Background

Environmental degradation has become one of the most urgent global challenges of the 21st century. From rising pollution levels to declining biodiversity, from urban waste accumulation to the increasing frequency of climate-induced disasters—the planet is undergoing rapid changes that demand immediate, intelligent, and data-driven action. One of the fundamental barriers to effective environmental intervention is the lack of accurate, real-time, and location-specific data. Without understanding the *where*, *why*, *how much*, and *how severe* of an environmental problem is, even the best policies and efforts fail to create a sustainable impact.

At the same time, modern Artificial Intelligence—powered by advanced sensing technologies, geospatial analytics, predictive modeling, and automation—has opened an extraordinary opportunity to transform environmental monitoring and management. Today, AI is capable of identifying waste patterns from satellite imagery, predicting air-quality shifts, optimizing recycling routes, detecting endangered ecosystems, and even supporting large-scale environmental restoration efforts. Countries and organizations across the globe are increasingly turning toward these technologies to protect natural systems and drive a greener future.

Recognizing this global momentum, **Environment Watch: BUET** aims to bring together innovative minds to design AI-driven solutions that address critical environmental issues by the **"Eco-Tech Hackathon 2026"**. Our event focuses on the integration of modern technologies—such as machine learning, computer vision, IoT, drone mapping, and data analytics—with traditional environmental science to generate impactful, scalable, and actionable solutions.

Scope and focus area of the Event

- **Accurate Environmental Data Collection:** Solutions that map pollution sources, quantify waste density, detect land-use changes, and monitor ecosystem health
- **AI-Driven Environmental Management:** Applications that support smart recycling, waste segregation, circular economy systems, and optimized resource utilization.
- **Ecosystem Revitalization Tools:** AI models and robotics for reforestation, habitat reconstruction, waterbody rehabilitation, and biodiversity tracking.
- **Predictive and Preventive Systems:** Forecasting models for floods, heatwaves, air pollution events, or ecological vulnerabilities to enable early intervention.
- **Community-Centered Environmental Technologies:** Platforms that empower public participation, reporting, and local data contribution to create citizen-driven environmental intelligence.

Objectives

The event will:

- Inspire students, researchers, and young innovators to explore how AI and modern technology can address pressing environmental challenges.
- Promote understanding of data-driven environmental problem-solving, including pollution detection, waste analysis, and ecosystem monitoring.
- Encourage participation from diverse teams—including women, youth, and interdisciplinary groups—to develop practical, scalable green-tech solutions.

Event Purpose:

This event seeks to formally examine how AI and emerging technologies can support effective environmental management. It aims to advance methods for collecting and analyzing environmental data with greater accuracy and efficiency. The program encourages the development of innovative tools for sustainable waste management and ecological restoration. Ultimately, it intends to foster a platform where students, researchers, and practitioners collaborate on scalable environmental solutions.

Event Structure

The event will be conducted in **three major stages** designed to identify, refine, and showcase innovative AI-driven environmental solutions.

Stage 1: Initial Screening (Online Submission)

- Participants will submit their ideas through a Google Form outlining the problem, proposed solution, technological approach, and potential environmental impact.
- Teams are encouraged to include preliminary sketches, data flow, or conceptual models.
- Based on relevance, feasibility, innovation, and clarity, **30% teams** will be shortlisted for the next round. (The number of shortlisted Teams may vary according to the decision of the authority)
- **Form link: https://forms.gle/rh8t1EGT2dGxYcrc8**

Stage 2: Video Pitch Round (Online Evaluation)

- Shortlisted teams will submit a 3–5 minute video pitch explaining their solution, expected outcomes, and implementation plan.
- Evaluators will assess problem understanding, technical depth, environmental value, and presentation quality.
- Shortlisted Teams will get certification.
- From this round, 10 **teams** will be selected for the Grand Finale**.**

Final Stage: Offline Presentation & Prototype Demonstration

- The top 8 teams will present their full idea, prototype, or working model in an offline session at BUET.
- Each team will deliver:
  - A structured presentation (10–12 minutes)
  - Prototype demonstration or simulation
  - Q&A with judges
- Winners will be selected based on innovation, practicality, scalability, and environmental impact.
- All the finalists will be certified.

Team Participation Guidelines

- Participation will strictly be **team-based**.
- Each team must consist of **4–6 members**.
- Teams may include students, researchers, or interdisciplinary groups.
- A team leader must be assigned for communication and registration purposes.

Registration Details
- Registration is open for all

(Registration fees are applicable only for the students of shortlisted in the phase. For Hackathon: 450 BDT tk (Per Person)

Evaluation Criteria

At all stages, teams will be evaluated on:

Criteria	Percentages of Mark Distribution
Innovation & Originality	15%
Environment Relevance& Impact	20%
Use of AI/ Modern Technology	20%
Presentation & Clarity (For 2nd Phase)	15%
Prototype Quality (For Finalists)	20%
Sustainability and Market Accusation Strength	10%

- *Each teams are encouraged to have members consisting of multidisciplinary backgrounds.*

Prize Money:
There will be a total of 20,000 prize pool.

1. Champion: 10000 BDT
2. 1st Runner Up: 6000 BDT
3. 2nd Runner Up: 4000 BDT

Tentative Dates:

Phases	Dates
Event initiation	17 December, 2025
Start of Phase 1 Submission	22 December, 2025
End of Phase 1 Submission	3 February,2026
Results of Shortlisted Teams in Phase 1	10 February, 2026
Start of Phase 2 Submission	To be Declared
End of Phase 2 Submission	To be Declared
Results of Shortlisted Teams in Phase 1	To be Declared
Final Presentation Day	To be Declared
Prize Giving Ceremony	To be Declared