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FOREWARN

Disaster Hackathon 2.0

Innovate Together Towards AI-Humanitarian Space

In Collaboration with

Department of Meteorology
Department of Disaster Science and Climate Resilience
University of Dhaka

Bangladesh Meteorological Department

youthmappers

Bangladesh Open Innovation Lab

CENTRE FOR RESILIENCE AND YOUTH

CDSR

FOREWARN Start Network Bangladesh introduces the country's 2nd Hackathon on Disaster, striving to inspire young minds to build solutions, expand their knowledge horizons, and innovate on humanitarian challenges using open-source data and technologies.

Who Can Register

We are calling out to individuals interested in bringing innovative solutions and technological development to the humanitarian cause, and we believe that innovation and technology can be the answer to the risks raised by natural disasters.

Participants can be a university student or a graduate from any discipline devoted to mitigating the suffering of people affected by disaster, climate change, and environmental hazards. Additionally, participants are allowed to form teams with members from different universities. Build a team consisting of like-minded 3-5 individuals from relevant departments or fields of expertise and participate in the Disaster Hackathon 2.0 in CREATE STAGE.

Stages

CREATE (29 May – 14 July, 2024):

Build the conceptual framework and present your solution to the challenge you chose in a 2-minute video. You will have an additional 1 minute for your Team Introduction.

Concluding CREATE STAGE, there were 84 Team submissions from 39 Academic institutions across the country, from which 25 Teams has been selected for CHECK STAGE

CHECK (12 August – 18 October, 2024):

Review your idea with relevant stakeholders on whether the proposed solution is realistic, interesting, and efficient. You can seek guidance from our mentors through virtual sessions. Submit the feasibility and methodology of your solution in written format.

The 25 Teams received Mentorship session, and feasibility checking and discussions with mentors for developing their project ideas.

CULTIVATE (27 October – 30 October, 2024):

The best 5 teams will attend a 4-day residential workshop where they will get the chance to be mentored in person and cultivate the prototype at an advanced level. The top 3 teams

will be selected by the jury board after prototype presentation and will be awarded on 31st October, 2024.

Challenges

Heading	Brief	CREATE STAGE Submission per Category
Early Warning Systems for specific hazards	Focus on specific hazards, such as developing an early warning system for flash floods, storm surges etc.	21
Predicting the impact of climate change on extreme weather events	Use of machine learning to analyze historical data and climate models to predict different events (like heatwaves, droughts, floods)	7
Communication in Crisis	• Developing communication tools for specific populations/Community specific solution • Building trust and reducing misinformation in crisis situations.	4
e-Risk Governance for accountable Disaster Management	• Development of a blockchain-based system for tracking the distribution aids • Designing a platform that facilitates communication and collaboration between different stakeholders involved in disaster management	1
Disaster Supply Chain	• Optimizing logistics for delivering essential supplies to remote areas for a better & easier access to the community • Reducing waste and promoting sustainability in the disaster response process	8
Create maps in Crisis	• Developing real-time maps of infrastructure damage. • Creating interactive maps to guide emergency responders and evacuees.	9
Citizen Reporting and Mapping	• Building a mobile app for reporting damage and requesting assistance • Developing a platform for collecting and verifying information from social media	5
Community Science for Disaster management	• Training community members to collect data on predictable hazards. • Developing tools to empower communities to prepare for and respond to disasters.	6
Data Analytics for Disaster Management	• Using data analytics to predict the spread of disease after a disaster. • Developing machine learning models to optimize resource allocation during disasters.	5
Create Your Own Statement	Any other unique ideas that you feel important but is not in the list will be assessed to get qualified for the next level.	18

TOP 5 TEAMS OVERVIEW

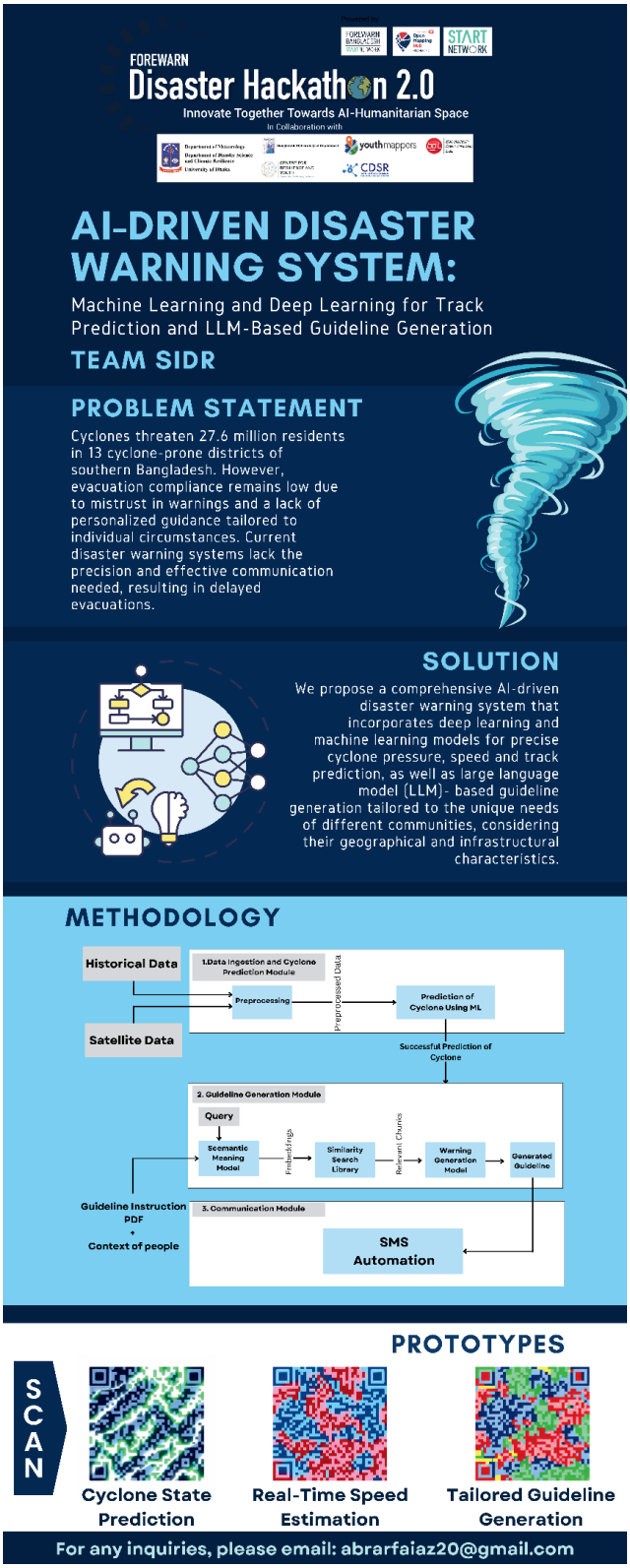
Team SIDR

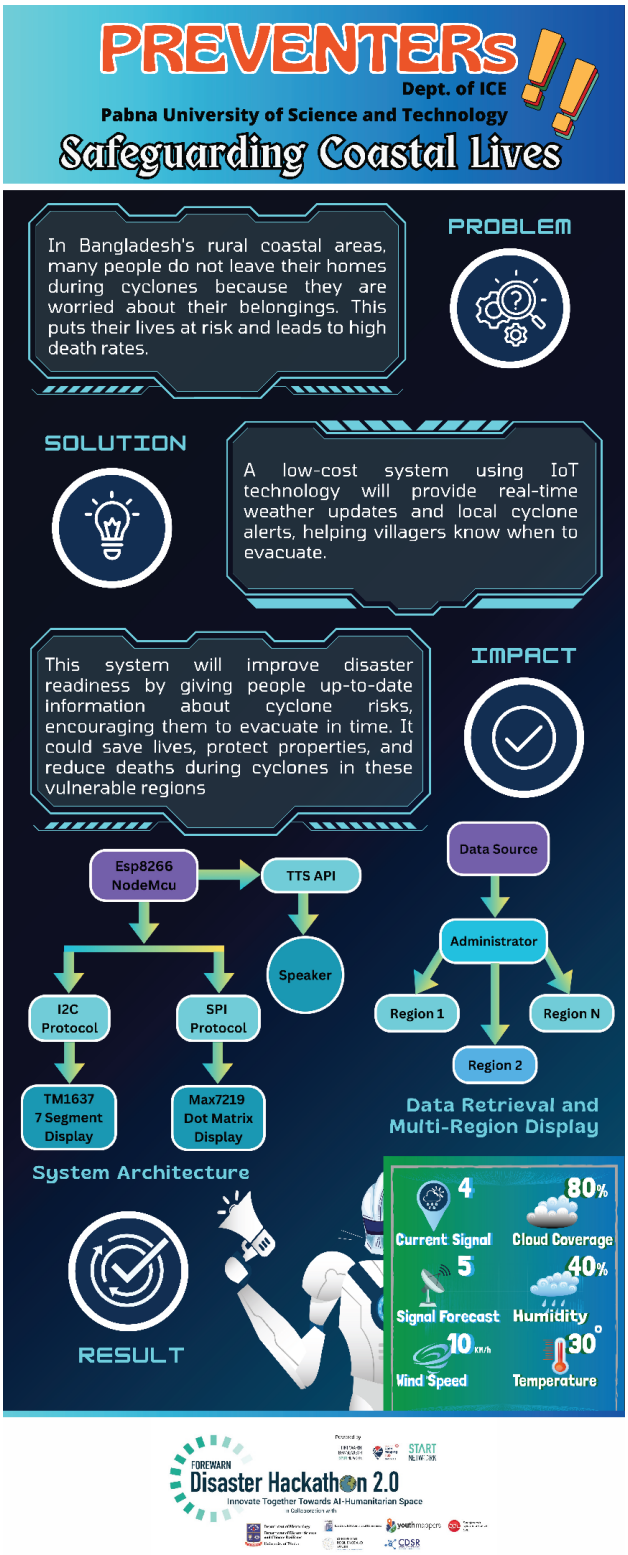
Affiliations: Bangladesh University of Engineering and Technology (BUET) and University of Dhaka

Problem Statement: Cyclones frequently strike coastal regions of Bangladesh, causing severe damage, yet residents often do not trust evacuation warnings, resulting in delayed or insufficient responses.

Solution: We propose an AI-driven disaster warning system that combines cyclone prediction and personalized evacuation guidelines to improve forecasting accuracy and public trust in evacuation orders.

Impact: Our solution enhances cyclone track prediction and real-time monitoring, enabling authorities to issue timely and accurate warnings. Additionally, personalized safety guidelines empower residents to make informed decisions, reducing cyclone-related risks and fatalities





Team Preventers

Affiliations: Pabna University of Science and Technology

Problem Statement: The rural coastal residents in Bangladesh often refuse to evacuate during cyclones, prioritizing their belongings over their safety, which leads to high casualty rates.

Solution: A low-cost, real-time weather monitoring and alert system using IoT technology to deliver localized cyclone alerts directly to villagers.

Impact: This system will enhance disaster preparedness by providing real-time weather updates, helping residents understand the severity of cyclones and evacuate before it's too late. It will potentially save lives, protect property, and reduce cyclone-related casualties in vulnerable coastal areas.

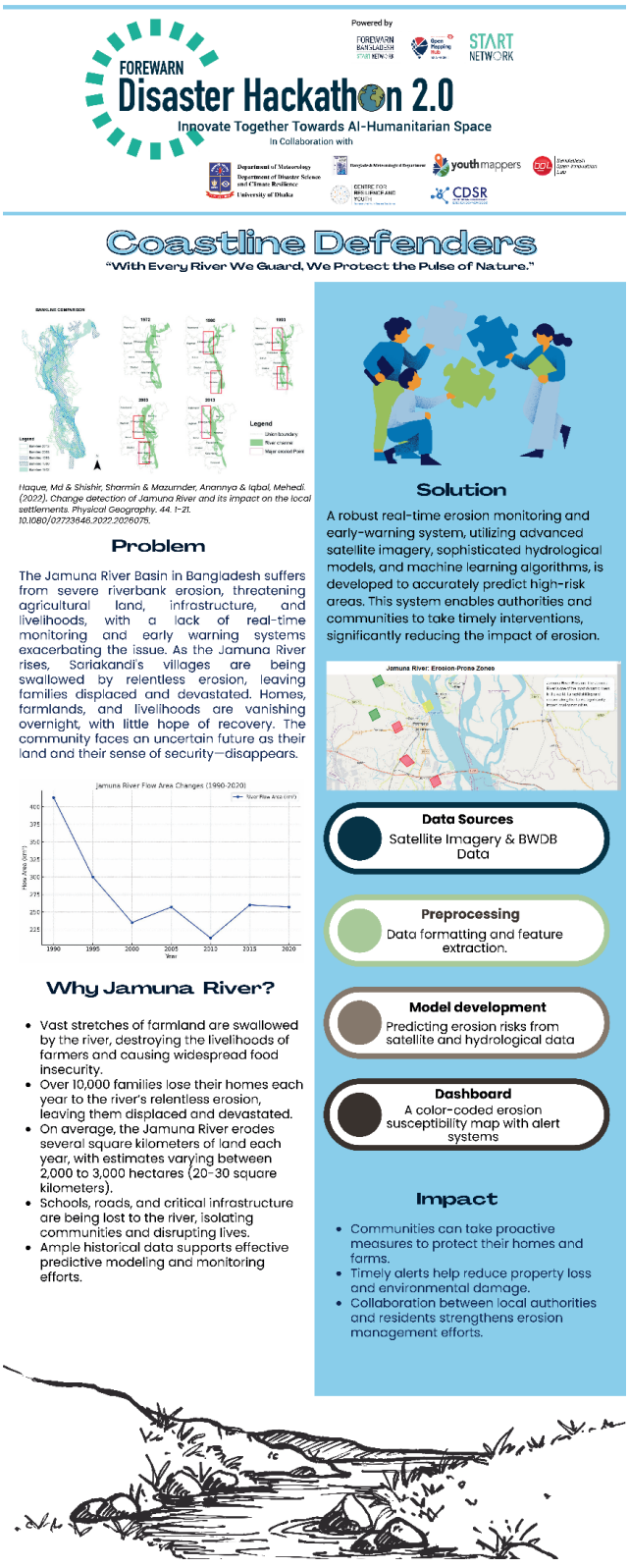
Team Coastline Defenders

Affiliations: BRAC University

Problem Statement: The Jamuna River Basin in Bangladesh suffers from severe riverbank erosion, threatening agricultural land, infrastructure, and livelihoods, with a lack of real-time monitoring and early warning systems exacerbating the issue.

Solution: A real-time erosion monitoring and early-warning system using satellite imagery, hydrological models, and machine learning to predict high-risk areas and enable timely interventions.

Impact: This solution empowers local authorities to proactively manage erosion risks, preventing displacement, agricultural losses, and infrastructure damage. It promotes sustainable land management, reduces disaster response costs, and enhances community resilience.



Team RELIEF TECH SQUAD

Affiliations: University of Dhaka

Problem Statement: We are tackling different aspects of Post-Disaster Relief Mismanagement such as anomalous distribution of relief goods, issue with transparency or credibility, lack of coordination or collaboration.

Solution: Our Solution to improve our assistance system is a platform (Relief Sync) which facilitates coordination and collaboration between different charitable organizations to make relief distribution more efficient and waste-free.

Impact: Our solution will benefit the affected communities, governmental entities, and diverse array of national and international charitable organizations. Our platform will have significant impact on Health sector, Food Security Sector, Communication Sector and many more.

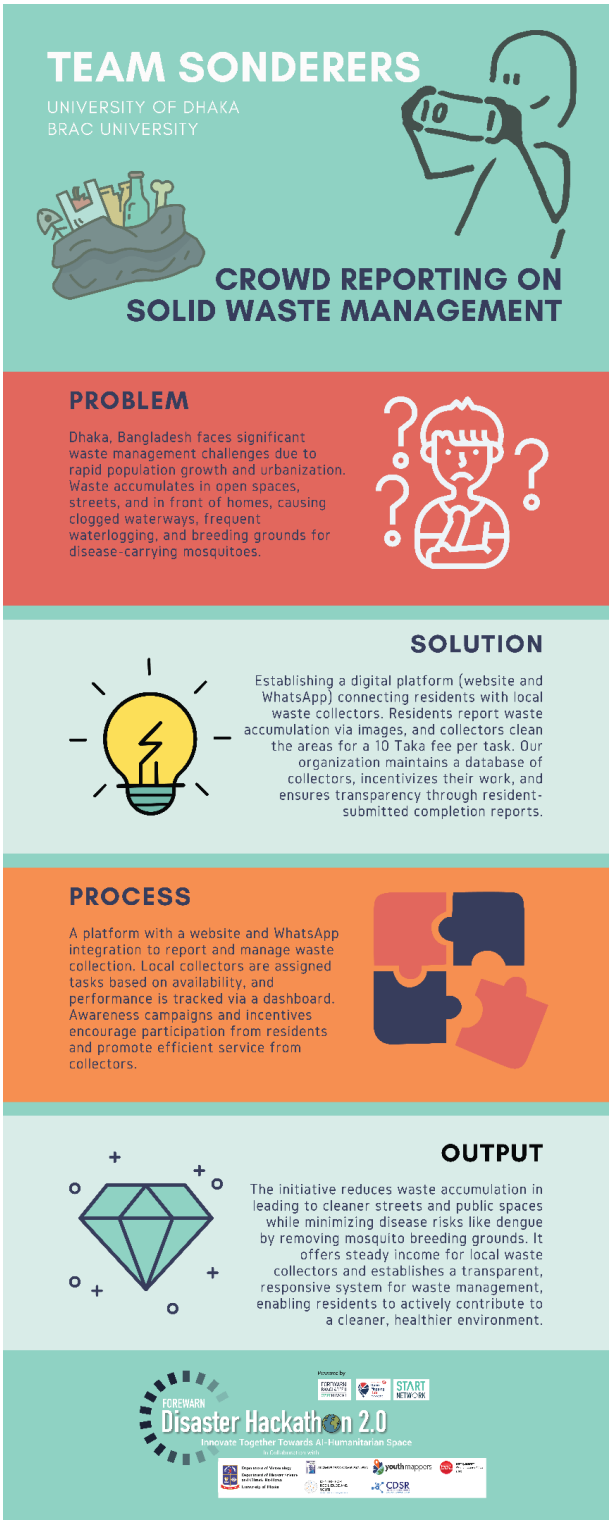
Team Sonderers

Affiliations: University of Dhaka and BRAC University

Problem Statement: Inadequate systems for tracking and reporting waste lead to illegal dumping, delayed collection, and environmental pollution, harming public health and quality of life in urban areas like Dhaka City.

Solution: Our proposed solution involves digitalizing waste management through innovative apps that utilize data analytics and GPS tracking. By providing real-time updates on waste collection and disposal, these apps enhance efficiency and reduce delays

Impact: Create a clean and healthy environment



DISASTER HACKATHON 2.0

The Disaster Hackathon 2.0 engaged university students across Bangladesh in a transformative journey to develop innovative disaster resilience solutions. Organized by FOREWARN Bangladesh with key institutional partners, the hackathon fostered collaboration among young innovators, disaster management experts, and technical mentors.

The competition underscored the importance of youth engagement in disaster management, empowering participants to tackle real-world humanitarian issues with technology and open-source tools.








Annexure

FOREWARN has been working with researchers, academia, sectoral experts, and practitioners to understand risks associated to disaster, risk predictability and how to use risk information as well as forecasting together to take actions ahead of predictable disasters.

To expand our horizons, build on the knowledge we possess and bring more state-of-the-art technological and innovative solutions to the humanitarian sector, FOREWARN Bangladesh is hosting a Hackathon on Disaster in Bangladesh for a 2nd time in 2024 with the technical partnership of the University of Dhaka, Open Mapping Hub Asia-Pacific, Humanitarian OpenStreetMap Team (HOT), and YouthMappers.

The Open Mapping Hub - Asia Pacific (AP Hub) was established to advance the open mapping movement in the Asia-Pacific region. OpenStreetMap (OSM) is a comprehensive, freely accessible geographic database, regularly updated and nurtured by a devoted community of volunteers, fostering open collaboration.

Participants of the hackathon can utilize open-source to develop their innovative solutions. We will be providing mentorship and support to the participants including access to an online learning module designed to give an understanding of OSM data and different tools and technologies within the OpenStreetMap mapping ecosystem.