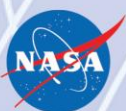


ANNUAL REPORT

GLOBE – Bangladesh

2024-2025

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INTRODUCTION

The GLOBE (Global Learning and Observations to Benefit the Environment) Program is an international initiative supported by NASA, the National Science Foundation (NSF), and other global partners. It enhances STEM education by enabling students and teachers to engage in hands-on environmental data collection and research. The program fosters global collaboration and environmental stewardship among young learners.

Shakti Foundation, as the Bangladesh Country Coordinator for GLOBE, integrates this initiative into its broader Climate Change programs. The foundation's efforts focus on **empowering underserved communities**, particularly young girls, by providing access to STEM education and environmental awareness.

Since its launch in February 2024, the Bangladesh GLOBE Program has expanded its reach, increased student participation, and introduced new scientific protocols to **enhance environmental research**.

Key Program Goals:

- Equip students in Grades 6-10 with hands-on training in Science, Technology, Engineering, and Mathematics (STEM) through inquiry-based activities and scientific tools.
- Assist teachers to implement activities that instill critical thinking, scientific research methodologies, data analysis and independent learning in students.
- Contribute valuable scientific data to the global GLOBE database used by NASA and other esteemed institutions.
- Connect students with a global network of peers for knowledge and experience sharing.
- Raise awareness about environmental issues within the school and inspire broader community engagement in environmental protection.

This report explores the program's impact on Education, Science, Community, Technology, Communication, and Staff, showcasing its multifaceted approach to nurturing a generation of environmentally conscious and scientifically literate citizens in Bangladesh.

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EDUCATION

The Bangladesh GLOBE Program has successfully integrated STEM education into schools and expanded learning opportunities for students from diverse backgrounds.

Key Educational Achievements:

- Successfully onboarded two rural schools (Nazrul Islam High School and Utsho Bidda Niketon).
- Trained 17 teachers in GLOBE scientific protocols to enhance STEM-based learning.
- Engaged over 70 students in hands-on research activities.
- Onboarded 20 new students from grades 5 to 10 at Utsho Bidda Niketon, a school that serves underprivileged students, including orphans and children with disabilities.
- Provided 10 smartphones to Utsho Bidda Niketon students to facilitate GLOBE data collection.

Recognizing the increasing role of technology in environmental research, Shakti Foundation has prioritized mobile-based data collection to make participation easier and more efficient for students.



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SCIENCE

The Bangladesh GLOBE Program has expanded its research focus, incorporating **new scientific protocols** and increasing student engagement in data collection.

Key Scientific Activities:

- Conducted **Mosquito Habitat Mapping** to identify breeding grounds and assess environmental factors contributing to mosquito populations.
- Implemented the **Tree Height Protocol**, enabling students to measure and analyze tree growth patterns.
- Contributed **over 250 data points** to the global GLOBE database.
- Conducted **water quality testing** (pH levels, temperature) in local rivers and ponds.
- Performed **soil characterization** and environmental monitoring.

By integrating **new research methodologies**, students gain a **deeper understanding of ecological changes**, while their findings contribute to **NASA's environmental research database**.



COMMUNITY

The GLOBE Program fosters both **local and global** engagement, empowering students to take **active roles in environmental initiatives**.

Local Community Impact:

- Conducted awareness campaigns on **climate resilience** and sustainable practices.
- Encouraged students to lead **school-based environmental initiatives** (e.g., mosquito control, tree planting, waste management).
- **Engaged more than 30 individuals as GLOBE observers**, broadening community participation.

Global Collaboration:

- Bangladesh was **represented at the GLOBE Regional Meeting in the Maldives**, where the country's contributions were highlighted to the international community.
- Engaged in **knowledge exchange programs** with other GLOBE participants worldwide.

These initiatives **strengthen national and international partnerships** in environmental education and encourage broader participation.



TECHNOLOGY

The GLOBE Program has embraced technology to improve data collection and analysis.

Key Technological Implementations:

- Provided **10 smartphones** to students at Utsho Bidda Niketon, recognizing the need for mobile technology in environmental research.
- Integrated **GLOBE Science Data Visualization tools** to help students analyze environmental trends.
- Utilized **mobile-based GPS technology** to improve accuracy in field data collection.
- Recently received **various equipment from the U.S. Embassy**, which will support onboarding more schools in the future.

Shakti Foundation has identified that **smartphones are now essential for GLOBE activities**, making it easier for students to **gather and submit data efficiently**.



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COMMUNICATION

The Bangladesh GLOBE Program ensures effective communication through **various engagement strategies**:

Internal Communication:

- Established a **teacher network** via WhatsApp for knowledge sharing and troubleshooting.
- Conducted **regular school visits** by the Country Coordinator to provide direct support.

External Communication & Public Awareness:

- Promoted GLOBE activities through **social media (Facebook, LinkedIn)**, increasing program visibility.
- Conducted **community engagement meetings** to inform parents and stakeholders about GLOBE's impact.
- Plans to expand online platforms for **virtual workshops and student engagement** in the coming year.

By prioritizing **effective communication**, the program ensures greater reach, transparency, and collaboration.



STAFF

The success of the GLOBE Program in Bangladesh is attributed to its **dedicated educators and organizational support**.

Current Staff & Training:

- 17 teachers have been trained to **implement GLOBE protocols** effectively.
- Regular **professional development sessions** ensure that educators stay updated on scientific methodologies.

Future Expansion Plans:

- Expand the program to **three additional schools** in rural and peri-urban areas.
- Develop **teacher exchange programs** to strengthen environmental education.
- Utilize newly received **equipment from the U.S. Embassy** to onboard more schools.
- Establish long-term collaborations with **government agencies and international partners** to **scale the initiative nationally**.

With these efforts, Bangladesh aims to create a **sustainable model** for STEM-based environmental education through the GLOBE Program.



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THE GLOBE PROGRAM

Contact Information:



Name: Sabbir Ahmed Usmani

Position: Country Coordinator

Organization: Shakti Foundation for Disadvantaged Women

Email: sahmad@shakti.org.bd

Tel: +880 1847099601 / +880 96134411 (mobile)

Website: www.shakti.org.bd

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