

SUSTAINABILITY REPORT 2020

STATUS OF SDGs

EDITED BY
PROFESSOR DR. MD KABIRUL ISLAM

Daffodil
International
University



DIVISION OF RESEARCH
DAFFODIL INTERNATIONAL UNIVERSITY

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DAFFODIL INTERNATIONAL UNIVERSITY
JULY 2020

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Forward

Daffodil International University is a young university in Bangladesh. The university has been maintaining educational quality since its inception in 2002. The prime intention was to produce the graduates to fulfil demand of the country and serve the society around them and beyond. Apart from academic and co-curricular activities, the teaching and learning communities are highly encouraged to engage themselves in various development initiatives executed nationally and globally. The university has reputations for its Information Technology (IT) supported infrastructure in Bangladesh and partnerships with the Government Organizations, industry, NGOs and international collaborators for their involvements in various development sectors. The stakeholders of the university are committed to work for the United Nations Sustainable Development Goals (SDGs). A lot of courses of different programs have been made aligned with the SDGs to acquaint the students with the challenges and identify solutions to act on it in a professional manner. Nevertheless, our contributions include several innovative projects which are under implementation at different departments and huge numbers of quality publications done by the faculty members jointly with the national and international partner universities. The Division of Research is managing a sustainability4 development website to highlight our achievements and evidences to the international communities.

The sustainability report 2020- status of SDGs of DIU is an excellent initiative of the Division of Research. The report is a glimpse of the events, activities, ongoing projects, research outcomes and their significances, and the attainments. Mr. Mohammad Monir Hossain, Senior Assistant Director of the Division of Research has performed the key responsibility of collecting the facts and organizing the resources. Our esteemed colleagues from the Department of ESDM, Civil Engineering, Architecture, EEE, Public Health, Nutrition and Food Engineering and Law responded to my request in a timely manner and provided their scholarly outcomes. Our heartiest congratulations to the contributors for their owing performances.

Professor Dr. Md Kabirul Islam
Director, Division of Research

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1. INTRODUCTION

1.1. Daffodil International University Viewpoint

Daffodil International University (DIU) is one of the leading private universities in Bangladesh, established on 24 January, 2002. The university aims to become a global leader in providing tertiary level education that produces graduates with high self-esteem who are able to accept challenges in a fast-changing environment. DIU provides higher education supported by 23 academic departments in the areas of Science and Technology, Engineering, Business and Entrepreneurship, Humanities & Social Sciences and Allied Health sciences aligning with the adoption of contemporary technological advancement in both bachelor and masters levels. The mission of the University are to:

- Supporting quality education and research, and implement latest educational pedagogies that nurture creativity, critical thinking and collaborative learning by students and faculty members
- Creating a research culture at the department level and the university as a whole and consequently, establish DIU as a Research University in international arena
- Promoting fundamental and applied research to fulfill the demand of the society and the global needs. In turn, special focus will be imposed on the national development agenda, digital Bangladesh vision, and the United Nations agenda for Sustainable Development Goals (SDGs)
- Promoting entrepreneurial education and develop entrepreneurial mindset among the students and encourage them to be able to self-employed
- Creating opportunity for underprivileged and rural populace access to higher education
- Conducting Human Resource (HR) development training suitable for local and global employers.

The University is serving the citizens of the country as well as the international knowledge seekers through its quality education for lifelong learning, research and publications, entrepreneurship initiatives, outreach programs, international collaborations and nurturing its graduates to respond positively towards national and global challenges. The students are provided broader access to the institution's educational resources. In a recent report, the University Grants Commission (UGC) of Bangladesh, has acknowledged that the highest number of international students studying at DIU in both bachelor and masters programs.

As a young university, DIU undertook lots of initiatives in various higher education domains and took part in international mobility programs for its internationalization. As a partner institute of Erasmus+ many students of DIU are studying in Turkey, Poland, Portugal, Italy, UK, Lithuania, and Finland with scholarships. The university has built a strong network and partnership with nearly four hundred universities/academic institutions in home and abroad for mobility of the teaching and learning communities in the form of inbound and outbound exchange programs which enables knowledge sharing, research collaboration, and internationalization. DIU has integrated an information technology (IT) supported system for managing its academic and administrative activities in a professional manner. DIU leads the Daffodil Education Network (DEN) that comprises 13 educational institutions of the Daffodil Family (DF) successfully.

1.2. The UN agenda for SDGs and DIU Context

According to United Nations, Sustainable Development Goals (SDGs) were adopted by its member states to end poverty, protect the planet and ensure that all people enjoy peace and prosperity by 2030. The proper integration of policy interventions in all 17 areas of SDGs will lead to take action in one area will affect outcomes in others and eventually development must balance social, economic and environmental sustainability. As a higher education institute, Daffodil International University (DIU) is committed to response to this universal call for SDGs and take actions to comply with the United Nation's endeavor and to support the Government of Bangladesh for achievement of desired outcomes. In this regard DIU is working closely with the Government, private sector, civil society and citizens jointly for implementation of SDGs and to make sure that we create a better and sustainable planet for our future generations.



Figure 1. The UN agenda for Sustainable Development Goals

In the past few years, Daffodil International University has been striving to make a footprint in this arena through its contributions towards sustainable development initiatives. In order to promote achievement of certain SDGs through research and academic excellence DIU has established a separate academic department namely Department of Environmental Science and Disaster Management (ESDM). In addition, a number of departments for example, Civil Engineering, Architecture, Electrical and Electronic Engineering, Public Health, and Nutrition and Food Engineering undertake a lot of initiatives which are aligned with the SDGs. The student affairs division of DIU conducts numerous events engaging

students of all levels round the year to meet the challenges of SDGs and consequently, it increases environmental awareness of the students as a whole. The university adopts sustainable practices in all its development activities and initiatives. Apparently, DIU arranges a lot of events in collaboration with other partners in the area of sustainability and environmental wellbeing every year.

1.3. Dissemination of Achievements of SDGs

The Division of Research of DIU has developed and maintained a very informative and data-driven website namely Sustainability for Development (<https://sustainability4d.daffodilvarsity.edu.bd/>). The intention was to increase visibility of the university's efforts and contributions towards achievements of different sustainable development goals and recognize ourselves as an active partner of the United Nations communities.

With this sustainability for development website, DIU would like to share its initiatives, thoughts, outcomes, research findings, achievements, and lessons learnt from different projects implemented at DIU with the national and international communities and partners.

2. RESEARCH PROJECT AND OUTCOMES

Daffodil International University cultivates educational innovations, collaborations and knowledge sharing and conducts research for improvement of life of people and creating a sustainable environment for future generations.

2.1. Unmanned aerial systems-based assessment of tree cover and deforestation dynamics in Bangladesh

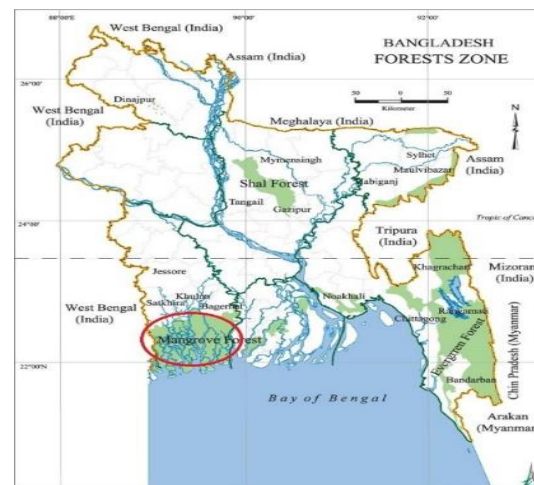
The project team was formed comprised with the Principal Investigator Dr. A.B.M Kamal Pasha of Daffodil International University and the U.S. Partner Demetrios Gatzolis for implementation within a duration of a four years from December 2017 - December 2021. Dr. Demetrios Gatzolis is a member of The United States Forest Service.

The main advantages of photogrammetry based on unmanned aerial vehicles (UAVs) compared to traditional aircraft imaging campaigns are low cost and flexibility. In addition, aircraft-based image acquisition usually requires months of planning and must cover a substantial area to justify the cost. UAVs can be deployed at a moment's notice and require practically no maintenance. They can also be deployed at easily customizable above-canopy altitude, camera orientation, trajectory, and speed. They are thus ideal for imaging small areas of forests, such as over individual tree stands,

management units or inventory plots (Gatziolis et al., 2015). Most developing countries do not yet have the capacity or knowledge base to support modern forest inventories and typically depend on satellite imagery and applications developed elsewhere to meet their needs, including the obligation to report on the status of their forests if they participate in the international REDD initiative. Satellite-based assessment is adequate in many instances—for example, to assess deforestation in the Amazon basin. It can be problematic and biased, however, when the anthropogenic interventions and ensuing disturbances are either gradual or have a spatial footprint much smaller than the resolution of the satellite imagery employed. The advent of novel, inexpensive technologies, including UAVs, and the development of affordable software capable of performing complex photogrammetric tasks hold promising potential into assisting the assessment of forest resources in developing countries and facilitating their verifiable participation in efforts to mitigate the effects of deforestation and forest degradation.



Mangrove forests in the Sundarbans, Bangladesh.



Study area (red oval) in the Sundarbans forest of Bangladesh

In this project, the PI and his team will devise and optimize a fully-automated UAV-based image acquisition protocol compatible with generating comprehensive (gap-free), high-density, precisely geo-referenced point clouds representing forest canopies for areas centered on selected locations in the Sal and Sundarbans forest types that host national forest inventory plots of the Bangladesh Forest Department (BFD). The researchers will generate canopy surface and canopy height rasters for each selected inventory plot and its surroundings, as well as estimates of canopy cover for each subplot of every selected inventory plot, and compare them to those obtained by inventory personnel during field visits. Using the data they will gather, they will develop forest type-specific models of forest biomass and outline a framework for forest change detection and quantification based on periodic satellite imagery and incorporating UAV-derived information over selected areas. Methodologies, findings, and results will be shared with the United Nations Food and Agriculture Organization,

representatives of the U.S. Government technical cooperative program SilvaCarbon in Bangladesh, BFD officials, and ultimately the public.

Project updates

The first quarter of 2020 was extremely busy and significant for the PEER project, starting with a successful field data collection campaign in January in the Sundarbans, with U.S. Ambassador and USAID Mission Director in attendance, to the productive meeting with the Defense Ministry in Bangladesh in March, at which time the PEER team had the opportunity to highlight their operational aspects and value of their PEER project in national and global conservation context.

Data collection campaign took place in Tambulunia forest region in the Sundarbans during January 23-30, 2020. Following NAS and USAID PEER team Sundarbans site visit earlier in November 2019, in January 2020, the PEER team hosted the U.S. Ambassador for Bangladesh, Earl R. Miller, and his consular team, as well as USAID Mission Director, Dr. Derrick Brown, and his colleagues at one of the PEER project sites. During the site visit, the PEER team demonstrated their PEER activities and goals and also discussed aspects of impact this project is bound to have in the context of environmental stewardship efforts. During this trip, the PEER team collected data on eight additional forest inventory plots. As per the original plan, the purpose of the visit was to collect imagery data of national forest inventory plots of the Bangladesh Forest Department (BFD) using UAV (Unmanned Aerial Vehicle). The team still needs more data with at least 60 plots in total covered and at least two more 10-day trips have been scheduled.

The procedure to get the needed permits from the Civil Aviation Authority Bangladesh (CAAB) finally reached an unprecedented momentum. On March 8th, the PEER team attended a meeting with the Bangladesh Defense Ministry where the team were requested to provide their projected schedule of data collection campaigns to assure compliance with low altitude flight scheduling. The meeting was also crucial and the most important step towards completing the CAAB permit approval requirements. The Ministry acknowledged the PEER team as pioneers in using UAV technology for forest research in Bangladesh, and the team's UAV protocol they had been using was confirmed as the first guideline for Bangladesh UAV policy.

Bangladesh's very first policy for UAV operation for research purposes is in the pipeline. The draft for this historic legislation evolved around operational aspects of UAV use, which the PEER team highlighted in their permit acquisition documents. This is a significant milestone, considering the already complex approval processes in Bangladesh. Furthermore, technical feedback the team gave during the meeting to representatives of the intelligence community and air defense experts in attendance have cleared a lot of aspects of UAV usage for research that had not been addressed before. This breakthrough is anticipated to have opened a window of opportunity for conducting UAV based research in Bangladesh in the future.



Patrick Meyer (USAID/Bangladesh), Lisa Patel (USAID) and Lina Stankute-Alexander (NAS) visit PI Dr. Pasha at DIU, Bangladesh, November 2019



The team enters Mangrove forest in the Sundarbans. November 2019



Bangladesh Mission Director (MD) Derrick S. Brown and U.S. Ambassador Earl. R. Miller visit the Sundarbans site with the PEER



Drone launch in the Sundarbans. November 2019 NAS and USAID site visit

2.2. DIU Solar Car



The “Yes You Can” team of 22 students of the Department of Computer Science and Engineering of Daffodil International University innovated the ‘Solar Car’. The young and talented students (‘Yes You Can’ Team) came up with an exceptional and outstanding project concept called "Solar Car" (7' long X 4' wide) for this green technology time of the earth. This is a complete and actual sized two seated solar car powered by the green technologies. This Car weight is 150 KG that could carry two-three person’s weight. It has 5 Solar panels with each 12 Volts in total 48 Volts with (50Watt x 4) + 80Watt = 280 Watt (in total); 4 pieces 12Watt Batteries in total 48Volts; one Solar Charge Controller; one high capacity Motor which 500rpm, 500Watt, 48Volts; one Motor Controller; along with associated parts and materials. In full charge state, this car is capable to run with two persons for 6 (six) hours at a time. The speed level of this car is 45km/hour. This car is fully solar car, charged from solar panel and need not any other supporting fuels. The future of this solar car is very prospective; it could reduce electricity consumptions where in most of districts in Bangladesh, lots of electricity motor vehicles are running on roads that used to charges from direct electricity connections. It also reduces the pressure of fuels and Gas used by different vehicles e.g. Oil, Mobil, Octane, Diesel, Petrol.



DIU Solar Car had received “Future Award” in the Asia's largest Solar technology event: ESVC - Electric Solar Vehicle Championship 2014-2015, organized by Imperial Society of Innovative Engineers (ISIE) which had been held at Maharishi Markandeshwar University (MMU) Haryana, India; in 2015. This project was jointly sponsored and funded by ICT Division, Government of the People's Republic of Bangladesh and Daffodil International University.

2.3. Daffodil Agro Complex



Vehicle exhaust is a major source of anthropogenic carbon dioxide (CO₂) and the main emission sources of air pollution in metropolitan cities of Bangladesh. Daffodil Eco-friendly Agro Support Centre was established targeting clean environment, conservation of nature, biodiversity, research, extension and development of different kinds of fruits, vegetables and medicinal plants by using inexpensive sandy fallow land. To support the efforts for a cleaner environment, most

of the fruit plants are broad leaved and evergreen which sink more CO₂ and release more O₂ for a consequently cleaner and healthier environment. Moreover, it also produces safe fruits and vegetables giving rise to the availability of nutritionally rich high value crops for fulfilling the nutritional food deficiency (hidden hunger) of poor and ultra-poor peoples. In spite of being the project area filled with sandy soil, DIU researchers have been successfully able to grow different types of fruits, vegetables and medicinal plants with acceptable amount of yields through organic farming systems. The centre also serves as a germplasm facility for education, research and training. The current activities include fruit saplings production and distribution, germplasm collection and conservation, and technical service to farmers.



This project is going to be popular at different strata of people for aesthetic value of fruit plants. It is an attractive place for the visitor from home and abroad which is enlightening the status of university too. However, we are going to establish an agro-tourisms centre where people can enjoy organic food and clean and healthy environment as a green space.

Daffodil Eco-friendly Agro Support Centre is an integral part of Department of Nutrition and Food Engineering (NFE) which has the mission to ensure quality of food from “Farm to Fork.” This mission refers to the quality impact in our integrated food value chain. Without organic farming it is almost

impossible to maintain the high value food ensure to the society. Daffodil Agro complex is relentlessly working towards the pursuit of supplying organic food products in affordable price. This endeavor automatically contributes to the enhancement of green sustainability through organic farming system.

A germplasm is a collection of genetic resources for an organism and plants, the germplasm may be stored as a seed collection or, for trees, in a nursery. Daffodil Eco-friendly Agro Support Centre is established to make it one of the largest depository/germplasm centers of fruits, medicinal plants and agroforestry in Bangladesh. The mission of establishing a seed bank and extension of technologies among the farmers. Daffodil Eco-friendly Agro Support Centre will be extended to 15 acres of land very shortly (currently 5 acres).



2.4. Natural Water Conservation and Restoration Using Aquatic Macrophytes

Background: Due to the industrialization, our water bodies such as rivers, lakes, ponds and wetlands of Dhaka are being polluted by the discharge of toxic chemicals and harmful substances which degrades the water quality and it creates back to back harmful impacts on humans and also the aquatic ecosystem. To improve water quality in a natural we need to think any possible solution related with biological method. In this regard a submerged macrophyte was used to reduce the level of pollutants and contaminants from the natural fresh water.

Objective:

- To find the concentration level of heavy metals
- To improve the water quality by our native aquatic plants
- To observe the efficiency of our native aquatic plants on the wastewater.
- To detoxify the water in a naturally occurred manner through aquatic plants
- To implement this cost effective way for the treatment of our polluted water body.

Methodology: This research has systematic procedures to follow. The overall process is being illustrated below:

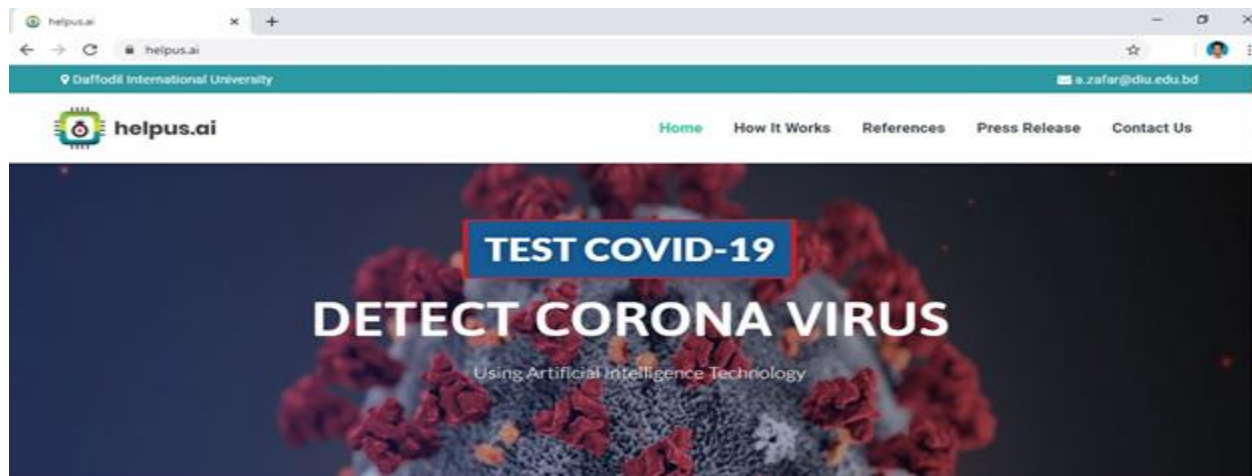


Fig. 1. Natural water quality improvement via aquatic plants in laboratory.

Research Outcome:

- The treatment has successfully changed the water quality
- It's a plant based treatment, so the oxygen is increased and creates a healthy environment for aquatic organisms
- Huge changes have been identified in water color and its odor.
- A huge percentage of reduction of heavy metals and other toxic chemicals.
- This research will assure the plausible sound life for aquatic organisms.

2.5. The beta version of AI solution to detect and track 'COVID-19'



As part of its social responsibility, a team of researchers from Department of Public Health, Artificial Intelligence (AI) Unit of Daffodil International University (DIU) along with Cardio-Care General and Specialized Hospital has developed a new diagnostic modality to detect COVID-19 where the

researchers are using AI software to detect Covid-19 by analyzing the chest X-ray or images from lung CT scans. By using this AI technology, the health workers/Doctors can instantly diagnose if the suspected person has COVID-19 or not. Currently, this AI technology can differentiate between COVID 19 and other respiratory diseases including Pneumonia. Doctors can then follow up with other examinations and lab tests to confirm a diagnosis of the disease. In this research, researchers found that the sensitivity of this AI modality for COVID-19 infection is 96%. This is a question-answer based tool which gives a prediction about COVID_19 through this software.



Any MBBS doctor with his/her BMDC Registration number can use the software free of cost to detect COVID-19 through x-ray image of patient's chest. This tool can be used through this website www.helpus.ai. Beside this, the software can play a vital role in forecasting COVID_19 symptoms at an early stage. It may mention that Daffodil International University also developed another software by using artificial intelligence, which can detect COVID-19 through x-ray image of patient's chest.

3. PUBLICATIONS

As stated earlier, DIU cultivates sustainable development mindset among the faculty and the students and integrates several sustainable development goals related courses which encourages our faculty member to conduct research into certain development areas and publish papers in quality journals and conferences jointly with the local and foreign university faculty members. A list of such publications are given below.

Sl. No	Title	Authors Name	Source
1	Heavy metal toxicity from the leather industry in Bangladesh: a case study of human exposure in Dhaka industrial area	Md. Mahamudul Hasan, Shahadat Hosain, Pinku Poddar, ABM Alauddin Chowdhury, Estiner W. Katengeza, Uttam Kumar Roy	Environmental Monitoring and Assessment
2	The growth and nutrient uptake of invasive vines on contrasting riverbank soils	M. Harun Rashid, Md Nazim Uddin, Animesh Sarkar, Mahfuza Parveen, Takashi Asaeda	River Research and Applications
3	Optimization and cost-benefit assessment of hybrid power	Kiflom Gebrehiwot, Md. Alam Hossain Mondal,	Energy

	systems for off-grid rural electrification in Ethiopia	Claudia Ringler, Abiti Getaneh Gebremeskel	
4	System and Cost Analysis of Stand-Alone Solar Home System Applied to a Developing Country	Chowdhury Akram Hossain, Nusrat Chowdhury, Michela Longo and Wahiba Yaïci	Sustainability (Switzerland)
5	Energy efficient instruction register for green communication	S.M.T. Siddiquee, Keshav Kumar, Bishwajeet, Pandey, A. Kumar	International Journal of Engineering and Advanced Technology
6	Growth and oxidative stress response of aquatic macrophyte <i>myriophyllum spicatum</i> to sediment anoxia	Keerthi Sri Senarathna Atapaththu, Mahfuza Parveen, Takashi Asaeda, M. Harun Rashid	Fundamental and Applied Limnology
7	Machine learning based class level prediction of restaurant reviews	F. M. Takbir Hossain, Md. Ismail Hossain, Samia Nawshin	5th IEEE Region 10 Humanitarian Technology Conference 2017
8	Image-based automated haze removal using dark channel prior	Mohammad Shorif Uddin, Bishal Gautam, Aditi Sarker, Morium Akter, Mohammad Reduanul Haque	5th IEEE Region 10 Humanitarian Technology Conference 2017
9	IoT based street lighting and traffic management system	Mohd. Saifuzzaman, Nazmun Nessa Moon, Fernaz Narin Nur	5th IEEE Region 10 Humanitarian Technology Conference 2017
10	SAISAN: An automated Local File Inclusion vulnerability detection model	Md Maruf Hassan, Touhid Bhuyian, M Khaled Sohel, Md Hasan Sharif, Saikat Biswas	International Journal of Engineering and Technology(UAE)
11	API vulnerabilities: current status and dependencies	Touhid Bhuiyan, Afsana Begum, Sharifur Rahman, Imran Hadid	International Journal of Engineering & Technology
12	Comparative Study of Traditional and Next Generation IPS	Mohammed Nadir Ali, Madihah Mohd Saudi, Touhid Bhuiyan, Azreena Abu Bakar	International Journal of Engineering & Technology
13	A literature review on NoSQL database for big data processing	Md. Razu Ahmed, Mst. Arifa Khatun, Md. Asraf Ali, Kenneth Sundaraj	International Journal of Engineering & Technology
14	Fuzzy logic-based improved ventilation system for the pharmaceutical industry	Sam Matiur Rahman, Mohammad Fazle Rabbi, Omar Altwijri, Mahdi Alqahtani, Tasriva Sikandar, Izzeldin Ibrahim Abdelaziz, Md. Asraf Ali, Kenneth Sundaraj	International Journal of Engineering & Technology

15	Effect of nanostructured surface configuration on evaporation and condensation characteristics of thin	Subrata Kumar Kuri, S. M. Rakibuzzaman, Arefiny Sabah, Jannat Ahmed, and Mohammad Nasim Hasan	AIP Conference Proceedings 1919, 020049 (2017)
16	Adaptation barriers and strategies towards climate change: Challenges in the agricultural sector	Muhammad Mehedi Masud, Mohammad Nurul Azam, Muhammad Mohiuddin, Hasanul Banna, Rulia Akhtar, A.S.A. Ferdous Alam, Halima Begum	Journal of Cleaner Production
17	Effect of differential forest management on biodiversity in a tropical hill forest of Malaysia and implications for conservation	Kazi Mohammad Masum, Asyraf Mansor, Shahrul Anuar Mohd Sah, Hwee San Lim, Md. Kamrul Hossain	Biodiversity and Conservation
18	Community-based ecotourism management for sustainable development of marine protected areas in Malaysia	Muhammad Mehedi Masud, Abdullah Mohammed Aldakhil, Abdelmohsen A.Nassani, Mohammad Nurul Azam	Ocean & Coastal Management
19	Environmental concern: Assessment of meteorological drought	Mohammad Nurul Azam, Md. Anisur Rahman, S.M. Mostafa Kamal, Mahbuba Yeasmin	International Journal of Environment and Sustainable Development
20	A poor country clothing the rich countries: Case of garment trade in Bangladesh	Muhammad Mahboob Ali, Anita Medhekar	Economy of Region
21	Effect of temperature, molar ratio of reactants and amount of catalyst on the yield of alkylation of phenol with benzyl alcohol in the presence of p-toluenesulphonic acid	M.A. Alam, Mohammad Shahruzzaman, Mohammad Shahruzzaman, M.S. Alam, M. Saha	International Journal of Earth Sciences and Engineering
22	Methylcyclohexylation of phenol: A statistical study	Mohammad Shahruzzaman, M.A. Alam, S. Sultana, Fataha Nur Robel, M. Saha	International Journal of Earth Sciences and Engineering
23	Energy perspective of climate change: The case of Bangladesh	B.K. Bala, M.S. Alam, Nipa Debnath	Strategic Planning for Energy and the Environment
24	Marine pollution and the South Asian coastal states: A legal appraisal	Abdullah Al Arif, Md. Ershadul Karim	Macquarie Journal of International and Comparative Environmental Law
25	Facile and Selective Determination of Dipeptides	Hasina Yasmin, Mohammed Shafikur Rahman, Takayuki Shibata	International Journal of Peptide Research and Therapeutics

	Using 3-Methylcatechol as a Novel Fluorogenic Reagent		
26	Phytochemical, antibacterial and anti-oxidant activity of piper longum leaves	Nazneen Ahmeda Sultana, Md. Nazmul hasan Zilani, Kazi Turash Md Taraq, Md Kodor Al-Din	Pharmacologyonline
27	In vitro anthelmintic activity ethanolic leaves extract of gynura procumbens, a prospective medicinal plant	Shaheen SM, Rashid Harun-Or, Anamul Haque, Ferdous W.	Pharmacologyonline
28	Prevalence of water-borne disease in farmgate slum of dhaka city: A case study of disease propagation in Bangladesh	Parvez, A. Rahman, M. M.; Sultana S.;Shaheen, S.M	Pharmacologyonline
29	Determination of different antioxidant compounds from the mangrove plants of pandanus foetidus and avicennia officinalis	Farjana Islam Aovi, Md. Mominur Rahman	Pharmacologyonline
30	Antidiarrheal activity of a mysterious herb, gynura procumbense in albino swiss mice	Shaheen SM1, Rashid Harun-Or, Ferdous W.	Pharmacologyonline
31	Comparative quality evaluation of different brands of ciprofloxacin tablets available in pharmaceutical market of Bangladesh	Mizanur Rahman, M. Asraful .Haque, Nahian Fyrose Fahim	Pharmacologyonline
32	Comparative study on production of bioethanol from banana and yam peel	Sirajo Ismail Isah, Muhammad Idris Abbas, Md. Mominur Rahman	Pharmacologyonline
33	Assessment of phytochemical, cytotoxic, anthelmintic and thrombolytic activity of mikania micrantha leaves: a new addition in phytomedicine	Sabreena Chowdhury Raka1, Sadia Afrin Mishu, Md. Mominur Rahman1and Arifur Rahman	Pharmacologyonline
34	In vitro inhibitory effect of methanol, hexane and ethylacetate extracts of albizia lebbeck (siris tree) stem bark on the activity of alpha glucosidase	Sirajo Ismail Isah, Bilal SirajoMusa, Nahian Fyrose Fahim, Faisal Muhammad	Pharmacologyonline
35	Hypoglycemic and analgesic activity of ethanol extract of polyalthia longifolia leaves on experimental mice	M. Khairuzzaman, A. K. Azad, Ahsan Habib, Atiqur Rahman, Jannatun Ferdous, Ariful Islam, Tauhidur Rahman, G. Tawabul Alam Chowdhury	Pharmacologyonline
36	Evaluation of antioxidant and antimicrobial activity of methanolic extract of Ficus	Sabreena Chowdhury Raka, Arifur Rahman and Md. KabirHasan Kaium	Pharmacologyonline

	Fistulosa Leaves: An unexplored phytomedicine		
37	Pharmacological screening of antidiabetic herbal preparations in streptozotocin induced type-2 diabetic model rats	Rausan Zamir, Nazmul Islam, Anisur Rahman, Masudul Hasan and Omar Faruque	Pharmacologyonline
38	Diagnosis of heart diseases and its treatment approach in urban areas of Bangladesh	Nahian Fyrose Fahim, Afsana Mimi, Mominur Rahman, Fouzia Akter, Sirajo Ismail Isah	Pharmacologyonline
39	Assessment of prevalence and prescription trends of patients with hemophilic disorder	Aklima Akter, Farhana Israt Jahan, Nahid Rahman Esha	Pharmacologyonline
40	Potential antimicrobial activity of achyranthes bidentata methanol extract against both gram (+) ve and gram (-) ve bacteria	Kamal S1., Shaheen Sharif.M. , RahmanM. M., and Rahman S.M.A.	Pharmacologyonline
41	Enhance cell performance of DSSC by dye mixture, carbon nanotube and post TiCl ₄ treatment along with degradation study	Fahmid Kabira, Syed Nazmus Sakib, Sheikh Shehab Uddin, Erteza Tawsif Efaz, Md.Tahmid Farhan Himel	Sustainable Energy Technologies and Assessments
42	Natural convective heat transfer in a square enclosure utilizing magnetic nanoparticles	Latifa M.Al-Balushi, M.J.Uddin. M.M.Rahman	Propulsion and Power Research
43	Predicting career using data mining	Yeasin Arafath, Mohd. Saifuzzaman, umaiya Ahmed, Syed Akhter Hossain	INTERNATIONAL CONFERENCE ON COMPUTING, POWER AND COMMUNICATION TECHNOLOGIES 2018
44	An optimized stand-alone green hybrid grid system for an offshore Island, Saint Martin, Bangladesh	Khandaker Foysal Haque, Nazmus Saqib, Md. Shamim Rahman	International Conference on Energy and Power Engineering (ICEPE),2019
45	Effect of MWCNT's concentration in TiO ₂ based DSSC and degradation study of the cell	Fahmid Kabir, Syed Nazmus Sakib, and Sheikh Shehab Uddin	Journal of Renewable and Sustainable Energy
46	System and cost analysis of stand-alone solar home system applied to a developing country	Chowdhury Akram Hossain, Nusrat Chowdhury, Michela Longo and Wahiba Yaci	Journal of Renewable and Sustainable Energy
47	Assessment of the impact of formalin treatment on the quality and shelf life of mango	Syedeeda Shiraj-Um Monira1, Mohammad Gulzarul Aziz, Subrato Kumar Dey Mondal	CIGR Journaly
48	Effect of the bandgap, sun concentration and surface recombination velocity on the	Syed Farid Uddin Farhad	International Journal of Renewable Energy Research-IJRER

	performance of a III-V bismide multijunction solar cells		
49	An Aspect of Sentiment Analysis: Sentimental Noun with Dual Sentimental Words Analysis	Prosanta Kumar Chaki ; Ikrum Hossain ; Probhas Ranjan Chanda ; Shikha Anirban	International Conference on Current Trends in Computer, Electrical, Electronics and Communication (CTCEEC)
50	Optimization of solar energy system for the electric vehicle at university campus in Dhaka, Bangladesh	Nusrat Chowdhury, Chowdhury Akram Hossain, Michela Longo, Wahiba Yaci	
51	Modelling digital library success using the DeLone and McLean information system success model	Ahmed Ibrahim Alzahrani, Imran Mahmud, Thurasamy Ramayah, Osama Alfarraj, Nasser Alalwan	Journal of Librarianship and Information Science
52	Structural equation approach to investigate trip-chaining and mode choice relationships in the context of developing countries	Md. Hadiuzzaman, Nahid Pervez Farazi, Sanjana Hossain, Saurav Barua, Farzana Rahman	Transportation Planning and Technology
53	Use of e-learning at higher educational institutions in Bangladesh: Opportunities and challenges	Md Fouad Hossain Sarker, Rafi Al Mahmud, M. Saiful Islam, Md Kabirul Islam	Journal of Applied Research in Higher Education
54	System and Cost Analysis of Stand-Alone Solar Home System Applied to a Developing Country	Chowdhury Akram Hossain, Nusrat Chowdhury, Michela Longo and Wahiba Yaïci	Sustainability (Switzerland)
55	Analysis of Complex Networks for Security Issues using Attack Graph	Tanvirali Musa, Kheng Cher Yeo, Sami Azam, Bharanidharan Shanmugam, Bharanidharan Shanmugam, Asif Karim, Friso De Boer, Fernaz Narin Nur, Fahad Faisal	Journal of Applied Research in Higher Education
56	An Intelligent and Secured Tracking System for Monitoring School Bus	Asif Ahmed ; M M Rayhan Parvez ; Md Hridoy Hasan ; Fernez Narin Nur ; Nazmun Nessa Moon ; Asif Karim ; Sami Azam ; Bharanidharan Shanmugam ; Mirjam Jonkman	International Conference on Computer Communication and Informatics (ICCCI)
57	Self-Assessed Health Status among Ethnic Elderly of Tea Garden Workers in Bangladesh	Md Kamrul Hossain, Kanis Fatama Ferdushi, Hafiz T. A. Khan	Ageing International

58	Prevalence and predictors of tobacco smoking among university students in Sylhet Division, Bangladesh	Muhammad Shaikh Hassan, Md Kamrul Hossain, Hafiz T A Khan	International Health
59	Prediction of whiteness index of cotton using bleaching process variables by fuzzy inference system	Abu Naser Md. Ahsanul Haque, Shamima Akter Smriti, Manwar Hussain, Nawshin Farzana, Fahmida Siddiqa, Md. Azharul Islam	Fashion and Textiles
60	BanglaMusicStylo: A Stylometric Dataset of Bangla Music Lyrics	Rafayet Hossain, Ahmed Al Marouf	International Conference on Speech and Language Processing (ICBSLP)

4. CURRICULUM TO SUPPORT SDGS

Daffodil International University has been providing higher education to the youths especially the rural citizens of Bangladesh who come from low income families. DIU has several programs that are related to sustainability and which work for the implementation of the sustainable development goals of the United Nations.

Daffodil International University since its inception in 2002, has been striving to introduce timely and demanding courses along with state of the art facilities for the students to be able to acquire skills and qualities to enter the national and international job markets. Hence, each year latest courses are introduced along with the new Departments to meet the rising demands of the industry. An overview of SDG related courses as per different disciplines are stated in the following section.

4.1. Sustainability Related Academic Courses in Different Disciplines

Courses related to environment and sustainability		
Sl.	Name of the Course	Department
1.	Introduction to Environmental Science and Disaster Management	Environmental Science and Disaster Management
2.	Geography and Environment	
3.	Environmental Biology	
4.	Environmental Biology lab	
5.	Soil and Environment	
6.	Environmental Economics	
7.	Bangladesh : Physical Environment	

8.	Fundamentals of Ecology	
9.	Introduction to Geographic Information System	
10.	Introduction to Geographic Information System Lab	
11.	Environmental Engineering	
12.	Environmental Chemistry	
13.	Environmental Chemistry with Lab	
14.	Environmental Resource Management	
15.	Statistics for Environmental Sciences	
16.	Forest and Wildlife Management	
17.	Environmental Hazard and Disaster Management	
18.	Fundamentals of Earth Sciences	
19.	Remote Sensing and GIS	
20.	Remote Sensing and GIS Lab	
21.	Fundamentals of Hydrosphere	
22.	Climatic Disaster Management	
23.	Environmental Pollution and Management	
24.	Database System Concepts	
25.	Database System Concepts Lab	
26.	Water Resources Planning & Management	
27.	Coastal & Marine Environmental Management	
28.	Biodiversity Conservation	
29.	Remote Sensing for Resource Appraisal	
30.	Remote Sensing for Resource Appraisal Lab	
31.	Urban Environmental Issues & Planning	
32.	Environmental Impact Assessment	
33.	Environmental Monitoring and Auditing	

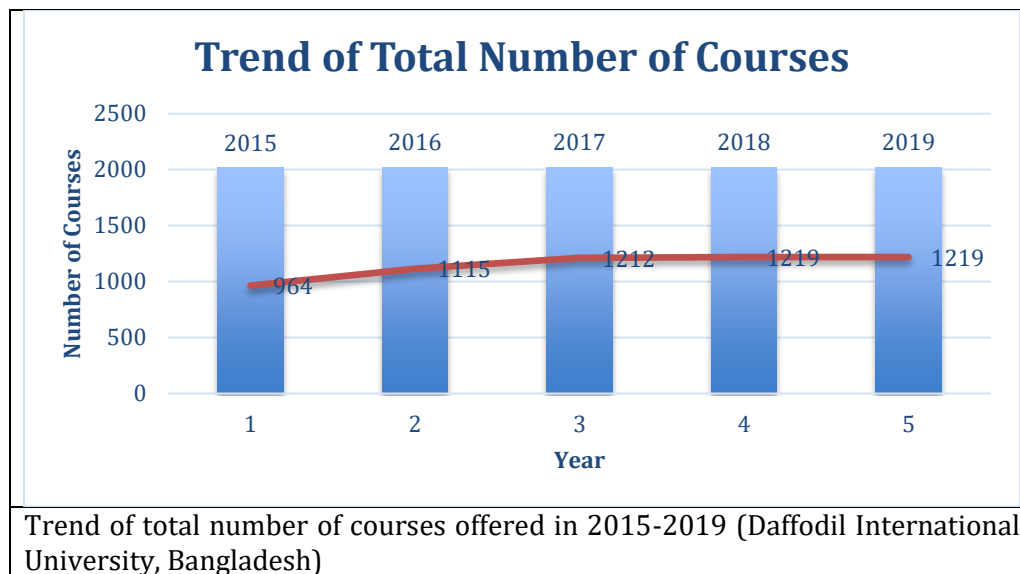
34.	Research Method (Project Design)		
35.	Urban Waste and Effluent Management		
36.	Environmental Modeling		
37.	Seminar (Pre-approved Topic)		
38.	Public Health and Environment		
39.	Gender and Environment		
40.	Environmental Laws and Ethics		
41.	Instrumental Methods for Environmental Analysis		
42.	Landscape Simulation and Perception		
43.	Project and Seminar		
44.	Development Theories, Strategies and Issues		Development Studies
45.	Poverty Alleviation and Development		
46.	Gender and Development		
47.	Governance and Development		
48.	Sustainable Development		
49.	Research Methodology		
50.	Basic Statistics for Development		
51.	Project Management		
52.	Natural Resource Management		
53.	Development Evaluation and Management		
54.	Rural Development	Nutrition and Food Engineering	
55.	Introduction to Food Science and Technology		
56.	Physical, Inorganic and Analytic Chemistry		
57.	Methods for Nutritional Status		
58.	Statistics and Probabilities		

59.	Dietetics	
60.	Food Microbiology	
61.	Fruits and Vegetable Technology	
62.	Clinical Nutrition	
63.	Nutrition in Health and Disease	
64.	Water and Beverage Technology	
65.	Nutritional Planning	
66.	Environmental Food Technology	
67.	Food Preservation and Engineering	
68.	Sensory Evaluation	
69.	Food Storage Engineering	
70.	Organic Pharmacy	Pharmacy
71.	Biochemistry and Molecular Biology	
72.	Bangladesh Studies	
73.	Statistics and Probability	Computer Science & Engineering
74.	Art of Effective Living	
75.	Project Management	Multimedia and Creative Technology
76.	Business Statistics	Business Administration
77.	Organizational Behavior	
78.	Legal Environment in Business	
79.	Entrepreneurship Development	
80.	Research Methodology	
81.	Bangladesh Studies: Socio-Economic Perspective	
82.	Art of Living	
83.	Environmental Science and Business Management	

84.	Economic Geography	
85.	Projects Appraisals and Management	
86.	Agricultural Marketing	
87.	Disaster Management	
88.	Entrepreneurship	Innovation and Entrepreneurship
89.	Art of Living	
90.	Environmental Issues in Real Estate	
91.	Geographical Information System in Real Estate	Real Estate
92.	Urban Land Use and Development	
93.	Urbanization & Regional Development	
94.	Research Project in Real Estate	
95.	Sustainable Land Use Planning and Management	
96.	Public Land and Natural Resources Laws	
97.	Geographical Information System	Tourism and Hospitality Management
98.	Entrepreneurship	
99.	Sustainable Tourism	
100.	Tourism Impact and Sustainability	
101.	Bangladesh: Land and Culture	Journalism and Mass Communication
102.	Art of Living	
103.	Communication Research Methodology	
104.	Statistics for Social Research	
105.	Health and Population Communication	
106.	Legal Research Methodology	Law
107.	Art of Living	
108.	Environmental Law	
109.	Renewable Energy Technology	

110.	Radar and Navigation	Electronics & Telecommunication Engineering
111.	Statistics and Probability	
112.	Environmental Mgt. in Textile & Allied Industries	Textile Engineering
113.	Climate Responsive Architecture	Architecture
114.	Ecology	
115.	Green Architecture and Sustainable Development	
116.	Luminous Environment in Architecture	
117.	Water Management in Buildings	
118.	Sustainable Architecture	
119.	Sonic Environment in Architecture	
120.	Environmental Design and Disaster Studies	
121.	Architectural & Urban Conservation	
122.	Research Method	
123.	Geology and Earthquake Engineering	Civil Engineering
124.	Environmental Engineering	
125.	Environmental Engineering Lab	
126.	Water Resource Engineering	
127.	Water Resource Engineering Lab	
128.	Climate Change and Sustainable Development	
129.	Biostatistics	Public Health
130.	Research Methodology	
131.	Occupational and Environment Health	
132.	Environment Health Toxicology	
133.	environmental policies, strategies, Regulation and occupational Environmental & Disease	

The following graph indicates an increase of number of courses introduced in the recent years.



5. STUDENT CLUB FOR PROMOTING SDGs

The University has a number of active students' clubs and associations which are working on sustainable initiatives. DIU student clubs are encouraged to organize national and international events having collaborations with the relevant NGOs, Industries and Government entities. Required funding is provided from the university to make the programs a success. Respective academic departments and institutes assign the faculty members to lead the students in this regard.

5.1. Students' Club and Associations

- Cultural Club
- DIU HR CLUB.(DIUHRC)
- DIU Creative Park
- DIU Bangladesh Study Form
- Sports Club
- DIU Computer and Programming Club (DIUCPC)
- Daffodil Prothom-Alo BondhuShova
- DIU Nature Study Club (DIUNSC)
- DIU Health Club (DIUHC)
- DIU Communication Club
- DIU Pharmacia Club
- DIU Creative Park (Dept. of MCT)
- DIU MUNA (Model United Nations Association)
- Career Club
- Entrepreneurship Club
- School of Entrepreneurs
- Business & Education Club
- Real Estate Association
- Software Engineering Club (SEC)
- DIU Volunteer Service Club
- English Literary Club
- Software Engineering
- Voluntary Service Club
- Air Rover Wing
- Robotics Club
- All Stars Daffodil
- Adventure Club

- DIU Film Society
- Daffodil Civil Engineering Club
- Business Round-Up & Motivational Cell (BRMC)
- Change Together

The following photographs bear the evidences of students' participation in the events arranged round the year on different occasions.



Youthmappers Club training at (DIU)



DIU Cultural Club Organized First Listen Session with Band team 'ArtCell'



Daffodil International Model UN 2020



Warm Clothes Destitution by DIU BNCC



DIU Voluntary Club Distributed Warm Clothes to Destitute People

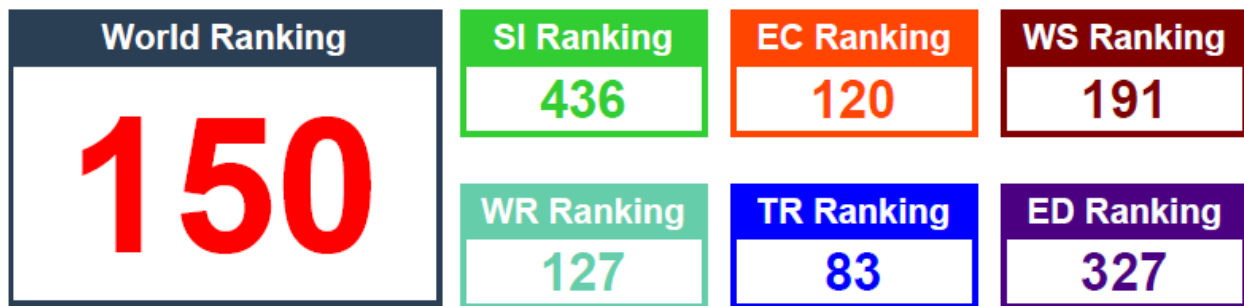
6. INTERNATIONAL RECOGNITION

Daffodil International University achieved certificate of achievement from Kaufland Sustainability Initiative for its excellent contribution in chemical management and root cause analysis.

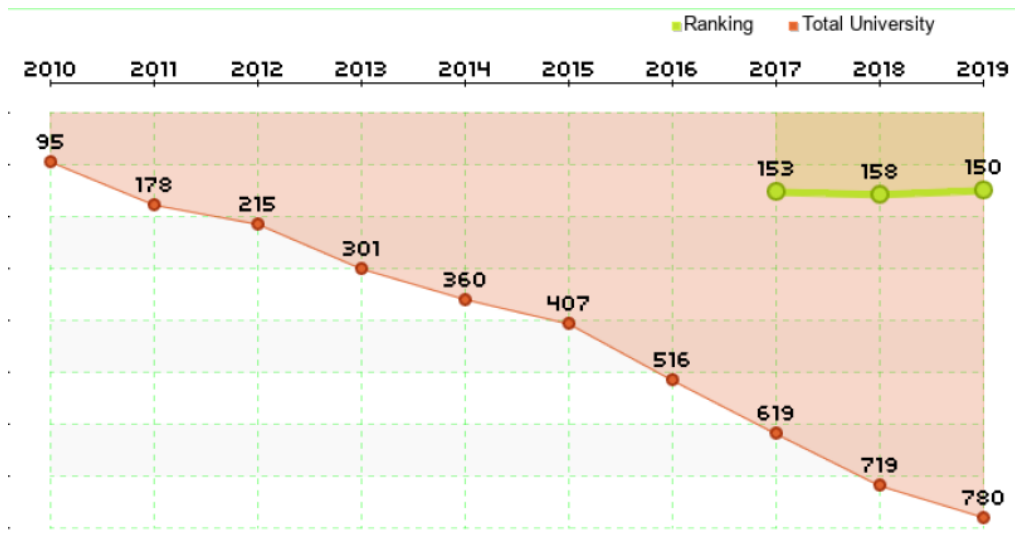
6.1. UI GreenMetric World University Rankings:

DIU Achieves 150th position globally in the UI Greenmetric world university rankings-2019. UI GreenMetric World University Rankings is an annual publication of university rankings on sustainability. It is an initiative from the University of Indonesia that ranks universities around the world based on their commitment and actions towards sustainability. UI GreenMetric World University Rankings aims to increase university awareness towards sustainability.

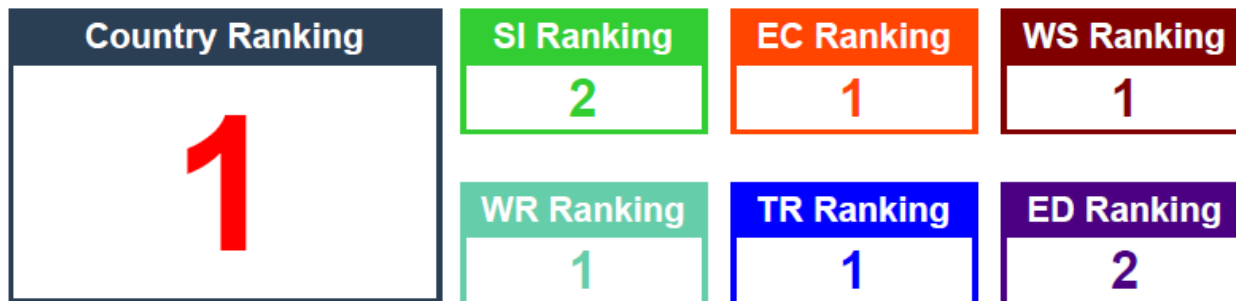
WORLD RANKINGS RESULTS SUMMARY



WORLD RANKINGS HISTORY



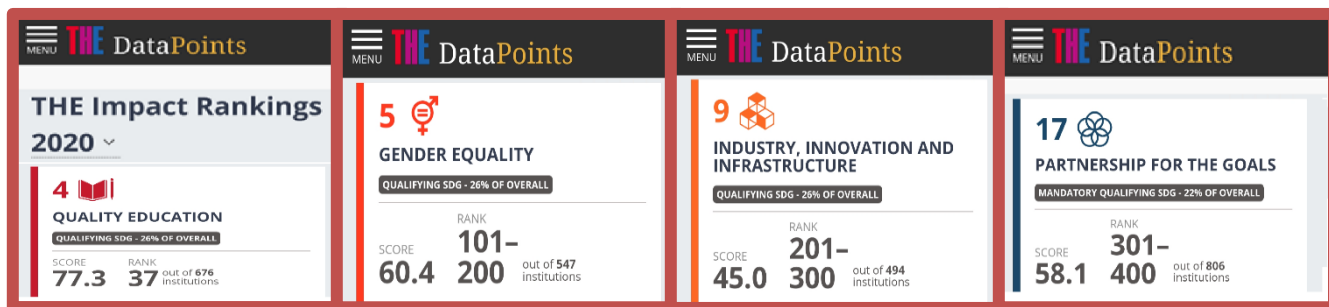
RANKING POSITION IN BANGLADESH



Sustainability Report 2020

6.2. Times Higher Education University Impact Rankings

DIU Achieves Prestigious Position in THE Impact Rankings-2020

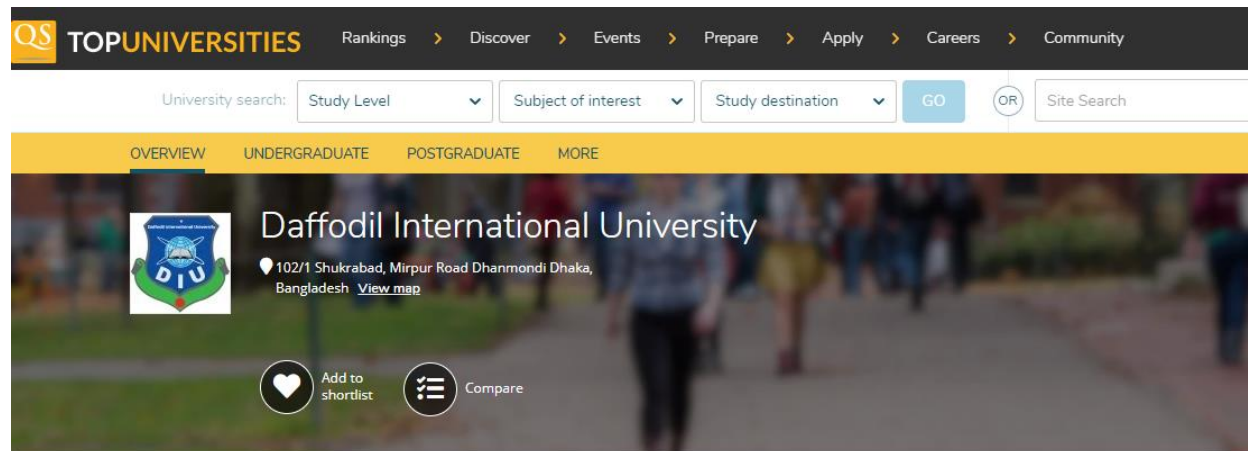


It is great achievement that Daffodil International University (DIU) has been [ranked 37th](#) globally on Quality Education (SDG-4) in the *Times Higher Education (THE) Impact Rankings-2020*, released on 22 April, 2020. Besides, DIU has been ranked in the range of 301 to 400 that is, its overall position falls within top 400 global universities in THE Impact Rankings-2020. The Impact Rankings are the only global performance tables that assess universities against the United Nations’ Sustainable Development Goals. This result is based on the contributions towards several Sustainable Development Goals set by the United Nations.

The ranking list can be viewed at:

[https://www.timeshighereducation.com/rankings/impact/2020/overall#!/page/0/length/25/locations/BD/sort by/rank/sort_order/asc/cols/undefined](https://www.timeshighereducation.com/rankings/impact/2020/overall#!/page/0/length/25/locations/BD/sort%20by/rank/sort_order/asc/cols/undefined).

6.3. QS Asia University Ranking-2019



Daffodil International University (DIU) has achieved a prestigious position in QS Asia University Rankings-2019. In terms of Academic Reputation criterion of the ranking, DIU obtained 3rd position among the Bangladeshi universities and was placed just after University of Dhaka and BUET. This recognition signifies DIU's continuous commitment to implement and sustain the quality education and research at tertiary level of Bangladesh as well as quality employment of DIU graduates.

The key indicators of this QS Asia University Rankings are: Academic Reputation (academic collaboration in terms of research), Employer Reputation (an educational quality indicator), Faculty Student (ratio), Staff with PhD, Research (Scopus Publications: paper per faculty, citations and international research network), International Students, International Faculty and Inbound as well as outbound students' exchange program.



OVERALL RANK
451-500

THE INSTITUTION HAS
BEEN INCLUDED IN THE
QS ASIA UNIVERSITY
RANKINGS FOR THE
FIRST TIME EVER.

6.4. International Collaboration with Millennium@edu for sustainable education



Recently, a memorandum of understanding (MoU) was signed between Millennium@edu Sustainable Education and Daffodil International University (DIU). The purpose of the MoU was to implement development projects, in a collaborative manner for example, 'Sustainable@edu project' in Bangladesh. With the signing of this MoU, both institutions agreed to undertake different initiatives to materialize jointly through organizing workshops at DIU which was expected to promote international collaborations. Additionally, there was a plan to promote knowledge sharing and leadership skills of the stakeholders in the area of education technology. However, key responsibility was imposed on the Daffodil International University because of their abilities and expertise.

6.5. Certificate from Kaufland Sustainability Initiative

DIU has a long tradition of involvement in the international collaborations with their partners especially in the development sector. Due to their active participation in the Detox Project 2019, Kaufland Sustainability Initiative acknowledged DIU's contribution in a formal gathering. A certificate was also handed over to the DIU representative in the event which is presented below.



6.6. 'Rookie of the Year' Award in Global Entrepreneurship Congress 2019



The Department of Innovation & Entrepreneurship of Daffodil International University has won the 'Rookie of the year' Award for its outstanding performance in promoting GEN Entrepreneurial effort countrywide in the year 2019. During the year Daffodil International University hosted a huge number of events, workshops and meetings to educate and engage the SMEs of all levels and motivate entrepreneurship in Bangladesh. The recognition was offered considering the outreach programs and success of its initiative.

6.7. Meena Media Award 2019, UNICEF

The students of the Department of Multimedia and Creative Technology (MCT), participated in a competition in Dhaka and achieved Meena Media Award 2019, UNICEF for the Director in "Visual Creative" Category. MCT is a pioneering department at DIU for their quality of course outcomes and maintaining standard of educational quality in the area of 3D modeling and animation, Visual Effects (VFX), Creative Designs etc. No university in Bangladesh offers this kind of creative programs.



6.8. Prime Minister Award for Tree Plantation and Beautification



Daffodil International University (DIU) achieved this Award from the Honorable Prime Minister, Government of the People's Republic of Bangladesh for Tree Plantation and Beautification of Dhaka City. DIU has been taking care of the two Roads' plantation, development & management since 2005. Total area is approximately six kilometers.

With this beautification project, DIU wants to convey the message to the society to stand against global warming and undertake similar plantation initiatives throughout the country. Huge number of trees have been planted on the traffic islands under this project. It really gives a charming look while plying through the areas. The lush, colorful islands overwhelmed by various trees, planted by the DIU authority gives a feeling of coolness in the hot summers, and humid environment in the winters.

6.9. Sustainable Development Goals HelpDesk Membership

The Sustainable Development Goals Help Desk is a one-stop online service providing access to Sustainable Development Goal (SDG)-related tools, knowledge, products, data portals, expertise, advice and opportunities for peer-learning and regional South-South cooperation through thematic areas, covering a multitude of topics. Daffodil International University achieved the membership of the [Sustainable Development Goals HelpDesk](#).





6.10. Women's Participation Award

YouthMappers Club at Daffodil International University achieved the 'Women's Participation Award-2020' for their engagement in leadership of women empowerment and participation in different youth forums. Membership of a majority portion (more than 50%) of female student mappers into their YouthMappers Chapter, are enriching the network and program activities.

6.11. Sustainable Development Solutions Network Membership

DIU Got Membership of Sustainable Development Solutions Network in 2019. The UN Sustainable Development Solutions Network (SDSN) was set up in 2012 under the auspices of the UN Secretary-General. SDSN mobilizes global scientific and technological expertise to promote practical solutions



for sustainable development especially the achievement of Sustainable Development Goals (SDGs) and the Paris Climate Agreement indicators. SDSN works closely with the United Nations agencies, multilateral financing institutions, the private sector, and civil society. SDSN is guided by a Leadership Council, which brings together global sustainable development leaders from all regions and all sectors, including civil society, public, and private sectors. The Leadership Council acts as the board of SDSN. Much of SDSN's work is led by National or Regional SDSNs, which mobilize knowledge institutions around the SDGs. Our research & policy work organizes experts from around the world on the technical challenges for implementation of the SDGs and the Paris Climate Agreement. The SDG Academy leads the education work of the SDSN.

6.12. Achievement of Bangabandhu Innovation Grant (BIG)

A team of DIU students cognition.ai won the Bangabandhu Innovation Grant (BIG) to Startup Chapter 2 in the Digital Device and Innovation Expo 2019 award giving ceremony held at Pan Pacific Sonargaon Dhaka on 16 October 2019. The DIU team demonstrated an Artificial Intelligence based android app that can detect any kind of skin disease using smartphone camera.



The team was led by Prapty Rahman along with Farzana Yesmin Jule & Gausul Azam, students of the Department of Computer Science & Engineering (CSE), Daffodil International University & Mentored by Md. Rezwan Islam, Adj. Asst. Professor of the Department of CSE. They won a grant of 10 lacs from Startup Bangladesh, IDEA Project of ICT Division for developing their startup and create a revolution in the field of healthcare of Bangladesh aligning the digital Bangladesh vision of our government.

6.13. Contribution to Sustainable Research in ICT Sector

A team comprised of a student and a faculty member of the Department of Computer Science & Engineering (CSE), DIU participated in the BASIS ICT Award. The DIU team achieved the first runner up award in the research and development category as announced by the BASIS National ICT Awards 2019 for their outstanding contribution to the ICT sector of Bangladesh. Daffodil International University has been a partner and collaborator of BASIS for a long time and cultivates introducing ICT in various sectors of Daffodil Family (DF)



6.14. “Bangladesh Education Leadership Award 2019”



Country’s renowned Architect Professor Dr. Md. Khairul Enam, Head, Department of Architecture, Professor Dr. Mahabub Ul Haque, Head, Department of Textile Engineering and Professor Dr. Harun Ar Rashid, Head, Department of Public Health of Daffodil International University have received “Bangladesh Education Leadership Award 2019” as the best Professor in their respective fields for their outstanding performances and pioneering role for academic improvements, Research development, and promoting Leadership and Teaching endeavors. The World Education Congress, CMO Asia and the CMO Council, jointly extended the Bangladesh Education Leadership Awards 2019 to these academicians at a function held at the Pan Pacific Sonargaon Hotel in

Dhaka on September 08, 2019.

7. SDG POLICY GUIDELINES

7.1. Policy Guidelines on Implementation of Sustainable Development Goals (SDGs)

According to the United Nations, Sustainable Development Goals (SDGs) were adopted by its member states to end poverty, protect the planet and ensure that all people enjoy peace and prosperity by 2030. The proper integration of policy interventions in all 17 areas of SDGs will lead to take action in one area will affect outcomes in others and eventually development must balance social, economic and environmental sustainability. As a higher education institute, Daffodil International University (DIU) is committed to respond to this universal call for SDGs and take actions to comply with the United Nation’s endeavor and to support the Government of Bangladesh for achievement of desired outcomes. In this regard DIU is working closely with the Government, private sector, civil society and citizens jointly for implementation of SDGs and to make sure that the coordinated effort can create a better and sustainable planet for the future generations. With an aspiration to work for SDGs, DIU has formulated a number of policy guidelines

Higher Education Institutions have a pivotal role to play in educating the people regarding the targets of sustainable development goals (SDGs) set by the United Nations and facilitate achieving the national SDG targets of any country. Education and research have been mentioned in a number of sustainable development goals (SDGs). Daffodil International University (DIU) strives to

formulate a policy on SDGs to take initiatives to adopt sustainable practices in its all development activities as part of its societal and environmental responsiveness. SDGs have open up a new horizon for DIU to explore its capability, readiness and initiatives towards ensuring sustainable development aligning with the national SDGs targets as well as contribution to the global sustainable development initiatives.

- Building awareness among university stakeholders, government and non-government counterparts regarding sustainable development goals and involve them for implementation of SDGs.
- Identify challenges, opportunities, targets and gaps for ensuring the true achievement of the SDGs.
- Undertake various research projects and conduct research by the relevant departments and sections of DIU for innovations and solving projects with regard to achievement of SDGs.
- Encourage researchers to collaborate with foreign university faculty members for research and publications.
- Conduct events, demonstrations, activities in collaboration with the government and NGOs for implementation of SDGs.
- Develop a sustainable development culture at the university as well as in the country for ensuring a sustainable living environment for future generations.

DIU library will do promotional activities to disseminate the policy among the local communities and take necessary initiatives for implementation of this policy. The Librarian will take record of use of library by the local communities. He will also make a yearly report and submit the report to the Vice Chancellor and the Division of Research of the university.

Policy

1. There will be an approved central SDGs committee in DIU to identify the current status of knowledge on targets of SDGs.
2. The approved central SDGs committee will form separate subcommittees in each academic department to look after all the relevant SDGs aligning with the central targets and initiatives of DIU. The following matrix will be helpful for playing role by each academic departments and division of the university.
3. Responsibilities of the departments for implementation of corresponding SDGs are indicated in the following table.

SDGs and assigned Departments	Activities
SDG 1 : End poverty in all its forms everywhere Department of Entrepreneurship and Department of Student Affairs	<ul style="list-style-type: none"> ○ Create entrepreneur, encourage entrepreneurship , conducting research ○ Organize awareness building programs, dissemination of innovations and good practices ○ Collaboration with relevant government and NGOs

<p>SDG 2 : End hunger, achieve food security and improved nutrition and promote sustainable agriculture Department of Nutrition & Food Engineering</p>	<ul style="list-style-type: none"> ○ Undertake projects, conduct collaborative research, dissemination of good practices among the citizens, involve neighboring communities and stakeholders ○ Provide support to communities involving students and teachers for motivation and changing their food habit.
<p>SDG 3 : Ensure healthy lives and promote well-being for all at all ages Department of Public Health</p>	<ul style="list-style-type: none"> ○ Conduct research and publish papers ○ Work closely with the local communities of all ages to ensure their healthy lives ○ Provide counseling and guidance in a regular manner ○ Update statistics of the services given to the citizen and the number got benefits
<p>SDG 4 : Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all Institutional Quality Assurance Cell IQAC)</p>	<ul style="list-style-type: none"> ○ Undertake analyses of the four targets (sub-categories) of SDG 4 and define activities relevant to all the four categories ○ Make a five-year plan for implementation of the activities relevant to higher education. Share the plan with all the departments for implementation. ○ Involve all the departments and faculty members to undertake the tasks ○ Promote use of communication technologies at all levels for quality education ○ Review progress on a regular basis and identify improvements and weaknesses for further development ○ Take initiatives to support other three agenda of Quality Education (SDG4)
<p>SDG 5 : Achieve gender equality and empower all women and girls Directorate of Students' Affairs Disciplinary Committee</p>	<ul style="list-style-type: none"> ○ Monitor and promote implement the existing policy of the university ○ Ensure rights and facilities for women and girls working and studying in the university ○ Disseminate the results and impact to other organizations/ institutions for their encouragement and implementation of the issues related to SGD5

<p>SDG 6 : Ensure availability and sustainable management of water and sanitation for all</p> <p>Department of Environmental Science & Disaster Management (ESDM) Department of Civil Engineering (CE) Planning & Development Division</p>	<ul style="list-style-type: none"> ○ Monitor the water and sanitation facilities available to the stakeholders within the campus and neighboring communities ○ Highlight the real picture of the neighboring citizens to the government and NGOs who are responsible for them ○ Ensure the facilities within the university campuses. Make proposals for budget every year to fulfil demand of the users
<p>SDG 7 : Ensure access to affordable, reliable, sustainable and modern energy for all</p> <p>Department of Electrical & Electronic Engineering (EEE) Department of Architecture Planning & Development Division</p>	<ul style="list-style-type: none"> ○ Undertake new projects and promote implementation of the ongoing projects on sustainable and modern energy for all ○ Involve government and NGOs for implementation of the projects ○ Collaborate with the international partner universities for implementation of the joint projects and funding ○ Conduct research involving the students and the teachers
<p>SDG 8 : Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all</p> <p>Department of Business Administration (BA) Department of Real Estate (RE) Department of Innovation & Entrepreneurship (IE)</p>	<ul style="list-style-type: none"> ○ Conduct empirical research to discern achievement of SDG 8 in the context of Bangladesh ○ Review best practices of the other successful countries and take initiatives for implementation with collaboration of the relevant Ministry/Division of the Government
<p>SDG 9 : Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation</p> <p>Planning & Development Department of Architecture Division of Research</p>	<ul style="list-style-type: none"> ○ Conduct research and create innovative design for Infrastructural development in the context of Bangladesh ○ Work closely with the government for promoting targets of the governments related to SDG9
<p>SDG 10: Reduce inequality within and among countries</p> <p>Department of Students' Affairs Disciplinary Committee</p>	<ul style="list-style-type: none"> ○ Monitor inequality issues in within the university ○ Promote advocacy to remove barriers if any with the university

	<ul style="list-style-type: none"> ○ Disseminate best practices and examples to the other institutions, industries, office environments ○ Collaborate with the government to ensure achievement at all sectors ○ Conduct demonstrations for awareness building throughout the country involving NGOs who are working implementation for SDG10
<p>SDG 11: Make cities and human settlements inclusive, safe, resilient and sustainable</p> <p>Department of Architecture Planning & Development</p>	<ul style="list-style-type: none"> ○ Make a plan to demonstrate history and trend of human settlement, and innovations ○ Do research to identify future realist and sustainable settlement approach in the context of Bangladesh
<p>SDG 12: Ensure sustainable consumption and production patterns</p> <p>Planning & Development Department of Civil Engineering Department of Textile Engineering</p>	<ul style="list-style-type: none"> ○ The assigned Departments will identify the research gaps in the proposed area ○ Undertake research projects in collaboration with the relevant government institutions and international partner universities
<p>SDG 13: Take urgent action to combat climate change and its impacts</p> <p>Department of Environmental Science & Disaster Management Department of Electrical & Electronic Engineering</p>	<ul style="list-style-type: none"> ○ Take initiatives for implementations of the current research projects ○ Conduct research and disseminate knowledge to all stakeholders including the government ○ Conduct awareness building program on a regular basis ○ Collaborate with the government Ministries and departments to promote implementation of SDG13
<p>SDG 14: Conserve and sustainably use the oceans, seas and marine resources for sustainable development</p> <p>Department of Environmental Science & Disaster Management (ESDM)</p>	<ul style="list-style-type: none"> ○ Undertake research in collaboration with the partner universities at home and abroad ○ Publish papers in Journals and conferences to disseminate knowledge
<p>SDG 15: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss</p> <p>Department of Environmental Science & Disaster Management (ESDM)</p>	<ul style="list-style-type: none"> ○ Undertake research in collaboration with the partner universities at home and abroad ○ Publish papers in Journals and conferences to disseminate knowledge

Planning & Development	
<p>SDG 16: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels</p> <p>Department of Development Studies Department of Law Department of Journalism & Mass Communication</p>	<ul style="list-style-type: none"> ○ Make a plan to design several activities and conduct awareness buildings programs involving the teachers and the students ○ Conduct survey to figure out adverse practices of the society and demands of the citizens ○ Take help from different electronic and print medias to highlight the relevant issues ○ Work closely with the government departments for bringing a changes in the society a s a whole
<p>SDG 17: Strengthen the means of implementation and revitalize the Global Partnership for Sustainable Development</p> <p>Department of Development Studies Division of Research International Affairs Division of Students' Affairs</p>	<ul style="list-style-type: none"> ○ As a higher education institution develop several models of achievements of SDGs in different country contexts ○ Collaborate with the Ministry of Planning and other relevant ministries to collect documents/ evidence to understand up to date achievement of SDGs (1-17) ○ Establish networking with the government and NGOs for organizing joint programs and provide funding for implementations of projects, initiatives, events, demonstrations etc. throughout the countries ○ Conduct research on achievement of sustainable development goals ○ Make a yearly report on achievement of sustainable development goals in the content of Bangladesh and contribution from Daffodil International University

4. Each subcommittee will undertake necessary initiatives within their SDG(s) horizon to comply the central targets of DIU related with SDGs. The initiatives may include (but not limited to):
 - a. Formulating other relevant policies (if required)
 - b. Organizing events/cross discipline dialogues with the Government agencies/NGOs/other organizations
 - c. Conducting survey(s) and research on specific SDGs targets for finding an easy way for achievement of the targets
 - d. Partnering, collaborating and cooperating with the initiatives of the Government and NGOs with a view to implement the specific targets of relevant SDG(s)
 - e. Involving students and local community in the SDG related initiatives

- f. Creating awareness among students, teachers, guardians, non-academic staff, local community etc. regarding the SDGs and their positive impact on the world.
 - g. Participating in relevant events, organized by others, both at home and abroad.
 - h. Developing necessary recommendations and comments which are significant for ensuring implementation of targets of SDGs and share the same (through DIU central SDGs committee) with the Government for inclusion in their policy initiatives.
5. Each subcommittee will keep record of each initiative and preserve those for future requirement
 6. Each subcommittee will prepare an annual report incorporating all of its initiatives during that particular year and submit the report to the Convener of the central SDGs committee as per their given timeline.
 7. The Central SDGs committee will guide and monitor the activities and initiatives of all subcommittees through holding at least two meetings per year to ensure that they are working in the right track.
 8. Each subcommittee will hold at least three meetings for planning and implementation of their targets, initiatives and activities.

All the subcommittees and the central SDG committee will be reportable to the Vice Chancellor of the university.

7.2. Policy for Creating Opportunities for Local Communities for Accessing Library Resources

As an academic institution Daffodil International University has responsibilities towards educating its local communities. DIU library has huge number of print and online resources in a wide range of disciplines. The local communities of all ages can have benefit from reading these resources in the library. A separate corner of the library will be used for this category of readers.

The purposes of this initiative are to acquaint the local people with the resources of DIU, involve them in using different types of resources, for example, printed materials, audio, and videos and enhance their knowledge of the society, international current affairs, health and safety issues, disaster tackling strategies etc.

1. All students of Daffodil International University and outsiders/local people will have on site access to DIU Library.
2. The outsiders/local general people will be allowed to access DIU library educational resources everyday (except weekend and holidays) from 3 p.m. to 5 p.m.
3. Library will make special provisions as needed to permit users with disabilities to examine sources, retrieve materials, and access services through the assistance of DIU library staff.
4. DIU students will have to show their valid identity card, provided by the university while the outsiders/local general people will be required to produce other acceptable identification and sign in before entering the DIU Library premises.
5. Everyone who intends to enter and use the DIU library facilities will have to keep their bag, mobile phone, electronic device and any other belongings in DIU locker free of cost. They may

- be asked to show the contents of their backpacks, book bags, briefcases etc. if it seems required by the Library security staff.
6. Everyone (DIU students, Staff and outsiders/general public) needs to surrender their identity card (University ID card for DIU students and Staff; and National ID card or any other equivalent ID for local people/outside) to the Library officials before using any library resources (Books, journals, periodicals, published research articles, research reports etc.
 7. There will be a corner for daily newspaper reading with access to all in general.
 8. Only DIU students and staff will be eligible to borrow library resources for a certain period of time with completing an online guarantee form that s/he will be responsible if any damage is done with the borrowed resource(s). There will be online arrangement for borrowers to see their borrowing history and status through their user profile, provided by DIU Library upon registration by eligible borrower.
 9. The users will also get free access to library educational resources through online library facility though outsiders/local general public will get limited access to its resources.
 10. The information services of DIU Library are available to all individuals on site, by telephone, by correspondence, and electronically. There will be facility of photocopier machine in the library for use by all individuals (both DIU stakeholder and outsiders) on site for which they will be charged.
 11. DIU Library will provide a noiseless, healthy atmosphere which is conducive for individual study and research. The library will also ensure a comfortable, neat & clean, and safe place for both library users and library staff. No one is allowed to make noises or disturb other users in the library. If anyone violates the rule, s/he may be asked to leave the place immediately, otherwise, administrative measures will be taken against him/her through the Disciplinary Committee of DIU as per the code of conduct policy of the university.
 12. DIU library will do promotional activities to disseminate the policy among the local communities and take necessary initiatives for implementation of this policy. The Librarian will take record of use of library by the local communities. He will also make a yearly report and submit the report to the Vice Chancellor and the Division of Research of the university.

7.3. Pedestrian Walkway Safety Policy

PURPOSE

The purpose of the Pedestrian Walkway Safety Policy is to ensure the safety of the pedestrians in the walkways which they use for their safe movement within the university campus. Moreover, another intention is to create awareness of the wheeled vehicles drivers from entering those walkways of the pedestrians. The Policy will also help the university stakeholders to be conscious about their health and safety by using walkways within the university campus.

RULES

1. The walkways at the university campus are supposed to be used by students, teachers, administrative employees, guardians, guests, and other stakeholders as pedestrian walking.

2. The security personnel will monitor and ensure that no vehicular movement in the pedestrian walkways. Vehicular movement may be allowed for any special situation but not as a regular practice which will be approved and monitored by campus administration.
3. Emergency Service Vehicles, such as: firefighting vehicles, ambulance, and police car will be allowed to access the pedestrian walkways when responding to emergency situations.
4. There will be special arrangements in the walkways for facilitating the movement of especially abled persons/persons with disability.
5. The campus administration will be responsible for keeping the walkways clean and dust-free.
6. There will be small benches under the tree shade beside the walkways so that the pedestrian may sit over there if they feel tired of walking
7. Bi-cycles are allowed in the walkways but motorcycles and other motorized vehicles are prohibited in the walkways.
8. No vehicles (irrespective of motorized and non-motorized) are allowed to park in the walkways which impedes the pedestrian movement.
9. If anyone violates the above rules of this policy guidelines, s/he will be monetarily penalized and issued official show cause letter.
10. The policy will be circulated widely among all stakeholders

7.4. Zero Emission Policy

BACKGROUND

According to United Nations Sustainable Development Goals (SDGs) were adopted to end poverty, protect the planet and ensure that all people enjoy peace and prosperity by 2030. The proper integration of policy interventions in all 17 areas of SDGs will lead to take action in one area will affect outcomes in others and eventually development must balance social, economic and environmental sustainability. As a higher education institute, Daffodil International University (DIU) is committed to formulate policy guidelines in several areas of SDGs and take actions to comply with the United Nation's endeavor and to support the Government of Bangladesh for achievement of desired outcomes. At DIU, we focus on social and environmental sustainability in the first instance which is aligned with SDG 11 for implementation. As such, the Zero Emission vehicle Policy with the aim of reducing carbon emission (SDG 13) from all vehicles of DIU has been formulated for execution by the relevant stakeholders.

OBJECTIVE:

The objective of the Zero Emission vehicle Policy of Daffodil International University is to support the environment by reducing the carbon emission and improving the air quality in Dhaka city by adopting Zero Emission Transport (ZET) and to ensure a healthy and sustainable atmosphere for the next generation.



ZERO EMISSION TRANSPORT (ZET):

A zero-emissions Transport (ZET), is a vehicle that emits no exhaust gas from the onboard source of power. The following list of vehicles are considered to be ZETs:

- Bicycles
- Electric bicycles
- Battery operated (electric) vehicles
- Vehicles with catalytic converter to reduce carbon emission

POLICY:

1. This policy on Zero Emission Transports of Daffodil International University will be considered as a guideline to gradually reduce the carbon emissions from DIU transports to support sustainable environment
2. Bicycles movement within the campus will be encouraged. There will be bicycles in the specific parking stand in the campus from where students, teachers, administrative employees can use those bicycles free of charge to avoid carbon emissions completely.
3. The students, teachers and administrative employees of the university will be encouraged to use the pedestrian walkways in the campus. The planning and development department will be responsible for this.
4. The private vehicles will be discouraged by the university through providing separate transport facilities for the teachers, students and administrative employees. Transports wing will be responsible for this.
5. Visitor's vehicles will not be allowed to enter into the campus area. Safety and Security wing will be responsible for this.
6. The university administration has taken initiatives to install Catalytic Converter in DIU Transports (Buses) and other light transports (cars & minibuses) to Reduce carbon Emissions. The Department of Environmental Science and Disaster Management will oversee this matter and be responsible for this.

7. The university stakeholders who use personal transports, specially, teachers, students and administrative employees, will be encouraged to catalytic converter to reduce carbon emission.
8. This policy guidelines will be circulated widely among all stakeholders.

7.5. Sustainable Procurement Practice

Daffodil International University has been implementing the sustainable procurement practices. All the procurement procedures of DIU are maintained through online which does not require any use of paper. Sustainable ethical procurement guidelines is maintained during the procurement.

User Guide for Vendors:

https://etender.daffodilvarsity.edu.bd/Online_Procurement%20System_User_Manual_Vendor%20Ver-1.1.pdf

7.6. Other Relevant Policies

A number of SDG policy guidelines were developed before and made available online. The titles of these policies are given below with web links.

[Maternity Leave Policy](#)

[Anti-Harassment and Non-Discriminatory Policy](#)

[Policy for Managing Women's Career Counseling Services](#)

[Women Access, Participation, Counseling and Mentoring Policy](#)

8. EVENTS AND AWARDS

Daffodil International University regularly arranges huge number of events regarding the sustainable development goals round the year. A number of selected events in collaboration with the government institutions, NGOs and international partners are given below.



8.1. Seminar on Stand Together against Sexual Harassment

DIU follows 'Zero Tolerance' philosophy to prevent sexual harassment. Following the direction from the High Court Division, UGC and Ministry of Education, there is a strong Complaint Committee to Prevent Sexual Harassment at Daffodil International University. DIU regularly educates the students regarding prevention of Harassment. The event was organized to revive the initiatives taken by DIU to prevent the sexual harassment through our education.

Sexual harassment has an adverse effect on victim's mental health and emotional wellbeing. It is considered a chronic stressor for the victim which may lead to severe mental disorder. To know sexual harassments from psychological perspective DIU organized a live program on "The Psychology

of Sexual Harassment" under the campaign "[#Stand Together against Sexual Harassment](#)". In this session, sexual harassments was discussed from the psychological perspective of both the victim and the perpetrator. There was also discussions and directions about how to overcome these mental anxieties.

8.2. Seminar on 'Outbreak and Prevention of Coronavirus (COVID - 19)'

With the recent emergence of deadly Coronavirus pandemic, the Department of Public Health of Daffodil International University and Cardio Care Specialized and General Hospital organized a seminar on 'Outbreak and Prevention of Coronavirus (COVID - 19)' on 3rd March, 2020 at 71 Milonayoton of the university as part of its social responsibility. The seminar was arranged with a view to creating awareness on COVID-19 among the DIU stakeholders and through DIU to create awareness among the mass people of the country. Two renowned researchers and medical doctors presented keynote speech on COVID 19 awareness and preventions at the seminar. Several hundred faculty members and admin of DIU participated in this program. There were also a question-answer session at the end which was very interactive and informative.



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8.3. ICT Solutions at BASIS National ICT Awards-2019



Hello task, a startup of the student of the Department of Innovation and Entrepreneurship became the Champion in Business Services, ICT Solutions at the BASIS National ICT Awards-2019 by solving the problem of Maids in our daily life. It also achieved Bangladesh Business Innovation Award 2019 - Honorable Mention as the Best Startup Innovation. Wining of this award will encourage other students of the Department of Innovation and Entrepreneurship (IE) to participate in other national events and award giving ceremony.

8.4. Social Business Concept Award

This year 33 teams out of 98 from 15 countries joined the World Final of Social Business Creation (SBC) Competition held on 30 September 2019 at HEC Montreal, Canada. Two teams of DIU; Team SOTEJ (Platform to encourage entrepreneurship in rural areas) achieved Social Business Concept Award as well as team SORBOJOYA (Low-cost sanitary napkins using indigenous materials) achieved Social Business Idea Award besides being Runner-ups. In the 4th edition of SBC 2019, 4 teams were from DIU to represent Bangladesh at the World Final.



8.5. CoronaThon-19: A Hackathon for Combating Coronavirus



With the recent emergence of deadly Coronavirus (COVID 19), Daffodil International University has taken a number of innovative initiatives to tackle the pandemic situation and provide solutions. DIU believes that besides the health and medication system, technology, especially the Artificial Intelligence (AI) based tools, can play a vital role to fight against the current corona pandemic. Accordingly, Daffodil International

University organized an international event [CoronaThon-19: A Hackathon for Combating Coronavirus](#) all over the world during 28-30 April 2020. Under this competition, students from Grade 10 to Post Graduation level were allowed to compete online and solve the challenges created by the

current pandemic. This initiative mainly aimed at developing the best possible solutions to fight against the Corona pandemic and also engage the students in productive work during this lockdown period. It will also help them to think out of the box towards facing the real challenges. Students from relevant institutions and networks all over the world were invited to join the CoronaThon19.

The winning team or individual with the most feasible AI solution idea to tackle COVID-19, was awarded a financial amount of \$25,000 (BDT 2000000+) and all other required research facilities from DIU to implement the idea. Besides, each participant got online certificate for their active participation in this innovative competitions.

8.6. Free Medical Camp at DIU Permanent Campus



Daffodil International University and Sheikh Fazilatunnessa Mujib Memorial KPJ Specialized Hospital & Nursing College jointly organized a “Free Medical Camp” at Ashulia, Savar, Dhaka. This temporary medical camp was established at the permanent campus of the university. The local communities rushed to the medical camp for taking a range of services from the doctors. The services Basic Health Check

Up, Doctor’s Prescriptions, Dietitian’s Prescriptions, and Blood Donation. The gathering inspired both the organizers, doctors and the patients.

8.7. Webinar on Career Prospect in Environmental Impact Assessment

The Department of Environmental Science and Disaster Management (ESDM) of Daffodil International University organized an online seminar on July 2020 on Career Prospect in Environmental Impact Assessment where the key resource person highlighted the job responsibilities of EIA, processes involved in EIA and expected qualification from the graduates. Mr. Alim Miah, a faculty member of Jatiya Kobi Kazi Nazrul Islam University conducted the seminar as the resource person. Mr. Md Azharul Haque Chowdhury, Senior Lecturer of ESDM department moderated the seminar. The students and the faculty members of ESDM department attended the seminar.

Career Prospect in Environmental Impact Assessment (EIA)
 Organized by: Department of Environmental Science and Disaster Management, Daffodil International University

Keynote Speaker: Md. Alim Miah (Lecturer)
 Department of Environmental Science and Engineering, Jatiya Kobi Kazi Nazrul Islam University, Trishal, Mymensingh, Bangladesh

Moderator: Md. Azharul Haque Chowdhury (Senior Lecturer)
 Department of Environmental Science and Disaster Management, Daffodil International University, Dhaka, Bangladesh

Chief guest: Dr. A.B.M. Kamal Pasha, D.Sc.
 Associate Professor and Head, DIU, ESDM

Special guest: Dr. Mahfuza Parveen, Ph.D.
 Assistant Professor, DIU, ESDM

Special guest: Md. Sadill Islam Khan
 Lecturer, DIU, ESDM

28 July 2020 (Tuesday)
 5:30 PM - 6:30 PM

Workshop Outline:
 1. Job Responsibilities in EIA
 2. Processes Involved in EIA
 3. Expected Qualification from the Graduates

8.8. 'Daffodil ICT Carnival-2019'

The Daylong '2nd Daffodil ICT Carnival 2019' was held on 26 October 2019 at Daffodil International University (DIU) permanent campus at Asulia.



The program was organized jointly by Daffodil International University and Daffodil Family. Professor Dr. Sazzad Hossain, Member, IMCT, Research Support & Publication Division of Bangladesh University Grants Commission was present as the chief guest and distributed prizes among the winners.

Students from Daffodil International University and Daffodil Education Network participated in the carnival. Among the participants, the jury board selected top-10 projects as winners. The winners were awarded worth of Tk. 2 million for their outstanding and implementable ICT projects and tools.

8.9. Formalizing Research Culture at DIU



The Division of Research of Daffodil International University organized a workshop titled "Formalizing Research Culture at DIU" on 18 September, 2019 at its premises. Professor Yousuf Mahbubul Islam, PhD, Vice Chancellor of the university facilitated the workshop as the key resource person. The Department Research Coordinators along with other two faculty member(s) of each

department participated at the workshop. The research coordinators were provided with some directions and guidelines for effective efforts and outcome-based research. The efforts of the research coordinators and faculty members of DIU was recognized which has increased the research

activity manifold. They were instructed them regarding the research culture that has been established, needs to make formal through documentation and publicity.

8.10. Keynote of Dr. Md. Sabur Khan at Sustainable Education Meeting 2019

Dr. Md. Sabur Khan, Founder and Chairman of Daffodil International University (DIU) and Daffodil Family presented keynote speech on “The Development of Education in Bangladesh and the Role of International Financial Entities: The Asian Context” at SUSTAINABLE EDUCATION MEETING 2019 (SEM2019) during the United Nations General Assembly Opening Week in New York City during September 25-27, 2019, partnered by UNESCO Global Action Program on Education for Sustainable Development on “Reinforcing partnerships SDGs 4 & 17- Sustainable Education and Technology” and the event was organized by Millennium@EDU Sustainable Education.



8.11. Industry-Academia Lecture Series

Mr. Md. Arfan Ali, President and Managing Director of Bank Asia Ltd. talks on ‘Entrepreneurial Role of an Executive’ in the 1st Academic Lecture Series on “Entrepreneurial Role of an Executive” held at Daffodil International University. After the successful completion of Industry Academia Lecture Series with an aim to inform and motivate the educated youths and make them capable to face the challenges. Finally, the youths should be able to deal with any

adverse situation and establish himself or herself as a successful Executives in the future. Daffodil International University has taken this initiative to introduce Academic Lecture Series on Entrepreneurial Role of an Executive.

8.12. Seminar on “Mitigating Sexual Harassment by Awareness and Shared Narratives”

Seminar on “Mitigating Sexual Harassment by Awareness and Shared Narratives” was held at the Auditorium of Uttara Campus of Daffodil International University on 30 July, 2019 organized by the Proctorial Committee, Uttara Campus to address the students’ of this Campus to lessen such unwanted situations in the campus premises and outside. Prof. Dr. Farhana Helal Mehtab, Associate Dean of Faculty of Humanities and Social Science delivered the keynote speech at the seminar. In her instructional speech, Dr. Farhana Helal Mehtab urged the students to develop themselves as a respected and a person with strong personalities and to raise their voices against any sorts of eve teasing.



8.13. Champion in Regional Final of Social Business Creation, Bangladesh Chapter

His Excellency, Benoit Préfontaine, High Commissioner of Canada to Bangladesh along with Dr. Md. Sabur Khan, Chairman, Board of Trustees, Daffodil International University is seen handing over the Regional Final Championship Award of Social Business Creation, Bangladesh

chapter to the winning team members of ‘Sorbojaya’. HEC, Montreal Canada and Daffodil International University jointly organized Regional Final of Social Business Creation, Bangladesh chapter on July 30, 2019 at 71 Milonayoton of Daffodil International University. ‘Sorbojaya’ team comprised with Mahfuz Islam (Textile Engineering Department), Meghla Akter Mitu (English Department) and Md. Ashik Iqbal (CSE Department) became Regional champion in Social Business Creation, Bangladesh chapter and moved to Canada to attend the global final.



8.14. International Social Business Summer Program

International Social Business Summer Program (ISBSP) 2019, the only summer program in Bangladesh dedicated to Social Business was held on July 12, 2019 at the green campus of Daffodil International University. Around 50 Participants from 11 different countries including China,

India, Indonesia, Iran, Japan, Jordan, South Africa, Sri Lanka, Somalia, South Korea, and Bangladesh have made the opening ceremony special. Professor Dr. Yousuf Mahbulul Islam, Honourable Vice Chancellor of DIU inaugurated the ISBSP 2019



8.15. Independence Day of Somalia Observed

The students from Somalia studying in Bangladesh observed the Independence Day of Somalia on Monday at 71 Milonayoton of Daffodil International University (DIU). Dr. Kasim from Somalia (Doctor in Bangabandhu Sheikh Mujib Medical University) was

present as the chief guest while Professor Dr. Md. Fokhray Hossain, Director of International Affairs, DIU was present as the special guest of the program. Around 300 Somalian students from all over Bangladesh participated in the program and celebrated the program by their national anthem, speech and few their native cultural program.

8.16. Robotics and Artificial Intelligence Course Curriculum

Mr. Donnie Chan, Regional Director of Ubtech Robotics Corporation handed over the certificate of training on Robotics to Mr. Md. Hafizul Imran, Project Manager (Robotics), Daffodil International University. The students of DIU are now acquainted with the 4th Industrial Revolution and inspired to undertake innovative projects in the latest area of interests having support from the faculty members. Daffodil International University has already included 'Robotics and Artificial Intelligence' in the curriculum of several departments in the area of Information Technology (IT) and engineering. The new courses are also remain other relevant departments.





8.17. Achievement of Top Position in Bangladesh by UI-Greenmetric World University Rankings-2019

Daffodil International University has achieved the top position in Bangladesh for the third consecutive year in the recently announced 'UI GreenMetric World University Rankings 2019'. It is another milestone to its continuous and sustainable global recognition initiatives. As per the rankings, the university has also achieved

second position in South Asian Region and 150th globally while University of Oxford, UK ranked second in the global list. The UI GreenMetric measures the contributions of the listed universities towards environmental sustainability through research and activities nationally and internationally.

8.18. 'Survey Report in ICT Job Market in Bangladesh 2018'

Daffodil International University published 'Survey on ICT Job Market in Bangladesh 2018' in a publication ceremony at the university. Mr. Zunaid Ahmed Palak, MP, Honorable State Minister, ICT Division, Ministry of Posts, Telecommunications and Information Technology was present in the publication ceremony as the 'Chief Guest' and unveiled the survey report. Mrs. Hosne Ara Begum ndc, Managing



Director (Secretary), Bangladesh Hi-Tech Park Authority was present in the program as the 'Special Guest' while Ms. Susan Amat, Ph.D, Executive Director, Global Entrepreneurship Network (GEN) Accelerates and CEO and Founder, Venture Hive was present as 'Guest of Honor'. The program was chaired by Dr. Md. Sabur Khan, Chairman, Board of Trustees of Daffodil International University.

8.19. Entrepreneurship World Cup Bangladesh

For the second consecutive year, Daffodil International University hosted the National Finale of



Entrepreneurship World Cup in Bangladesh on 5th September 2020. Entrepreneurship World cup is the biggest global competition for entrepreneurs which have got a great number of impactful prizes – \$1 million in cash prizes total for the global winners plus a combined \$70 million worth of in-kind support for the top 100 global finalists, not to mention investment opportunities and awesome

resources and perks from our leading partners. Mr. Jonathan Ortman, President of Global Entrepreneurship Network graced the event as the Chief Guest; Dr. Md. Sabur Khan, Chairman of Daffodil International University was present as the Special Guest, and Ms. Ana Maria Torres, Director of Entrepreneurship World Cup was present as the Guest of Honor. The top ten national finalists presented their ideas in front of the renowned judges.

8.20. 'DIU Innovation Lab'

A large "Innovation Lab" with a focus on research was inaugurated on September 19 at the permanent campus of Daffodil International University (DIU). The lab has been included with market space, robotics zone, 3D printer, IOT-based electric bulb, fan, air conditioning, architectural design, reading zone, business incubator, meeting room, all in one TV with android and windowed facilities. Students can research, develop and implement their ideas through this Innovation Lab.



8.21. 4th International Conference on Globalization, Entrepreneurship and Emerging Economics (ICGEEE-2019) hosted by DIU

'4th International Conference on Globalization, Entrepreneurship and Emerging Economies' begins today on December 08, 2019 at Daffodil International University. Daffodil International University (DIU) in association with The Centre for Innovation Leadership Navigation (CILN), UK is organizing this conference for the first time in Bangladesh during December 8-10, 2019. This conference seeks to shine a light on a wealth of issues that are fundamental to economic development and progress and effectiveness in societies across the globe which is related to the SDG 8 and SDG 9.



8.22. Round Table Discussion on 'Angel Investment in Bangladesh: The Way Forward'



On November 21, 2019, Daffodil International University, in association with Venture Capital and Private Equity Association of Bangladesh (VCPEAB), has organized a policy dialogue titled "Investment Opportunities for Startups in Bangladesh- A Policy Dialogue with Ecosystem Stakeholders" where public and private entrepreneurship ecosystem stakeholders of Bangladesh were present to share their views on best practices on tackling the challenges of innovation and industrial development through investment focusing SDGs and to develop a relevant and conducive policy to ensure the same.

8.23. Observance of 'International Day for the Elimination of Violence against Women'

To observe 'International Day for the Elimination of Violence against Women' on 25 November 2019, the Complaint Committee to Prevent Sexual Harassment of Daffodil International University (DIU) has successfully conducted the discussion session titled "The Role of Educational Institution and Young Generation to Prevent Sexual Harassment and



Violence Against Women" jointly with Bangladesh Mahila Parishad held today at 71 Milanayatan of the University.

8.24. Glimpses of Other Events

Various events are organized by the Daffodil International University for implementation of several SDGs round the year in collaboration with the Government, Non-government and international organizations. The following photographs are taken from a number of events.





Glimpses of Events Related to Environment and Sustainability







Examples of Events Related to Environment and Sustainability

9. NATIONAL AND INTERNATIONAL PARTNERSHIP FOR THE SDGS

SDG 17: Partnership for the Goals

9.1. Partnership with SDGs HelpDesk

Daffodil International University (DIU) is now a well-pleased partner of Sustainable Development Goals (SDGs) Helpdesk, in the category of Think Tanks and Academia. The helpdesk activities are available at <https://sdghelpdesk.unescap.org/.../daffodil...>



As per commitment, DIU and SDG Helpdesk have shared their reciprocated executions of sustainability practices, and have agreed on providing support for SDG practitioners in the prominent fields. Through this collaboration, SDG practitioners from DIU have got the opportunity to access the online community of experts for SDG implementations. SDG enthusiasts of our university are invited to join this network for SDG community practices: <https://sdg-cop.unescap.org/feed>

9.2. Participation in the 3rd Edition of International Youth Forum Focusing SDGs

Dr. Kudrat E Khuda Babu, an Associate Professor of Law Department at Daffodil International University participated in the 3rd Edition of International Youth Forum, took place at Omandurar Government Estate, Chennai, India as an Ambassador for Peace. The program was organized by the *International Youth Forum* and supported by *Indian Government*. Around 150 selected delegates participated in the said program from 30 countries of the world where 14 selected delegates participated from different public and private universities, medical colleges and other institutions of Bangladesh.



Dr. Babu presented his paper on peace, education, poverty and health which are under the Sustainable Development Goals (SDGs) of the United Nations. Finally, Dr. Babu received Medal and Certificate as an Ambassador for Peace from Shri Ashwini Choubey, Honorable Minister of state for the Health and Family Welfare, Govt. of India; Shri Prahlad Singh Patel for his outstanding research publications, deliberations and contributions towards ensuring the SDGs.

9.3. Engaging youth for initiating world peace through peace dialogue



Engaging youth in peace initiative, an important area for United Nations and Bangladesh, keeping that in priority a three-day long international model UN conference was organized by Daffodil International University (DIU) Model UN Association in association with United Nations

Bangladesh and knowledge support by UNIC Dhaka during 17 to 19 January 2019 at the University campus. More than 250 delegates from different educational institutions and a number of guests from different organizations took part in the MUN conference. The conference was opened by former Bangladesh Ambassador to United States and Vice-President of Bangladesh Enterprises Institute H.E.

Ambassador Humayun Kabir. Among others, Chairman of DIU Md. Sabur Khan, UNRCO Sr. Communication Advisor Ari Gaitanis, UNIC NIO Dr. Md. Moniruzzaman and Pro-Vice Chancellor of DIU Prof. Dr. SM Mahbulul Hoque Mojumder spoke in the inaugural session.

9.4. Asian University Presidents Forum (AUPF)-2019 Regional Partnership

Daffodil International University is playing an instrumental role in shaping higher education system of Bangladesh. Visionary leadership and collaboration model could be attributed to this success. *DIU organized a grand event bringing Presidents of different universities from*



multiple countries in one platform for facilitating effective international partnership and collaboration in ensuring sustainable development goals of the UN. The event was hosted and organized by DIU with a view to collaborate and create partnership among the universities of the Asia Pacific region to tackle the challenges, obstacles towards ensuring a sustainable educational environment in each institution as well as in the region. More than 150 Presidents, Rectors and Vice Chancellors from 40 universities from Asian 15 countries.

9.5. Participation in the International Workshop on Linking SDGs 5 and 16: Next Steps in Research and Practice



Ms. Sadia Zafrin Lia, Senior Lecturer of English of DIU attended a national workshop on Linking SDGs 5 and 16: Next Steps in Research and Practice, arranged by Bangladesh Legal Aid Services Trusts (BLAST) on 21 September, 2019. At that event, she worked with a group of stakeholders working on gender equality and access justice issues where they had a constructive exchange of ideas. There were panelists from UN Women, Justice of the Supreme Court of Bangladesh, Expert professors from UK universities and NGO personnel. She presented her reflections on

gender equality and offered alternative indicators focusing on the pressing need for gender equality in Bangladesh. The panelists lauded the ideas with great concern for their future operation regarding the gender equality issue.

This workshop brought together researchers in law, social sciences and economics, lawyers, legal service providers and women's rights advocates to discuss, among other things, the existing indicators for monitoring implementation of these two SDGs, alongside issues regarding availability and sources of relevant data, innovations and availability of investment to ensure access to justice. It was intended to scope out a research agenda on the interaction between SDGs 5 and 16 with a particular, although not an exclusive, focus on Bangladesh.

9.6. Participation in "Youth Engagement in Disaster Risk Reduction"

A team from the department of Environmental Science and Disaster Management of Daffodil International University has participated an event named "Youth Engagement in Disaster Risk Reduction" which is organized by BRAC Humanitarian Program (Brac NGO), held on 30th November, 2019 at CIRDAP. Dr. A. S. M. Maksud Kamal, Dean, Faculty of Earth and Environmental Sciences and Professor, Faculty of Disaster Science and Management, University of Dhaka graced the event as Chief Guest. The event was chaired by Sajedul Hasan, Director, Humanitarian Program, BRAC and BRAC International. The program helped the youths, especially, the university students in tackling the challenges of disaster risk as a result of climate change and global warming. This type of event will enhance the knowledge as well as willingness of the youths to involve them in disaster risk management activities which will facilitate achieving the SDG-13 addressing climate change.



9.7. Seminar on "Healthy living and use of Phytonin"

Department of Nutrition and Food Engineering (NFE) has organized a seminar on "Healthy living and use of Phytonin" at the Permanent Campus. Mr. Shane Mitchell, CEO of the Product Maker (Australia) Pvt. Ltd. has presented the keynote paper and Mr. Anselm L. Martin, Business Coordinator of Banga Flavour & Fragrance Ltd. was present as the special guest. The Head, Associate Head and faculty members along with 120 students NFE joined the seminar. The Seminar highlighted the theme and approach of SDG 3: Good health and Well-Being.



The Seminar highlighted the theme and approach of SDG 3: Good health and Well-Being.

9.8. Discussion Meeting with SME Entrepreneurs: Collaboration with Industry and Government



Partnership between the Department of Electrical and Electronic Engineering (EEE) and SME for the implementation of Web based Accounting and Energy Audit in SME industries. Department of Electrical and Electronic Engineering of DIU will facilitate the services to SME industries on free of cost. Mr. Md. Masum Talukder, Consultant, BEIOA expressed his concern

about language of software in day to day transactions for entrepreneurs. Also, he advised to incorporate Tally feature into software for making it more appropriate for small entrepreneurs. Mr. Md. Abdul Matin, Assistant Secretary, BAPA appreciated the initiative and said that it will enable the SME entrepreneurs to update their factory for compliance issues. Ms. Farzana Khan, General Manager, SME Foundation recommended to gain confidence of entrepreneurs initially.

9.9. Participation in the PPLG 2019 Conference, Greece and Made Presentation on “Living with Artificial Intelligence”

Mr. Syed Mizanur Rahman, Associate Professor and Director of Students' Affairs visited Anatolia College, Greece after receiving invitation letter for attending PPLG 2019 Conference, being organized by Aristotle University of Thessaloniki, East Side Institute New York, Lesvos Solidarity Greece and Epineio Institute Thessaloniki. He delivered a speech on “Living with Artificial Intelligence” at the conference that was held from 03 to 07 October 2019.



9.10. Keynote Speech on 'Cleaner and Greener Environment for a Safer World' at AUAP Annual Conference

In the Annual Conference of Association of the Universities of Asia & Pacific (AUAP), Dr. Md. Sabur Khan, Chairman, BoT, Daffodil International University as well as the Vice President (2nd) of AUAP has given a Keynote entitled 'Cleaner and Greener Environment for a Safer World' at AUAP Annual Conference on November 11, 2019 at Ekathotsarot 301 Auditorium in Naresuan University (NU), Thailand. AUAP Annual Conference 2019

is hosted by Naresuan University which is one of the top ten Public University in Thailand. University's Top executives & academicians from 15 different countries across Asia, Europe, Australia and Africa have joined this annual conference.

9.11. International Social Business Summer Program (ISBSP) 2019 in collaboration with Yunus Centre

With the motto 'New Minds for New World' DIU is hosting International Social Business Summer Program (ISBSP) 2019 for the third time in collaboration with Yunus Centre. This year, around 50 participants from 11 different countries such as China, India, Indonesia, Iran, Japan, Jordan, South Africa, Sri Lanka, Somalia, South Korea and Bangladesh are experiencing the knowledge of the social business from 12 to 22 July at DIU Permanent Campus.



On the 2nd day, Ms. Lamiya Morshed, Executive Director of Yunus Centre conducted the introductory session to Social Business & its Global Platform for the participants of ISBSP 2019. She focused on the local and global social business activities, factors of successful collaboration with different institutions regarding Social Business development as well as with Yunus Centre, etc. Enthusiastic participants of ISBSP 2019

made the session very interactive with many questions & discussions to learn how does it look like and how does it work. The ISBSP is also supported by YSBC & SBSF of DIU along with YouThink Centre China.

9.12. Taking Action at Home: SDGs as a Core Pillars of University Governance

Mr. Mohamed Emran Hossain, Director (Administration) and Member of Board of Trustees along with Mr. Syed Raihan-Ul-Islam, Assistant Director of International Affairs of Daffodil International University (DIU) attended the 7th ASEF Rectors' Conference and Students' Forum (ARC7) in Bucharest, Romania from 11-15 May 2019 co-organized by the Asia-Europe Foundation (ASEF) and the National University of Political Studies and Public Administration (SNSPA) with the support of the



Romanian Ministry of National Education. More than 150 university leaders, experts and policy makers, along with 51 student leaders from the 51 ASEM partner countries participated in the conference. They actively contributed to the discussions named “ARC7 Rectors’ Policy Recommendations” and in the Working Group-1 following the topic: *Taking Action at Home: SDGs as a Core Pillars of University Governance” in the Students’ Forum.*

9.13. Technical Support to the ADB Project on Strengthening Knowledge and Actions for Air Quality Improvement



Asian Development Bank is financing the above mentioned project. Clean Air Asia and RICARDO, UK are jointly implementing the project in regional countries. Nature Conservation Management (NACOM) is implementing the project in Bangladesh. Dr. Salamat Khandker, Associate Professor, Department of Public Health, Daffodil International University is providing technical support to NACOM to measure the air quality

of Faridpur city of Bangladesh. Dr. Med. Salamat Khandker, Associate Professor, Department of Public Health of Daffodil International University is seen in ADB building with team members of ADB TA 9608. The team visited Faridpur City on 24.10.2019

9.14. Daffodil Nordic Joint Collaboration towards Achieving SDGs



Daffodil Nordic Ltd (<http://daffodil-nordic.com/>) is a spin-off established by a group of Finnish-Bangladeshi nationals. The cardinal objective for Daffodil Nordic Ltd is to bring in positive social developmental impacts through engaging ventures and initiatives, in close cooperation with companies, government and non-government organizations of Nordic countries (Finland, Sweden, Denmark, Norway & Iceland) in Bangladesh for tackling the challenges towards achieving SDGs. The center is primarily focused on developing skilled human resources and bringing social transformative changes into

the following areas:

- Health Management (SDG-3)
- Quality Education & Training (SDG-4)
- Environmental Management (SDG 7, 8, 11, 12 & 13)

SDG 5: Gender Equality

9.15. 4th National Girls' Programming Contest 2019

Daffodil International University in collaboration with Department of Computer Science and Engineering, DIU Girls' Computer Programming Club (DIU GCPC), Bangladesh Computer Council and ICT Division of the Ministry of Posts, Telecommunications and Information Technology organized the "4th National Girls' Programming Contest 2019" was held at on 23rd November 2019.



10. TRANSPORTATION



Transportation is a major issue to both students and staff. Realizing the needs for the students, DIU has introduced around 50 buses to their transport pool which are exclusively used for our students/faculty/admin staff. A dedicated Car and an ambulance are also available for the students and their parents. Total transportation system is managed from the Ashulia campus. All the transports (buses) are moving to different routes and campuses from Ashulia Campus for transportation of the students. Students are require to show their ID cards for getting this facility. It saves both time money and traveling hassle in a public bus. Particularly this service is very helpful for the female students. They can easily escape from the unavoidable circumstances or any types of unpleasant situations in the public transports.

Facilities inside the Buses:

- CCTV Camera
- Fire Extinguishers
- First Aid Box
- Air conditioner
- Excellent seats and safety belt

Benefits of Using University Transport

- Always on time
- Safe and time saving
- Better Environment
- Reduce traffic
- Reduce pollution
- It can teach time management
- Money saver

10.1. Shuttle Bus service for students



10.2. Shuttle service routes:



11. ENERGY AND SUSTAINABLE INFRASTRUCTURE

Daffodil International University has been striving to produce renewable energy inside the campus. The following are the initiatives taken:

1. Biogas plant
2. City campus Rooftop Solar Panel installed with 1.2 KW capacity
3. Ashulia campus Rooftop Solar Panel installed with 1.5 KW capacity
4. The wind turbine will be placed in the east and west verandah facing south, power generation will be around 0.1 M watt.
5. The university is going to install solar panel in the entire 10,000 meter square rooftop of the new academic building 4.



Solar panel at the roof top of Academic building 3 and 4 at Ashulia campus (Rooftop Solar Panel used for using 2000 KWH power annually)



Example of Biogas plant (Daffodil International University)



Planned Wind Turbine, Daffodil International University



City campus rooftop Solar Panel used for using 1500 KWH power annually

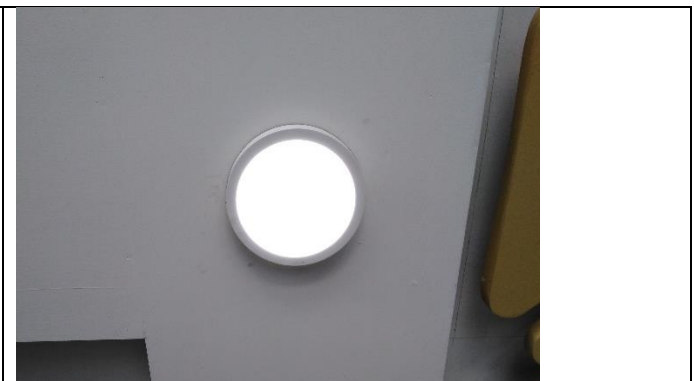


Solar panel energy grid

The Department of Nutrition and Food Engineering of Daffodil International University has been using the Multi-Commodity Solar Tunnel Dryer (MCSTD) technology for drying the food items with the solar panel without using the electricity. This is contributing towards reducing electricity consumption and directly impacting on environmental sustainability.



The Automatic Fire Alarm Sensor System and direct sun light and natural ventilation in classroom



Sensor-based LED lighting system in the buildings



Finger print-based, password protected and Face recognition locker system for students



Fingering system for daily attendance and access into the university



Fire Extinguisher along with Instructions to be followed (in local language) during fire and other accidents



Exit indication and audio speaker for use during any fire and accidental moment



Fire balls are placed in suitable places



Firefighting tools in the building



Card Touch and go system for access in the campus buildings



Central Monitoring and Surveillance Centre in the Building

12. WASTE MANAGEMENT

12.1. Inorganic Waste Management Project

The Department of Environmental Science and Disaster Management of Daffodil International University has been working on the web based project for inorganic waste management. They have developed a website namely 'Safe the Environment' (<https://safeenvironment.github.io/>) and with the help of web based application, it is working to ensure inorganic waste management.



Fig. 1. Ongoing Web based Project for Inorganic Waste Management

12.2. Organic Waste Management

Methodology: This research has systematic procedures to follow. The overall process is being illustrated below-

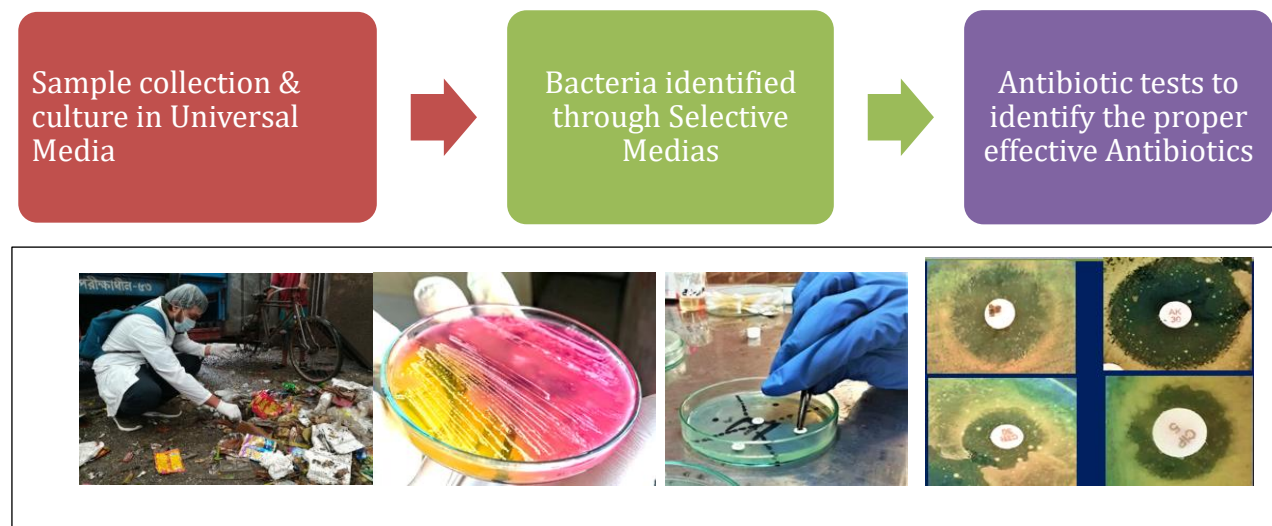


Fig. Sample collection from the sampling sites and work in research lab.

12.3. Water Spinach Utilization as a Phytoremediation Technique for Toxic Waste Management

Background: The present state of toxic waste management system in Bangladesh is not in a good condition. There is lack of proper management of toxic waste in different industries such as leather, textile, chemical and others industries which contain heavy metals. It has harmful effects on environment and human health. Waste water treatment cost is very high and it's a long time process. The waste water which have heavy metals that modify the cells of living organic substances, soil, water bodies and human body too. So, untreated waste water is a great problem for us and for the environment. If it remains untreated then it will become a great threat for the human race. The waste water can be treated with phytoremediation which is a process where plants are used to treat water and it is also very cost effective way to manage toxic waste.

Objective:

- To manage the toxic waste coming from the industries.
- To find out feasibility of water spinach in toxic waste water.
- To find out the level of toxic content removed by the plants.

Methodology: This research has systematic procedures to follow. The overall process is being illustrated below-

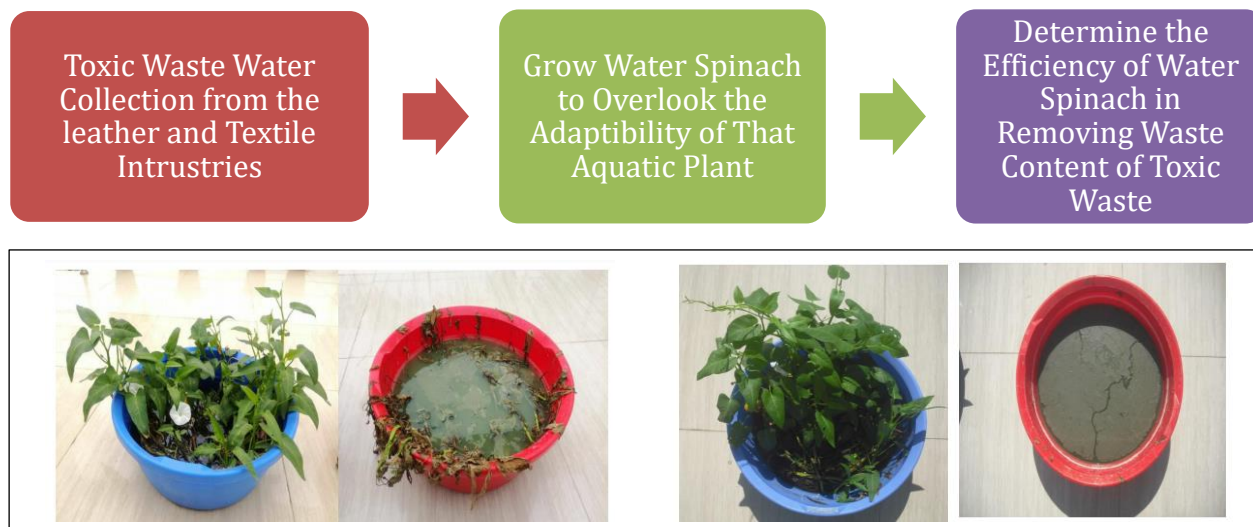


Fig: Adaptability Measures of Water Spinach in Textile and Leather Waste Water

Research Outcome:

- Water Spinach successfully survived in the textile toxic waste water for one month.
- Water Spinach could not survive in high leather toxic effluent for 2 days.
- A huge amount of contaminant and pollutant removed by phytoremediation.

13. WATER CONSERVATION AND SUSTAINABLE CONSUMPTION

13.1. Water Body Restoration and Quality Development

The permanent campus of Daffodil International University (DIU) at Ashulia is a phenomenal natural beauty and an art of perfect green entity. There is a water body adjacent to the campus which somehow restricts the flourishing visuals and environmental aspects. The place is 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 is therefore a crying need to work on the problem. Following is the description of the present state as well as an improvement plan for the place.

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 proposed Area for Existing 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 glimpses of the place is shown below-





Fig. 2. Pre-Condition at Targeted Area

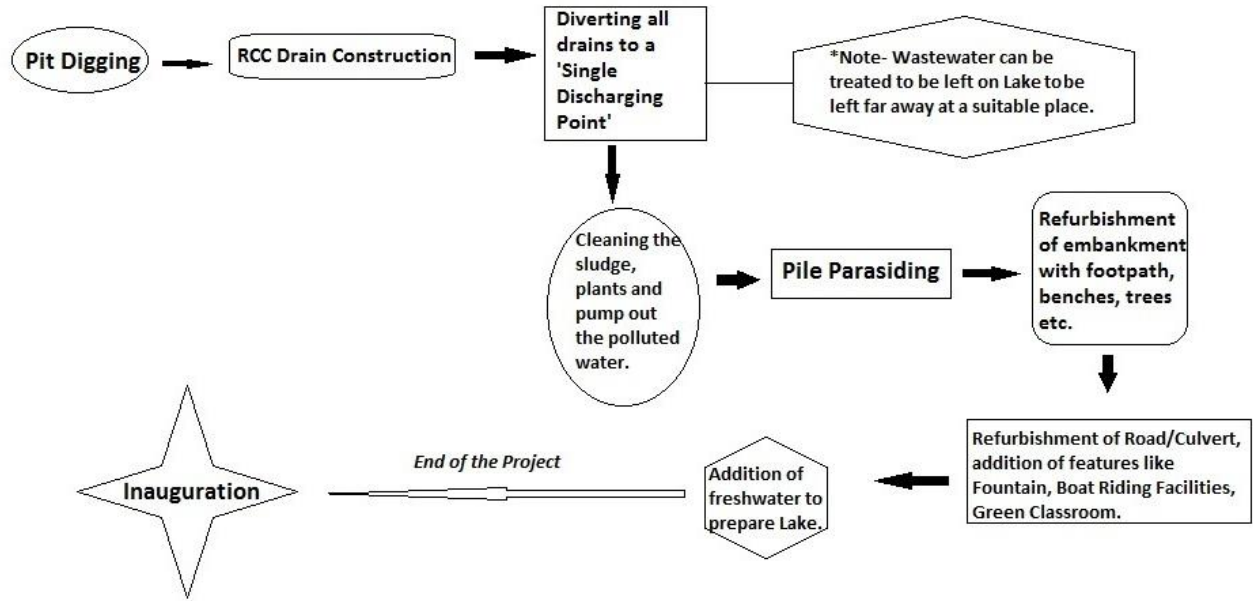
Improvement Plan: The improvement plan has been designed through a drawing which has been uploaded to the google drive. The content is viewable by clicking [here](#) online. For hard copies of the report, the design has been attached.

According to the design, plans have been set part by part. A secondary management plan has been proposed. Firstly, the main focus is to take care of the effluents that are being discharged from nearby industries and local villagers. For that, **Pit** will be dug below the discharging points of the pipes. Then following the pit, **Reinforced Cement Concrete (RCC) drain** would be built as shown with Cross-Section in the design. All the drains around would meet at a single point as shown in the design. After the construction of RCC drain, the pipes would be cut short so that the effluents can fall in pit and be directed towards the **Single Discharging Point**. That point can be extended to leave the wastewater at a suitable place or a treatment plant can be 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 would be on the existing water body. So, the hyacinths and aquatic plants should be removed. Then the existing polluted water should be pumped out. Lime can be used to clean the water. Afterwards, the attention would be on the stability of the Lake's embankment. And for that, the proposal is for **Pile Parasiding**, almost 5 feet away from the existing embankment. Piled structure would shape the Lake. Then the embankment can be made ready by sand and clay filling. Later on, footpath can be added, a cross section of that has been added in the design. Some features like Fountain, Boat Riding Facilities, and Green Classroom have been added as well. Green classroom has been proposed to be under the Environmental Science and Disaster Management (ESDM) department, it will be 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 can be precise after necessary surveys and measurements by the engineers.



The proposal has been 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.



Fig. 3. Post-Condition at the targeted area

Conclusion: To reiterate, the water body is not conducive to the studios as well as healthy environment. The operation of the university with a purpose to serve the students with good quality environment, is being interrupted due to the polluted water. If immediate measures aren't taken now, the place might have more negative impacts in the long run, in terms of human health and environment. So, an improvement is urgent for now.

13.2. Home Scale Desalination Plant Design and Development

The present condition of drinking water for the people of coastal area is very much weak and unavailable at most of the coastal area. This research can bring a very handy solution for the people of coastal area who are suffering from premature miscarriage, malnutrition, skin diseases & so on. This research can be used to develop a home scale desalination plant to treat the saline water through sublimation process.

Objective:

- To create a device or home scale plant to treat saline water
- To get salt from the saline water as a byproduct.
- To provide a handy and effective solution for the coastal people about fresh drinking water in a very low cost

Methodology: This research has systematic procedures to follow. The overall process is being illustrated below-

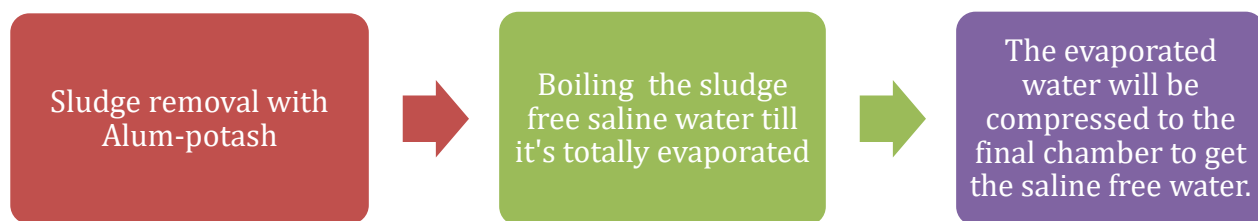


Fig. 1. Project demonstrated in competitive project exhibition

Research Outcome:

- About 70-80% fresh water can be produced from the total amount of saline water.
- 1-20% of salt can be collected as a byproduct from the plant.
- Handy and affordable.

13.3. Water Absorption Initiatives



Water absorption in DIU Pond and Lake



Recycled Water is used in DIU water fountain



Recycled water re-used for watering the plants



Preserved Rain water is used for water fountain



Preserved Rain water is used for fish cultivation

14. PLASTIC RECYCLING & REUSING

14.1. Plantation on Plastic Bottle

The Department of Environmental Science and Disaster Management (ESDM) always had a passion to protect the environment. From this passion, they want to know how the environment can be protected from pollution. After knowing this term, they thought about a plan by which we can clean our whole surroundings, can reduce environmental pollution and also can run a small business from which they can make some money. This business is a recycling or reusing business with a mid-term plan of going into full-scale recycling or reusing of some recyclable or reusable items, mainly plastics, and other (e.g. paper, metal, rubber, glass, etc), and a long term plan of converting waste to reusable products.

Plastic waste is arguably one of the most common forms of waste on this planet. Waste plastic such as plastic bottles, used plastic tins and containers, and shopping bags can be reused and formed into an amazing range of new and reusable products. According to the ESDO, 73,000 tons of plastic wastes end up in the Bay of Bengal every day through the GBM Basin of Bangladesh. A study report has done by the Ministry of Environment, Forest and Climate Change under the Department of Environment, Bangladesh, stated that plastic waste is 60% of the total waste found in the coastline, and most of the plastic waste is plastic bottles.

Objective:

- To reuse and recycle plastic wastes and other waste that are harmful to nature
- To aware people on the creative use of plastic and other wastes
- To create a business model for the community which is eco-friendly and sustainable

Methodology:

Anyone who is environmentally conscious, will know how important it is to reuse or recycle as much of our trash as we can. When we are done with that plastic drink bottle, we should not just throw it away, use it to make something awesome! Of course, we could just put it in with the rest of our recycling, but making something new out of our old bottles is much more fun, plus we could save ourselves some money by crafting something we need instead of having to go out and buy it. Take a look at these creative ideas for reusing bottles.

Instead of buying a can, glass, or ceramic pencil holder, simply recycle the old plastic bottles that you have at home. Ones with the widest circumference will do so that you can place as many pencils or pens as possible. Use a rubber lining on top and make it as plain or as colorfully designed as you'd like it to be. An easier way to create an organizer using plastic bottles is to cut the bottom part and place them alongside each other on your desk. You can use the containers to store pens, clips, wires, pins, stapler wires, and other office supplies.



Fig. 1. Reuse of Plastic Jar and Bottle for Plantation

Outcome:

- Starting up a recycling plant also contributes to the economy, concerning taxes, conservation of power consumption, local content creation, small and medium scale development, job creation, and wealth distribution. 1-20% of salt can be collected as a byproduct of the plant.
- For instance, the money saved through the consumption of less energy means more competitive price of goods. The production cycle can be greatly decreased. Taking paper as an instance, the whole wood growth time lag is removed from the producing process
- As a green entrepreneur or owner of an eco-conscious company, one can also contributing the quota in the movement for environmental protection because that A little company young people established will help to curtail many problems.



Fig. 2. Reuse of Plastic Bottle and Jar for Plantation

14.2. Plastic re-use and Reducing the Use of Plastic Products



Waste bin prepared with used plastic bottle



Mini plastic house model prepared with used plastic



Sitting Tool prepared with used plastic bottle



Jute bag used as Convocation kit (reducing the use of plastic products)

15. CONCLUSION

Daffodil International University is recognized as an environment-friendly university with having the largest green campus amongst the private universities in Bangladesh. All of its existing development initiatives and future plans put highest priority to the climate change, environment issue and sustainability. The mission of the university is somewhat aligned with the importance of SDGs: *“To positively influence and enhance the lives of people by promoting research that is aligned with national development agenda, Millennium Development Goals (MDGs), Sustainable Development Goals (SDGs), innovation and entrepreneurship.”* (<https://daffodilvarsity.edu.bd/article/strategy>)

The sustainability report of Daffodil International University strives to identify the strengths, opportunities and limitations of the university which remained undetected in the past. This report also acts as a catalyst to inform the management regarding the prospects and threats of the organization in the long run.

DIU is committed to pay close consideration to the issue of environmental changes and recognize the significance of the progressions it is seeing for the future of the Daffodil Family and rest of the world. DIU's continued endeavor will be to manage new difficulties and to ensure its progression giving highest priority to the environmental wellbeing and sustainability of the eco-system of the earth. The university will impose importance on collaborations with the partner institutions, government and non-government bodies, nearby networks and will present real scenario of the sustainability and environment-friendly practices of the university in the yearly report on sustainability.