



- ENVIRONMENT
- Part 4

Red Data Book

- List of all those species at risk; includes categories such as 'vulnerable', at risk, endangered, and critically endangered updated every three years
- IUCN- The International Union for Conservation of Nature. Maintains the Red Data Book
- Critically Endangered in India
 - Himalayan Brown/Red Bear
 - Pygmy Hog
 - Namdapha Flying Squirrel
 - Goldan Langur
 - Fresh water river dolphin

Marine National Park: Gulf of Kutch

- Situated seawards from the Southern coastline of Gulf of Kutch
- spreads over 458 square km
- Includes a group of 42 islands Poshitra, Pirotan, Karubhar and Narara
- Coral Lichen, sea slug, painted storks, shelled mollusks
- First Marine wild life Sanctuary and first Marine National Park in India

Alliance to End Plastic Waste

- The Alliance to End Plastic Waste (AEPW) is designed as a non-profit organization. It comprises of 30 companies. It includes companies from across North and South America, Europe, Asia, Southeast Asia, Africa as well as Middle East in the alliance.
- They have pledged over 1 Billion \$ to eliminate plastic waste across the world.
- Plastic waste management is a complex and serious global challenge.
- The issue of plastic waste is seen and generating concern and becoming a serious threat to existence of human on land.
- The issue must be addressed.

Alliance to End Plastic Waste

- The aim of the alliance is to develop solutions to mitigate plastic pollution and promote a circular economy by utilizing used plastics.
- This new alliance is the most comprehensive effort to date to end plastic waste in the environment.

Last Four Years Hottest on Records

- The WMO also said that the 20 warmest years in history all occurred within the last 22 years.
- Secretary-General of WMO- Petteri Taalas.
- The WMO said heightened temperatures also contributed to a number of extreme weather events such as hurricanes, droughts and flash flooding. In 2019, Australia is experiencing its warmest January on record. WMO warned that intense heatwaves are becoming more frequent as a result of climate change.

Polar Vortex

- A phenomenon called the polar vortex has hit central and eastern parts of the United States. It has brought with it snow, brutally cold temperatures and potentially life-threatening wind chill. In Chicago the temperature dropped to -46°C .
- Schools and businesses have closed and flights have been cancelled.
- Polar Vortex is an upper level jet stream that circulates around the North and South poles keeping the coldest air there. When the jet streams weaken, it disrupts weather patterns bumping warmer air into Alaska and pushing cold winds down into the U.S. Midwest and East Coast

Katowice Package

- The Katowice package includes guidelines that will operationalize the transparency framework. It sets out how countries will provide information about their Nationally Determined Contributions (NDC) that describe their domestic climate actions. This information includes mitigation and adaptation measures as well as details of financial support for climate action in developing countries.

Katowice Package

- The Katowice package also includes guidelines that relate to process for establishing new targets on finance from 2025 onwards to follow on from the current target of mobilizing \$100 billion per year from 2020 to support developing countries.
- It also includes how to conduct the Global Stock Take (GST) of the effectiveness of climate action in 2023 and how to assess progress on the development and transfer of technology. It is Outcome of COP 24 in Poland.

Eco Niwas Samhita

- Ministry of Power has launched ECO Niwas Samhita 2018.
- It is an Energy Conservation Building Code for Residential Buildings (ECBC-R).
- The code was launched on National Energy Conservation Day 2018. Aim of ECO Niwas Samhita 2018 is to benefit the occupants and the environment by promoting energy efficiency in design and construction of homes, apartments and townships.

Last Four Years Hottest on Record

- The last four years were the hottest since global temperature records began. The U.N. confirmed this and observed “clear sign of continuing long-term climate change. The U.N.’s World Metrological Organisation said in November that 2018 was set to be the fourth warmest year in recorded history, stressing the urgent need for action to rein in runaway planetary warming.
- The average global surface temperature in 2018 was 1°C above pre-industrial baseline levels.
- 2016 remains the hottest year on record. In 2006 strong El Nino was responsible for abnormal rise in temperature.

Future Earth Program

- Future Earth is a 10-year international research program which aims to build knowledge about the environmental and human aspects of Global change, and to find solutions for sustainable development. It aims to increase the impact of scientific research on sustainable development. Future Earth is an interdisciplinary research program bringing together natural and social sciences as well as the humanities, engineering and law, and focused on designing and producing research together with stake holders from outside the scientific community.

Water Conservation Fee

- The Central Ground Water Authority of Union Ministry of Water Resources, River Development and Ganga Rejuvenation on December 12, 2018 notified revised guidelines for ground water extraction. The revised guidelines , which will be effective from June 1, 2019, aim to ensure a more robust groundwater regulatory mechanism in the country. The guidelines were revised in the wake of the directions issued by the National Green Tribunal to address various shortcomings in the existing guidelines of ground water extraction.

Sanctuary Vs. National Park

- There are three major differences between the National Parks and Wild Life Sanctuaries. Livestock grazing is not allowed in a National Park, but it can be allowed in a regulated manner in a Sanctuary. A Sanctuary can be upgraded to a National Park but a National Park cannot be down graded as a Sanctuary.

No human activity is allowed inside National Parks

- In biosphere reserve limited economic activity like sand mining and stone mining is permitted.
- Wild life sanctuaries of India are classified as IUCN Category IV protected areas.
- Between 1936 and 2016, 543 wild life sanctuaries were established in the country.
- Area of Sanctuaries: In 2017 about 1.2 Lakh km
- National parks in India: 104 in 2018 covering an area of 40,501 SqKm that is 1.23% of total area of India.

National Park

- Largest Sanctuaries in the World:
 - Natural Park of the Coral Sea : Largest Marine Park of the World spread over 5lakh square miles. It is in east of Australia
 - Second largest is Kavango-Zambezi Transfrontier Conservation Area- It is located on convergence of the borders of Angola, Botswana, Namibia, Zambia and Zimbabwe. Area 2 lakh square miles
 - Third largest is Northeast Greenland National Park: Extending across nearly half of all of Greenland, Northeast Greenland National Park. Established in 1974. Area 3.75 lakh square miles

Drip Irrigation

- Drip irrigation is a type of micro-irrigation method to save water. Watering is done through drip at a slow discharge of water. This way water goes slowly to the roots of plants. The roots are able to absorb water more efficiently. There is least wastage of water as water does not runoff and does not evaporate.

SMOG

- Smog is often caused by heavy traffic, high temperatures, sunshine and calm winds.
During the winter months when the wind speeds are low, it helps the smoke and fog to become stagnate at a place forming smog and increasing pollution levels near the ground closer to where people are respiring. It hampers visibility and disturbs the environment.
- Smog is more severe when it occurs farther away from the sources of release of pollutants. This is because the photo chemical reactions that cause smog take place in the air when released pollutants from heavy traffic drift due to the wind. Smog can thus affect and prove to be dangerous for suburbs, rural areas as well as urban areas or large cities.
Smog can be responsible for any ailment from minor pains to deadly pulmonary diseases such as lung cancer.

Sustainable Development

- Economic development that is conducted without depletion of natural resources.

Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their needs.

UNDP (United Nations Development Programme)- the 2030 Agenda for Sustainable Development is an ambitious universal and holistic agenda. UNDP promotes an integrated approach that tackles the connected issues of multidimensional poverty, inequality, and exclusion, and sustainability, while enhancing knowledge, skills and production technologies to enlarge peoples' choices, reduce risks and sustain development gains.

SMOG

- The atmospheric pollutants or gases that form smog are released in the air when fuels are burnt. When sunlight and its heat react with these gases and fine particles in the atmosphere, smog is formed. It is purely caused by air pollution. Ground level ozone and fine particles are released in the air due to complex photochemical reactions between volatile organic compounds (VOC), sulphur dioxide, nitrogen oxide,. These volatile organic compound, sulphur dioxide and Nitrogen dioxide are called precursors. The main sources of these precursors are pollutants released directly into the air by gasoline and diesel run vehicles, industrial plants and activities, and heating due to human activities.

Expansion of Universe

- Universe is expanding constantly. The distance between two distant parts of the universe with time. The universe appears to be expanding at an increasing rate, so that the velocity at which a distant galaxy is receding from the observer is constantly increasing with time.

Dark energy is an unknown form of energy which is supposed to be filled in all empty spaces and because of which universe is expanding at accelerating speed.

Lean Management

- Lean manufacturing or lean production or lean management is a systematic method for waste minimization with in manufacturing system without sacrificing productivity.

Plastic Ban

- Plastic waste have been identified as one of the major source of environmental pollution as they don't decay naturally. Besides choking drains, water-bodies and adding to the load of the already-exhausted landfill sites, there are instances of cattle eating and dying after choking on plastic bags. Most of the states have banned plastic bags less than 50 microns, which is the thickness of a human hair. Microns is the short of micromillimeter. It is the global measurement unit for thickness of plastic bags. The thinner the bag, the more harmful they are to the environment. According to manufacturers the market share of thin bags is not more than 25%.

Green Crackers

- Firecrackers are responsible for air pollution. So to minimize the pollution the concept of green crackers emerged.
- Fire crackers contains gunpowder.
- Green crackers are less harmful as they do not contain harmful chemicals.
- Conventional fire crackers contain aluminium, barium potassium nitrate
- Fire crackers contains chemicals and substances like cadmium, lead, chromium, aluminium, magnesium, nitrates, carbon monoxide, copper, potassium, sodium, zinc oxide, manganese dioxide.

Dip in Stubble -Burning Cases

- Paddy is grown in about 30 lakh hectares in Punjab. After its harvesting, about 20 million tonnes of straw is left on the field.
- It is estimated that 15 million tonnes of straw is burnt on the open fields to clear the land for next crop. This year the cases of stubble burning has come down
- In Haryana Paddy had been sown on 13 lakh hectares in Haryana.

National Policy on Biofuels

- Energy is a critical input for socio-economic development
- The energy strategy of a country aims at efficiency and security and to provide access which being environment friendly and achievement of an optimum mix of primary resources for energy generation.
- Crude oil consumption was 156 million tonnes in 2007-08
- The domestic crude oil is able to meet only about 23% of the demand, while the rest is met from imported crude.
- The crude oil prices are fluctuating from \$60 to \$140 a barrel

Bio Fuel

- Biofuels are derived from renewable bio-mass resources and, therefore, provide a strategic advantage to promote sustainable development and to supplement conventional energy sources in meeting the rapidly increasing requirements for transportation fuels associated with high economic growth, as well as in meeting the energy needs of India's vast rural population.
- Biofuels can increasingly satisfy these energy needs in an environmentally benign and cost-effective manner while reducing dependence on import of fossil fuels and thereby providing a higher degree of National Energy Security.

Bio Fuel

- The Goal of the Policy is to ensure that a minimum level of biofuels become readily available in the market to meet the demand at any given time. An indicative target of 20% blending of biofuels, both for bio-diesel and bio-ethanol is set.
- Ethanol is mainly being produced in the country at present from molasses, which is a by-product of the sugar industry. 5% blending of ethanol with gasoline has already been taken up by the Oil Marketing Companies (OMCs) in 20 States and 4 Union Territories.
- In order to augment availability of ethanol the sugar industry has been permitted to produce ethanol directly from sugarcane juice. The sugar and distillery industry will be further encouraged to augment production of ethanol to meet the blending requirements prescribed from time to time.

- Thank you