

Progress Towards SDG 14



Conserve and sustainably use the oceans, seas and marine resources for sustainable development

Daffodil International University



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International
University

August 2023

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SDG 14:

Sustainable Development Goal 14 is about "Life below water" and is one of the 17 Sustainable Development Goals established by the United Nations in 2015. The official wording is to "Conserve and sustainably use the oceans, seas and marine resources for sustainable development".

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DIU's Contributions and Progress:

Set up an academic department on Agricultural Science
Implementing a project on cultivating fish in the transformed DIU Lake water
Follows water discharge guidelines
Has been implementing plastic reduction policy in campus
Has been implementing the Guidelines on Water Pollution Reduction in campus

Restoration of Waste Water Lake into Fresh Water Lake at DIU

Background: The permanent campus of Daffodil International University (DIU) at Ashulia is a phenomenal natural beauty and an art of perfect green entity. There was a water body adjacent to the campus which somehow restricts the flourishing visuals and environmental aspects. The place was posing impediments to study in a healthy environment, to the current as well as future students who will be belonging to the under-construction female halls nearby. It was therefore a crying need to work on the problem. Following is the description of the successful restoration and present state of the lake.

Pre-Condition: The water body is located at the permanent campus of DIU at North to the 'Shadhinota Shommelon Kendro', DIU. The approximate position is 23°87' N and 90°32' E. The concerned area is approximately 7.961 Acres, as estimated by the Civil Engineering Department of DIU. Aerial image has been captured to delineate the location and the shape of the concerned place.

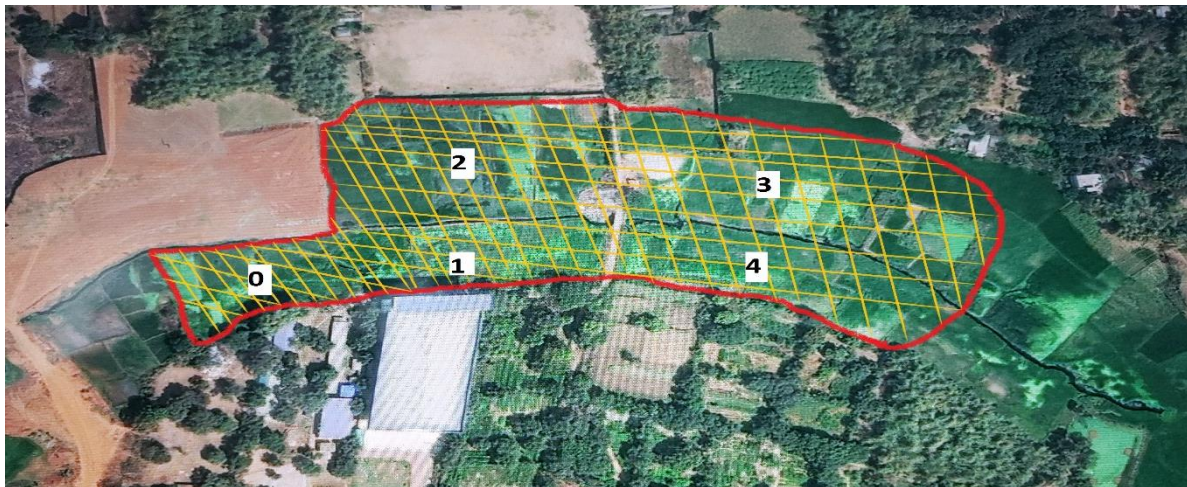


Fig. 1. The previous status and location for Water Body Restoration.

The targeted area has been marked with Red and Yellow color. Numbering has been done to link with the following pictures in order to understand the place better. Some previous glimpses of the place are shown below-

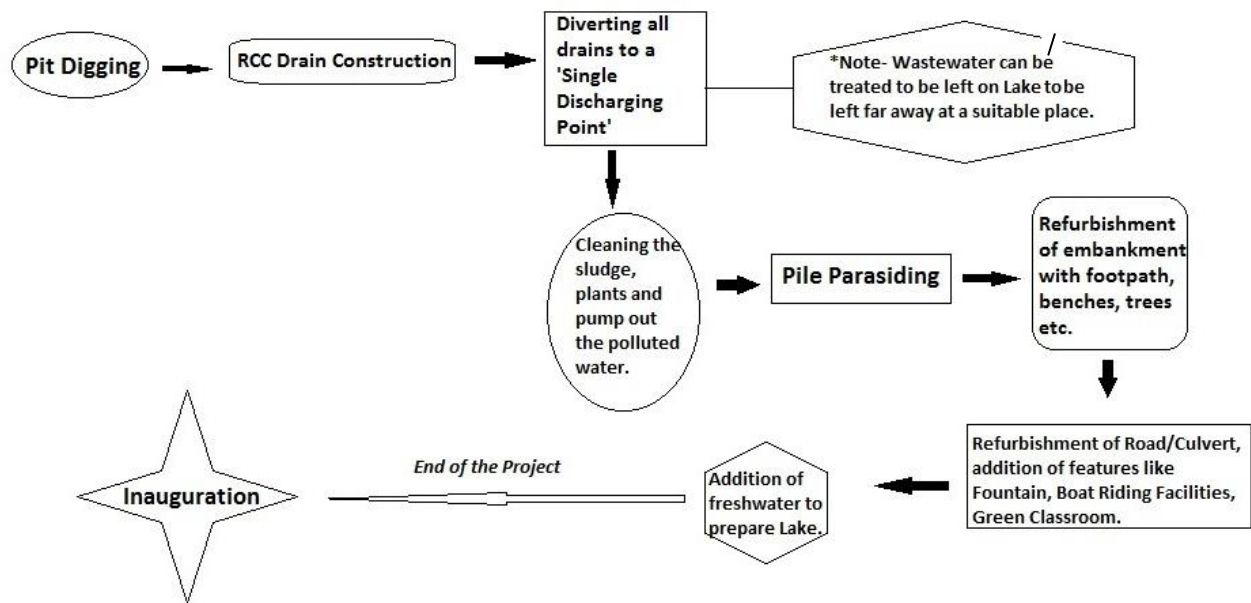


Improvement Plan:

According to the design, plans were set part by part. A secondary management plan was proposed. Firstly, the main focus was to take care of the effluents that were being discharged from nearby industries and local villagers. For that, **Pit** was dug below the discharging points of the pipes. Then following the pit, **Reinforced Cement Concrete (RCC) drain** was built as shown with Cross-Section in the design. All the drains around met at a single point as shown in the design. After the construction of RCC drain, the pipes were cut short so that the effluents could fall in pit and directed towards the **Single Discharging Point**. That point could be extended to leave the wastewater at a suitable place or a treatment plant was established to treat the wastewater and leave back as treated water to the lake.

After taking care of the effluent by diverting them, the next focus was on the existing water body. So, the **hyacinths and aquatic plants** were removed. Then the existing polluted water was pumped out. Lime was used to clean the water. Afterwards, the attention was on the stability of the Lake's embankment and for that, the proposal was for **Pile Parasiding**, almost 5 feet away from the existing embankment. Piled structure shaped the Lake. Then the embankment was made ready by sand and clay filling. Later on, footpath was added, a cross section of that was added in the design. Some features like Fountain,

Boat Riding Facilities, and Green Classroom were added as well. Green classroom was proposed to be under the Environmental Science and Disaster Management (ESDM) department, powered by 'Green Energies' like Solar/Bio, and would be used as recreational and counselling purposes besides studies. In case of the road, it can be refurbished and the culvert can be extended as well as beautified. Lastly, Freshwater would be added to the Lake. The place can then be inaugurated as an amusement park or other suitable title. A work flowchart has been added



The budget of the project was precise after necessary surveys and measurements by the engineers. The proposal was made to offer the feasibility with the least possible amount. For example, an alternative of pile parasiding would be 'RCC Retention Wall Construction'. But that would greatly increase the costing.

Transformation of the polluted water lake at DIU

A research team of Department of Environmental Science & Disaster Management (ESDM) and other experts undertook a project to renovate and revive an old and polluted water lake surrounding the university campus. The water of the lake was polluted and the surrounding environment was not suitable for students and the local community. The research team with their expertise and experience and financial and other support from the University, was successful to transform that polluted lake into a revived and user-friendly lake. The University has a plan to establish an aquaculture students and local community can have a free ride on the handy water vehicles in the lake and use the fresh and pollution-free water of the lake for various purposes.

Current view of the lake:



Contributions to Knowledge:

The researchers of Daffodil International University conducted research and subsequently published the research results in reputed journals that contributed to the knowledge domain of SDG-14. Below is a highlight of such contribution:

SL	Article Title
1.	Aquatic Microplastic Pollution Control Strategies: Sustainable Degradation Techniques, Resource Recovery, and Recommendations for Bangladesh
2.	Baseline marine litter abundance and distribution on Saint Martin Island, Bay of Bengal, Bangladesh
3.	An in-depth automated approach for fish disease recognition
4.	Marine Microbial-Derived Resource Exploration: Uncovering the Hidden Potential of Marine Carotenoids
5.	Co-management approach to sustainable management of marine protected areas: The case of Malaysia
6.	HYBRID-CNN: For Identification of Rohu Fish Disease
7.	STUDIES ON PHYSICO-CHEMICAL PROPERTIES OF BURIGANGA RIVER WATER AND THE

	VEGETATION COVERAGE OF SURROUNDING AREA, DHAKA, BANGLADESH
8.	Assessment of Ecosystem Services, Plant Diversity Pattern, and Water Quality of an Urban Water Body in Dhaka, Bangladesh
9.	Studies on physicochemical properties of Buriganga river water and the vegetation coverage of surrounding area, Dhaka, Bangladesh
10.	STUDIES ON PHYSICOCHEMICAL PROPERTIES OF BURIGANGA RIVER WATER AND THE VEGETATION COVERAGE OF SURROUNDING AREA, DHAKA, BANGLADESH