THE **GLOBE** PROGRAM

ANNUAL REPORT

GLOBE – Bangladesh

2023-2024

Sponsored by: NASA Supported by: NSF NOAA Implemented by: UCAR www.globe.gov

TABLE OF CONTENTS

INTRODUCTION

The Bangladesh GLOBE Program marks a significant milestone in the nation's commitment to science education and environmental awareness. Launched in February 2024, a collaborative effort by the Shakti Foundation, U.S. Embassy Dhaka, and Brighters Society Bangladesh brought this program to Nazrul Islam High School in Lalpur Union, Cumilla. This report details the program's initial activities and achievements, highlighting its potential to empower a new generation of Bangladeshi environmental leaders.

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.

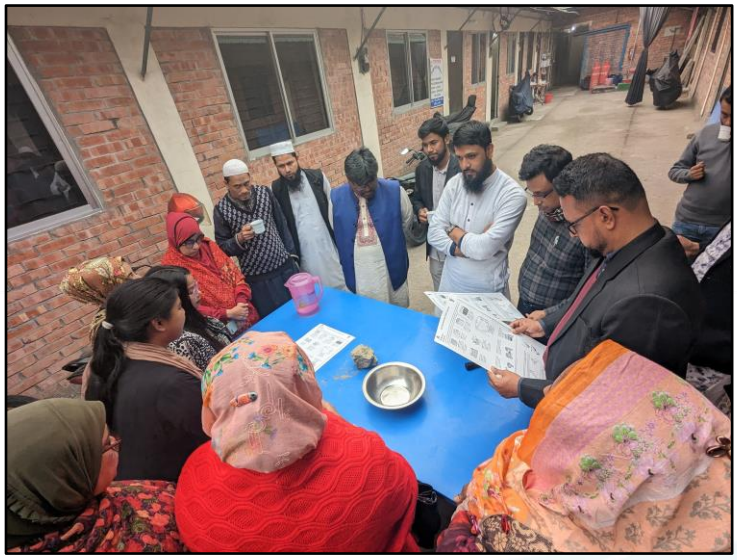
This report explores the program's impact on Education, Science, Community, Technology, Communication, and Staff, showcasing its multifaceted approach to nurturing a generation of environmentally conscious and scientifically literate citizens in Bangladesh.

EDUCATION

Marking a significant first step in Bangladesh's GLOBE Program journey, the initial phase successfully engaged 60 enthusiastic students from Nazrul Islam High School in Lalpur Union, Cumilla. These students, representing Grades 6-10 (ages 12-16), are now embarking on an exciting path of scientific exploration.

A Team Empowered for Success:

To ensure a strong foundation for the program, 12 dedicated teachers at Nazrul Islam High School received comprehensive training. This equipped them with the necessary skills to guide students through inquiry-based activities and effectively utilize the GLOBE curriculum, fostering a love for science and critical thinking.



Future Collaborations:

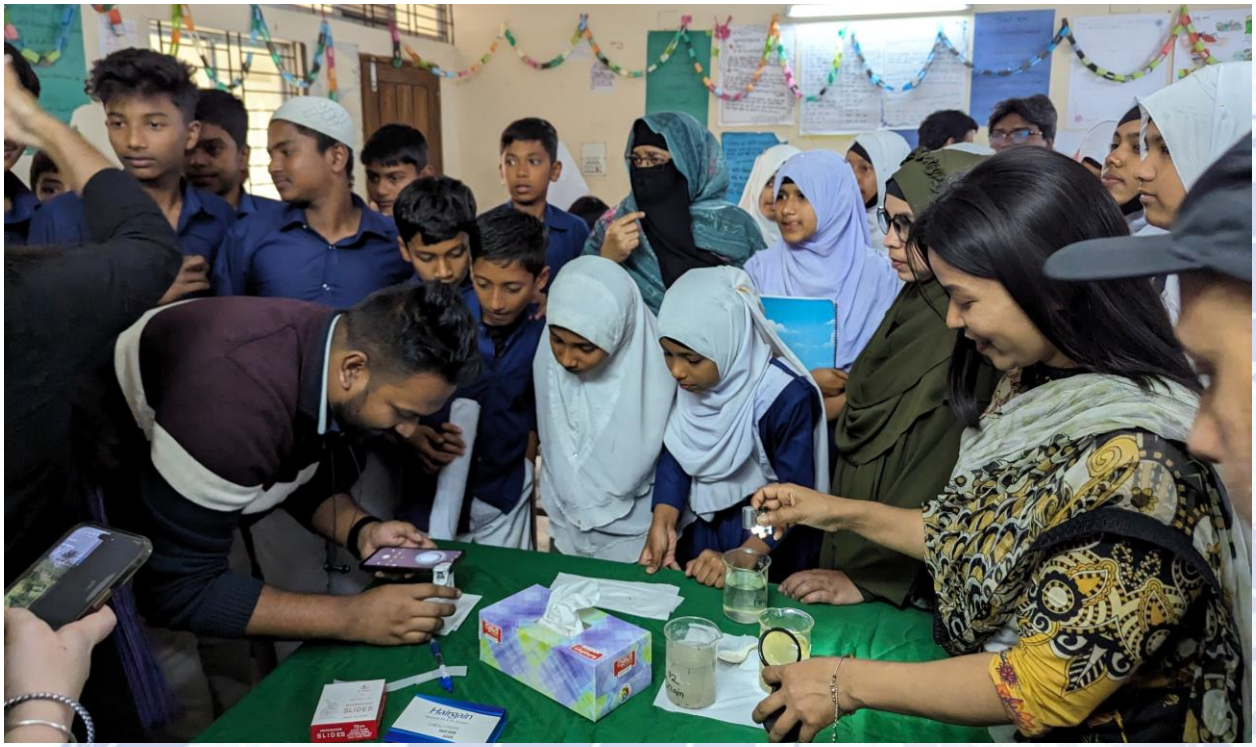
While Bangladesh is in the initial stages of its GLOBE Program involvement, we are seeking future partnerships with other schools. We are targeting rural and/or peri-urban schools with limited access to science education. This collaboration can strengthen environmental awareness initiatives and create a national network of young environmental leaders within the nation.

The initial success in Bangladesh lays the groundwork for a vibrant and collaborative GLOBE Program, fostering a new generation of scientifically-literate citizens who are prepared to address global environmental challenges.

SCIENCE

The Bangladesh GLOBE Program has ignited a passion for scientific exploration in students at Nazrul Islam High School. Here's how the program is fostering a culture of scientific inquiry:

- **Hands-on Research:** Students at Nazrul Islam High School are diving headfirst into scientific exploration! Their inaugural project involved measuring water temperature and pH levels in the Gomoti River as well as a unnamed pond near the school. The students also conducted the soil characterization protocol. This data contributes to the global GLOBE database used by NASA and other esteemed scientific institutions.
- **Globally Standardized Protocols:** The program utilizes established GLOBE protocols for data collection, ensuring consistency and allowing Bangladeshi data to seamlessly integrate with the international scientific community.
- **STEM Integration:** The GLOBE Program complements the existing curriculum by providing a practical application of science, technology, engineering, and mathematics (STEM) concepts. This fosters a deeper understanding of these subjects and ignites student interest in pursuing STEM careers in the future.



Bangladesh's foray into the GLOBE Program is already yielding promising results. By emphasizing real-world research, standardized protocols, and STEM integration, the program equips students with the tools and knowledge they need to become the next generation of scientific leaders.

COMMUNITY

The Bangladesh GLOBE Program is fostering a sense of community on multiple levels:

- **Global Connection:** Students at Nazrul Islam High School have the exciting opportunity to connect with their peers worldwide through the GLOBE online platform. This allows them to share data, experiences, and a passion for environmental stewardship.
- **Potential Opportunities:** While Bangladesh is in the initial stages of its GLOBE Program involvement, the potential for future collaborations with other GLOBE countries is incredibly promising. We look forward to establishing connections and initiating joint projects with partner schools around the world and gain valuable insights from diverse perspectives on environmental issues. This will allow Bangladeshi students to not only share knowledge and experiences with their international peers but also contribute to a wider pool of scientific data.

- **Local Impact:** Future GLOBE projects will be chosen based on environmental issues relevant to the school's surrounding community. Students will conduct research and collect data that directly impacts their local environment, fostering a sense of ownership and responsibility.

- **Gender Divide:** In the South Asian context, education for the girl child requires special consideration. One-third of girls in South Asia remain excluded from educational opportunities. Girls' lack of access to quality education is rooted in gender inequality, i.e., the belief that girls and women are worth less than boys and men. Coupled with economic pressure, this inequality leads to a preference for the education of boys over girls, with the girls forced to drop out of school to take on household responsibilities. These underlying drivers lead to humanitarian issues of child marriage, dowry, adolescent pregnancy, and gender-based violence. The younger the age at drop-out, the greater the impact.

Through the GLOBE Program we are nurturing the school-going girl's interest in STEM education so they can envision a life outside of household chores and marriage. More importantly, we are empowering adolescent girls with valuable skills in critical thinking, data analysis, and research so they can:

- Fight against discriminatory social norms.
- Pursue higher education or careers in STEM.
- Compete for employment on a more equal footing.
- Become breadwinners for themselves and their families, and break the poverty cycle.

Spreading the Word:

The Shakti Foundation and the U.S. Embassy in Bangladesh are actively promoting the GLOBE Program through social media platforms like Facebook and LinkedIn. These posts raise awareness, garner support, and inspire others to join the movement.

Internal Communication: Shakti Foundation, being one of the largest NGOs in Bangladesh, leverages its extensive network for internal communication. With over 4,500 staff members across 518 branches and serving over half a million families, the organization can effectively disseminate information about the GLOBE Program, encouraging broader participation and support from within.

By fostering global connections, focusing on local impact, and encouraging collaboration, the Bangladesh GLOBE Program is building a strong foundation for a more sustainable future.

TECHNOLOGY

The Bangladesh GLOBE Program embraces technology to empower students and enhance their learning experience:

- **Data Visualization Tools:** The program incorporates GLOBE Science Data Visualization tools. These tools allow students to analyze and interpret their collected data visually, fostering a deeper understanding of environmental trends and patterns.
- **Satellite Data Integration:** Students have the opportunity to learn how to access and compare their observations with satellite data. This valuable skill allows them to validate their findings and gain a broader perspective on environmental phenomena.
- **Mobile Technology and Equipment:** The program may introduce the use of mobile GPS units to pinpoint research locations and collect location-based environmental data. This enhances the accuracy and detail of student investigations.
- **Future Expansion:** Schools participating in the GLOBE Program can potentially gain access to digital weather stations. These sophisticated tools provide real-time data and advanced visualization tools, further enriching the learning experience.

Understanding the cultural context in Bangladesh, the GLOBE Program prioritizes a balanced approach to technology integration:

- **Prioritizing Traditional Methods:** While mobile apps offer convenience, the program acknowledges the value of traditional data collection methods using physical instruments. Students can enjoy the hands-on experience and develop essential scientific skills through direct observation and measurement.
- **Facilitating Desktop Access:** The program will explore the use of the GLOBE Observer desktop software for data entry and analysis. This aligns with the existing infrastructure of computer labs in schools and provides a controlled environment for technology access under teacher supervision. Students can learn valuable computer skills while contributing to the program.
- **Parental Assurance:** The program actively communicates with parents about the responsible use of technology in the GLOBE Program. This could involve workshops or information sessions outlining the program's focus on science education and data collection, addressing any concerns regarding social media or internet misuse.

Communication

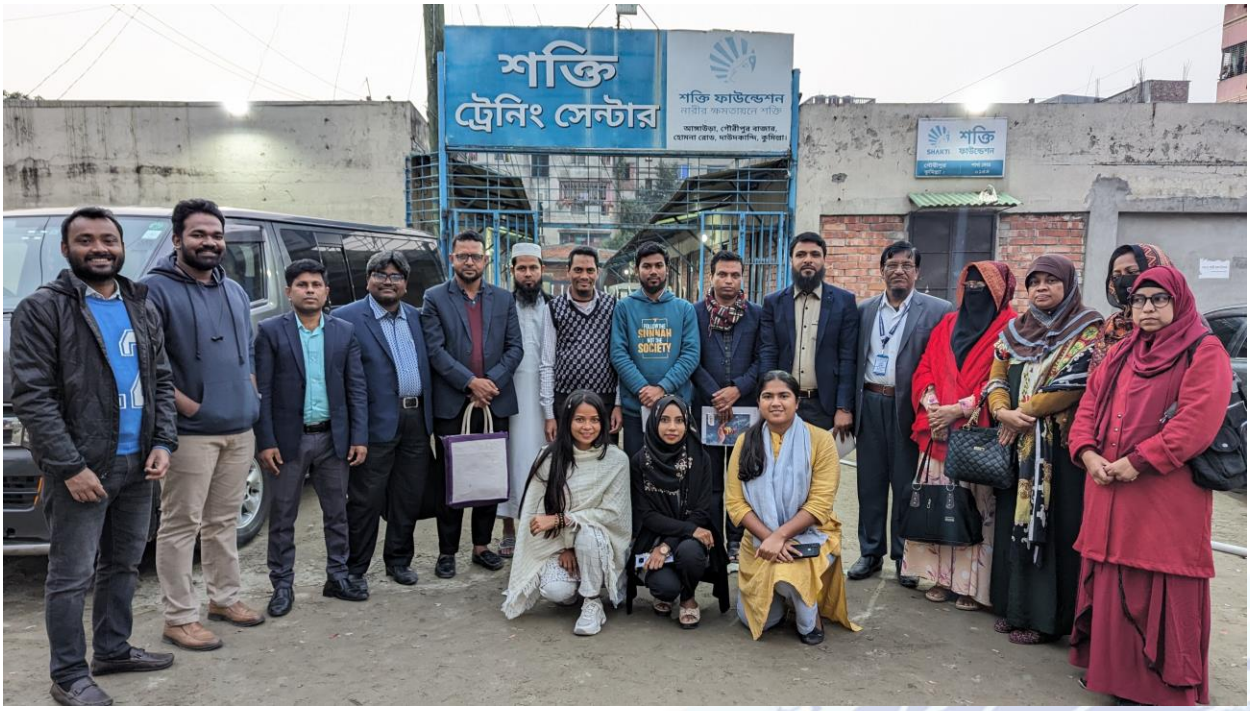
The Bangladesh GLOBE Program fosters open and effective communication on multiple levels:

- **Teacher Network:** A dedicated communication WhatsApp group has been established with all teachers of Nazrul Islam High School. This allows teachers to share best practices, troubleshoot challenges, and collaborate for program improvement.
- **In-Class Interaction:** Students engage in regular communication with their teachers during GLOBE program activities. This ensures immediate guidance, clarification of concepts, and promotes a supportive learning environment.
- **Parental Engagement:** The program recognizes parental concerns regarding mobile phone use. We prioritize in-person communication through school meetings or information sessions. These sessions explain the program's focus on science education and responsible data collection, addressing any anxieties about technology usage.
- **Country Coordinator Visits:** The GLOBE Country Coordinator maintains regular contact with the school by visiting once or twice a month. These visits serve to observe the learning process, address any concerns, and facilitate open communication between the program and the school.
- **Future Expansion:** The program may explore the possibility of online communication platforms in the future when deemed culturally appropriate and student age groups are more comfortable with technology.

By utilizing a multi-pronged communication strategy, the Bangladesh GLOBE Program ensures all stakeholders are informed, engaged, and equipped to contribute to its success.

STAFF

The program relies on dedicated staff for its success. Currently, trained teachers at Nazrul Islam High School implement the program activities. Future expansion may require additional staff training and support.



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