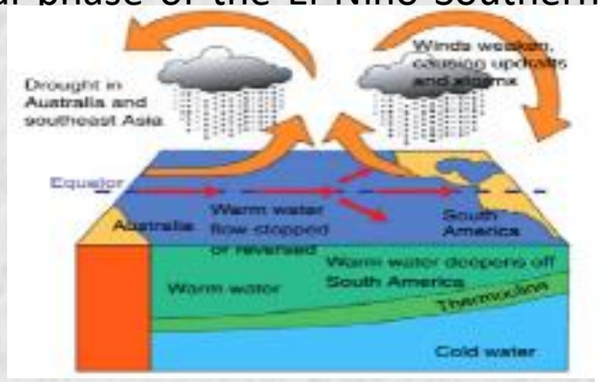
1. **El Nino Southern Oscillation (ENSO):** According to the US weather monitor (NOAA), India's southwest monsoon this year is likely to benefit from the neutral phase of the El Nino Southern Oscillation (ENSO) along the equatorial Pacific Ocean.



   - **About El Nino Southern Oscillation (ENSO):** It is a recurring ocean-atmospheric condition in the southern equatorial Pacific, caused by changes in sea surface temperatures (SSTs).
     - It includes alternating warming (El Niño) and cooling (La Niña) phases, collectively called the ENSO cycle.
     - ENSO significantly influences rainfall distribution in the tropics and impacts weather across the Indian subcontinent and other global regions.
     - ENSO has three phases: **warm (El Nino), neutral, and cool (La Nina).**
   - **Impact of ENSO on Indian Monsoon and Agriculture**
     - **Monsoon Impact:** El Niño events are associated with weakened monsoons and are linked to most major droughts in India.
       - ✓ La Niña leads to above-average monsoon rainfall across the Indian subcontinent.
     - **Agricultural Impact:** El Niño negatively affects summer crop production, reducing yields of rice, sugarcane, cotton, and oilseeds.
       - ✓ La Niña rainfall near Kharif harvest time (Sept-Oct) can damage standing crops, despite overall higher rainfall.

2. **Kavach 5.0:** Union Railway Ministry has recently announced the launch of Kavach 5.0 to upgrade Mumbai's suburban train network.
   - **About Kavach 5.0:** Indigenously developed Automatic Train Protection (ATP) system.
     - **Development**: Designed by **RDSO** (Research Design and Standards Organisation) in collaboration with Medha Servo Drives Pvt Ltd, HBL Power Systems Ltd, and Kernex Microsystems.
     - **Technology**: Comprises electronic devices and RFID installed in locomotives, signalling systems, and tracks.
     - **Communication**: Devices communicate using ultra-high radio frequencies to coordinate braking and driver alerts.

- **Applications of Kavach System:**
  - **Speed Regulation**: Assists loco pilots in maintaining specified speed limits by automatically applying brakes if the pilot fails.
  - **Collision Prevention**: Automatically stops the train if another train is detected on the same track within a defined distance.
  - **Signal Safety**: Helps prevent Signal Passing At Danger (SPAD) and overspeeding.
  - **Signal Relay**: Continuously relays upcoming signals to the locomotive, aiding in low-visibility conditions.
  - **Weather Assistance**: Enhances train operations during inclement weather, like dense fog.
  - **Capacity Boost**: Reduces the gap between trains by 30%, allowing 30% more trains and improved commuter frequency.
  - **Field Testing**: Conducted on passenger trains **since 2016** by Indian Railways.

3. **Plastic Parks in India:** The Department of Chemicals and Petro-Chemicals is implementing the Scheme for Setting up of Plastic Parks under the umbrella scheme New Scheme of Petrochemicals.
   - The aim is to support need-based Plastic Parks with state-of-the-art infrastructure and common facilities through a cluster development approach.
   - **About:** A Plastic Park is an industrial zone for plastic-related businesses and industries.
     - **Objective**: To synergize capacities, promote investment, production, exports, and generate employment.
     - **Focus**: Achieve environmentally sustainable growth through waste management and recycling.
     - **Significance**: Integral to India's strategy for plastic waste management, recycling, and chemical industry support.
   - **India's global position**: India ranks 12th in world plastic exports (World Bank 2022).
   - **Scheme aim**: To synergize capacities via cluster development, boost production and exports.
   - **Recent approvals of Setting up Plastic Parks**: In 2022, Plastic Parks were approved in **Gorakhpur (UP)** and **Ganjimutt (Karnataka)**.

4. **ASEAN-India Trade in Goods Agreement (AITIGA):** Recently, India hosted the 8th meeting of the AITIGA Joint Committee to review the ASEAN-India Trade in Goods Agreement (AITIGA) at Vanijya Bhawan, New Delhi.
   - **About AITIGA:** It is a trade deal between India and the ten ASEAN member states.
     - Signed in 2009 at the 7th ASEAN Economic Ministers-India Consultations in Bangkok, Thailand.
     - Came into effect in 2010; also referred to as the ASEAN-India Free Trade Agreement.
     - Covers trade in physical goods and products; does not apply to trade in services.
     - A separate ASEAN-India Trade in Services Agreement was signed in 2014.
   - **About ASEAN:** It refers to the Association of Southeast Asian Nations, established in 1967 with the Bangkok Declaration.
     - **Founding members:** Indonesia, Malaysia, Philippines, Singapore, and Thailand.
     - **Current members (10):** Indonesia, Malaysia, Philippines, Singapore, Thailand, Brunei, Laos, Myanmar, Cambodia & Vietnam.
     - Promotes intergovernmental cooperation and facilitates economic, political, security, military, educational, and sociocultural integration among its members and with other Asian countries.
5. **Long-Range Glide Bomb (LRGB):** Defence Research and Development Organisation (DRDO) successfully conducted the Release Trials of Long-Range Glide Bomb (LRGB) 'Gaurav' from the Su-30 MKI aircraft.
   - **About Long-Range Glide Bomb (LRGB):** It is an air-launched 1,000 kg class glide bomb capable of hitting targets at long distance.
   - **Features:** It is an Air to Surface LRGB with conventional warheads to destroy enemy air strips, bunkers, hard installations, buildings, etc. It is designed to integrate with fighter aircrafts.
     - It consists of an Inertial Navigation based guidance system with Digital Control.
     - GAURAV has been designed and developed indigenously by the Research Centre Imarat (RCI), Hyderabad.
     - After launch, the glide bomb steers towards the target using a highly accurate hybrid navigation scheme with a combination of INS and GPS data.

- systDuring the flight test, the glide bomb hit the target erected at Long Wheeler's island with pinpoint accuracy.
- Complete flight data during the test launch was captured by Telemetry and Electro optical tracking ems deployed by Integrated Test Range along the coastline.

- **About Su-30 MKI Aircraft:** It is a multirole combat fighter aircraft jointly developed by the Sukhoi Design Bureau and Hindustan Aeronautics Limited (HAL) for the Indian Air Force (IAF).
  - Based on the Su-30 fighter aircraft, Su-30MKI is equipped with thrust vectoring control and canards.
  - **Features:** It is a fourth-generation fighter jet powered by two AL-31 FP aero engines.

6. **Indian Silk:** India is the second-largest producer and the largest consumer of silk in the world.
   - The Silk connects India's history, tradition, and art, as seen in iconic silk sarees like Kanchipuram and Banarasi.
   - **About:** Silk is a thread connecting India's history, tradition, and art.
   - **Iconic Silk Sarees:**
     - **Kanchipuram and Banarasi silk sarees**: Iconic representations of India's silk heritage.
     - **Mulberry silk**: Used to make pure, luxurious silk sarees.
     - **Silk weaving craft**: Passed down through generations, symbolizing India's vibrant soul.
   - **Sericulture Process:** Sericulture → Silkworm diet → Cocoon process → Silk extraction
   - **Silk Production in India:**
     - **Mulberry silk production**: Mainly produced in Karnataka, Andhra Pradesh, Tamil Nadu, Jammu & Kashmir, and West Bengal.
     - **Non-mulberry silk (Vanya silk)**: Comes from wild silkworms, produced in Jharkhand, Chhattisgarh, Orissa, and northeastern states.
     - **Raw silk**: 92% of India's raw silk production comes from mulberry.
   - **Economic Role of Silk:**
     - **Economic development**: Silk production creates jobs, especially in rural areas, and contributes to foreign exchange.
     - **Silk's share in textile production**: Accounts for **0.2%** of the world's total textile production.
   - **Government Schemes in Silk Development:**

- **Silk Samagra Scheme**: Focuses on improving sericulture by scaling production, improving quality, and empowering families.
- **Scheme components**: Research & Development, Training, Technology Transfer, Seed Organizations, Market Development, and Quality Certification.

- **Other Supporting Schemes:**
  - **Raw Material Supply Scheme (RMSS)**: Provides quality yarn to handloom weavers at subsidized rates.
  - **National Handloom Development Programme (NHDP)**: Supports weavers with raw materials, design, technology upgrades, and marketing.
  - **SAMARTH Scheme**: Focuses on training **3 lakh people** in textiles, including silk.

7. **Automotive Industry: Powering India's Participation in Global Value Chains:** NITI Aayog has recently released a report titled "Automotive Industry: Powering India's Participation in Global Value Chains.
   - The report provides an extensive analysis of India's automotive sector, highlighting opportunities, challenges, and a roadmap for integrating India into global automotive markets.
   - **About Automotive Industry Landscape in India:** 4th largest automobile producer globally, with 28 million vehicles manufactured in 2023–24 across all segments.
     - **Export Trends**: Auto component exports stood at $20 billion in 2023, accounting for 3% of global trade; target set to reach $60 billion by 2030.
     - **Domestic Demand**: Rising middle class and policy support are fueling demand for EVs and small cars.
     - **Trade Balance**: Auto component trade ratio is 0.99, indicating near balance but untapped export potential.
     - **Policy Support**: Key schemes include PLI, FAME-II, PM E-Drive, and ACC Battery Storage, aiding manufacturing scale-up.
   - **Importance of Automotive Sector in Indian Economy**
     - **GDP Contribution:** Contributes 7.1% of India's GDP and nearly 49% of manufacturing GDP.
     - **Sectoral Linkages:** Strong linkages with steel, rubber, electronics, glass, and IT.
     - **Employment Potential:** Potential to add 2–2.5 million new jobs by 2030.