Topics - MINDS MAPS included (Daily current affairs)-- 13th september 2024
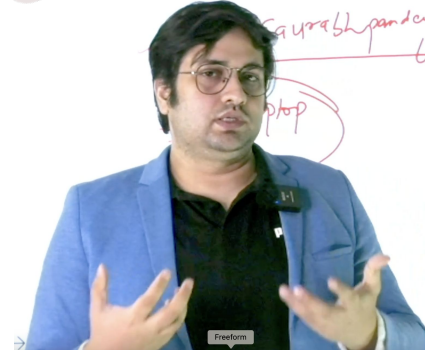
- **Skywalker**
- **Mission Mausam: ₹2,000-Crore Weather Forecasting**
- **Analysis of Narendra Modi's Visit to CJI D.Y. Chandrachud's Residence**
- **Climate Change and Cholera: Health Impacts and Solutions**
- **Drowning in India**
- **Free AI-Powered Primary-Care Physician in India**
-
- **Mains**

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THE HINDU

Q **'Climate change will make various sectoral infrastructure irrelevant ''** **Discuss**

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Topic---> Skywalker

- Jared Isaacman looks out of a hatch, 'Skywalker', during the first private spacewalk performed by the crew of the SpaceX Polaris Dawn mission.
- A private crew is making history, with the first spacewalk by non-professional astronauts.
- A billionaire stepped out for the □first private spacewalk, teaming up with SpaceX on the daring endeavour hundreds of miles above Earth.
- Tech entrepreneur Jared Isaacman and his crew waited until their capsule was depressurised before popping open the hatch.
- Mr. Isaacman emerged □first, joining a small elite group of spacewalkers who until now had included only professional astronauts from a dozen countries.

SpaceX Polaris Dawn Mission

Overview

Mission Goal: Conduct the first commercial spacewalk 🛰️

Crew: All-civilian astronauts 🧑‍🚀🧑‍🚀

Key Features:

Telemedicine testing with NASA 🏥

Data gathering for health metrics 📊

Historic spacewalk completion 🏆

SpaceX Polaris Dawn Mission

- Mission Objectives
  - Gather Health Data
  - Test Telemedicine
  - First Commercial Spacewalk
- Crew
  - Jared Isaacman
    - Founder of Shift4 Payments
    - Previous SpaceX Missions
  - Diverse Civilian Astronauts
    - Various Backgrounds
- Technology Used
  - Advanced Life Support Systems
  - Spacewalk Equipment
  - Crew Dragon Spacecraft
- Key Events
  - Spacewalk Completion
    - Historic Success
  - Live Coverage
  - NASA Collaboration
    - Data Analysis
    - Health Monitoring

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Topic---> Mission Mausam: ₹2,000-Crore Weather Forecasting Initiative

Overview

Objective: Major upgrade of weather forecasting infrastructure.

Funding: ₹2,000 crore allocated.

Timeline: First tranche until 2026.

Executing Body: Ministry of Earth Sciences (MoES).

Key Components:

Procurement:

60 new weather radars 🌦️

15 wind profilers 💨

15 radiosondes 📡

Research Focus: Understanding weather modification techniques.

Purpose: Enhance accuracy of rainfall forecasts and weather predictions.

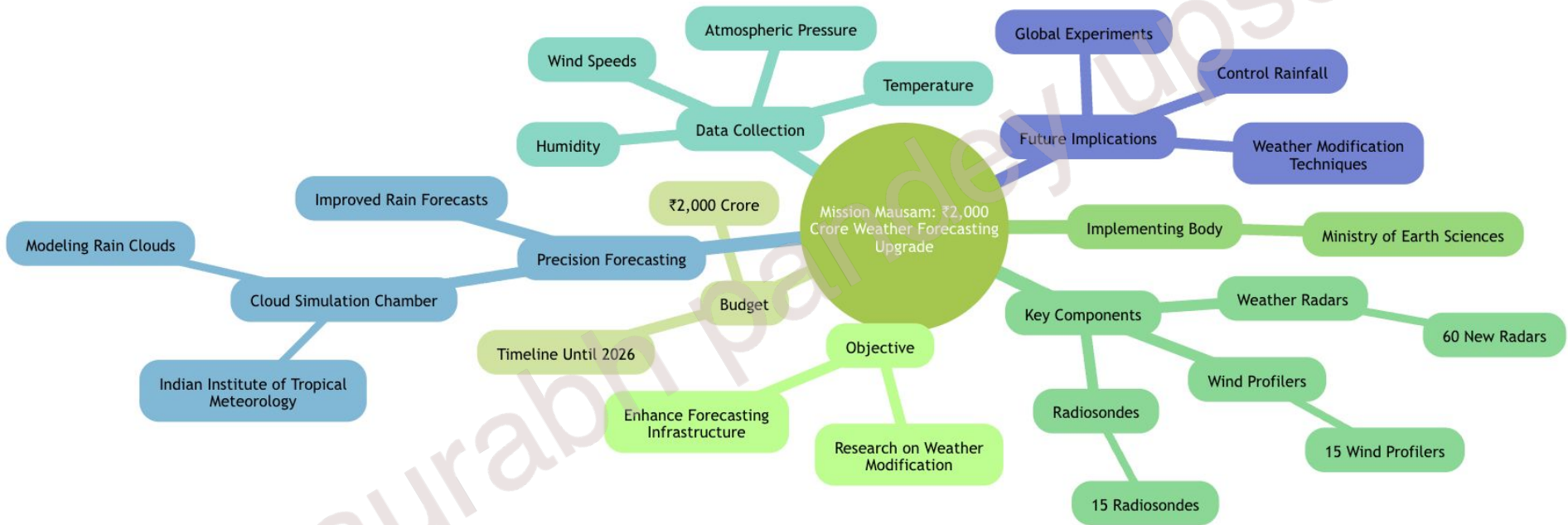# Infrastructure Development

Installation Goals:

- **Regular updates on wind speed, atmospheric pressure, humidity, and temperature.**
- **Improved data collection for accurate forecasting.**
- **Cloud-Simulation Chamber:**
    - **Located at Indian Institute of Tropical Meteorology, Pune.**
    - **Aim: Model rain clouds with precision to facilitate weather modifications.**

Mission Mausam: ₹2,000 Crore Weather Forecasting Upgrade

- Data Collection
  - Atmospheric Pressure
  - Wind Speeds
  - Temperature
  - Humidity
- Precision Forecasting
  - Improved Rain Forecasts
  - Cloud Simulation Chamber
    - Modeling Rain Clouds
    - Indian Institute of Tropical Meteorology
- Budget
  - ₹2,000 Crore
  - Timeline Until 2026
- Objective
  - Enhance Forecasting Infrastructure
  - Research on Weather Modification
- Future Implications
  - Global Experiments
  - Control Rainfall
  - Weather Modification Techniques
- Implementing Body
  - Ministry of Earth Sciences
- Key Components
  - Weather Radars
    - 60 New Radars
  - Wind Profilers
    - 15 Wind Profilers
  - Radiosondes
    - 15 Radiosondes

Topic --->>Analysis of Narendra Modi's Visit to CJI D.Y. Chandrachud's Residence

Overview of the Event

Participants: Prime Minister Narendra Modi, Chief Justice D.Y. Chandrachud

Occasion: Participation in Ganesh Puja

Context: Grounded in the "Restatement of Values of Judicial Life"

The visit stirred discussions on judicial independence and the perception of the judiciary's impartiality.

Judicial Independence Public Perception Separation of Powers Judicial Conduct

Judicial Values and Conduct

16-point Document: Established guidelines for judges

Key Tenets:

Reaffirm faith in judicial impartiality.

Maintain a degree of aloofness.

Consciousness of public gaze.

Judges must avoid any actions that could erode public trust in the judiciary.

Core Themes

Judicial Independence 🔍
>   **Separation of powers**
>   **Avoiding impropriety in public perception**

Public Confidence 💬
>   **Role of judges under public gaze**
>   **Importance of aloofness**

Social and Religious Functions 🎊
>   **Public reactions to religious gatherings**
>   **Cultural significance vs judicial responsibilities**

Narendra Modi's Visit to CJI Chandrachud

- **Implications**
  - Judicial Independence
  - Perception of Judiciary
  - Separation of Powers
- **Event Overview**
  - Participants
  - Context
  - Occasion
- **Judicial Values**
  - Public Reaction
    - Campaign for Judicial Accountability
    - Public Speculation
    - Concerns from Legal Experts
  - 16-point Document
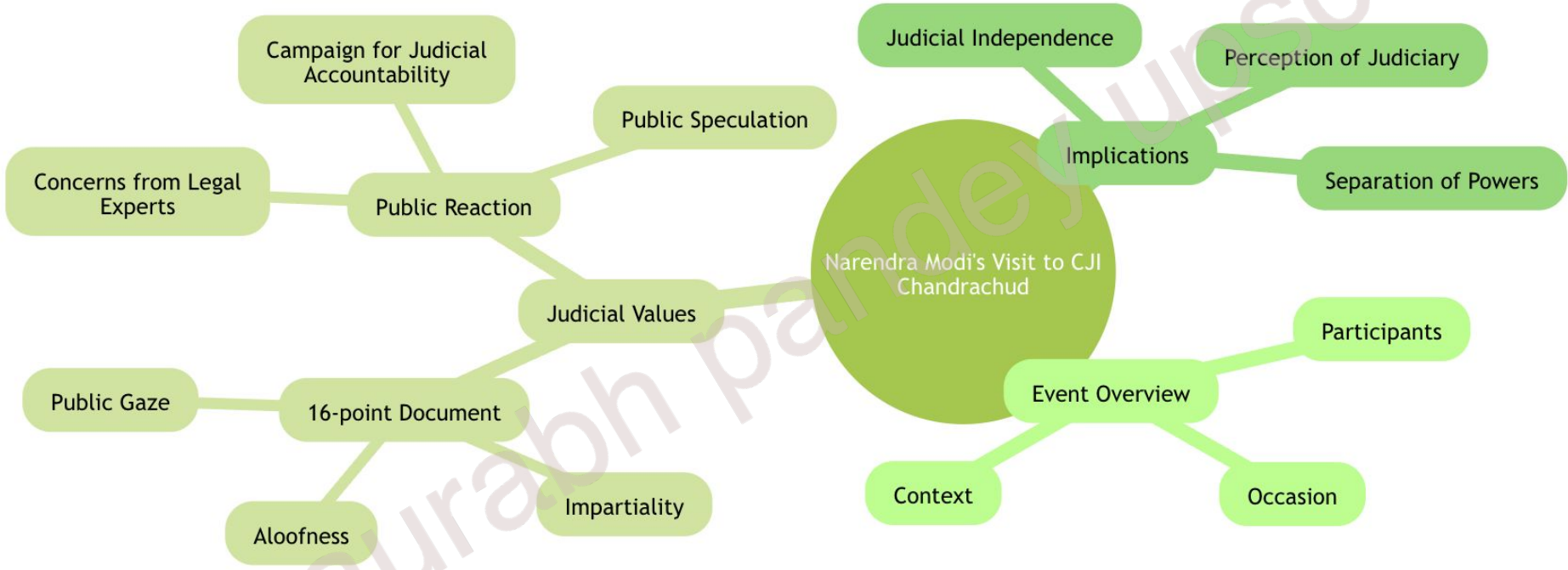   - Public Gaze
    - Aloofness
    - Impartiality

figure 1.2: Images

Q3. Consider the following statements with reference to Bat population. (DTE).

1) The decline set off a chain reaction of environmental and human health impacts.

2) The loss of this natural pest control service led to a 31 per cent rise in pesticide use

Which of the given statements is/are correct.

A) 1 Only

B) 2 Only

C) Both 1 and 2

D) Neither 1 or 2

Implications of the Visit

Judicial Independence:
Concerns over potential compromises in judicial integrity.

Expert Opinions:
Kapil Sibal: Warns of public perception issues.

Indira Jaising: Critiques the separation of powers.

Topic--->Climate Change and Cholera: Health Impacts and Solutions

Overview

Health Damage: Climate change exacerbates health issues globally 🌍
Key Issues: Clean water, hygiene, and sanitation are often overlooked 🚰

**Cholera is an infectious disease caused by the bacterium Vibrio cholerae. It can be caused by:**

- **Contaminated food or water: Cholera can spread if you drink water or eat food that's contaminated with the bacteria.**
- **Raw shellfish: Eating raw shellfish, like shrimp or crab, can cause cholera.**
- **Brackish water: The bacteria can live in brackish (slightly salty) and coastal waters.**
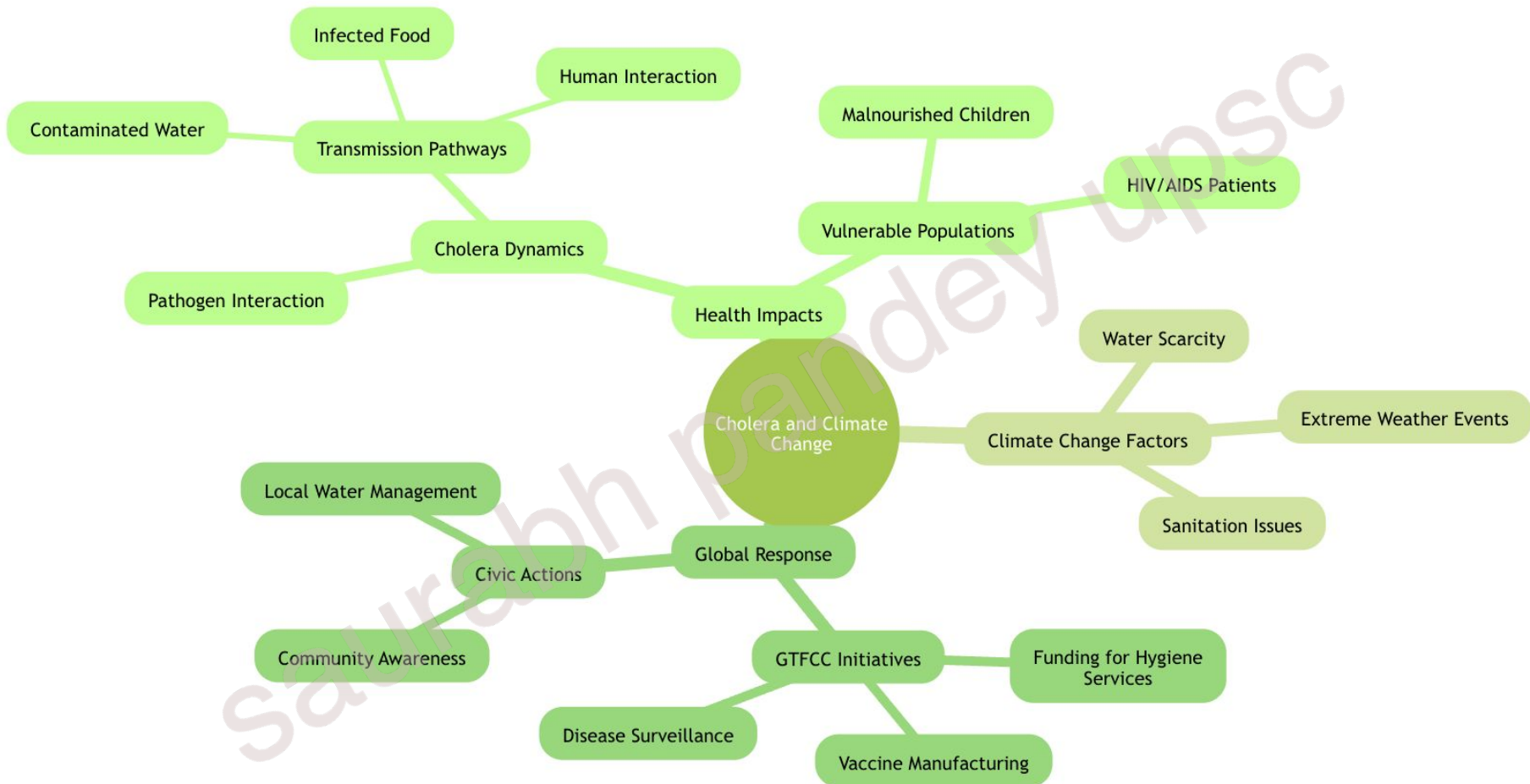
Topic---> Drowning in India

Drowning Crisis in India

Public Health Issue 🏥

38,000+ deaths per year

Global issue: 2.5 million preventable deaths

Underreported statistics 📊

Contributing Factors

Accidental Drowning 🌊

70% from falls into water bodies

Majority are children (under 14)

Lack of Awareness ❓

Drowning not prioritized in public health discussions

Need for policy change

Initiatives for Prevention

Community-Led Programs 👥

Safe spaces for children in Bangladesh

Pond-based swimming lessons in Sundarbans

Government Strategies 🏛️

National Strategy for Prevention of Unintentional Injury

Strategic Framework for Drowning Prevention

Changing Public Perception

Awareness Campaigns 📣

Shift narrative from crime reports to public health crisis

Importance of swimming education

Key Solutions

Education and Training 📚

- Swimming lessons for children
- Guidelines for parents and communities

Infrastructure Improvements 🏗️

- Signage around water bodies
- Barricading hazardous areas

Conclusion

Urgent Action Needed ⚡

- Addressing the drowning crisis requires collective effort
- Importance of community and government collaboration

Drowning Crisis in India

Conclusion
- Urgent Action Needed
  - Community and government collaboration
  - Collective effort required

Public Health Issue
- Global issue: 2.5 million preventable deaths
- 38,000+ deaths per year
- Underreported statistics

Contributing Factors
- Accidental Drowning
  - 70% from falls
  - Majority are children
- Lack of Awareness
  - Drowning not prioritized

Initiatives for Prevention
- Community-Led Programs
  - Swimming lessons in Sundarbans
  - Safe spaces in Bangladesh
- Government Strategies
  - National Strategy
  - Strategic Framework

Key Solutions
- Infrastructure Improvements
  - Signage and barricading
- Education and Training
  - Guidelines for communities
  - Swimming lessons

Changing Public Perception
- Awareness Campaigns
  - Shift narrative
  - Importance of swimming education

Topic--->>Free AI-Powered Primary-Care Physician in India

Key Considerations

Ambition: Aiming for a free AI-powered physician for every Indian 24/7

Feasibility: Questions on implementation and effectiveness

Sustainability: Long-term viability of AI in healthcare

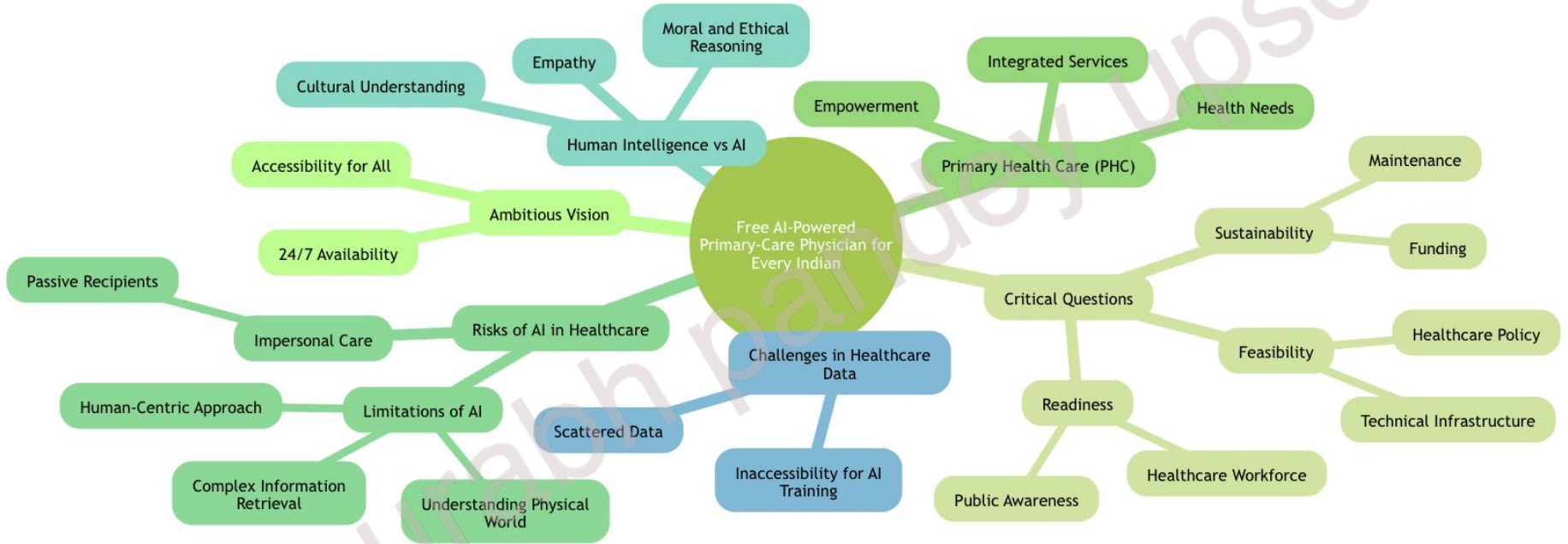**Readiness: India's capability to adopt such technology**

figure 1.2: table

AI's Utility in Health Care

Overview

AI plays a crucial role in health care.

Focus on well-defined tasks using various AI models.

Key Areas of AI Application:

Narrow Intelligence: Specialized tasks like:

Predicting hospital kitchen supply needs

Managing biomedical waste

Optimizing drug procurement

Diffusion Models:

    Predicting patterns in complex datasets

    Screening histopathology slides

    Medical image analysis

Large Language Models (LLMs) & Large Multimodal Models (LMMs):

    Rapid access to medical knowledge

    Simulating patient interactions

    Supporting training of health-care professionals

Challenges:

Black Box Problem:

    Lack of transparency in AI decision-making.

    Risks in health care due to non-transparent processes.

    Trust issues among health-care providers.

Importance:

AI's impact on patient safety and treatment efficacy.

Necessity for clear understanding of AI decisions in critical health scenarios.

AI Governance in India: Ethical Implications

Overview

AI Governance: The need for ethical frameworks in AI development.

Exploitation Concerns: Highlighting the exploitation of underpaid workers in AI training.

Patient Data Protection: Importance of safeguarding Indian patients' data rights.

AI governance is crucial for ensuring ethical practices in AI development, especially in sectors like healthcare. The recent issues raised in Kenya emphasize the global need for ethical AI practices, making it essential for India to adopt comprehensive regulations.
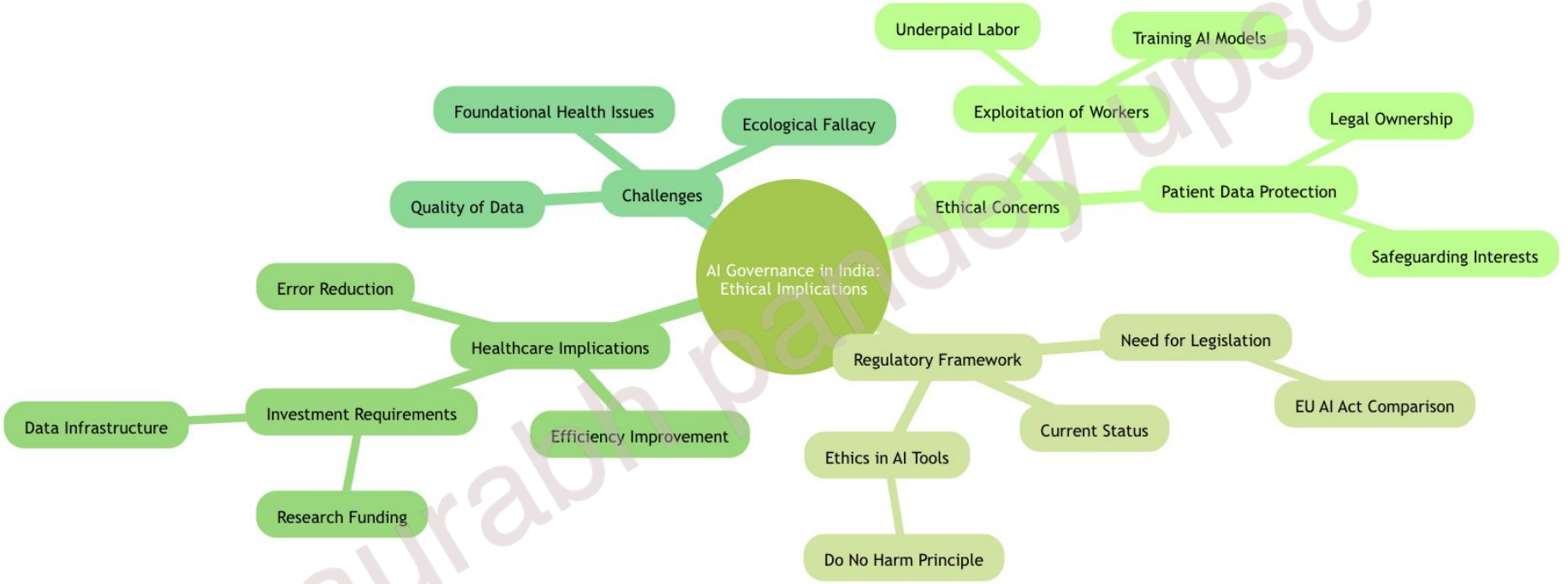
Figure 1.2: Image

AI Governance in India: Ethical Implications

- Challenges
  - Foundational Health Issues
  - Ecological Fallacy
  - Quality of Data
- Healthcare Implications
  - Error Reduction
  - Investment Requirements
    - Data Infrastructure
    - Research Funding
  - Efficiency Improvement
- Ethical Concerns
  - Exploitation of Workers
    - Underpaid Labor
    - Training AI Models
  - Patient Data Protection
    - Legal Ownership
    - Safeguarding Interests
- Regulatory Framework
  - Need for Legislation
  - Current Status
  - EU AI Act Comparison
  - Ethics in AI Tools
    - Do No Harm Principle

Topic--->> Standing Committee on Statistics (SCoS),

- **The 14-member Standing Committee on Statistics (SCoS), led by Pronab Sen, has been dissolved due to overlap with the Steering Committee for National Sample Surveys. SCoS advised on survey methodologies, tabulation plans, and addressed issues related to statistical surveys.**

- **The new 17-member Steering Committee, including four former SCoS members, will perform similar functions but with more official members.**
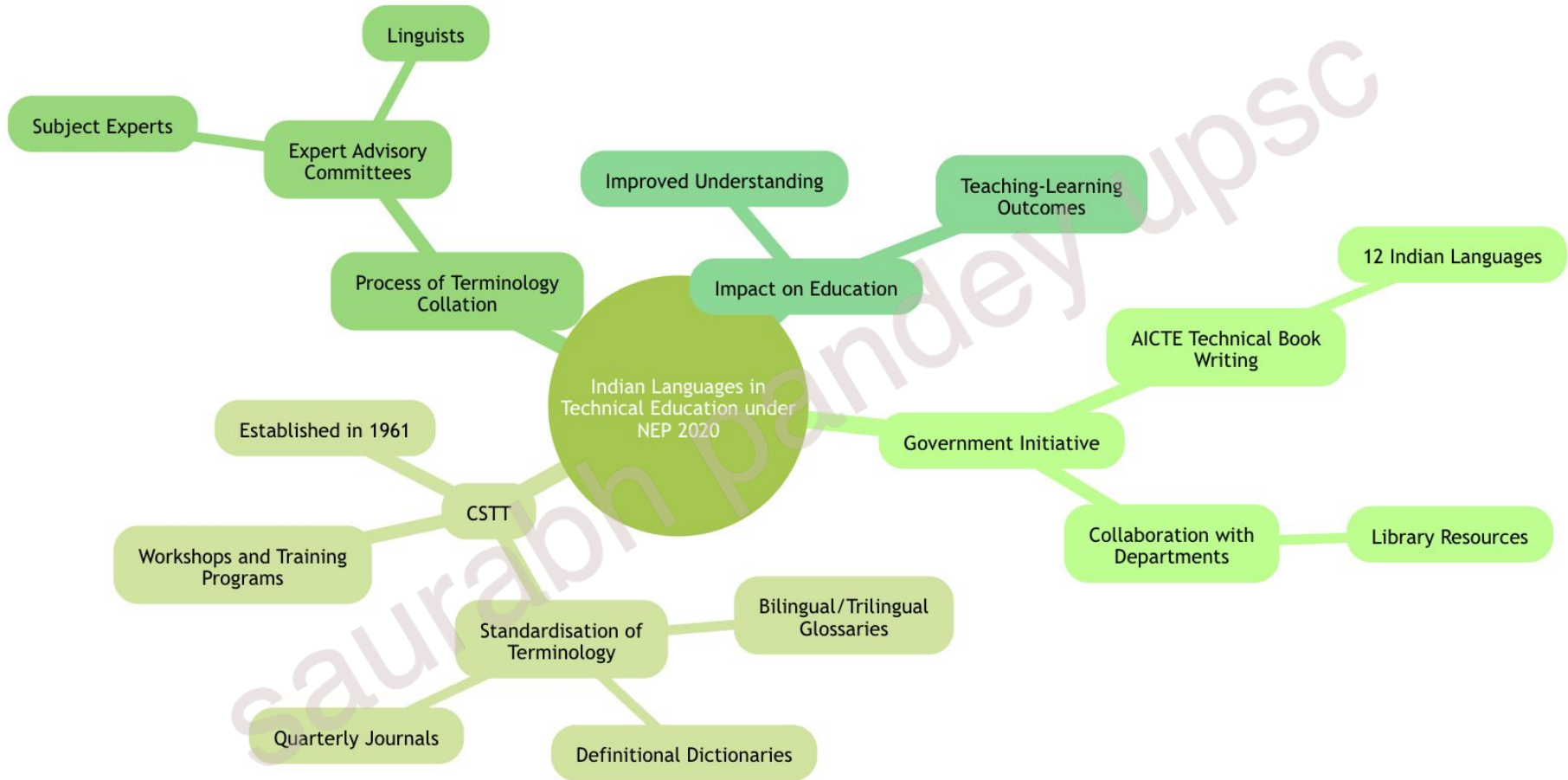
- **There is significant pressure to conduct the next census, delayed from 2021 due to COVID-19, to provide updated data for decision-making.**
- **Economists and policymakers recommend conducting the next census promptly to ensure accurate data for effective decision-making.**

Topic→Indian Languages in Technical Education as per NEP 2020

Overview

- **Objective: Impart education in Indian languages**
- **Areas: Technical education (Engineering, Medicine)**
- **Key Body: All India Council for Technical Education (AICTE)**
- **The All India Council for Technical Education (AICTE) has introduced "AICTE Technical Book Writing and Translation" in 12 scheduled Indian languages.**
- **The government is also collaborating with technical education departments to distribute one set of books in Indian languages for the libraries of each degree and diploma-level institution.**
- **The Commission for Scientific and Technical Terminology (CSTT) has also launched a website offering technical terms in all 22 official Indian languages for various educational subjects.**

Indian Languages in Technical Education under NEP 2020

- Expert Advisory Committees
  - Linguists
  - Subject Experts
- Process of Terminology Collation
- Impact on Education
  - Improved Understanding
  - Teaching-Learning Outcomes
- Government Initiative
  - AICTE Technical Book Writing
    - 12 Indian Languages
  - Collaboration with Departments
    - Library Resources
- CSTT
  - Established in 1961
  - Workshops and Training Programs
- Standardisation of Terminology
  - Bilingual/Trilingual Glossaries
  - Definitional Dictionaries
  - Quarterly Journals

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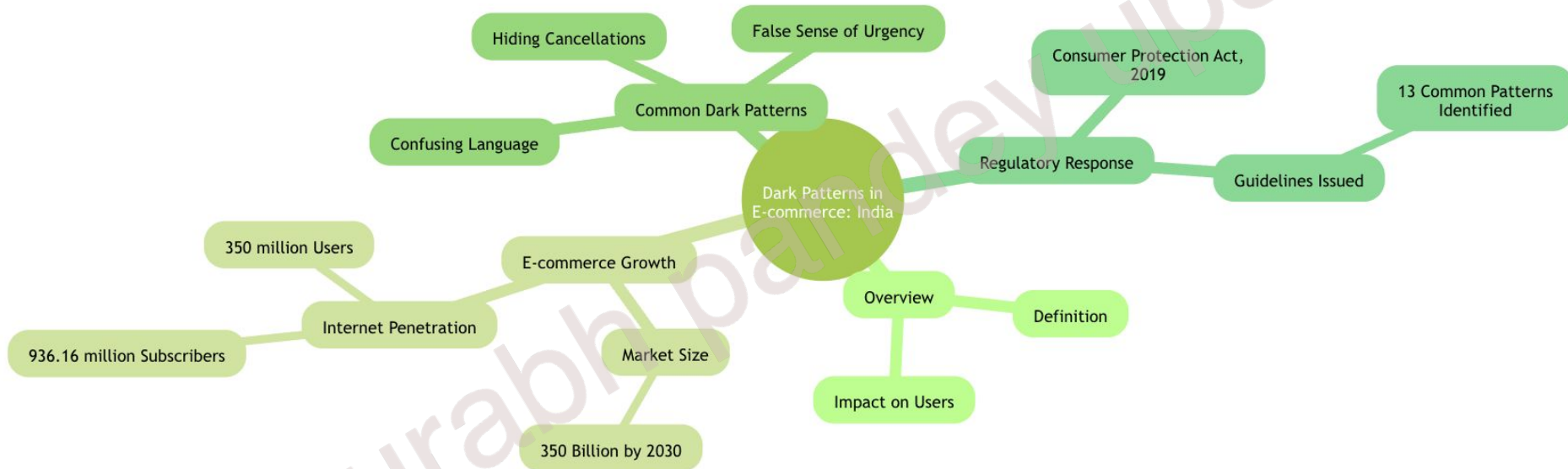# Topic --->>Dark Patterns in E-commerce: A Growing Concern in India

Overview of Dark Patterns

Definition: Deceptive design practices that manipulate users.

Impact: Users may sign up for unwanted services or share personal info unknowingly.

Consumer Manipulation: Exploits human psychology for corporate benefit.

Dark patterns are increasingly prevalent in India's expanding digital landscape, particularly in the e-commerce sector, which is expected to reach $350 billion by 2030

Dark Patterns in E-commerce: India

- Common Dark Patterns
  - Hiding Cancellations
  - False Sense of Urgency
  - Confusing Language
- Regulatory Response
  - Consumer Protection Act, 2019
  - Guidelines Issued
    - 13 Common Patterns Identified
- E-commerce Growth
  - Internet Penetration
    - 350 million Users
    - 936.16 million Subscribers
  - Market Size
    - 350 Billion by 2030
- Overview
  - Definition
  - Impact on Users

Key Aspects

Growth of E-commerce in India: Expected market size of $350 billion by 2030.

User Statistics: Approximately 936.16 million Internet subscribers and 350 million active online users in India.

Common Dark Patterns:

False sense of urgency

Hidden subscription cancellations

Confusing language

International Regulations

European Union:

Digital Services Act (DSA): Provides a framework for online safety.

General Data Protection Regulation (GDPR): Protects personal data and privacy.

Unfair Commercial Practices Directive (UCPD): Addresses misleading and aggressive marketing practices.

United States:

California Privacy Rights Act (CPRA): Enhances privacy rights for consumers.

Connecticut Data Privacy Act: Regulates consumer data privacy.

Colorado Privacy Act: Establishes rights over personal data.

Ethical Challenges

Consumer Manipulation: Dark patterns exploit psychological tendencies, undermining user autonomy.

Transparency Issues: Misleading information and hidden fees create distrust.

Reputation Risks: Companies face backlash from consumers, leading to decreased loyalty and negative brand perception.
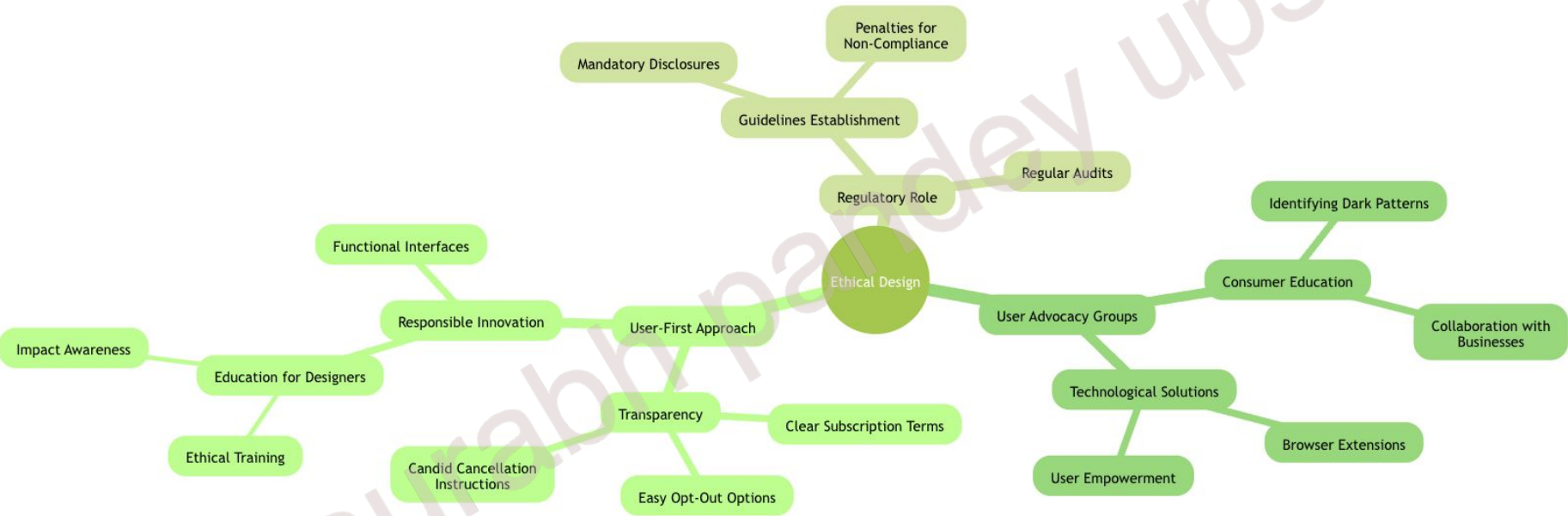
Potential Consequences

Legal Actions: Companies using dark patterns may face fines and lawsuits.

Market Position Threats: Continued reliance on these practices could harm a company's competitive standing.

Ethical Design: A user-first approach that prioritizes transparency and responsibility in digital interactions.

Stakeholders: Collective efforts from businesses, designers, developers, regulators, and user advocacy groups are essential.

Ethical Design

- Regulatory Role
  - Guidelines Establishment
    - Mandatory Disclosures
    - Penalties for Non-Compliance
  - Regular Audits
- User-First Approach
  - Responsible Innovation
    - Functional Interfaces
    - Education for Designers
      - Impact Awareness
      - Ethical Training
  - Transparency
    - Clear Subscription Terms
    - Candid Cancellation Instructions
    - Easy Opt-Out Options
- User Advocacy Groups
  - Consumer Education
    - Identifying Dark Patterns
    - Collaboration with Businesses
  - Technological Solutions
    - User Empowerment
    - Browser Extensions

Topic --->>>Soil Moisture Impact on Brazil's Hydropower Generation

Overview

Current Situation: Soil moisture in Brazil's main river basins for hydropower has reached near two-decade lows.

Impact on Hydropower: Reduced moisture threatens electricity generation and economic stability.

Drought Conditions: Continuous weak rainfall has led to increased energy costs and inflation forecasts.

Key Points:

Hydropower Contribution: Generates about two-thirds of Brazil's electricity.

Reservoir Concerns: Expected slow filling of hydroelectric reservoirs due to moisture absorption in soil.

Affected Regions: Paranaiba, Grande, and Tocantins basins are crucial for capacity.

Economic Implications:

Energy Costs: Rising costs due to reliance on thermoelectric plants.
Inflation Risks: Forecasts indicate potential interest rate hikes.
Electricity Pricing: High prices likely until sufficient rainfall returns.

Expert Insights:

Analyst Commentary: Long-term drought patterns are problematic for energy generation; current drought has severely impacted hydroelectric performance.
Grid Management Challenges: Brazilian grid operator ONS faces operational difficulties at peak times.

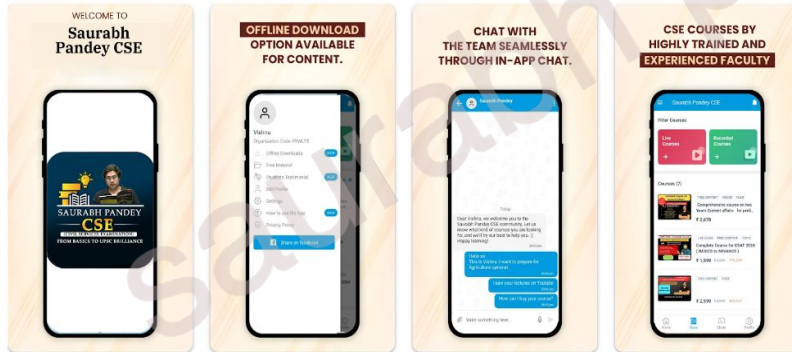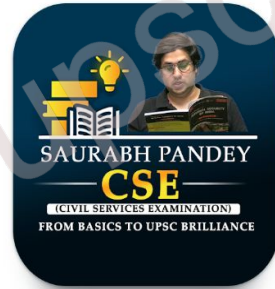# Saurabh Pandey CSE

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Q **'Climate change will make various sectoral infrastructure irrelevant ''** Discuss

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