SUSTAINABILITY

S.No	Problem Statement	Why This Problem Matters (Description)
1	**Decentralized DAOs for Environmental Governance**	Centralized environmental actions often fail in local contexts. DAOs allow communities to transparently govern reforestation, pollution tracking, and clean energy projects.
2	**AI-Powered Climate Disaster Early Warning System**	Climate-driven disasters are rising. An AI system that predicts floods, wildfires, or droughts using historical and satellite data could save millions.
3	**Smart Waste Segregation & Circular Economy System**	Most waste ends up in landfills due to poor segregation. An intelligent system can automate waste separation and feed back into upcycling industries.
4	**Secure & Sustainable Supply Chains using Blockchain**	Global supply chains often hide unethical sourcing and environmental harm. A blockchain-based model offers transparency and sustainability assurance.
5	**Digital Twins for Ecosystem & Urban Climate Modelling**	Simulating city-wide climate, water flow, or green cover changes helps planners mitigate future climate risks in real-time.
6	**Quantum Climate Change Simulator**	Climate modeling at quantum precision can reveal non-linear effects of global warming and offer new paths to prediction.
7	**AI for Inclusive Urban Planning (Green Infra Focus)**	Cities often ignore marginalized zones in sustainability plans. AI-based heatmaps can identify under-served areas and suggest ecofriendly infrastructure.
8	**Resilient Infrastructure & Smart Grids**	With power grids failing in extreme conditions, self-healing, AI-optimized grids that adapt in real time are vital for sustainable development.

9	**Carbon-Conscious IoT Smartwatch**	Personal awareness is key to change. A wearable that tracks your daily carbon footprint via activities can nudge users into more ecoconscious behaviors.
10	**Sustainable Fashion & Smart Textiles Platform**	Fast fashion is a major polluter. A platform that maps the lifecycle of garments and recommends biodegradable or recycled options can reduce fashion waste.
11	**AI-Driven Environmental Risk Monitoring Dashboard**	Centralized dashboards can monitor pollution, water quality, noise, and biodiversity in real time for decision-makers and public awareness.
12	**Water Scarcity Mitigation via Smart Irrigation Networks**	Agriculture wastes massive water. IoT-based irrigation tied to soil moisture and weather prediction can optimize water use dramatically.
13	**Zero-Waste E-Waste Tracking & Recovery System**	E-waste is the fastest-growing toxic waste. A blockchain-integrated e-waste flow system can ensure every part is traced and recycled responsibly.
14	**AI-Powered Afforestation Strategy Planner**	Planting trees is great—but where, and what type? AI can suggest optimal native species, density, and placement based on ecosystem needs.
15	**Geoengineering Monitoring Tool with Ethical Guardrails**	Geoengineering (like cloud seeding) has potential but also huge risks. A system to simulate, track, and evaluate such projects transparently is urgently needed.