

UPSCprep Free Daily Answer Writing Initiative

Subject: GS 1

Syllabus: Geography

Questions

Q1. What is ENSO? Is Global warming influencing La-Nina? Substantiate the same, and also what is its impact? (150 words) 10

Q2. Eastern Indian states are the most mineral-rich areas in India but lag in socio-economic development. Delineate geographically the minerals present in the eastern belt and formation of minerals in this area with time. (250 words) 15

Model Structures

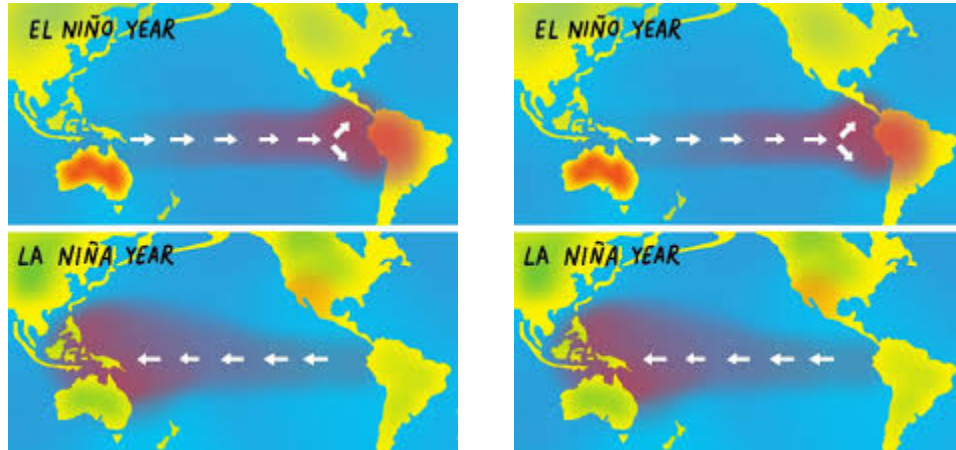
Q1. What is ENSO? Is Global warming influencing La-Nina? Substantiate the same and also what is its impact? (150 Words, 10 Marks)

Introduction:

- The World Meteorological Organisation (WMO) has warned that the La Nina that has caught the Earth since September 2020 is set to last 2023.

Main body:

- **El Niño-Southern Oscillation (ENSO)** is a recurring climate pattern involving changes in the temperature of waters in the central and eastern tropical Pacific Ocean.
 - In periods ranging from about three to seven years, the surface waters across the tropical Pacific Ocean warm or cool by anywhere from 1°C to 3°C, compared to normal.
 - This oscillating warming and cooling pattern, referred to as the ENSO cycle.



- **La-Nina:**
 - During a La Nina event, **cooler-than-average sea surface temperatures** prevail over the east and central Pacific Ocean, due to which the trade winds above the sea surface change in character because of a difference in the wind pressures.
 - This change in character of the trade winds is then carried all around the world affecting different regions in different ways.
 - Many regions become colder and wetter, while many others become hotter and drier.
- Climate change scientists have also predicted an impact of global warming on the El Niño-Southern Oscillation :
 - “**Extreme El Niño and La Niña events** may increase in frequency from about one every 20 years to one every 10 years by the end of the 21st century under aggressive greenhouse gas emission scenarios.
 - The **continuation and changing character** of the La Nina in an era of climate change has been highlighted by the WMO.
 - Human impact on climate and La Nina.
- Human-induced climate change **amplifies the impacts** of naturally-occurring events like La Nina and is increasingly influencing our weather patterns.
 - If the interaction between the **La Nina and the warm Arctic** is in fact happening then it is an impact of global warming induced by human greenhouse gas emissions.

Impact:

- The ongoing drought situation in the **Horn of Africa** and the southern part of South America are testimony to the ongoing La Nina effect.
- **East Africa** is forecast to see drier-than-usual conditions, which together with the existing impacts of the desert locust invasion, may add to regional food insecurity.
- Off the west coast of **the Americas**, upwelling increases, bringing cold, nutrient-rich water to the surface.
- Causes the **jet stream** to move northward and to weaken over the eastern Pacific.
- Causes drought in the South American countries of Peru and Ecuador.
- The “**cold event**” causes winter temperatures to soar in the south but cool in the north.
- **Climate-sensitive** sectors like agriculture, health, water resources and disaster management are likely to be affected.
- The India Meteorological Department (IMD) declared, the reason behind **early heat waves, early depressions** and the dust storms is the continued persistence of a north-south low pressure pattern that forms over India during winters when a La Niña phenomenon is occurring in the equatorial Pacific Ocean.

Conclusion:

- Hence controlling global warming caused due to human induced climate change is the key to sustainable development in the 21st century.

Q2. Eastern Indian states are the most mineral rich areas in India but lag in socioeconomic development. Delineate geographically the minerals present in eastern belt and formation of minerals in this area with time. (250 Words, 15 Marks)

Introduction

- According to data from the Ministry of Mines, **Odisha, Jharkhand and Chhattisgarh** contribute to more than **24.8% of the value of mineral production** in India.

Main body

- **Geographically**, minerals present in Eastern belt can be understood state wise-
 - **Jharkhand-**
 - Iron ore of **Noamundi**.
 - Uranium in **Turandeh and Narwapahar**.
 - Coal in **Jharia, Bokaro and Giridih** in Damodar valley.
 - **Chhattisgarh**
 - Iron ore locations in **Dalli Rajhara, Bila Dila and Jagdalpur**.
 - Manganese in **Durg and Bhilai**.
 - Limestone and Dolomite in **Bilaspur and Raipur** respectively.
 - Coal in **Korba and Chirmiri** in Hasdo valley.
 - **West Bengal**
 - Coal in Raniganj fields.
 - Iron ore in Purulia.
 - **Odisha**
 - Manganese and Limestone in **Kendujhar and Sundargarh** respectively.
 - Iron ore in **Badampahar and Mayurbhanj**
 - Uranium in **Jharsuguda** of Garhjat hills in Odisha,
 - Coal in **Talcher**,
 - These states **lag in socioeconomic development because-**
 - **Opposition by locals** who are mostly tribals.
 - Growth of **naxalism** which involves violent resistance to any development efforts.
 - Issues in policy making which has mostly **neglected environmental issues** and traditional rights of tribals.
 - **Low outreach and implementation** of government schemes due to difficult terrain.
 - **Mining and its issues** like cancer due to contamination of soil and groundwater.
Eg- uranium mining in Jharsuguda and Narwapahar.

Conclusion

Eastern states have lagged behind in many indicators like Ease of doing business, **SDG India index**, **NITI Aayog health index** etc. Their development is critical in achieving SDG 1 (no poverty), 2 (zero hunger), 4 (quality education) and 10 (reduced inequalities).

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