JULY 2ND WEEK VITALS COMPILATION

Discuss how AI is transforming the manufacturing landscape for a more sustainable development and resilient economic aspirations. (250 Words)

» Artificial Intelligence (AI) is **rapidly reshaping the global manufacturing sector, driving innovation, efficiency, and competitiveness.**

» Smart automation to quality control and supply chain optimization, **AI is redefining how products are designed, produced, and delivered.**

AI Transforming
A. Automation and the use of Robotics

» The insightful impacts of AI in manufacturing is the integration of **intelligent automation**.

» AI-driven systems can **learn from experience, adapt to variability**, and collaborate safely with human workers.

» This will show the **impact of Increased output, reduced labour costs, and enhanced worker safety.**

B. Predictive Maintenance

» AI allows manufacturers **to predict equipment failures** before they happen by analyzing sensor **data in real-time.**

» This predictive maintenance approach reduces **unplanned downtime, extends equipment lifespan, and saves millions in repair costs.**

» This will **reduce maintenance cost** and will cause fewer breakdowns.

C. Quality Control

» AI vision systems and machine learning algorithms **are increasingly used for quality assurance.**

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» These systems can detect **minute defects** that human inspectors might miss, **ensuring higher product reliability and fewer recalls.**

» Example: **Foxconn uses AI-powered cameras** to inspect smartphone components with microscopic precision.

D. Supply Chain Optimization

» AI is **helping manufacturers forecast demand, manage inventory, and optimize logistics.**

» With tools like digital twins and real-time data analytics, companies can **anticipate disruptions and make proactive decisions.**

» **Lower operational costs,** improved delivery times, and better customer service.

E. Sustainable and Energy Efficient

» AI helps manufacturers **monitor and reduce energy consumption, minimize emissions,** and better manage resources.

» AI-enabled systems can **optimize machine usage and align production with renewable energy availability.**

» It will come with the **insight of Environmentally friendly operations and compliance with green regulations.**

Challenges and Ethical Considerations

Despite its benefits, AI adoption in manufacturing comes with challenges:

» **Workforce displacement** and the need for reskilling.

» **Cybersecurity risks** as factories become more connected.

» **Data privacy concerns** with increased data collection and analysis.

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Conclusion

» AI is not just transforming how goods are made; **it's redefining the very nature of manufacturing.**

» By enhancing **productivity, reducing costs, and enabling smarter decision-making, AI is driving a new industrial revolution.**

What are Catastrophe Bonds and how is india managing the rising climate risk and financial exposure. Explain (250 Words).

» India is increasingly **vulnerable to natural disasters such as floods, cyclones, droughts, and earthquakes & Climate change** has intensified the frequency and severity of these events, posing significant risks to human lives, livelihoods, infrastructure, and economic stability.

» The rising costs of disaster response and recovery are placing immense **pressure on public finances and insurance systems.**

» **Catastrophe Bonds (Cat Bonds)** have emerged as an innovative **financial instrument** to transfer risk and reduce fiscal exposure.
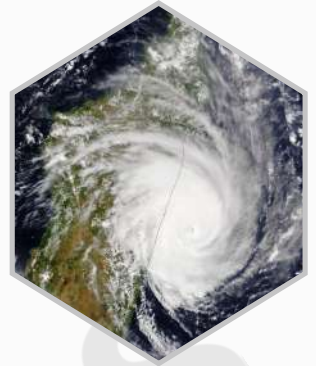
What is Catastrophe Bonds?

» **Catastrophe bonds are a type of insurance-linked security (ILS)** that allow insurers or governments to **transfer the risk** of catastrophic events to capital market investors.

» Cat bonds are triggered by **specific events**, such as a cyclone of a particular intensity or a flood exceeding a predefined level.

Types of Triggers:

» **Indemnity-Based:** Linked to actual losses incurred.

» **Parametric:** Linked to measurable parameters (e.g., wind speed, rainfall).

» **Modelled Loss:** Based on simulated catastrophe models.

» **Industry Loss:** Based on the industry's total estimated losses.

India's Climate Risk and Financial Exposure

India faces a significant climate challenge. According to the **Global Climate Risk Index**, India is consistently ranked among the top countries affected by climate-related disasters.

Key Risks:

» **Floods**: Annual monsoons cause massive flooding, especially in states like **Assam, Bihar,** and **Kerala.**

» **Cyclones:** The Bay of Bengal and Arabian Sea witness frequent **cyclones** (e.g., Cyclone Amphan, Cyclone Tauktae).

» **Droughts:** Affect large agricultural belts in central and western India.

» **Earthquakes:** Northern and northeastern regions are seismically active.

Financial Exposure

Cat Bonds offer a promising alternative to traditional disaster financing mechanisms.

Benefits:

» **Risk Transfer:** Shifts financial risk from the government to global investors.

» **Rapid Liquidity:** Ensures faster post-disaster funding without relying on slow budget reallocations or external aid.
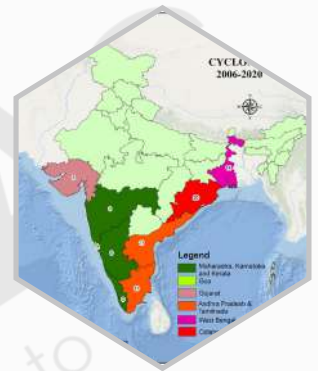
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» **Budget Stability:** Reduces the burden on state and national budgets.

» **Market Discipline:** Encourages better risk modeling and disaster preparedness.

Use Cases in India:

Cyclone Risk in Coastal States: Parametric cat bonds could cover high-risk states like Odisha, Andhra Pradesh, and Tamil Nadu.

Flood Risk Insurance Pools: Could be created for flood-prone regions like Bihar and Assam.

EU's Carbon Border Adjustment Mechanism has created a stir among emerging economies calling it as a protectionist measure. Discuss (250 Words)

» European Union's Carbon Border Adjustment Mechanism (CBAM), a tariff on imports of carbon-intensive goods intended to prevent carbon leakage and promote green production globally.

» But the BRICS nations have strongly condemned it citing it as protectionist policy especially among emerging economies.

CBAM

» The EU's Carbon Border Adjustment Mechanism is designed to tax imported goods like steel, aluminium, cement, fertilizers, electricity, and hydrogen based on their carbon content.

» CBAM essentially acts as a tariff on countries whose emissions norms are not aligned with EU standards, disproportionately affecting emerging economies that still rely heavily on fossil fuels for industrial growth.

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Key Concerns Raised by BRICS

» **Equity and Climate Justice:** Developing countries have contributed less to historical emissions but face harsher trade penalties.

» **Economic Impact:** CBAM makes exports from BRICS nations more expensive and less competitive in European markets.

» **Violation of Multilateralism:** CBAM bypasses global consensus and imposes **unilateral standards,** eroding trust in climate diplomacy.

» **Diversion of Resources:** BRICS warns that such policies could divert critical funds away from climate adaptation and infrastructure.

» CBAM is seen as a **disguised trade barrier** that undermines the development and clean energy transition of emerging economies.

» BRICS argues that such measures **violate international law,** including the **UN Framework Convention on Climate Change (UNFCCC),** which prohibits arbitrary trade restrictions in the name of climate action.

India's Position
India has been particularly vocal:

» CBAM threatens key Indian exports like **steel, cement,** and **aluminum.**

» India argues that CBAM **ignores the principle of "common but differentiated responsibilities"** enshrined in the Paris Agreement.

» The country is pushing for **fair climate finance,** emphasizing grants over loans to avoid debt burdens.

Conclusion

· The BRICS rejection of Europe's carbon-based import duties reflects a growing divide between developed and developing nations on climate-linked trade.

· While the EU aims to lead on climate standards, BRICS nations demand equitable, inclusive, and multilateral approaches that respect their development needs.

· The debate over CBAM is not just about emissions it's about who pays the price for climate action, and how global trade can evolve without leaving the Global South behind.