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Daily News Discussion (DND)

4th March 2021

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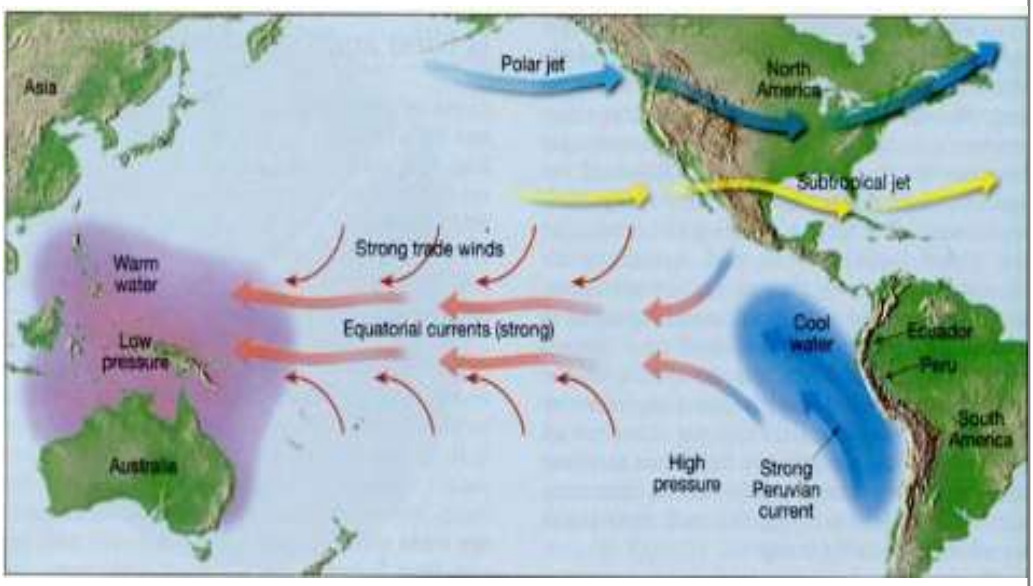
1. Geography

1.1.Warmer winters in India: La Nina events may be getting hotter than El Nino, say experts

- The IMD, said most of the north, north-west and north-east India, along with a few parts of central India and coastal areas of north Peninsular India, may experience above normal day-time temperatures from March till May
- The La Niña years may be getting warmer than El Niño events of the past, experts have pointed out.
- The current La Niña conditions commenced in October 2020, but have not led to much cooling over India. The IMD has predicted that the moderate La Niña conditions over the equatorial Pacific Ocean will continue through May. La Niña could be bringing warmer air from the North into India.
- The La Niña conditions in the Pacific are fading, and global agencies forecast that the temperatures will return to neutral and then warm up in the coming months. Hence global temperatures might also rise further in the coming months.
- That February 2021 was the warmest month in the recorded history is proof enough, Koll said.
- He added that 2020 was one of the warmest years despite a La Niña with cool waters in the east Pacific. "The same was observed from January to February, when La Niña was fading from the Pacific. La Niña typically has a cooling effect on global temperatures, but this is now offset by global warming due to greenhouse gas emissions.

Normal Conditions

- In a normal year, a surface low pressure develops in the region of northern Australia and Indonesia and a high pressure system over the coast of Peru. As a result, the trade winds over the Pacific Ocean move strongly from east to west.

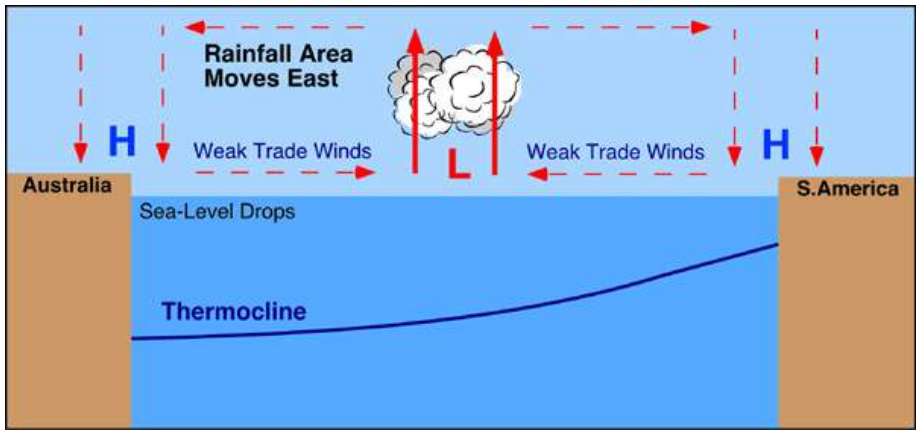


- The easterly flow of the trade winds carries warm surface waters westward, bringing convective storms (thunderstorms) to Indonesia and coastal Australia. Along the coast of Peru, cold bottom cold nutrient rich water wells up to the surface to replace the warm water that is pulled to the west.

During El Nino year

- In an El Niño year, air pressure drops over large areas of the central Pacific and along the coast of South America.

- The normal low pressure system is replaced by a weak high in the western Pacific (the southern oscillation). This change in pressure pattern causes the trade winds to be reduced == Weak Walker Cell. Sometimes Walker Cell might even get reversed.



- This reduction allows the equatorial counter current (current along doldrums) to accumulate warm ocean water along the coastlines of Peru and Ecuador.
- This accumulation of warm water causes the thermocline to drop in the eastern part of Pacific Ocean which cuts off the upwelling of cold deep ocean water along the coast of Peru.
- Climatically, the development of an El Niño brings drought to the western Pacific, rains to the equatorial coast of South America, and convective storms and hurricanes to the central Pacific

Effects of El Nino

- The warmer waters had a devastating effect on marine life existing off the coast of Peru and Ecuador.
- Fish catches off the coast of South America were lower than in the normal year (Because there is no upwelling).
- Severe droughts occur in Australia, Indonesia, India and southern Africa.
- Heavy rains in California, Ecuador, and the Gulf of Mexico

How El Nino impacts monsoon rainfall in India

- El Nino and Indian monsoon are inversely related.
- The most prominent droughts in India – six of them – since 1871 have been El Nino droughts, including the recent ones in 2002 and 2009
- However, not all El Nino years led to a drought in India. For instance, 1997/98 was a strong El Nino year but there was no drought (Because of IOD).
- On the other hand, a moderate El Nino in 2002 resulted in one of the worst droughts.
- El Nino directly impacts India's agrarian economy as it tends to lower the production of summer crops such as rice, sugarcane, cotton and oilseeds.
- The ultimate impact is seen in the form of high inflation and low gross domestic product growth as agriculture contributes around 14 per cent to the Indian economy.

La Nina

- After an El Niño event weather conditions usually return back to normal.
- However, in some years the trade winds can become extremely strong and an abnormal accumulation of cold water can occur in the central and eastern Pacific. This event is called a La Niña.

- A strong La Niña occurred in 1988 and scientists believe that it may have been responsible for the summer drought over central North America. During this period, the Atlantic Ocean has seen very active hurricane seasons in 1998 and 1999.
- One of the hurricanes that developed, named Mitch, was the strongest October hurricane ever to develop in about 100 years of record keeping.

Effects of La Nina

- abnormally heavy monsoons in India and Southeast Asia,
- cool and wet winter weather in southeastern Africa, wet weather in eastern Australia,
- cold winter in western Canada and northwestern United States,
- winter drought in the southern United States

2. Polity

2.1.Use of PM's photo in petrol pump hoardings violates poll code, should be removed: ECI official

- The Election Commission of India (ECI) on Wednesday directed all petrol pump dealers and other agencies to remove hoardings advertising central government schemes that carry photographs of Prime Minister Narendra Modi
- The use of the prime minister's photograph in such hoardings violates the Model Code of Conduct (MCC), the official of the West Bengal Chief Electoral Officer (CEO) said.

Key Points

- The MCC is a set of guidelines issued by the EC to regulate political parties and candidates prior to elections.
- It helps EC in keeping with the mandate it has been given under Article 324 of the Constitution, which gives it the power to supervise and conduct free and fair elections to the Parliament and State Legislatures.
- The MCC is operational from the date on which the election schedule is announced until the date of result announcement.

Evolution

- The origins of the MCC lie in the Assembly elections of Kerala in 1960, when the State administration prepared a 'Code of Conduct' for political actors.
- Subsequently, in the Lok Sabha elections in 1962, the ECI circulated the code to all recognised political parties and State governments and it was wholeheartedly followed.
- It was in 1991 after repeated flouting of the election norms and continued corruption, the EC decided to enforce the MCC more strictly.
- What comes under the Model Code of Conduct?
  - ✓ The government usually doesn't introduce any new ground for projects or public initiatives once the Model Code of Conduct comes into force.
  - ✓ Government bodies are prohibited from participating in any recruitment process during the process of election.
  - ✓ The contesting candidates and their campaigners are not supposed to disturb the freedom of roadshows of their opponent candidates. The code of conduct exercise control over this majorly.
  - ✓ The election campaign rallies and roadshows must not affect the road traffic and the general public.

MCC contains eight provisions dealing with

- General Conduct: Criticism of political parties must be limited to their policies and programmes, past record and work. Activities such as using caste and communal feelings to secure votes, criticising candidates on the basis of unverified reports, bribing or intimidation of voters, etc. are prohibited.

- Meetings: Parties must inform the local police authorities of the venue and time of any meeting in time to enable the police to make adequate security arrangements.
- Processions: If two or more candidates plan processions along the same route, organisers must establish a contact in advance to ensure that the processions do not clash. Carrying and burning effigies representing members of other political parties is not allowed.
- Polling Day: All authorised party workers at polling booths should be given suitable badges or identity cards. Identity slips supplied by them to voters shall be on plain (white) paper and shall not contain any symbol, name of the candidate or the name of the party.
- Polling Booths: Only voters, and those with a valid pass from the EC are allowed to enter polling booths.
- Observers: The EC will appoint observers to whom any candidates may report problems regarding the conduct of the election.
- Party in power: The MCC incorporated certain restrictions in 1979, regulating the conduct of the party in power.
  - ✓ Ministers must not combine official visits with election work or use official machinery for the same.
  - ✓ The party must avoid advertising at the cost of the public exchequer or using official mass media for publicity on achievements to improve chances of victory in the elections.
  - ✓ Ministers and other authorities must not announce any financial grants, or promise any construction of roads, provision of drinking water, etc.
  - ✓ Other parties must be allowed to use public spaces and rest houses and these must not be monopolised by the party in power.
- Election manifestos: Added in 2013, these guidelines prohibit parties from making promises that exert an undue influence on voters, and suggest that manifestos also indicate the means to achieve promises.

Legal Enforcement

- Though MCC does not have any statutory backing, it has come to acquire strength in the past decade because of its strict enforcement by the EC.
- Certain provisions of the MCC may be enforced through invoking corresponding provisions in other statutes such as the Indian Penal Code 1860, Code of Criminal Procedure 1973, and Representation of the People Act 1951.
- In 2013, the Standing Committee on Personnel, Public Grievances, Law and Justice, recommended making the MCC legally binding and recommended that the MCC be made a part of the RPA 1951.
- However, the EC argues against making it legally binding.
  - ✓ According to it, elections must be completed within a relatively short time or close to 45 days and judicial proceedings typically take longer, therefore it is not feasible to make it enforceable by law.

3. Economy

3.1.Purple Revolution (Under Aroma Mission):

- Around 500 farmers across villages in Doda district in Jammu had their incomes quadrupled after shifting from maize to lavender cultivation which is being called purple revolution. It was possible due to initiatives taken under Aroma Mission.
- In 2016, the Centre launched Aroma Mission to boost cultivation of plants like lavender which have aromatic medicinal properties

Medicinal properties of Levander

- Lavender oil is believed to have antiseptic and anti-inflammatory properties, which can help to heal minor burns and bug bites.
- Research suggests that it may be useful for treating anxiety, insomnia, depression, and restlessness.
- Some studies suggest that consuming lavender as a tea can help digestive issues such as vomiting, nausea, intestinal gas, upset stomach, and abdominal swelling.
- In addition to helping with digestive problems, lavender is used to help relieve pain from headaches, sprains, toothaches, and sores. It can also be used to prevent hair loss.
- lavender oil could be effective in combating antifungal-resistant infections.
- Lavender is possibly effective for treating alopecia areata. This is a condition in which hair is lost from some or all areas of the body
- Lavender oil has been shown to reduce the amount of painkilling medicine required after a tonsillectomy.

Aroma Mission

- Objectives: The CSIR Aroma Mission is envisaged to bring transformative change in the aroma sector through desired interventions in the areas of agriculture, processing and product development for fuelling the growth of aroma industry and rural employment.
  - ✓ The mission will promote the cultivation of aromatic crops for essential oils that are in great demand by the aroma industry.
  - ✓ It is expected to enable Indian farmers and aroma industry to become global leaders in the production and export of some other essential oils on the pattern of menthol mint.
  - ✓ Making India a hub of opportunities in the domain of aroma products by developing and disseminating aroma related S & T to reach end users/clients of CSIR; farmers, industry and society, leading to creation of business opportunities, rural development and life-quality improvement. All this will be implemented without causing harm to the environment.
  - ✓ Attain self-sufficiency in the production of a majority of essential oils used by domestic aroma industry and reducing foreign exchange drain due to imports
  - ✓ It aims to provide substantial benefits to the farmers in achieving higher profits, utilization of waste lands and protection of their crops from wild and grazing animals.

- Nodal Agencies:
  - ✓The nodal laboratory is CSIR-Central Institute of Medicinal and Aromatic Plants (CSIR-CIMAP)

Additional information

- Scientists from Council of Scientific and Industrial Research- Central Institute of Medicinal and Aromatic Plants (CSIR-CIMAP), Lucknow have developed a new low-cost technology to prepare Geranium saplings and make this available for the farmers too.
- Geranium plant has huge medicinal value and its essential oil works as an anti-inflammatory and anti-septic agent.
- The production of Geranium has got boost under the Aroma mission.
- Till now the plant of Geranium was saved in aerated glass house, but now with the development of the protective shed technology of the polyhouse, it is prepared at a much cheaper cost on the farmer's farm itself.

About CSIR

- Council of Scientific and Industrial Research (CSIR) is the largest research and development (R&D) organisation in India. CSIR has a pan-India presence and has a dynamic network of 38 national laboratories, 39 outreach centres, 3 Innovation Complexes and 5 units.
- Established: September 1942
- Located: New Delhi
- CSIR is funded by the Ministry of Science and Technology and it operates as an autonomous body through the Societies Registration Act, 1860.
- It provides significant technological intervention in many areas with regard to societal efforts which include the environment, health, drinking water, food, housing, energy, farm and non-farm sectors.

Organisation Structure

- President: Prime Minister of India (Ex-officio)
- Vice President: Union Minister of Science and Technology (Ex-officio)
- Governing Body: The Director-General is the head of the governing body.
  - ✓The other ex-officio member is the finance secretary (expenditures).
  - ✓Other members' terms are of three years.
- CSIR Advisory Board: 15-member body composed of prominent members from respective fields of science and technology.
  - ✓Its function is to provide science and technology inputs to the governing body.
  - ✓Member terms are are of three years.

Objectives

- The objectives of the Council are scientific and industrial/applied research of national importance.

The activities include

- Promotion, guidance and coordination of scientific and industrial research in India
- Establishment and assistance to special institutions or departments of existing institutions for the scientific study of problems affecting particular industries and trade.
- Establishment and award of research studentships and fellowships.
- Utilization of the results of the research conducted under the auspices of the Council towards the development of industries in the country.
- Payment of a share of royalties arising out of the development of the results of research to those who are considered as having contributed towards the pursuit of such research.
- Establishment, maintenance and management of laboratories, workshops, institutes and organisations to further scientific and industrial research.
- Collection and dissemination of information in regard not only to research but to industrial matters generally.
- Publication of scientific papers and a journal of industrial research and development.

4. Environment

4.1.Wildfire rages in Similipal

- Similipal Biosphere Reserve lies within two biogeographical regions: the Mahanadian east coastal region and the Chhotanagpur biotic province of the Deccan peninsular zone.
- Volcanic sedimentary rocks .
- The highest peak in the Similipal hill range is Khairiburu (1,168 metres).
- Numerous waterfalls and perennial streams flow into major rivers, such as the Budhabalang, Baitarani and Subarnarekha.
- The biosphere reserve has the largest zone of Sal in all of India.
- Tropical monsoon climate
- Two endemic Orchid species are Eria meghasaniensis and Tainia hookeriana
- Royal Bengal Tiger and Asiatic Elephant
- Famous for melanistic tiger

Tribes

- Approximately 73% of all inhabitants are Aboriginals.
- Two tribes, the Erenga Kharias and the Mankirdias, inhabit the reserve's forests and practise traditional agricultural activities (the collection of seeds and timber).
- Other dominant tribes include the Ho, Gonda and Munda, among others.

Culture

- Similipal's cultural significance is characterized by stories and paintings that date back to the Ramayana, Mahabharata and Puranas, many of which mention local sites linked with specific mythological stories.
- For example, a sacred grove called Shami Vrikhya is said to have been the secret hiding place of the bow and arrow of the hero Arjuna.
- Writings -Goddess Ambika, or mention a sacred bathing place of Lord ShriRam.

5. Science and technology

5.1.Swachhta Saarthi Fellowships

About

- The Office of the Principal Scientific Adviser to the Government of India under its "Waste to Wealth" Mission launched the "Swachhta Saarthi Fellowship" to recognize students, community workers/self-help groups, and municipal/sanitary workers who are engaged in tackling the enormous challenge of waste management, scientifically and sustainably.
- The Waste to Wealth Mission is one of the nine national missions of the Prime Minister's Science, Technology, and Innovation Advisory Council (PM-STIAC).
- The fellowship is an initiative to empower young innovators who are engaged in community work of waste management/awareness campaigns/waste surveys/studies, etc. as Swachhta Saarthis and implement actions to reduce waste for a greener planet
- Targeted to encourage community participation, the Swachhta Saarthi Fellowships invites applications from students and community workers who have done previous work or are currently engaged in waste management activities, including awareness campaigns, surveys & studies.
- The three categories of awards under the fellowships are as below:
  - ✓ Category-A – Open to School students from 9th to 12th standards engaged in waste management community work
  - ✓ Category-B – Open to College students (UG, PG, Research students) engaged in waste management community work
  - ✓ Category-C – Open to Citizens working in the community and through SHGs, municipal or sanitary workers working beyond specifications of their job requirement/descriptions

About PMSTIAC

- An overarching council that facilitates the PSA's Office to assess the status in specific science and technology domains, comprehend challenges, formulate interventions, develop a futuristic roadmap and advise the Prime Minister accordingly.

Objective

- Synergizing Science & Technology collaborative research with various stakeholders both in central and state governments.
- Facilitating future preparedness in science and technology emerging domains
- Formulating and coordinating major inter-ministerial Science & Technology missions
- Ensuring an enabling ecosystem for technology-led innovations and entrepreneurship
- Solving socio-economic challenges for sustainable growth by innovations and technology based solutions
- Fostering effective public-private linkages for driving research and innovation

- Developing innovation clusters with multiple stakeholders including academia, industry and government
- Skilling in current and futuristic technologies

Waste to energy technology

- Thermochemical
  - ✓ Thermochemical processing is the use of heat to promote chemical transformations of biomass into energy and chemical products
- Incineration
  - ✓ Incineration is a thermal decomposition of organics in the presence of oxygen at higher temperatures
- Pyrolysis
  - ✓ Pyrolysis is the process of heating organic material at high temperatures in the absence of oxygen.
- Gasification
  - ✓ It occurs in a higher temperature with very little air or oxygen
- Torrefaction
  - ✓ Torrefaction is a thermal process to convert biomass into a coal-like material, which has better fuel characteristics than the original biomass.
- Process
  - ✓ Heating of biomass in the low or absence of oxygen to a temperature of typically 200 to 400°Cmaterial becomes brittle, and more hydrophobic
- Benefits
  - ✓ Moisture evaporate
  - ✓ Low calorific component (Volatile) driven out
  - ✓ Low quality fibre into high quality fuel
  - ✓ Mass loss 20-30%
  - ✓ Can convert 150-200 kilograms of paddy straw to bio-coal every hour and reduce CO2 emissions by 95%.

Biochemical process

Fermentation

- is a metabolic process that produces chemical changes in organic substrates through the action of enzymes. In biochemistry, it is narrowly defined as the extraction of energy from carbohydrates in the absence of oxygen.
- In a fermentation process sugar (glucose, fructose or other monosaccharides) is converted to ethanol by microbes (mostly varieties of the yeast Saccharomyces cerevisiae), which are inoculated to the feedstock.

- The monosachharides originate either directly from disaccharides, which are broken up via invertase enzymes, or from starch which is hydrolysed with amylase enzymes. In addition to ethanol, water and carbon dioxide are prdouced also.

Anaerobic digestion

- is a process through which bacteria break down organic matter—such as animal manure, wastewater biosolids, and food wastes—in the absence of oxygen. Anaerobic digestion for biogas production takes place in a sealed vessel called a reactor

Centre for Science and Environment (CSE) study

- According to a recent study by the Centre for Science and Environment (CSE), nearly half of India's waste-to-energy (WTE) plants, meant to convert non-biodegradable waste, are defunct.
- Moreover, the existing plants are functioning at low capacity.
- The key reasons for closure are the plants' inability to handle mixed solid waste and the high cost of electricity generated by them that renders it unattractive to power companies.
- MSW (municipal solid waste) in India has low calorific value and high moisture content.
- As most wastes sent to the WTE plants are unsegregated, they also have high inert content (inert materials like soil, sand, grit, etc).
- These wastes are not suitable for burning, and therefore to burn them, additional fuel is required which makes these plants expensive to run.

6. International affairs

6.1.IAF Participation in EX Desert FLAG VI

- Ex Desert Flag is an annual multi-national large force employment warfare exercise hosted by the United Arab Emirates Air Force. The Indian Air Force is participating for the first time in Exercise Desert Flag-VI along with air forces of United Arab Emirates, United States of America, France, Saudi Arabia, South Korea and Bahrain.

Other Exercises

- India has In-UAE BILAT (bilateral naval exercise) as well as Desert Eagle-II (bilateral air force exercise).

Other important exercises

- GARUDA VI-It is a bilateral air exercise between Indian Air Force and French air force. The latest edition was held in France
- AUMX-ASEAN-US Maritime Exercise
- SITMEX-(Singapore India Thailand Maritime Exercise)
- SAMUDRA LAKSAMANA- The Indian Navy and Malaysian Navy
- India-Thailand Coordinated Patrol (Indo-Thai CORPAT) between the Indian Navy(IN) and the Royal Thai Navy (RTN) was held
- Shakti-2019-It is a biennial joint exercise between India and France
- DANX-19-second edition of Defence of Andaman & Nicobar Islands 2019 (DANX-19),a large scale joint services exercise, was recently conducted by Andaman and Nicobar Command (ANC).Carried out by Indian Army, Navy, Air Force and Coast Guard.
- Nomadic Elephant It is Indo –Mongolian joint military training.
- Tiger Triumph-It is a India-U.S. joint tri-services Humanitarian Assistance and Disaster Relief (HADR).
- SAMPRITI-It is a bilateral defence cooperation endeavour between India and Bangladesh
- Malabar Exercise-trilateral maritime exercise between navies of India, Japan and the US recently began off the coast of Japan.

Current affairs Worksheet (04 March 2021)

Factual sheet for Quick revision

Topic	Description	Update
Similipal BR	About BR in india BR under MAB MAB	
PMSTIAC	Swachhta saarthi fellowship	
Waste to energy technologies	Incineration Pyrolysis Gasification Torrefaction Fermentation Anaerobic digestion	
Aroma mission	Purple revolution Levender Geranium Aroma mission CSIR	
Moral code of conduct		
Monsoon	La Nina El Nino ENSO El Nini modoki India ocean dipole	