



The Role of Universities in Sustainable Ecological Development with Reference to Montenegro

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Abstract. From the moment Montenegro became an ecological state in 1991 and defined its strategic commitment to adopt and apply the highest norms and standards in the field of environmental protection, until today, it can be stated that very little has been done in practice. The role of the scientific community in such a chaotic system should be crucial in terms of supporting and developing study programs oriented towards nature conservation, environmental protection, and the adoption of the concept of strategic development that is ecologically sustainable. Citizens increasingly recognize and feel the consequences of bad decisions by those who do not want to face the avalanche of environmental problems in Montenegro. The role of the university as a higher education scientific research institution should be crucial in managing future education in this area, through full support for sustainable development and providing examples of good practice. This paper will investigate to what extent and in what way Montenegrin universities contribute to sustainable development, including their curricula, programs, contents, and overall activity focused on "green" business.

Keyword:

Universities, Sustainable Development, Ecology

1. Introduction

Since the creation of the planet Earth, everything has been formed naturally, however, with the appearance of man on Earth, the environment changed according to his requirements. Global warming as a consequence of human activity, primarily caused by the burning of fossil fuels, has been observed since the pre-industrial period (between 1850 and 1900). With the increase of the human population and the unlimited exploitation of limited resources on Earth, the environment is faced with numerous problems. The planet has never been warmer than it is now. The impact of global warming poses a significant threat to millions of people around the world.

2. Points of Results and Discussions

Sustainability is a key social issue that should be dealt with primarily by universities, as leaders in education, research, and innovation, recognized as institutions of higher education that proactively work on various global issues related to problems and progress in society, both in the present as well as in the future. Universities should adopt a sustainable concept of work and future development, which creates a basis for changing the social and cultural paradigm in a society where little is said about this globally widespread topic.

Most universities in Montenegro approach sustainable business in one way or another, but this is not recognized as sufficient or to the extent that this concept can be applied continuously. The majority of people in Montenegro lack awareness of sustainable business and studying on a healthy "green" basis, as well as scientific research directed towards this form of development.

Considering the growing concern about sustainability issues in society, the benefits of incorporating sustainability content into university programs are great. Prestigious universities in the world and in Europe apply the concept of sustainability in all segments of their work, which first requires a developed awareness of the importance of preserving the environment in which we live as well as research, technological, and scientific capacities. In recent years, the field of "sustainability and higher education" (SHE) has begun to consider this issue extensively. Today, universities are engaged in research for sustainable development, which implies a (re)orientation of research and work directed towards a sustainable concept of development. The problems that today's universities most often face in creating a sustainable concept of work include: (1) an outdated study concept; (2) not using the eco-system in work; (3) lack of investment and financial support for the "green" concept and outdated facilities; (4) lack of personnel educated in this field.

Ecological sustainability is one of the major issues in today's society, which is dealt with by policy makers, universities and the scientific community, as well as the whole society. Although Montenegro is an ecological country, it works continuously but not enough to improve the green concept of development in all segments. The new National Strategy for Sustainable Development of Montenegro by 2030 (NSSD) was adopted, and it defines criteria and activities aimed at: increasing the competitiveness of the Montenegrin economy in sustainable development and green jobs; improvement of the management system for sustainable development; strengthening environmental management by improving the application of environmental protection instruments; implementation of the reform of the institutional organization of the management system for sustainable development; establishing a system for monitoring the sustainability of national development, including monitoring the implementation of sustainable development goals, etc. [1] In this domain, the role of the university is crucial in building the concept of sustainable development, in such a way as to develop study programs that support sustainable practices, and initiate scientific research projects based on sustainability topics.

Today's green universities support and implement sustainability in all their activities, starting with the development of the institutional framework, preparation and organization of campus placements, reporting, engagement of the entire community, research, with the aim of turning to the "green" principle of work and realization of the concept of sustainable development.

Universities in Montenegro work on opening study programs and centers related to ecology, and incorporating environmental subjects into their curricula, but again, this is not

sufficiently recognized by the community, which, one would say, cares little about raising society's awareness in this regard. Although sustainability issues are considered in the educational offer, it would rather be said that there is a lack of systemic coordination between sustainability and scientific research. At the campus level, numerous research projects should be related to waste management, green fences, and sustainable mobility, despite financial constraints.

The green concept of work implies the acceptance of guidelines and policies necessary to maintain goods and services in such a way that they cause little or no damage to the natural world and the environment. Global warming, loss of biodiversity, and plastic pollution of the oceans are global environmental problems that threaten life on planet Earth. Already today, these challenges negatively affect agriculture through the loss of pollinator bees, water security through droughts, and human health through microplastics in food. As institutions for research and learning, universities should play an important role in resolving these problems. That is why it is important to become a "green university".

Green universities as educational institutions meet their own needs for natural resources, such as energy, water, and materials, without compromising the ability of people in other countries, as well as future generations, to meet their own needs. In their activities, green universities should:

1. Use renewable energy sources, use and promote green transport, dispose waste properly, work on the reuse of recycled material, and encourage events to raise awareness of the "green" concept of work and life;
2. Enable students to get familiar with all topics in the field of sustainability through studies and/or extracurricular activities;
3. Strive for zero CO₂ emissions by using renewable energy sources, insulating buildings and campuses, buying organic food, creating campus gardens, banning toxic substances, etc.
4. Use solar panels, as an eco mode of powering computers and lights with the goal of reducing global warming.

Of course, there are countries where all this exists, but these are developed countries that have sufficient capacity to study this important concept in study programs. One must work on the constant improvement of this concept when it comes to studying it.

All institutions in society, in a world of catastrophic climate change, must take action and make well-thought-out choices. Universities should be beacons of hope and leaders in the field of sustainability. It is enough to become an example to other universities in the way they should act, thereby contributing to a positive global change in the world. It is recommended that universities adopt the following measures:

1. Create more green spaces and use the concept of sustainable practice.
2. To be energy efficient, work on reducing greenhouse gases, and adapt to green energy and renewable sources;
3. Work on reducing water consumption;
4. Work on the promotion of cycling, public transport, and other forms of green transport, i.e. limit the use of private vehicles;
5. Promote and teach sustainability to students;
6. Encourage students to independently contribute to global efforts through teaching and research, etc.;
7. Modernize curricula with practical teaching that would influence young people to be an

- example of how to behave towards the environment;
8. Work on marketing and promotional activities, strengthening awareness of environmental problems and ways to solve them;
 9. Through working teams that participate in policy-making, adopt measures and activities in the field of ecology.

Although there is still work to be done in Montenegro in terms of sustainability, there is no doubt that, through the concept of sustainable universities, significant progress can be made towards an environmentally-friendly Montenegro, which must remain committed to ecological standards and, as a candidate country for EU membership, committed to activities that will preserve its status as an ecological state.

It is very important to teach young people to take care of the environment, and their level of ignorance about the „green” concept of work comes precisely from the fact that in many countries we do not have the inclusion of subjects that deal with these very important issues.

When we talk about the application of this ecological standard, ecological study programs, and the universities that are dedicated to the concept of green business, we can definitely single out Europe as one important part of the world that pays great attention to this concept. In Europe, there are numerous universities that nurture the ecological spirit and everything that leads to the sustainable development of green business. Europe is a part of the world that respects all ecological standards. Here we are specifically talking about developed countries that have the resources and all the infrastructure that is necessary to apply the concept of sustainability not only in universities but also in the state.

A large number of universities promote the concept of working in a spirit of sustainability. We are talking about universities such as the University of Almeria in Spain, one of the universities that strives to greatly contribute to the preservation of the environment through its activities, and we can classify it as one of the eco-friendly universities in Europe. Spain is a country that is recognized for respecting and raising standards when it comes to certain sustainability segments, and therefore eco marketing, i.e. the concept of green marketing. This is supported by the fact that the awareness of the professors and associates at the University of Almeria is such that they try to direct all their university activities in such a way as to preserve the environment. [2]

What we can say is that this university has applied studies related to environmental protection. This program of theirs actually aims to train all those who choose this study program to integrate all ecological processes and thus encourage biodiversity management, ecosystem services, analysis and monitoring of carbon and water cycles, bioeconomy, and the application of ecological technologies, ecohydrology, and water resources. [2]

When we talk about Europe, we must certainly say that the Green European University plays the most important role. This University gathers a large number of universities, but also all those entities that want to contribute to the preservation of the environment and raise people’s awareness to start taking care of the environment that surrounds them. It is very important to emphasize that this University aspires to be a leading European university in the field of sustainable agriculture, green biotechnology, and environmental and life sciences. This is a university where students, as well as the academic community, develop values. This university encourages students as well as the academic community to develop their own attitudes, knowledge, skills, and competencies for transitional resources. [5]

Europe is known for respecting legal regulations related to environmental standards. In this respect, we will present some of the universities that have been incorporating the concept of green business through their study programs and sustainability practices for years. One of the most sustainable universities in Europe is Wageningen University & Research. It is located in the Netherlands and is characterized by a green office that is a cooperative space that connects students and the research environment where they work and live. One of the university's goals is to provide sustainable access to students, as well as academic staff, i.e. employees. Students can be involved in one of the most environmentally-friendly colleges through several programs that offer courses related to the concept of environmental sustainability they provide. Aarhus University is another example of a university that takes great care of ecological sustainability, of raising people's, but primarily their staff and students' awareness of promoting ecological standards that are the basis of life in Europe. This university has a clearly defined climate strategy that directs the institution towards sustainable practices such as the use of sustainable water bottles that can be reused. [3]

3. Conclusion or Concluding remarks

We live in a world where it is very challenging to preserve the environment and nature in which we live and work. The developed countries of Europe and numerous universities that work according to the principles of sustainable development show an enviable attitude towards the social community. The Montenegrin economy should be oriented as much as possible to the concept of sustainable development, especially sustainable tourism, agriculture, organic food production, preservation of biodiversity, marine ecology, protection of green areas, as well as the encouragement of the scientific community to act in order to raise people's awareness of a green future that belongs to them. We believe that universities in Montenegro will play an essential role in sustainable development.

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