



ZBEU'S Greenmetric Perspective

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Abstract. Environmental and sustainability issues are becoming increasingly important as rapidly advancing technology damages the environment and a growing world population depletes natural resources. UI GreenMetric draws attention to environmental and sustainability issues in higher education institutions, which are expected to provide research solutions to important global challenges. As a result of sustainability studies, sustainable and green campuses Zonguldak Bülent Ecevit University, which plans and manages its formation, aims to be a university that contributes to sustainable life as an "Exemplary Sustainable Green Campus" with environmentally sustainable education and training practices on national and international platforms. ZBEU is one of the most environmentally friendly universities in Turkey.

Keyword:

Sustainable campus, Green campus, UI GreenMetric, Sustainability

1. Introduction

Universities have important responsibilities to mitigate the effects of climate change, which affects the whole society, and to build a more sustainable world. In this regard, universities are expected to inform the whole society, especially students and employees, and to pioneer the development of awareness of these segments; to play important roles in reducing the impact of climate change and building a more sustainable world by conducting innovative studies and developing technologies [1].

Nowadays, with increasing environmental concerns, it is criticized that universities only evaluate their success in research and education. The society expects universities to lead sustainability studies and become green universities due to the opportunities they have.

In line with this expectation, it is considered important to measure the sustainability performance of universities as well as academic success and to determine the relationship between them. In this context, the aim of the study is to determine whether there is a direct relationship between the academic performances of universities and their sustainability performances. Today, university success rankings are made according to various categories by many international ranking institutions. Times Higher Education (THE-Times Higher Education Institution), Quacquarelli Syndoms World University Rankings (QS - World University Rankings), Akademic Ranking of World Universities (ARWU - Academic Ranking of World Universities), University Ranking By Academic Performance (URAP), National Taiwan University Ranking (NTU), Webometrics (World Universities' Ranking to the Web), G-Factor International University Rankings (Google Search International Universities Ranking), HEEACT (Performance Ranking of Scientific Papers for World Universities) are some of them. Unlike the research of these organizations, University of Indonesia GreenMetric (UI GreenMetric) is an organization that evaluates and ranks the sustainability studies on university campuses [2].

Sustainable university; It is a higher education institution that works to minimize the negative environmental, social and economic effects while carrying out its activities and leads the society in terms of a sustainable lifestyle. While the academic studies, research and teaching levels of universities are evaluated by various research institutions, the evaluation of their studies on environmental issues is quite new. "Green League", "Environmental and Social Responsibility Index" and "Green Metric" evaluations are a few examples that can be given in this regard. Among these, the GreenMetric Measurement System is the first and stands out as a global measurement system [3].

The University of Indonesia (UI) launched a world university ranking in 2010, and this ranking, which evaluates sustainability studies on campuses, was later named UI GreenMetric World University Rankings. The ranking created an online survey to profile the sustainability programs and policies of universities around the world. The ranking is generally based on the Environment, Economy and Equity conceptual frameworks. Ranking indicators and categories are arranged to be associated with each university. Indicators and their weights are organized to be as free from bias as possible. 95 universities from 35 countries, 18 from America, 35 from Europe, 40 from Asia and 2 from Australia, participated in the 2010 version of GreenMetric. In 2018, the ranking evaluated 619 universities from 76 countries from all over the world. This shows that GreenMetric is the first in its field and the only one in the world for sustainability [4].

The GreenMetric Measurement system, which was created to evaluate the efforts of universities to become sustainable universities, was developed by the University of Indonesia and was first implemented in 2010. Philosophy; environment, economy, equality and education. Categories and indicators have also been created in connection with these elements. Participation continues to increase each year. The GreenMetric Measurement system provides information and experience sharing between the universities participating in the evaluation and provides the opportunity for universities to see their weaknesses and

strengths on the path of sustainability. There are 6 main indicators in GreenMetric and the ranking of universities is made on these indicators. Indicators; campus layout and infrastructure, energy and climate change, waste management, water management, environmentally friendly transportation opportunities, teaching [3].

Environmental sustainability, in addition to being a frequently studied research topic in higher education; It is now a concept that universities adapt to their own living spaces. In this context, universities are reshaping their activities and trying to completely change their current functioning. The concept of “Green University/Campus - (Green University/Campus)” and the environmental activities carried out are increasingly used by universities every year in order to be sustainable [5].

2. Material and Method

It consists of 12 campus areas of Zonguldak Bülent Ecevit University. Each of these campuses has separate infrastructure components and continues its education, training and research activities by being established in the Central District of Zonguldak and a total of six districts. In this context, our university continues its education and training with its structure consisting of 14 Faculties, 3 Institutes, 4 Schools, 9 Vocational Schools and 1 State Conservatory. The largest campus in terms of number of students and administration is Farabi campus, and Zonguldak is located in the central district, while all other faculties and units are located in the districts (Figure 2).

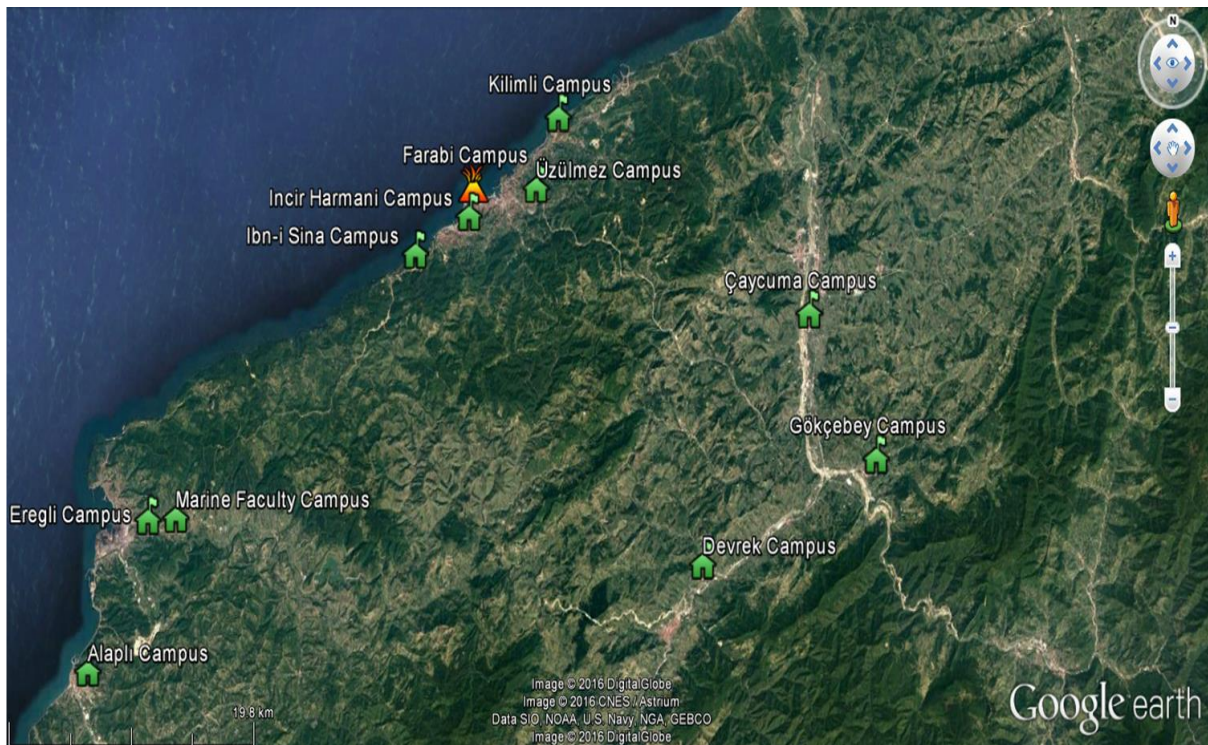


Figure 1. Zonguldak Bülent Ecevit University Campuses and Distribution [4].

Approximately 77,394 m² of the total land rate of 2.517,685 m² of the campuses of

Zonguldak Bülent Ecevit University is greened area.

Smart building applications are widely used in new buildings at Zonguldak Bülent Ecevit University. The newly built Faculty of Engineering, Faculty of Theology and Prof. Dr. Durmuş Günay Library buildings have been designed with smart building applications starting from the project stage and their construction has been completed. In our other buildings, smart building applications are included within the scope of repair and renovation works. Fire alarm systems, security systems, smart lighting systems and automatic doors constitute smart building applications.

In this study, we describe the studies and workshops that ZBEÜ has done within the framework of greenmetric.

3. Environmental Workshops organized by ZBEÜ

October 4-5, 2019 Environmental Universities National Workshop is important for many universities in Turkey to learn about the ranking and to encourage participation by providing a wide-ranging information sharing environment about the GreenMetric ranking, which we are the coordinator of Turkey. Within the scope of the workshop, where experience was shared by the universities that participated in the ranking, questions about environmentalist campuses and sustainable policies were answered both by our university and directly by the GreenMetric administration; There has been an opportunity for universities to improve themselves in the fields of zero waste project and waste management, which are directly related. At the Environmental Universities Turkey Workshop, where we had the opportunity to show the representatives of universities from many parts of Turkey, how sensitive our university is to the GreenMetric criteria, zero waste project, and creating green campuses, and that it sets an example for other universities in this regard, ZBEU, in our country. He also undertook the task of guiding the dissemination and successful implementation of the GreenMetric ranking in the field of higher education.

Zonguldak Bülent Ecevit University, one of the "Most Environmentalist", "Greenest" and "The Most Respectful to Nature" universities in the world and in Turkey in the fields of environmental awareness, energy, waste, transportation management and sustainability, is an Indonesia-based Greenmetric, an international platform in environmental awareness and sustainability. Ranked first in Turkey in the World Environmental Universities Ranking in 2014-2015 and 2016 consecutively; It was the second in Türkiye in 2017 and the third in Turkey in 2018; It has also moved up its place among world universities, rose to the 239th place in 2014, 217th in 2015, 195th in 2016, 190th in 2017 among world universities, and lastly, it was ranked 193rd among 719 world universities in 2018, with respect to the environment and nature awareness. It has proven to the national and international public that it is a "green university" that moves and makes it sustainable. Studies and practices in the direction of environmental awareness and sustainability continue with importance.

The Greenmetric workshop was hosted by ZBEÜ for the second time between September 30 and October 1, 2022 (Figure 2). It took place with a large participation.

Under the leadership of our University's Zero Waste Management Coordinator, the

Climate Change and Zero Waste Summit was held with the slogan "Change Yourself, Not the Climate". It was stated that the aim of the summit was to raise awareness about the causes and possible effects of climate change and to raise awareness about the importance of environmental health and recycling. "Zero Waste"; It is a target defined as a waste management philosophy that includes preventing waste, using resources more efficiently, preventing or minimizing waste generation by reviewing the causes of waste generation, and collecting and recycling waste separately at the source in case of occurrence.

In order to ensure that people's socio-economic quality of life is sustainable, fossil fuel resources used in energy production and all ecosystem resources used in production must be used and protected in the most efficient way. As living standards and consumption habits change as a result of increasing population and urbanization with the technological innovations that emerged due to the industrial revolution, more waste is generated than in the past. This situation, on the other hand, causes air, water and soil pollution to such an extent that it threatens all living things, such as the depletion of natural resources and climate change. Within the framework of sustainable development principles; In order to control our wastes and to leave a clean, developed Turkey and a livable world to future generations, the zero-waste principle should be targeted and waste management should be ensured with an integrated approach.



Figure 2. 30 Eylül-1 Ekim 2022 ZBEÜ Greenmetric Workshop

4. ZBEU Perspective

Zonguldak Bülent Ecevit University (ZBEU) is among the leading higher education institutions in Western Black Sea Region of Turkey offering high quality education to more than 37.000 students. With 14 faculties, 4 schools, 9 vocational schools and 3 graduate schools, ZBEU centers its activities around three mottos. These are high quality education, service to society and internationalization.

A comprehensive recycling program is implemented for all wastes at Zonguldak Bülent Ecevit University. There are boxes for waste types in buildings on all campuses and it is ensured that staff and students separate and dispose of their wastes. The Zero Waste program, which is widely implemented throughout the country, is effectively implemented at our University. Individual waste bins in the offices of academic and administrative staff are removed, and all staff and students are allowed to separate and dispose of their wastes as paper, glass, metal and plastic, and all wastes are weighed, recorded and given to recycling companies.

Two programs have been put into effect in order to reduce the use of paper and plastic at Zonguldak Bülent Ecevit University. The first of these is the Electronic Document Management System, which enables all official correspondence to be made completely electronically without printing. This program ensures that correspondence, which is thousands of pages per year, is stored electronically in a secure and efficient manner and can be accessed when necessary. The other program is a two-way printout policy. All academic and administrative staff are encouraged to take two-sided printouts and it is aimed to save 50% of paper. The cafeteria, canteen and garden wastes of the University are collected by the Zonguldak Municipality and processed in the waste separation facility. In addition, organic wastes such as leaves and grass are composted within the campus and used in gardening. Inorganic wastes are collected within the scope of the Zero Waste project, which is widely implemented in all campuses, and given to authorized companies for recycling. In addition, within the scope of the protocol signed with TUBISAD, electronic waste containers were placed on campuses and these wastes were recycled to the country's economy. Inorganic wastes such as glass and metal are collected separately and delivered to the authorized company and disposed of.

Toxic and hazardous wastes from units such as Zonguldak Bülent Ecevit University Hospital, Faculty of Arts and Sciences, Science and Technology Application and Research Center are stored in a special collection area, given to İZAYDAŞ at regular intervals, and thus they are disposed of without any harm to the environment. All toxic wastes of the university are necessarily disposed of in this way. In addition, hazardous wastes such as batteries and print cartridges are collected separately and sent for recycling.

All sewage wastes of the University Farabi Campus are processed in the advanced biological wastewater treatment plant of Zonguldak Municipality. The İbni Sina campus, where the Practice and Research Hospital is located, is equipped with 2 package type wastewater treatment plants for 5000 people, since it is far from the wastewater treatment plant. It is ensured that any untreated sewage waste is not discharged into the sea. In other campuses, the planning of sewage treatment projects continues within the framework of the possibilities of local governments.

ZBEU considers service to society a priority and in this respect, protection of the nature and resources, saving energy and environmentally friendly setting and infrastructure are closely linked with ZBEU's mission. Considering the fact that universities are centers of research and applications to solve world problems, ZBEU considers education and research on environmental problems a priority. These mottos being closely related with UI

GreenMetric World University Ranking, ZBEU has been participating UI GreenMetric since 2014.

Zonguldak Bülent Ecevit University ranked 1st among Turkish universities in 2014, 2015 and 2016. In 2017 and 2018 BEU ranked 2nd and 3rd respectively. In 2019 ZBEU ranked 6th. In 2020 ZBEU ranked 14th. However this does not mean that ZBEU is scoring less according to GreenMetric criteria. Instead, we are working hard to make GreenMetric more common in Turkey. Every year, more universities are participating and considering the Ranking as a significant indicator of excellence. Also the Turkish Council of Higher Education has accepted GreenMetric as an evaluation criteria of universities. Thus, as the national coordinator, we are working hard for more participation and adherence to GreenMetric criteria instead of engaging in simple competition. With ZBEU's assistance, universities in Turkey are beginning to have more awareness about environmental concerns and educating next generations with an environmental awareness, which is probably the most significant output of the Ranking.

At ZBEU, most of the applications indicated in UI GreenMetric World University Ranking have been in implementation for quite long and have turned into institutional culture. On all 12 campuses, collection of waste for recycling, use of energy efficient appliances, water and electricity conservation programs have been in implementation. Institutional policies are in practice to reduce carbon foot print and CO₂ emissions. ZBEU is continuing its green growth with construction and renovation of smart buildings which save all forms of energy as much as possible.

ZBEU's applications in the field of green campuses is totally consistent with national priorities of Turkey. In 2018, a country-wide project named "Zero Waste" was initiated by Presidency. This project aims to recycle as many resources as possible to save the nature as well as providing financial support to economy. The waste separation and encouragement of recycling promoted by "Zero Waste" have already been in progress in ZBEU and have become part of the institutional culture. Thus we plan to be one of the leading universities in Turkey in "Zero Waste" project. All our campuses have been granted with Zero Waste certificate which approves adherence to the program's principles.

At the beginning of 2019, Turkish Council of Higher Education (YOK) announced main areas on which universities will receive scores. Among these areas are green campus applications, awards received and ranks in terms of sustainability and respect to environment. The establishment of these national criteria by Council of Higher Education is quite significant and as ZBEU we are proud that we definitely have a share in arousing awareness in the process of establishment of these criteria. As the National Coordinator, we have initiated this awareness before all projects and institutions in Turkey and we pursue our path to excellence.

Keeping the national situation and our responsibility in mind, we decided to focus on educational activities during the last year. Also because of the global Covid-19 pandemic it is not always possible to arrange face-to face activities. We have a number of nature-friendly applications in place on our campuses. These have certain benefits and present good examples. However, by means of education, we can spread environmental awareness and

let it develop in all universities, all students and academic staff in Turkey. Another reason behind our focus on education was financial concerns. For big scale projects it is not possible to get financial support because of extensive growth of Turkish higher education system and limited national financial resources. However, education is cost-effective and more useful in fulfilling our duty as the national coordinator.

5. Conclusion

The Mission of ZBEU Zero Waste Unit is to plan, implement, monitor and implement environmentally friendly practices in order to reduce waste in all campuses of the university, in line with the recommendations of the ministry. Our mission is to contribute to the progress of the region by achieving the success of the zero waste project, which aims to protect natural resources, prevent waste and reduce waste. Zero waste; including preventing waste, using resources more efficiently, reducing the amount of waste generated, establishing an effective collection system, and recycling waste; It is defined as the "waste prevention approach". It aims to contribute to the whole world and universities. Zero waste advocates avoiding waste and preventing, reducing, reusing and recycling waste. Thus, it can help achieve positive socio-economic outcomes, including the development of social cohesion.

ZBEU; as a green and environmentalist university, it has important activities and practices. Within the framework of our university's environmental policies, many plans for the protection of resources such as water use, thermal insulation and energy saving are successfully implemented. Within the scope of this sensitivity towards the environment; Our university adopts an approach that adopts the Zero Waste project, which envisages the appropriate management and reduction of all kinds of waste, as well as the vital necessity of protecting the environment and natural resources. It is determined to do its part for our environment and our future with the slogan of Zero Waste Let the world breathe.

Universities have a very crowded population with both their employees and students, as well as structural areas such as roads, buildings and parking lots. When the people who receive service from various units are included in the number, universities have direct or indirect negative effects on both the natural environment and the social environment, as well as the benefits they provide to the city where they are located with the pollutants they produce. For this reason, it is extremely important for universities to be sustainable both in terms of reducing their own polluting factors and in terms of leading the society and being an example. In this article, a "sustainable university model" has been proposed, considering the inadequacy of universities' approaches to sustainability in Turkey. Sustainability is a long process and requires a fundamental change in processes and approaches. In order to avoid any resistance in this process of change, it is most important to explain the importance of the issue to the employees, students and stakeholders well and to proceed with determination.

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