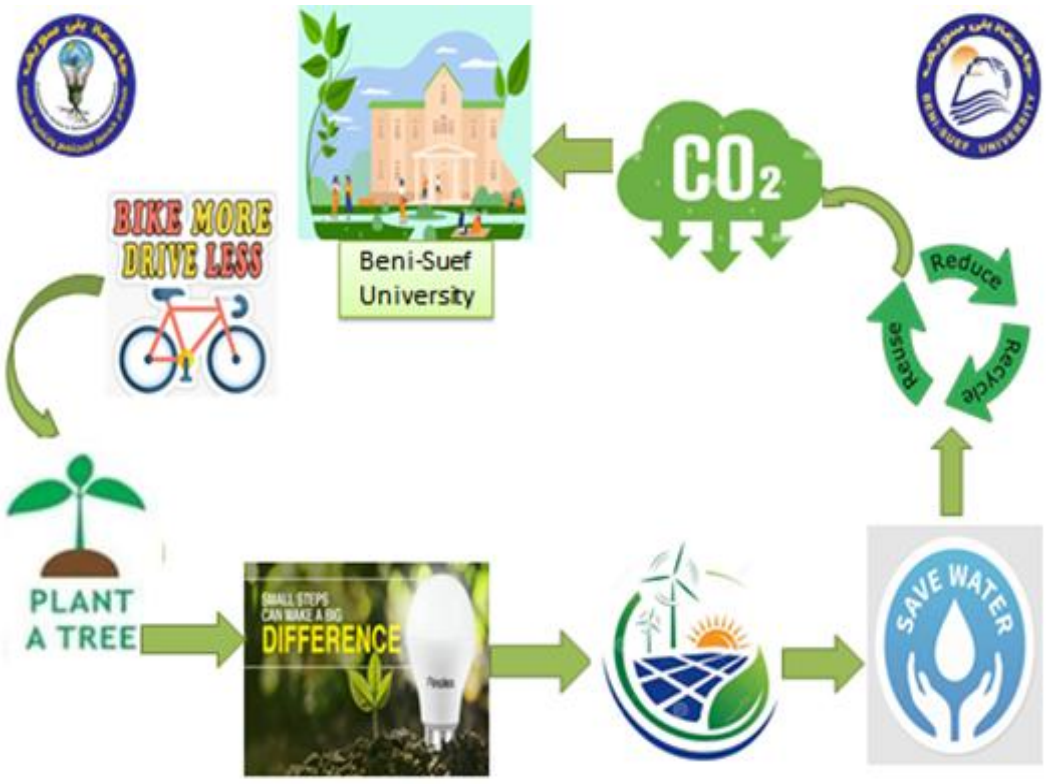
Beni-Suef University (BSU): Our Road Map for Climate Resilience and Decarbonization

Action plan 2021 - 2030

The University's plan towards decarbonization aims to reduce the energy consumption of the organization’s operations in pursuit of reducing its overall carbon footprint.



Overview of Green Strategies and Technologies implemented at Beni-Suef University

BSU has key implementation points to promote carbon reduction that focus on clean transportation, renewable energy, pollution prevention and waste management, energy efficiency, water management and wastewater treatment.

Our actions

Our Pathway towards Decarbonization and Climate Resilience, presents a clear,overarching path forward for climate change action in BSU ***through three pillars:***

1. **Leadership and Governance**
2. **Cutting down on greenhouse gas GHG emissions**
3. **Climate change readiness**

Pillar 1: Leadership and Governance

With the publication of our first Climate Change Action Plan in 2021 and subsequent updates, BSU hopes to effectively establish a solid framework for climate action. Furthermore, BSU is committed to supporting international initiatives to mitigate the effects of climate change and hasten the shift to a low-carbon economy.

BSU has pledged to achieve net-zero greenhouse gas (GHG) emissions by 2050, acknowledging that swift action is required to prevent the worst effects of climate change. This entails making every effortto bringing GHG emissions as near to zero as feasible and offsetting any residual emissions through removals. In the upcoming years, leadership and consistent effort are needed to accelerate BSU's response to climate change.

1.1. BSU's sustainable strategic targets

BSU has taken the interlinked and integrated 17 Sustainable Development Goals (SDGs) as part of the university's operational framework as necessary for achieving the university's five Strategic Targets (SSTs). BSU pays great interest to all 17 SDGs with priority and the primary operational focus is given to the SDGs related to each target in its five Sustainable Strategic Targets (SSTs):

1. First SST: it is consistent with SDGs 6, 7, 11 and 13 aiming to achieve Energy, climate action and Environment Sustainability.
2. Second SST: it is consistent with SDGs 2, 3 and 12 aiming to achieve Food and Health Sustainability.
3. Third SST: it is consistent with SDGs 3, 4, 6, 7 and 17 aiming to achieve Education Sustainability.
4. Fourth SST is consistent with SDG 9 aiming to achieve Innovation in Management.

5. Fifth SST: it is consistent with SDGs 1 and 11 aiming to achieve University Management for Excellence.

1.2. Reporting and accountability

As part of the commitment to accountability and reporting, ***the University will continue to ensure and achieve the University's strategic targets including combating the climate change, through the following:***

1.2.1. Contiuously analyze the present state.

1.2.2. Regularly measure and supervise the implementation success of the University action plans by using suitable means of data collection and indicators, that to ensure the sustainable performance of the university.

1.2.3. Optimize the sustainability practices to reach the ultimate accepted level of the sustainability and of combating the climate change.

Fig. 1: The four major steps for sustainability achievement and improvement at BSU.

There is an increased focus on the measurability and accountability of actions in our plan. All new incremental actions have a clearly identified deliverable that the University will track through implementation and progress reporting. Each new action has been assigned to specialized members and decision makers with or without participation of external collaborative parties to ensure its successful implementation. These plans may be short run; medium run or long run. Noteworthy, the duration of the plan relies on the present level and the desired expected level of each factor. Hence, the Top University Management prioritizes the issues related to sustainability and combating the climate change according to their acceptance levels and the required targets.

1.3. Education and Research

The University has ample teaching and research capacity, which is conducive for teachers and students to establish a cooperative relationship

1.3.1. Education and capacity building

Our success will depend on our ability to respond to the opportunities and challenges presented by a changing climate both on and off campus, as well as on our collective efforts to raise awareness of climate change. ***As part of the commitment to education and capacity-building, the Unoversity will continue to:***

1.3.1.1. Integrate climate change topics and actions into the curriculum. Where the academic programs are distributed among different goals of sustainability involving those related to environment and climate change as described by the **below figure**.

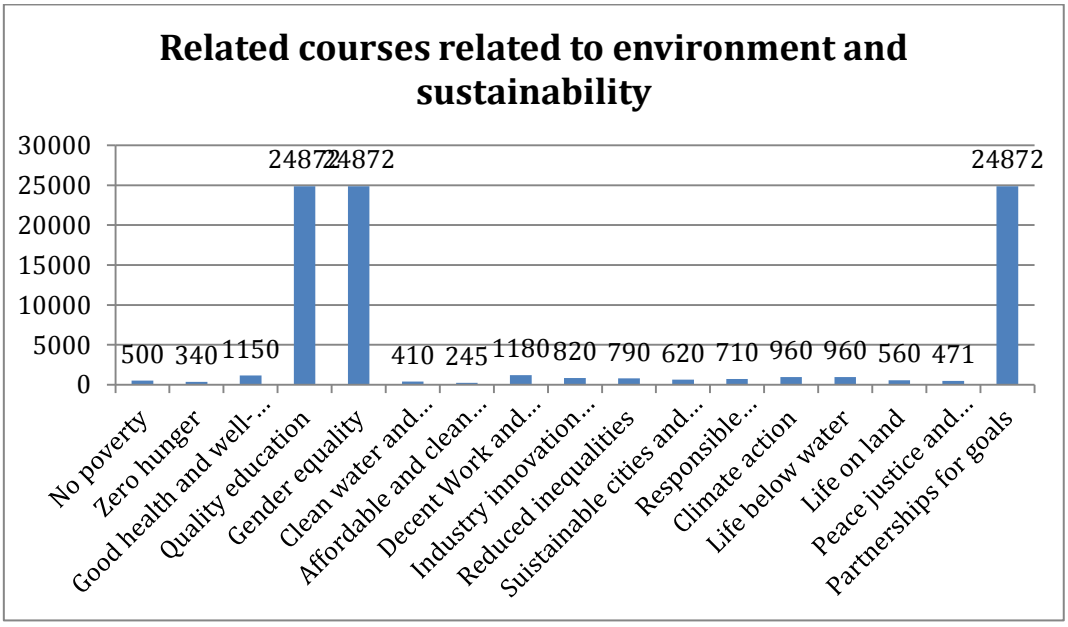
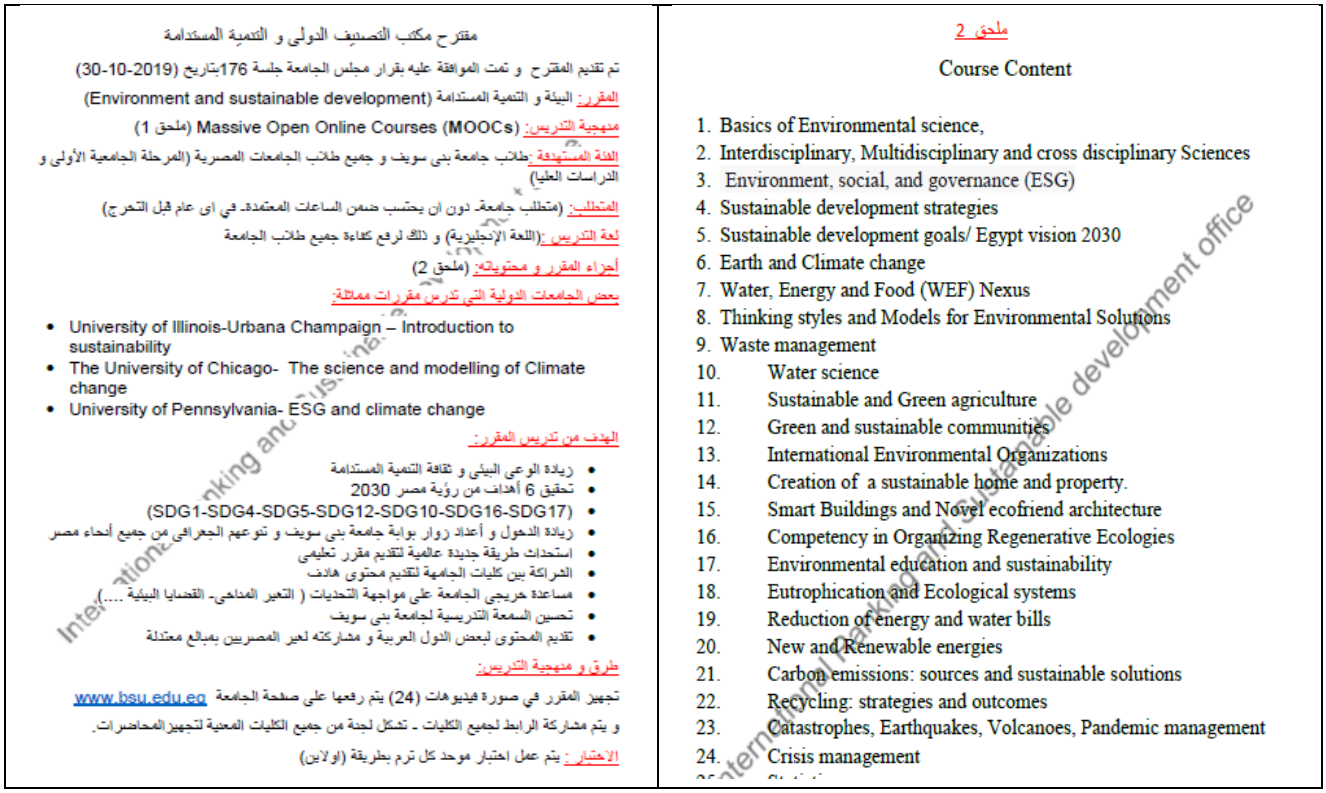


Fig. 2: bar chart describe the distribution of academic coursed among different goals of sustainability at BSU.

1.3.1.2. Support and approve different proposals for teaching courses encouraging the environmental saving such as the approval of the proposal rendered by the Office of International Ranking and Sustainable Development about teaching the environment and sustainable development electronic course. As shown by the **two below image**:



مقترح مكتب التصنيف الدولى و التنمية المستدامة

تم تقديم المقترح و تمت الموافقة عليه بقرار مجلس الجامعة جلسة 176بتاريخ (30-10-2019)

المقرر: البيئة و التنمية المستدامة (Environment and sustainable development)

منهجية التدريس: Massive Open Online Courses (MOOCs) (ملحق 1)

الفئة المستهدفة :طلاب جامعة بنى سويف و جميع طلاب الجامعات المصرية (المرحلة الجامعية الأولى و الدراسات العليا)

المتطلب: (متطلب جامعة- دون ان يحتسب ضمن الساعات المعتمدة- في اى عام قبل التخرج)

لغة التدريس :(اللغة الإنجليزية) و ذلك لرفع كفاءة جميع طلاب الجامعة

أجزاء المقرر و محتوياته: (ملحق 2)

بعض الجامعات الدولية التي تدرس مقررات مماثلة:

- University of Illinois-Urbana Champaign – Introduction to sustainability
- The University of Chicago- The science and modelling of Climate change
- University of Pennsylvania- ESG and climate change

الهدف من تدريس المقرر:

- زيادة الوعى البيئى و ثقافة التنمية المستدامة
- تحقيق 6 أهداف من رؤية مصر 2030 (SDG1-SDG4-SDG5-SDG12-SDG10-SDG16-SDG17)
- زيادة الدخول و أعداد زوار بوابة جامعة بنى سويف و تنوعهم الجغرافى من جميع أنحاء مصر
- استحداث طريقة جديدة عالمية لتقديم مقرر تعليمى
- الشراكة بين كليات الجامعة لتقديم محتوى هادف
- مساعدة حريجى الجامعة على مواجهة التحديات (التغير المناخى- القضايا البيئية ....)
- تحسين السمعة التدريسية لجامعة بنى سويف
- تقديم المحتوى لبعض الدول العربية و مشاركته لغير المصريين بمبالغ معتدلة

طرق و منهجية التدريس:

تجهيز المقرر في صورة فيديوهات (24) يتم رفعها على صفحة الجامعة www.bsu.edu.eg و يتم مشاركة الرابط لجميع الكليات - تشكل لجنة من جميع الكليات المعنية لتجهيز المحاضرات.

الاختبار : يتم عمل اختبار موحد كل ترم بطريقة (اونلاين)

ملحق 2

Course Content

1. Basics of Environmental science,
2. Interdisciplinary, Multidisciplinary and cross disciplinary Sciences
3. Environment, social, and governance (ESG)
4. Sustainable development strategies
5. Sustainable development goals/ Egypt vision 2030
6. Earth and Climate change
7. Water, Energy and Food (WEF) Nexus
8. Thinking styles and Models for Environmental Solutions
9. Waste management
10. Water science
11. Sustainable and Green agriculture
12. Green and sustainable communities
13. International Environmental Organizations
14. Creation of a sustainable home and property.
15. Smart Buildings and Novel ecofriend architecture
16. Competency in Organizing Regenerative Ecologies
17. Environmental education and sustainability
18. Eutrophication and Ecological systems
19. Reduction of energy and water bills
20. New and Renewable energies
21. Carbon emissions: sources and sustainable solutions
22. Recycling: strategies and outcomes
23. Catastrophes, Earthquakes, Volcanoes, Pandemic management
24. Crisis management

Fig. 3: Copy of the approved proposal's first page for the environment and sustainable development electronic course at BSU..

1.3.1.3. Frequently hold many campaigns, initiatives, sustainability training programs, seminars, workshops and conferences aiming to raise the awareness among students, faculty and staff about climate changes, decarbonization and climate resilience.

1.3.1.4. Engagement of Students with Sustainability and combaying climate change through different organizations and units.

1.3.1.5. Continuing launching of different campaigns, initiatives, informative lectures, and sustainability training programs and workshops around the campus is one of the effective methods to decrease carbon emissions. These should aim to raise the awareness of reducing the annual consumption of utilities such as energy, water and paper.

1.3.2. Scientific Research

BSU contiuously support meaningful climate change research projects, through:

1.3.2.1. Encouraging and providing funding for many projects that aim to reduce carbon dioxide emissions and global warming.

1.3.2.2. Getting funding for a large number of research projects in the energy field.

1.3.2.3. Holding cooperation protocols and international exchange between Beni-Suef University BSU and French, Spanish and Japanese universities in different environmental fields.

1.3.2.4. Scientific cooperation programs with Italy under the auspices of the Science, Technology and Innovation Funding Authority in fields of renewable energy, materials science and engineering and environmental sciences.

1.3.2.5. Investing in environmental projects to compensate for the share of BSU emissions.

1.3.2.6. Supporting innovative solutions to address environmental problems.

1.3.2.7. Many theses and diplomas are interested in the field of environmental;pollution, energy field and renewable energy at BSU. For example, Environmental and Energy Department at Faculty of Postgraduate Studies for Advanced Sciences is concerned with giving many master's and doctorate degrees as well as diplomas in more than 10 programs specialized in fields of energy, environment, climate change, cement chemistry and technology and quality control.

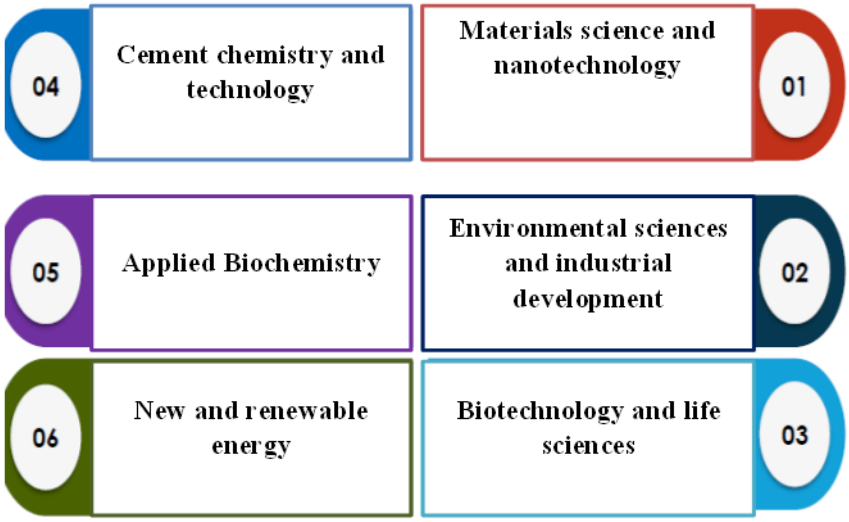


Fig. 4: Some of the environmental progroms at Faculty of Postgraduate studies for Advanced Sciences, BSU..

1.3.2.8. Faculty of Postgraduate studies for Advanced Sciences and Faculty of Earth Science have a strong infrastructure of integrated devices and laboratories that continuously conducts advanced researches and studies to solve environmental problems and to achieve the sustainable development goal based on reducing carbon dioxide emissions and combate environmental pollution.

1.3.2.9. Registration of master's and doctoral theses based on the research plan that serves the goals of sustainable development.

1.3.2.10. The participation of students in competitive master's scholarships from the Center of Excellence for Water in cooperation with the American University in Egypt.

1.3.2.11. Faculty of Postgraduate studies for Advanced Sciences has programs that serve the goals of sustainable development such as:

1.4. Collaborations to lower GHG emissions

As part of the commitment to engage with local communities and non-governmental organizations (NGOs) aiming to establish collaborations and boost local capacity to take part in climate change initiatives, ***Beni-Suef University BSU will continue to:***

1- Participate in different events and conferences to share its planes and strategies that support sustainable development goals with local government and /or local community groups, and to build partnerships with companies and factories.

2- Encourage fruitful and constructive cooperation between the University and third parties in various fields in a way that contributes to serving the community and increasing the awareness. In addition, these protocols aim to optimal exploitation of local resources and capabilities in a manner consistent with the Egypt's plan for sustainability and National strategy for higher education . For example:

   a. A cooperation protocol between BSU and the Holding Company for Drinking Water and Wastewater.
   b. A partnership with the Center of Excellence for Water, a USAID funded project.
   c. A cooperation protocol between the university and Chinese Research Center of Excellence for Water Management and Technology.
   d. A cooperation protocol between Beni-Suef University and the Arab Organization for Industrialization.
   e. A Cooperation protocol between Faculty of Earth Science and the Industrial Control Authority.
   f. A cooperation protocol between the Faculty of Earth Science at Beni-Suef University and the General Authority for Mineral Resources
   g. A cooperation protocol between Beni-Suef University and the New Valley Governorate to reclaim land and increase the productivity of acres in the New Valley.

h. Participation of Beni-Suef University in the National Committee for Sustainable Development and Governance
i. Cooperation with the Regional Center for Teaching Space Science and Technology.
j. Cooperation protocol between the scholarships sector of the Ministry of Higher Education and Scientific Research.

1.5. Funding for climate change

Funding specifically for climate change programs is necessary to solve the issue more quickly. The university's sustainability budget supports its initiatives to reduce greenhouse gas emissions, improve our resilience to the consequences of climate change, and provide opportunities for climate education. An essential tool for funding BSU's climate-related projects that support the implementation of the university's Climate Change Action Plan will continue to be the Sustainability Support Fund. The average percentage sustainability budget for the university during the last three years is 48.68%. **Figure 5** describes the evolution of the average sustainability budget from 2021 to 2023. The university spendings on sustainability activites increased significantly during the year of 2023. However the increase is not totally reflected in the percentage change from 48.16% in 202j2 to 54.48% in 2023 due to the exchange rate depreciation for the Egyptian Pound against the US dollar.

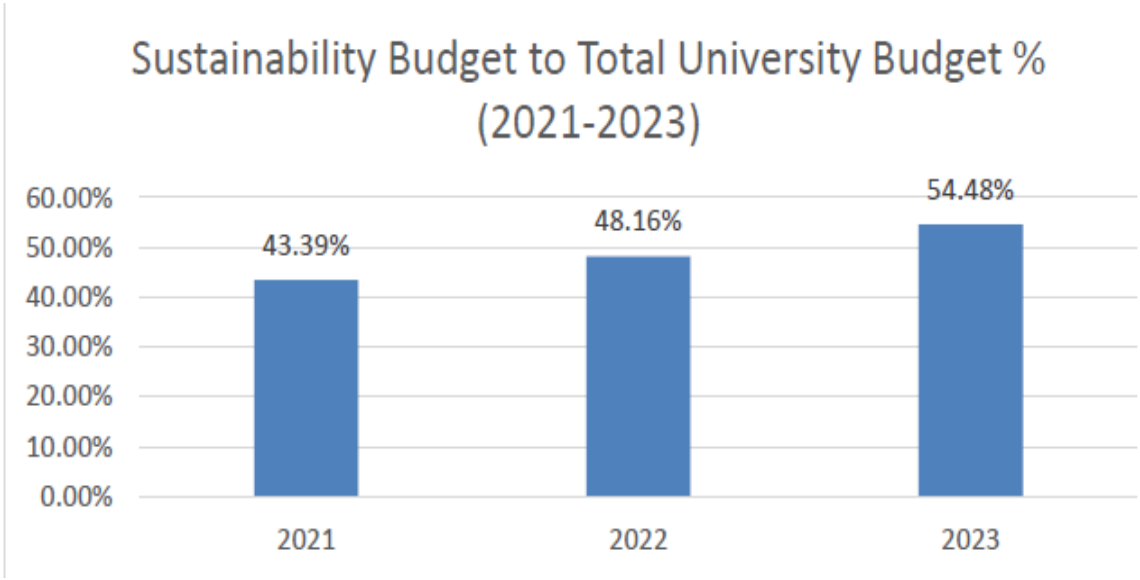


Fig. 5: The University budget for sustainability effort compared to the total budget from 2021 - 2023..

Pillar 2: Cutting down on GHG emissions

Although BSU has demonstrated different climate change initiatives, more work is needed to achieve our GHG targets for 2030 and 2050. Beni-Suef University is a public sector university currently educating more than 92,000 students at three campuses and different separated institutes and

faculties. It seeks to reduce the emissions, by reviewing the way of operation and activities, and setting targets and metrics and continuously follow up on progress, where various actions are taken to achieve a net-zero society.

2.1. Goals to reduce GHG emissions

BSU will keep doing the following as part of its commitment to reducing GHG emissions:

2.1.1. Work towards achieving our 2030 GHG reduction target equal to at least 45 percent below 2021 emission levels.

2.1.2. Measure, forecast and report progress towards the GHG reduction targets.

2.1.3. Commit to reach net-zero GHG emissions by 2050 through a suite of actions, focusing on all key sectors and including new low-carbon technologies and naturebased solutions, such as biofuels and clean hydrogen, clean electricity, and sustainable water and waste management.

2.2. Using energy more efficiently and making buildings more energy efficient

As part of the commitment to reduce GHG emissions in BSU, it will continue to: Support energy efficiency programs and explore opportunities for improvements. Clearly, energy sector is the largest emitter of carbon emissions and is the largest contributor to climate change compared to other sectors in the university, ***so BSU will continue to do to the following****;*

2.2.1. Arranging a budget for energy-saving improvement projects annually and it pays a great attention to rationalize energy consumption.

2.2.2. Generalizing the use of lamps and lighting poles with light sensors inside all different buildings of the university. This allows the automatic lighting and closing in response to sunlight and hence, energy saving and reducing climate change.

2.2.3. Providing different buildings with more modern and energy-saving means such as smart outlets that allow the passage of sunlight with keeping the atmosphere cool leading to a reduction in the use of air conditioners.

2.2.4. Continuous launching of different campaigns, initiatives, workshops and seminars to raise the awareness of energy saving and to encourage youth to find innovative solutions for energy problems.

2.2.5. Directing to restore the old buildings with better insulation.

2.2.6. Finding alternative environmentally friendly modes is one of the most important concerns for all parts of the organization. Hence, the ordinary

filament bulbs are replaced with LED bulbs at all parts of Beni-Suef University. LED bulbs are the most environmentally friendly bulbs that save more than 85 % of electrical energy compared to filament bulbs.

2.2.7. Providing energy-saving air conditioners and refrigerants.is to reduce the electricity consumption.

2.2.8. The periodic supervision of the University's administrative security for all offices, research laboratories and halls after the end of the official working hours, to ensure that all light sources are closed.

2.2.9. Regular Maintenance of all devices.

2.2.10. The use of light – colored paints inside college buildings to increase lighting during daytime periods reducing the use of the artificial light.

2.2.11. Distribution of ventilation holes in halls, offices, roads and building entrances to help natural lighting at the university during daytime periods.

2.2.12. The university uses energy-saving and self-battery research devices to control the amount of the electricity for devices.

2.2.13. Giving strict instructions for all university employees and students not to use electric boilers and instead, providing special places as buffets that are powered with natural gas or cooking cylinders.

2.2.14. All buildings of the university apply passive cooling means that help in improving the indoor thermal comfort with low or no energy consumption. These means are for example proper sized shading of glass when heat gains are being avoided and the use of light or reflective colored materials for the building envelope and roof.

2.2.15. Rationalizing the consumption of the daily amount of water contributes to save the energy needed to pump. Hence, water efficient appliances are used such as water taps with automatic sensors.

2.2.16. Completing implementation procedures after approval of the University Council to open registration for the professional master's program in (construction and building materials integrated management of the environment and water)

2.3. Access to clean, affordable transportation options

At BSU, transportation is considered the second-biggest source of greenhouse gas emissions. To reach our 2030 and 2050 GHG reduction goals, the transportation sector must continue to decarbonize. By using other modes of transportation and lowering our reliance on personal vehicles,

BSU will achieve the biggest reductions. In an effort to improve the flow of people and products throughout campus, ***the university will keep doing the following:***

2.3.1. Better access to cost-effective, environmentally friendly modes of transportation including ridesharing, public transportation, and personal cycling.

Fig. 7: Launching the Bicycle Festival each academic year at BSU.

2.3.2. There are several initiatives that have been conducted in the University to reduce number of private cars, such as:

a. Car Free Day Project by reducing the number of days allowed for parking of private cars aiming to reduce air and noise pollution, traffic congestion.

b. An initiative launched by a number of the university staff for leaving their university cars from accessing to the university campus for three months.

2.3.3. Creating programs to support and accomplish the goal of switching freight transportation to zero-emissions using clean fuels and fuel-saving techniques for transporting goods across the university.

2.3.4. Investigating ways to increase the effectiveness of the transportation of commodities and encouraging alternate modes of transportation.

2.3.5. Directing to replace petrol and diesel tanks with cars and buses running on natural gas or biofuel.

2.3.6. Cars are NOT allowed for parking except in specified areas in each university site.

2.3.7. Establishing of external parking areas in front of all campuses

2.4. Powering the University with clean and renewable energy

BSU is continuously working to reduce the effects of global warming and to be a green and healthy University . It also believes in the big role of the renewable energy next periods. The University continually encourage to use energy more efficiently and switch from carbon-based fuels to clean and renewable energy sources, such as clean electricity and decarbonized fuels, in order to lower GHG emissions from the production of power. By pursuing new technologies and cleaning up the electrical industry, the University will be able to achieve net-zero and clean energy potential.

Even if switching to cleaner electricity has many advantages, there will be drawbacks as well, particularly with regard to how the university will balance meeting the rising demand for electricity with reducing the effects of electricity rates. It is obvious that the university will need the government support in order to do this. ***The University will keep doing the following as part of its commitment to using clean and renewable energy to power the institution***:

2.4.1. Promote and assist cutting-edge tools and technology to enable higher efficiency gains in the electrical industry.

2.4.2. Support sustainability projects and stimulating different aspects of sustainability within the curriculum.

2.4.3. Encourage the expansion of economically viable renewable energy sources for heating and power generating.

2.4.4. Getting cooperation protocols aimed at providing renewable energy and solving environmental problems.

2.4.5. Circulate solar energy project within different parts of Beni-Suef University. As exemplified by using light poles working with solar energy and operating different buildings with solar energy.

2.4.6. Encourage to install new roof-mounted photovoltaic panels on the various buildings.

2.4.7. Manufacture materials that can be used in energy storage and conversion of solar energy

2.5. Cutting waste and repurposing it as a resource

BSU focuses on having a green atmosphere and spaces within the university, to provide students and staff with a good quality of life by living in a beautiful environment with good air quality. Organic waste, which includes animal manure, wastewater biosolids, and food industry waste, is the main contributor to greenhouse gas emissions from existing waste management procedures. The university places great emphasis on reducing all kinds of pollution, for esample:

2.6.1. Having of measures to minimize food waste at BSU. **Figure 7**

2.6.2. Eatablishing og Waste Recycling Center that is considered one of the production units and is concerned with treating organic materials in the most appropriate and best way to produce high quality organic fertilizer. **Figure 7**

2.6.3. The Waste Recycling Center is also interested in separating useful materials such as metals, plastics, glass, paper and other recyclable materials from useless wastes and preparing them for sale in the local market. Where, more than 200 kg of paper and plastic were processed **Figures 8 - 10**

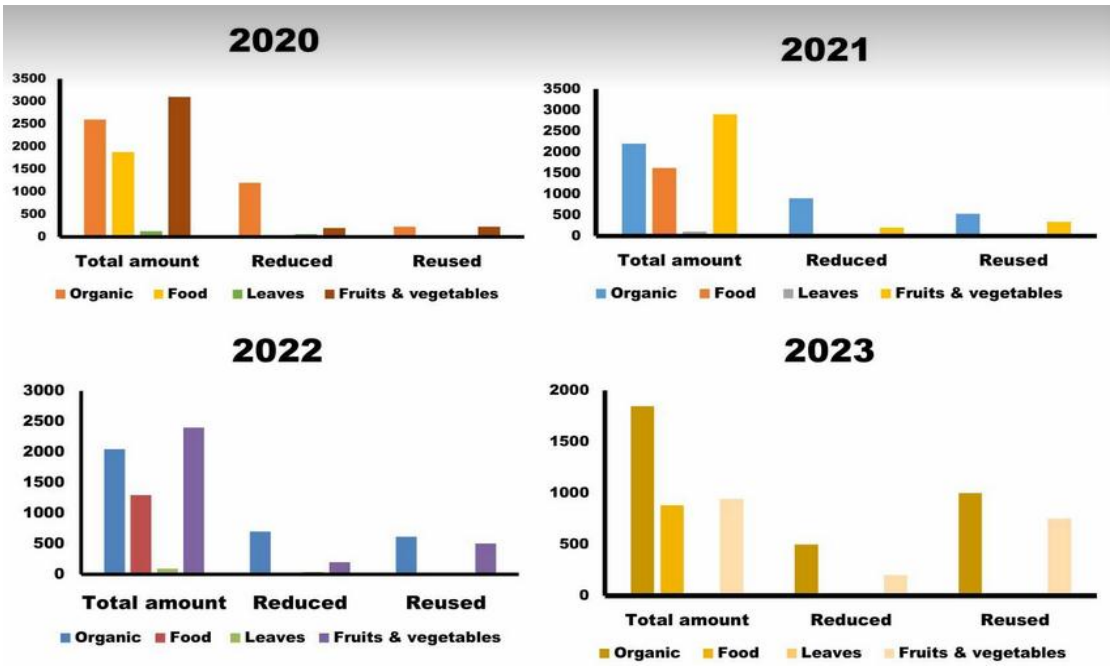


Fig.7: 3R program for different organic waste types over the course of 4 consecutive years at BSU

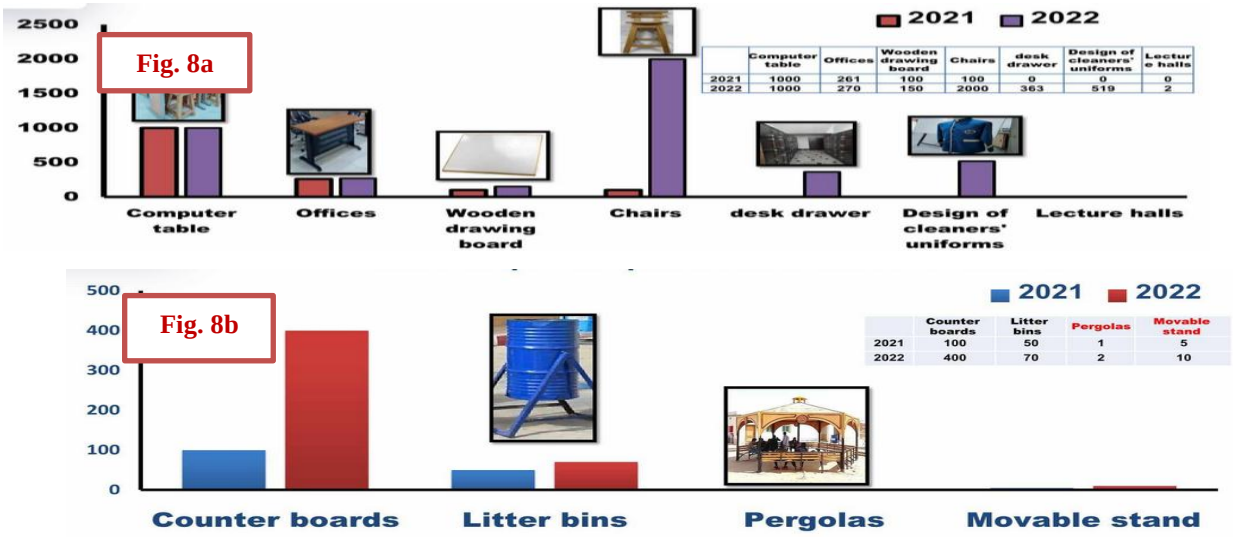


Fig. 8 (a) and (b): Some services regarding the reuse process that are offered by Center of Workshops and Production at BSU.

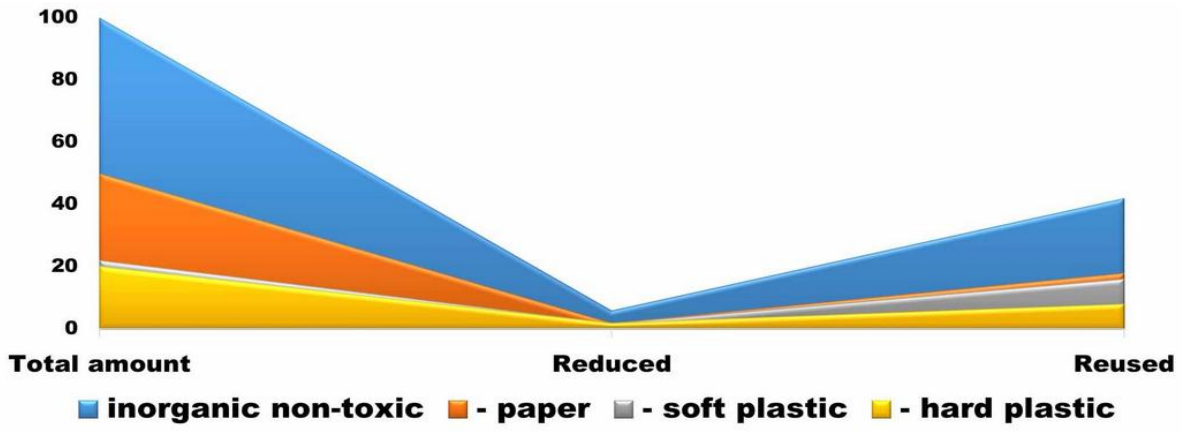


Fig. 9: Treated amount (Kg) of inorganic waste at BSU in 2022.

Fig. 10: Diagram illustrating the different types of waste sustainably managed at BSU

2.6.4. Cooperation protocols to implement training courses on handicraft industries for both undergraduate and postgraduate students.

2.6.5. The participation in the electronic waste management project for university youth.

2.6.6. The Center for the Development of Means of Preserving the Environment within the University aims to identify environmental problems and work to solve them scientifically. It also aims to combat all causes of pollution from all sources, to deal with garbage and wastes, to recycle wastes and to raise environmental awareness among students.

The University will keep doing the following as part of its commitment to reduce waste and convert it into a renewable resource:

2.6.7. Create and carry out a Solid Waste Management Strategic Action Plan to reduce the amount of organic and recyclable material that is dumped in landfills in order to achieve an overall avoidance of GHG emissions.

2.6.8. Examine ways to cut down on waste, such cutting down on food waste.

2.7. Promoting climate-smart fisheries, aquaculture, and agriculture

Beni-Suef University has been a positive force in conservation and environmental effort as follow:

2.7.1. Department of Fisheries at the Faculty of Veterinary Medicine, BSU, prepares veterinarians with distinguished scientific and practical skills in the field of fish diseases and care and are able to implement research plans to develop fish wealth and solve their problems, in addition to participating in preserving the environment and human health.

2.7.2. Covering of meat and fish technology and their products in the Department of Livestock at Faculty of Agriculture.

2.7.3. There are clear and cautionary policies and programs in all parts of the university for the safe and proper disposal of different waste types aiming to secure pure water.

2.7.4. Establishment of greenhouses aiming to expand the investment in the cultivation of variable plants, to maximize the economic return by increasing the production of these crops and to establish the concept of superior quality.

2.7.5. The presence of a cattle farm and the produced milk is used by the Center of Production and Student Services in the main campus of BSU to produce dairy products and their derivatives. These products are sold through 4 outlets distributed in the main campus, the 320 acres complex and the industrial education complex of BSU.

2.7.6. Holding a cooperation protocol with the Company for Animal Production that aims to; a) prepare and implement workshops and training programs and research project services, b) exchange experiences and participate in animal production projects, and c) establish model farms.

2.7.7. Establishment of Center for Agricultural Research and Products comprising 13 production units aimed at linking the educational process inside the university with the outside community. For example, 3 production units with their outlets are available at Faulty of Agriculture namely; honey unit, detergents unit and seedlings unit and their products are sold to university workers as well as citizens.

2.7.8. Beni-Suef University is one of the most important universities linked to the agricultural environment such as:

a) Faculty of Agriculture has a number of diverse departments and four basic programs namely; plant production, animal and poultry production, food and dairy industries and biotechnology.

b) Making agricultural convoys to help the farmer to identify his real problems and to give support and provide him with everything new in modern agricultural methods and systems.

c) Faculty of Agriculture implements 8 training courses in various fields including; i)animal and agricultural production, ii) feed manufacturing, iii) production of microbial vaccines and fertilizers, iv) soap and disinfectants manufacturing, and v) environmental safety, occupational health and security of laboratories

d) Encouraging and funding the research projects about the production of biofertilizers based on agricultural wastes which aims to encourage organic agriculture and leaving the conventional chemical fertilizers.

e) Cooperation and successful partnership between BSU and the Ministry of Agriculture and Agricultural Reclamation in the agricultural innovation project.

f) Maximizing the importance of producing aromatic and medicinal plants, to provide solutions raising the efficiency of crops and various other things through different departments at Medicinal and Aromatic Plants Research Institute.

g) Providing training courses for students about different systems and designs of aquaponics (soilless farming).

h) Having various initiatives aimed at producing safe food, such as: i) launching the “Clean Agriculture” initiative through the cooperation of the Faculty of Agriculture with the Directorate of Agriculture in BSU and the Agricultural Research Center in the village of Sads, and ii) the university’s participation in the 4 per 1000 initiative on food security and climate.

i) Cooperation with ten Arab and European universities in the project of enhancing biodiversity in grain farming systems in the Mediterranean basin seeking to achieve sustainable development in agricultural systems for

wheat and some leguminous crops to confront climate change, rationalize irrigation water consumption, increase soil fertility, and raise nutritional value and disease resistance.

j) Organizing agricultural convoys to assist farmers in recognizing their true issues, offering them assistance and up-to-date information on contemporary farming techniques and systems. This aims to the optimal practice in the use of fertilizers and rational management of nutrients for plants and access to the highest agricultural productivity.

In keeping with its pledge to promote climate-smart fisheries, aquaculture, and agriculture, the University will:

- Collaborate with the government to develop and carry out initiatives that lower greenhouse gas emissions and increase the resilience of the agriculture industry.
- Use simulation models to improve water productivity and yield in dry areas.
- Use modern and non-traditional techniques in the agricultural sector, including the applications of area sciences, geographic information systems and remote sensing.
- Encourage the production of food and drink locally.
- Conduct studies on rising groundwater levels and their negative effects on the surrounding environment and infrastructure, as well as the quality of agricultural soil.
- Evaluate several sewage treatment plants in Beni-Suef, Governorate.
- Focus n the storage and utilization of rainwater and the use of abundant local underground aquifers to meet the water needs for irrigation and planting.

2.8. Green operations

BSU focuses on having a green atmosphere and spaces within the university, to provide students and staff with a good quality of life by living in a beautiful environment with good air quality. Moreover, the university places great emphasis on reducing all kinds of pollution and at the same time increasing energy conservation both inside and outside the university's buildings. The university emphasize the activities that everyone can participate in. In addition, to attempting to reduce the amount of garbage, the university conducted many researches on environmental sustainability for the benefits of the community. BSU is continuously working to reduce the effects of global warming and to be a green and healthy University through supporting sustainability projects and stimulating different aspects of sustainability within the curriculum.

Also, university operations can be made greener through clean electricity, low-carbon fuels, net-zero buildings, clean-fueled vehicles, green procurement, and policies that acknowledge the circular economy and reduce waste in all its forms. ***Hence, the University will continue to:***

2.8.1. Implement the Green Procurement Policy to encourage the purchase of goods and services with a lower environmental impact.

2.8.2. Maintain and grow a comprehensive energy management and reporting system, as part of its commitment to greening**.**

2.8.3. Support the sustainable development of the local environment by helping community residents to understand sustainable development goals and effective strategies, and to provide them with professional knowledge on good water and energy management and to evaluate the effects of climate change and providing solutions.

2.8.4. Completing implementation procedures of the Center for Environmental Monitoring and Limiting the Risks of Climate Change at BSU. It will strengthen the university's role in facing climate change.

2.8.5. Cooperate with governmental water resources related departments. BSU also continue to collaborate with governmental organization and NGOs on climate adaptation.

Pillar 3: Climate change readiness

The steps listed in this section will improve BSU's ability to become ready for and adjust to changing climate conditions. These steps will be crucial in reducing the effects of climate change and build upon the substantial climate adaptation work that has been done thus far.

3.1. Recognizing and sharing the opportunities and hazards associated with climate change

The first step in preparing the University for future changes is to increase our knowledge of climate change and how it will affect our lives. Second, involving the local community, stakeholders, and partners across various sectors to provide the most recent climate change data, education and awareness, training, and climate tools and products—all of which are critical in increasing awareness and guaranteeing that climate knowledge and considerations guide decision-making.

As part of its commitment to comprehend and share climate change risks and possibilities, the University will keep:

3.1.1. sharing current climate information with the internal and external community at BSU and increasing knowledge of climate science and anticipated repercussions

3.1.2. Taking future climate circumstances into account when deciding whether to replace or repair infrastructure.

3.1.3. Encouraging and facilitating public information sharing opportunities to strengthen our group's resistance to climate change.

3.1.4. Determining the most important areas for research on the effects of climate change, create a network of researchers, and exchange data with partners.

3.1.5. Educating the people to raise awareness of erosion and sea level rise.

3.1.6. Providing better understand how climate change affects freshwater quality, hence we keep looking for ways to increase freshwater quality monitoring.

3.2. Adaptation planning and implementation

A more ambitious, strategic, and cooperative approach is needed to go from adaptation planning to implementation across a wider range of industries as part of our action plan, which was initiated in 2021 to combat climate change. The adaptation strategy for climate change will assist in setting priorities for the adaptation actions needed to anticipate and mitigate hazards that have been identified. ***Accordingly, BSU will continue to:***

3.2.1. Encourage the local community, rural areas, important industries, and non-governmental organizations to share their accomplishments and get ready for a changing climate.

3.2.2. Enhance infrastructure's ability to withstand climate change. Make sure that all significant projects, plans, and financing applications take climate change into account.

3.2.3. Arrange a budget for energy-saving improvement projects annually and pay a great attention to rationalize energy consumption.

3.2.4. Install new roof-mounted photovoltaic panels on the various buildings.

3.2.5. Increasing of the green spaces in all university campuses.

3.2.6. Adopt and implement an integrated waste management system.

3.2.7. Establishing of the center for environmental monitoring and limiting the risks of climate change. It will be a unique center at the level of Egyptian universities that will strength the university’s role in facing climate changes and in order to achieve the principle of sustainability and Egypt’s vision of 2030.

3.2.8. Create a database of problems which results in negative effects on the environment and directing them to be enrolled in master's and doctoral degrees.

3.2.9. Establish a number of environmental monitoring stations in cooperation to monitor carbon emissions.

3.2.10. Provide scientific advices in the field of wastewater treatment, and assessing the environmental impact of all development activities and projects at the governorate level.

Conclusion

Building on the implemented energy and water savings and carbon reduction policies over the next years, by 2050 BSU Campuses are expected to reach carbon neutrality.