**Super Detailed Summary of the IPCC Report (Latest)**

**1. What is the IPCC?**

* The **Intergovernmental Panel on Climate Change (IPCC)** is a UN body formed in **1988** by the **World Meteorological Organization (WMO)** and **United Nations Environment Programme (UNEP)**.
* It provides **scientific insights** on climate change to help governments craft policies.
* **Headquarters:** Geneva, Switzerland.
* **Members:** 195 nations (including India).
* **Awards:** Joint recipient of the **2007 Nobel Peace Prize** (along with Al Gore) for efforts to build awareness on climate change.
* Produces **Assessment Reports (ARs)** summarizing the state of climate science, impacts, and mitigation.

**2. What is the IPCC Assessment Report?**

* Published every **7 years** (approx.) since **1990**.
* So far, **six** assessment reports (AR1 to AR6) have been released.
* Key influences:
  + AR1 (1990) → Led to the **Kyoto Protocol (1997)**.
  + AR5 (2013) → Influenced the **Paris Agreement (2015)**.
* **Three Working Groups (WGs) contribute to each report**:
  + **WG1:** Physical science of climate change.
  + **WG2:** Impacts, vulnerabilities, and adaptation strategies.
  + **WG3:** Climate change mitigation options.

**3. IPCC 6th Assessment Report (AR6)**

* **Latest update** to AR5 (2013).
* Released in **three phases**:
  + **WG1 (2021):** Physical science basis of climate change.
  + **WG2 (2022):** Impacts, adaptation, and vulnerability.
  + **WG3 (2022):** Mitigation of climate change.
* **Final Synthesis Report:** Released in **September 2022**.

**4. Key Findings of the IPCC Latest Report**

**(1) Greenhouse Gases (GHG)**

* **Anthropogenic GHG emissions (2010-2019) rose steadily**, continuing the upward trend since **1850**.
* GHG emissions rose slower from **2010-2019** than in **2000-2009**, but were still **higher than any previous decade**.
* **Major sources:** Cities, energy, transport, industry, agriculture, and buildings.
* **Some improvements:** Reduced carbon intensity of energy due to better efficiency.

**(2) Least Developed Countries & Inequality in Emissions**

* **18 countries have achieved sustained emission reductions for over 10 years.**
* **Least Developed Countries (LDCs) and Small Island Developing States (SIDS)** have per capita emissions **far below the global average**.
* **10% of the wealthiest households** account for a **disproportionate share** of global emissions.

**(3) Temperature Rise & Climate Trends**

* **Global surface temperature increased by 1.09°C (2011-2020) compared to 1850-1900.**
* **Each of the last four decades has been warmer** than the one before.
* **Sea levels rose by ~0.20m (1901-2018)**.
* **Arctic sea ice decline (40% in September, 10% in March) since 1979**.
* **Climate zones have shifted poleward.**

**(4) Impending Threats**

* **CO2 levels at a 2-million-year high**.
* **Glacial retreat at a 2000-year high**.
* **Sea-level rise faster than any century in 3,000 years**.
* **Arctic summer ice at its lowest in 1,000 years**.
* **Ocean warming faster than any time since the last Ice Age**.
* **Ocean acidification at its worst in 26,000 years**.

**(5) Technology with Low Emissions**

* **Since 2010, the cost of low-emission technologies has fallen** and their adoption has risen.
* **Developing nations face barriers** like limited finance, technology transfer, and infrastructure.
* **Digitalization has mixed effects**: while enabling green solutions, it also creates e-waste and job risks.

**(6) Financial Shortfalls**

* **Massive funding gap for climate mitigation, especially in developing countries.**
* **Sectors like agriculture, forestry, and land use suffer from inadequate financial support.**
* **Need for increased public finance and private investments in climate solutions.**

**5. Recommendations of the IPCC Report**

The report suggests several mitigation strategies for deep GHG reductions:

1. **Carbon dioxide removal (CDR)**: Methods like reforestation, soil carbon sequestration.
2. **Strong policy actions:** Using regulatory and economic tools to support climate action.
3. **Equitable partnerships:** Engaging businesses, media, youth, labor, and indigenous communities.
4. **Integrating adaptation and mitigation measures across all sectors.**
5. **Governments should provide clear policy signals** to scale up climate finance.
6. **International cooperation and agreements** are key to tackling global climate change.

**6. Regional Findings for India**

India and South Asia are projected to face significant climate challenges:

* **More intense and frequent heatwaves & humid heat stress in the 21st century.**
* **Increase in annual and monsoon rainfall**, with greater inter-annual variability.
* **Higher risks of floods due to increased precipitation.**
* **Longer and more intense fire weather seasons.**
* **Decline in snow-covered areas and glacier volumes in the Himalayas.**
* **Rising sea levels contributing to more frequent coastal flooding.**

**Conclusion**

* The IPCC report highlights **alarming climate trends**, including rising temperatures, melting glaciers, increasing sea levels, and worsening extreme weather events.
* The world needs **urgent action** to **reduce emissions, scale up clean technology**, and **increase climate finance**—especially for developing countries.
* **India is particularly vulnerable**, requiring stronger policies for mitigation and adaptation.

This report serves as a **critical guide for policymakers worldwide** to make informed climate decisions. 🚨