial assistance & will get assured assistance.
- India is the largest consumer of vegetable oil in the world (we import more than half of our consumption needs)
- We import palmoil from- Indonesia, Malaysia; soyaoil from Brazil & Argentina; Sunflower oil from Russia and Ukraine.

GOBARDHAN Scheme- Galvanizing Organic Bio Agro Resources Dhan:

- announced in budget 2018 to ensure village cleanliness by converting waste to wealth (cattle dung/ solid organic waste to compost/Biogas)
- Implemented as a part of Swachh Bharat Abhiyan- Gramin by Ministry of Jal Shakti
- Part of ODF-plus strategy (open defecation free + solid and liquid waste management (SLWM))
- Funding by Centre & State to be 60:40 respectively for SLWM aspect of SBM-G- & only those Panchayats will have access to funds which have not utilised their funds under SLWM.
- States can provide additional funds.

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Delay in Withdrawal of Southwest Monsoon

- Usually, the southwest monsoon enters India after reaching Kerala on June 1 and exits from the northeast on October 10-15, as per the India Meteorological Department (IMD).
- In 2020, however, the withdrawal happened on October 28, which is 13-18 days later than normal.
- The US 'weather forecasting agency warns there is a 70% chance that La Niña conditions may develop across the Pacific in September or October.
- During a La Niña event, trade winds, which blow west along the equator carrying warm water from Latin America towards Asia, become stronger than usual and thereby extend the monsoon period.
- La Niña was also the reason for delayed monsoon withdrawal in 2020. If this happens, 2021 will be the 11th consecutive year when India will experience a late monsoon withdrawal.
- Such imponderability directly impacts the country's agriculture, which largely depends on monsoon showers.
- Delayed monsoon withdrawal in 2020 led to unexpected floods in Golaghat district of Assam that completely destroyed the standing paddy crops. The monsoon withdrawal is likely to get delayed again this year.

Deficit Rainfall:

- On September 1, 2021, the India Meteorological Department (IMD) announced that the monsoon this year was well within the normal range, with a deficit of just 9%.
- Despite "normal" rains, almost 90 per cent of the districts remain drier than usual even as the kharif (summer) crop season is underway, suggests the latest Aridity Anomaly Outlook Index released by
- for September 2-8, 2021.

v The index monitors agricultural drought, a situation when rainfall and soil moisture are inadequate to support healthy crop growth till maturity, causing crop stress.

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v The index, released week-on week, shows the dramatic increase in the aridity levels this monsoon season.

v India's only real-time drought monitoring system, developed by the Indian Institute of Technology, Gandhinagar, Gujarat, showed almost 28% of the country was under drought.

Drought Declaration:

- State governments are responsible for declaring a drought, as per the Manual of Drought Management, 2016, released by the Union Ministry of Agriculture and Farmers Welfare.
- As per the manual, state governments are responsible for providing financial assistance during moderate droughts.
- Only in the case of a severe drought, the state government can receive financial assistance from the National Disaster Response Fund under the Union Ministry of Home Affairs.
- The decision to announce a drought is dependent on how much unrest is being reported within the state and not on the rainfall and soil moisture pattern.
- A drought can be identified on the basis of five categories of indices: rainfall, vegetation, water, crop and others such as socioeconomic or developmental factors that might help understand the impact of the droughts.
- The rule book says the declaration of kharif drought should not be done later than October 30 and the rabi drought by March 31 of each year.

Land Degradation

- Almost 30% of the country's land mass is undergoing degradation, suggests the Desertification and Land Degradation Atlas of India, released in June this year by the Indian Space Research Organisation.
- The report defines degradation as a decline in productivity in terms of biodiversity and economy due to various causes including climate and human dominance.

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- Degradation in dryland regions is called desertification.
- While almost all states have reported an increase in such wasted land in the past 15 years, the most rapid increase has taken place in the biodiversity-rich northeastern states.
- Close to 98 million hectare an area almost three times the size of India's largest state Rajasthan has already been degraded.
- The report, in a way, highlights the stiff challenge India needs to overcome if it wishes to achieve its target of becoming land degradation neutral by 2030, as announced by the Prime Minister in September 2019 at the United Nations Convention to Combat Desertification.
- The country also plans to restore 26 million hectares (ha) by 2030.

Mercury Pollution

- While the world has always known about the presence of toxic mercury in the oceans, it believed the atmosphere was the primary source of the heavy metal that poisons fish and other marine life.
- Researchers at Yale School of the Environment, US, claim rivers are the real culprit, and that they flush more than 1 million kg of hazardous mercury into oceans each year.
- The estimate is threefold of that suggested by the United Nations Environment Programme (UNEP) Global Mercury Assessment, 2018, which highlights that rivers are an important but overlooked source of the global mercury cycle.
- Just 10 rivers account for 53% of mercury deposited in coastal oceans every year.
- Coastal oceans, which constitute 0.2 per cent of the entire ocean volume, receive 27 per cent of the external mercury input. These deposits, over time, get released into the open ocean.
- This is worrying since coastal oceans account for 30% of the global oceanic primary production and 60 per cent of the total economic value of the oceanic biosphere, as per a 2013 study published in Nature.
- Legacy mercury refers to historical releases of the metal due to human activities, which continue to circulate in the atmosphere and get stored in the soil.

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Alarm for India:

- The researchers attribute two reasons for the high yield of riverine mercury in the Ganga- Brahmaputra river basin: legacy mercury and intensive coal combustion in the country.
- Chlor alkali plants that use mercury cell technology were a major source of pollution, but the country successfully shifted to cleaner membrane cells in 2012.
- Indian coal has higher mercury content than that of other countries. And it lacks a robust system to check mercury emissions in power plants.

FOOD LABELLING

- As per the Food Safety and Standards (Packaging and Labelling) Regulations, 2011, every pre-packed processed food product sold in the country must be labelled with nutritional information.
- The Codex Alimentarius Commission, an international food standards body established jointly by WHO and the Food and Agriculture organization (FAO), mentions that “fop labelling is designed to assist in interpreting nutrient declarations”.
- Countries such as Chile, Brazil and Israel have laws to push the packaged food industry to adopt FOP labelling. They have used FOP labelling as a measure to fight obesity and NCDs.
- In 2018, FSSAI released the draft Food Safety and Standards (Labelling and Display) Regulations, which for the first-time proposed FOP labelling for packaged food in India.
- FSSAI working group thresholds for total sugar and saturated fat are much higher than those in countries that follow global best practices.
- FSSAI working group thresholds for total sugar and saturated fat are highly relaxed than limits proposed by the food regulator in its earlier drafts of labelling and display regulations.

Read FSSAI and their initiatives below:

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<https://www.aspireias.com/daily-news-analysis-current-affairs/FSSAI-and-Nutrition>

PT Pointers:

- The UN on August 30, 2021, declared the world free from the use of lead-based petrol. The use of lead as a petrol additive to improve its performance has contaminated soil, water and air and lead to diseases such as cancer in humans.
- Africa's tropical mountain forests store the most carbon of all tropical forests globally. The study finds tropical mountain forests in Africa store 149.4 tonnes of carbon per hectare (ha). The study also finds Africa has lost over 0.8 million ha of tropical forests since 2001.
- The Telangana government announced a drone-based afforestation project, "Hara Bahara", to plant 5 million trees across 12,000 hectares in the state.
- The Lakshadweep administration on September 1 began large-scale farming of indigenous seaweed in nine inhabited islands for economic development. The Central Marine Fisheries Research Institute will lead the initiative with an aim to produce 30,000 tonnes of seaweed worth R75 lakh in one year. Seaweed is used in many South Asian countries as a food additive, medicine, fertiliser and to stop beach erosion.
- Delhi Chief Minister inaugurated a smog tower near Connaught Place on August 23, 2021. A first-of-its-kind in the national capital, the 24-m-high tower can purify 1,000 cubic metres of air per second and is estimated to be effective in a 1-km radius.
- The Montreal Protocol was signed, which banned the use of 100-odd ozone-depleting substances.

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