Sustainable Development of Universities in Poland – Identification of the Status and Possibilities of Support

Anna Katarzyna Stasiuk-Piekarska * , Monika Michalska , Małgorzata Hordyńska

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Article

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Anna Stasiuk-Piekarska [1,*], Monika Michalska [2] and Małgorzata Hordyńska [3,*]

[1] Poznan University of Technology in Poznan; anna.stasiuk-piekarska@put.poznan.pl
[2] University of Zielona Gora m.michalska@wez.uz.zgora.pl
[3] Silesian University of Technology; malgorzata.hordynska@polsl.pl
* Correspondence: anna.stasiuk-piekarska@put.poznan.pl; Tel.: +48616653379

Abstract: In the empirical dimension, the authors' intention was to define the criteria that should be taken into account by universities to meet the requirements of sustainable university development - in terms of activities and reporting through the analysis of good practices developed by top Polish universities. The aim was also to select activities that, based on benchmarks, could be used by universities at every stage of implementing SDG goals. This is not an easy task, considering that for educational institutions the priority is the educational process, and the implementation of the principles of sustainable development is only possible through an intensive educational process combined with the application of knowledge in practice. This is a challenge for the university because it requires remodeling the current culture, changes in processes and the perception of certain cultural and social phenomena, and will involve a change in the teacher-student relationship, a change in the traditional education process to practice-based education, and will also require an interdisciplinary context. in the content provided. But this is precisely the challenge for outstanding educators. The authors compared three significant world rankings to which Polish universities also report. They collected information and data mainly regarding the activities undertaken by the reporting Polish universities in the area of developing good practices. Many ideas and tips will enable the preparation of further material, which the authors plan to deepen with a detailed analysis of SD indicators.

Keywords: sustainable development 1; ESG 2; CSRD directive 3; good university practices 4

1. Introduction

Sustainable development of universities is an element that influences the implementation of this concept at the global level in two ways - universities not only shape the level of knowledge and solutions supporting this idea and educate staff for the economy but also implement this concept in their activities. As research conducted in 2023 for the Polish Ministry of Regional Policy Funds showed, the sustainability level of universities - including foreign universities - is unsatisfactory and considered insufficient [1]. Comparing these results to the assessment of Polish universities in international rankings, e.g. The UI GreenMetric World University Ranking [2], and QS Ranking (especially in terms of sustainable development criteria), in the highest positions of Polish universities are in the second hundred, and on The Impact Factor [3] Polish universities are ranked on the four hundredth place and beyond. Research issues have arisen: which elements subject to evaluation place Polish universities at distant ranking places? Will finding these elements help Polish universities improve their results in the coming years? The key question that we have been asking ourselves almost from the beginning when preparing materials for this article is - are Polish universities disqualified in international rankings by deficiencies in particular assessment categories, or does the problem lie in the inability to diagnose Polish universities by those preparing the annual report? Perhaps this is also a problem for foreign universities. This will be justified later in the article.

The aim of the article, in connection with the above, is to verify whether Polish universities have such a low level of implementation of sustainable development goals, as shown by the analyzed

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rankings, and whether they should prepare for ESG reporting (E-Environment, S-Social G-Government), by the guidelines of the directive CSRD, even though they have no such obligation. The EU Corporate Sustainability Reporting Directive (CSRD) was published on December 16, 2022, in the Official Journal of the EU [4].

"Sustainable development is development that meets the needs of the present without compromising the ability of future generations to meet their own needs." This general definition was included in the 1987 Report of the World Commission on Environment and Development "Our Common Future" [5]. In the following years, the concept of sustainable development was developed and principles and instruments for its practical implementation were created.

Already in the 1960s, the deteriorating condition of the environment was noticed. Air, water, and soil pollution have become a significant threat to human health and the biological balance of ecosystems on a local scale. Unfavorable environmental changes were accompanied by growing economic and social inequality. The energy crisis of 1973 and the ecological disasters that occurred in the following years contributed to the search for an alternative development model to the one pursued so far, based on the maximization of economic profits.

The concept of sustainable development was created as a response to the ongoing ecological crisis, which has become global since the second half of the 20th century. This caused the issue of reducing anthropogenic pressure on the environment to become an international issue and the United Nations (UN) became involved [6]. The events that contributed to the development and the spread of the idea of sustainable development were the establishment of the World Commission on Environment and Development (WCED) of the United Nations (1983), the issuance of the WCED Report Our Common Future (1987), the UN conference in Rio de Janeiro Environment and Development (1992), the UN Conference in Johannesburg, World Summit on Sustainable Development Rio + 10 (2002) and the UN Conference in Rio de Janeiro on Sustainable Development Rio + 20 (2012) [7]. During the above-mentioned events, documents important for sustainable development were adopted, thanks to which it was implemented on an international, national, regional, and local scale.

Another significant event from the point of view of implementing sustainable development was the Sustainable Development Summit in New York in 2015. A document was signed then, which the Open Working Group established by the UN had been working on since 2012. As a result of the negotiation process, 17 goals were developed, which are included in the new agenda, Transforming Our World: Agenda for Sustainable Development – 2030 [8].

Many definitions have been created in the several decades since work on sustainable development began. Their multiplicity and diversity result, among other things, from the fact that sustainable development is multidimensional. The literature on the subject presents over 100 interpretations of this concept, from those focusing on socio-economic issues to those emphasizing the environmental aspects of development. More on the analysis of the concept can be found in the works of: A. Misztal [9], T. Zalaga [10], P. Jeżowski [11], M. Kistowski [12], T. Borys [13], S. Kozłowski [14]. Broadly speaking, it can be assumed that sustainable development is such socio-economic development in which the process of integrating political, economic, and social activities takes place while maintaining natural balance and the durability of basic natural processes, that will allow meeting the basic needs of individual communities or citizens of both the modern generation, as well as the future generation [15].

Sustainable development is a concept based on the inextricable connection between environmental, economic, and social issues. Problems arising in one area cannot be effectively solved without taking into account the situation in the other areas [16]. The currently applicable 2030 Agenda, which should be treated as an action plan until 2030 in the area of implementing sustainable development, indicates that to achieve it, the coherence of three key elements is necessary: economic growth, social inclusion, and environmental protection. They are interconnected and all contribute to improving the quality of life of individuals and entire societies.

There are 169 tasks related to the 17 goals of the 2030 Agenda, which set the directions for desired decisions that should be made at the international, national, as well as regional, and local levels,

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including in various types of organizations (production enterprises, services, universities, and other units dealing with education). It is important to take into account differences resulting from national realities, the level and possibilities of development, and to respect the principles and priorities applicable in individual countries. The goals and tasks of the Agenda refer to five main thematic areas: People, Planet, Prosperity, Peace, and Partnership [17]. Universities have an important role to play in each of these areas.

As provided by a report financed by the National Fund for Environmental Protection and Water Management [18] (the aim was to prepare an analysis of the state of education for sustainability development activities in Poland - 2012), in higher education only students of natural sciences, agriculture, forestry, and veterinary classes have been trained of sustainability development [19]. However, for third-cycle (doctoral) students, until 2012 (the date of issue of the Expertise), there were no guidelines regarding education for sustainable development. In this respect, universities had and still have full autonomy.

The Integrated Qualifications System (ZSK) [20] as a state policy tool allowing for building high-quality human capital, based on the Polish Qualifications Framework (PRK), was announced by program and strategic documents adopted after 2010 by the Council of Ministers, such as: "Strategy National Development 2020" (2012), "Lifelong learning perspective" (2013), "Strategy for responsible development" (2017). Up-to-date challenges related to strengthening the quality of capital human resources in Poland towards competencies related to the sustainable development goals are indicated by the Integrated Skills Strategy 2030: "The new economy is based on new skills. […] The quality of human capital is increasingly the basis for intelligent, sustainable development based on social cohesion" [21].

The survey data shows that by 2012 only 29% of primary and middle school teachers and 33% of secondary school teachers believed that they were obliged to conduct EZR (education for sustainable development) through the Core Curriculum. NQF obliged their employees to introduce issues related to sustainable development only in the case of higher education institutions, with an emphasis on natural sciences (61%). However, there were no indications to educate teachers about ESD. The current qualifications framework leaves university institutions independent in this matter [22]. As indicated by research conducted on a group of 492 university employees and management staff in institutions of various specialties, public and non-public, by a team of experts (Working Group on Social Responsibility of universities at the Ministry of Funds and Regional Policy) on conducting training - for employees of non-public universities in the field of ecological education indicated by 71% of respondents, public - 69%. As many as 72% of surveyed teachers declare that they discuss social responsibility/sustainable development in their classes. However, in the same report, we read that the barriers most frequently indicated by employees to universities' activities consistent with the idea of Corporate Social Responsibility of Universities (SOU) include insufficient knowledge about the implementation of the concept of corporate social responsibility (CSR) and SOU (53% of responses), lack of motivation among employees to participate in initiatives related to both CSR and sustainable development (SD; 44%), as well as insufficient communication in the SOU area (42%) [23].

Universities, in response to global social changes, climate and economic problems in the world, took up the challenge and jointly, at the international level, established a strategy for implementing EZR (education for sustainable development). Universities of higher education have voluntarily, and not due to legal regulations, adopted the "University as a Whole" principle, according to which the institution implements and promotes the principles of sustainable development throughout its entire structure. It not only educates in the field of SD, but also sets a good example in the field of infrastructure, planning, and implementation of activities (including waste management, energy saving, transport, environmental management, and purchasing).

This approach is expressed in two declarations:

- The first, unique on a global scale, developed in 2017 by the Working Group on the social responsibility of universities in Poland, is the Declaration of Social Responsibility of Universities. Currently, 160 public and private universities declare voluntary promotion of

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sustainable development and social responsibility in educational programs, scientific research and management, and organizational solutions of universities. The 12 principles contained in the Declaration indicate the direction of changes for university authorities, based on the highest management standards, effective management of resources, development of academic staff, and building the prestige of the university by generating knowledge and creating new ideas [24,25];

- Declaration of Valencia [26] - a document that is the result of discussions of almost 700 rectors of universities from all over the world (including 30 rectors from Poland), representatives of the academic community, political and business figures from 14 countries and ministers of higher education, among others. from Spain, Poland, Portugal, Uruguay, and Argentina. The content of the document indicates Rectors and their teams as those who have a key role to play in the transformation processes toward sustainable development. The discussion took place on May 8-10, 2023, during the 5th International Meeting of Rectors of Universia in Valencia, under the slogan "Universities and society", and the result of several days of discussions was the formulation of 7 conclusions. The meeting participants declared:
    1. Shaping the university's mission in line with sustainable development goals.
    2. Expanding the educational offer to meet the needs of diverse groups of recipients.
    3. Providing students with comprehensive, interdisciplinary education and the ability to combine knowledge from three main fields that form the foundation of sustainable development: knowledge of the environment, economics, and knowledge of society.
    4. Helping students develop their skills and passions, as well as equipping them with competencies that will enable efficient and satisfactory functioning on the global market, as evidenced by their flexibility.
    5. Interdisciplinarity of research, implementation of research plans taking into account global challenges and local conditions, while engaging society and disseminating knowledge and research results for its benefit.
    6. Promoting exchange and cultural enrichment of students and academic staff geographically, virtually, and inter-industry.
    7. Broad cooperation between educational institutions and governments, industry, and society, and the creation of a network of connections between them that will function for the common well-being.

Providing education is included in the implementation of each of the Sustainable Development Goals, and the setting of Goal 4: "Providing high-quality inclusive education and enabling lifelong education for all people" particularly strongly emphasizes the importance of education for the success of all SDGs, what emphasized by Kalinowska A. and Batorczak A. [27], as well as at the international e.g. Uggla and Soneryd [28]; Rieckmann, Vare and Lausselet [29] etc.

In this matter, a serious problem is the lack of preparation of teaching staff in the field of knowledge regarding sustainable development, which should be elementary knowledge, as indicated above. The report commissioned by the Ministry of the Environment in 2012 [18] shows the awareness of adults in the field of sustainable development is at an "unsatisfactory" level. The report also emphasized that it is easier to reach people who participate in the educational process by their own choice, i.e. in the process of higher and postgraduate education. It also allows for expanding the university's offer and encouraging participation in the educational process in the field of sustainable development within, for example, Universities of the Third Age or Universities for Children.

Most of the conclusions of the Valencia Declaration point to the role of the teacher as not only an educator but also an interdisciplinary coach: a guide and a practitioner, which draws attention to the need to prepare teaching staff for this role. E. Buchcic [30] speaks in a similar tone, rightly claiming that the participation of universities in shaping ecological education should not be underestimated. He correctly notes that the process of change must refer to the actual situation in the country, but in the face of the global climate crisis, this reality is reflected in precise knowledge about the global situation and local needs. Here again, the university plays the main role as a guide in this reality, with its educational potential, contacts with industry, and a strong influence on all social groups centered around its activities.

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Flexible skills and knowledge can only be the result of a teaching process during which the student will have the opportunity to confront theoretical knowledge in the field of sustainable development with practical market requirements. The graduate must be able to think both as an enterprising producer, but also as a demanding consumer, at the same time, knowledge about SD will provide the foundation for creating internal motivation to protect natural goods and look for ways to solve economic and social problems in the most environmentally friendly way. E. Buchcic draws attention to this and thus confirms the thesis of Stefan Kozłowski, who stated that "if we want to make a turnaround and implement the assumptions of sustainable development, it is necessary to change the worldview and way of thinking, and this is possible by systematically teaching the young generation to think holistically, global and ecological. A global collective intellectual effort is needed to chart further paths and ways of life on Earth [30].

The demand for qualified educators in the field of ESD is reflected in the procedure initiated in November 2023 by the Minister of Development and Technology for including a new market qualification "Managing the sustainable development of organizations" into the Integrated Qualification System. Under Article 19(1) of the Act of December 22, 2015, on the Integrated Qualifications System [20].

2. Materials and Methods

This article is composed of two parts - methodological and empirical analysis, indicating the actual activities of universities in the implementation of the concept of sustainable development. Using the method of interpreting the literature on the subject - supported by the practical experience of researchers on the subject, the first part of the article determined the current state of affairs, allowing for the positioning of Polish universities in the world. In the empirical dimension, the authors intended to define the criteria that should be taken into account by universities to meet the requirements of sustainable development of universities - in terms of activities and reporting through the analysis of good practices developed by top Polish universities. The review of the achievements of Polish universities in reporting the Sustainable Development Goals was made based on qualification results in three rankings: QS World University Rankings [31], UI GreenMetric World University Ranking [32], and, above all, THE Impact Rankings [33]- the only global ranking of universities where are monitoring the degree of university's involvement in the implementation of 17 goals sustainable development. Nevertheless, the evaluation methodology in each of the three rankings was analyzed and the results of Polish universities were presented, collectively comparing their result to the best in each ranking - the university taking first place. In the next stage of the research, analyzing the indicators that performed the weakest, an attempt was made to discuss the reasons for this.

Then, twelve Polish universities that took leading positions among Polish universities in THE Impact Factor classification were compared and their activities and campaigns regarding sustainable development were checked: website, ZR or CSR report, good practices, etc.

In 2019, only the University of Warsaw reported in THE Impact Rankings, but the following year there were 5 Polish universities in the general classification, and in 2021 - 12 and in the last ranking (2024) - 23. Probably more and more universities will report in the coming years. Development of interest in reporting allows us to predict that next year, at least 30 Polish universities will report, and the resources of catalogs of good university practices in the field of SD will also increase.

Fulfilling the sustainable development goals and related financial and non-financial reporting, as well as posting good practices in databases (national and global), means that more and more universities will want to participate in rankings because high positions in them are a powerful tool for marketing and attract stakeholders to the best centers: students, scientists, investors, employees, and others, which guarantees development. The implementation of sustainable development into university activities draws attention to these centers as modern in every respect and, therefore attractive to interested parties, influencing the initiation and development of relationships with them. (Figure 1.)

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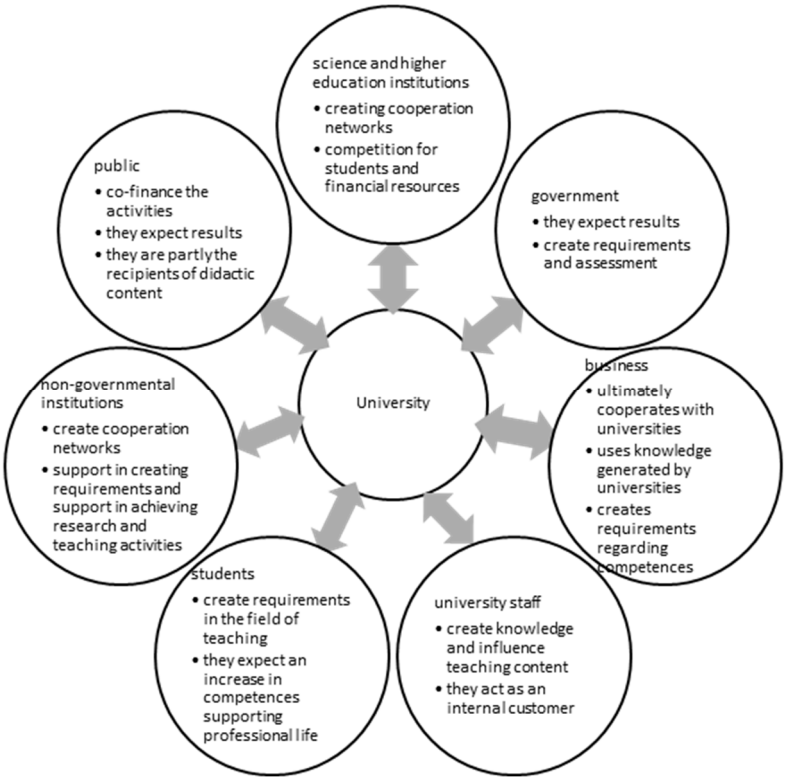

Figure 1. University relations with stakeholders. Source: own study based on: [34].

The entry into force on January 5, 2023 of EU Directive 2022/2464 on corporate sustainability reporting, which extends the reporting obligations of enterprises, was a signal to higher education that this was the last call to become active in the issue of SD, both as an educator and an entity that actively teaches how to implement each of the 17 goals. Huge changes are coming in big steps. Universities, as providers of highly qualified employees, will have to cope with the difficult task of shaping a potential employee - a university graduate, so that when entering the labor market he is aware and prepared to carry out tasks in the area of SD.

Activities in the field of sustainable development, including the implementation of the University's Social Responsibility, go beyond the obligations arising from legal provisions and taking them into account in the functioning of the university is voluntary. Despite this, universities will be willing to undertake tasks in the field of SD, because such sustainable functioning is associated with a number of benefits for them. Firstly, they support the student's preparation to function sustainably in the workplace, i.e. they reliably prepare the candidate for an employee desired by the employer. Secondly, they reduce of their own waste and thirdly, they give great satisfaction, which acts as a strong motivator. The implementation of SDG goals by universities proves greater responsibility for relations with external and internal stakeholders and for the natural environment (Table 1.).

Table 1. University tasks in the field of sustainable development. Source: [35].

Area	Tasks
Scientific and research	• high level of education • high-quality scientific research shaping ethical and responsible business leaders • supporting and developing innovation • mobility of students and researchers • international and cross-sectoral exchange of experiences
Social	Inside:

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	• attention to employee development • promoting the mobility of students and researchers • maintaining international relations • equalizing social opportunities for students • adapting infrastructure to the needs of disabled people Outside: • Provide specialists needed in the labor market • creating the political and economic reality of activities for children, seniors, and disabled people • supporting activities to protect health and promote sports • supporting culture and art • protection of monuments • charity events
Ecological	• curriculum related to environmental protection, creating and promoting pro-ecological attitudes, implementing and monitoring sustainable development goals • reducing the ecological footprint • research responding to the problems and needs of the natural environment
Economic	Inside: • sustainable supply chain • management system ISO 9001:2015, 14001:2018, 26000:2012 • non-financial reporting (e.g. by GRI) Outside: • impact on the local economy • creating new staff • university as an employer • new business partnership • purchases from local suppliers • consulting services • opinion-forming

In the area of statements made to universities, it is noted that, apart from the standard elements related to sustainable development (ecological, economic, and social impact), these units primarily have a scientific and research mission to implement and their quality affects the previously mentioned spheres.

3. Results

In this year's international rankings examining the level of sustainable development of universities, Polish institutions rank low. The results of three international rankings, subjectively considered important, in which Polish universities also report are presented and analyzed below: QS World University Rankings: Sustainability 2024, UI GreenMetric World University Rankings, and THE (Times Higher Educations) Impact Rankings.

The QS World University Rankings cover in 2024 (reports for 2023) a total of 54 disciplines, and 15,700 curricula from 1,594 educational institutions around the world [https://www.topuniversities.com/world-university-rankings].

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The detailed QS World University Rankings: Sustainability methodology assesses the social and environmental impact of almost 1,400 universities as centers of education and research, and as major employers facing sustainability challenges. The ranking is conducted in three categories: Environmental Impact (45%), Social Impact (45%), and Management (10%), wherein various percentages detailed indicators regarding the following issues are taken into account: Equality, Knowledge exchange, Equal employability and development opportunities, Health and Wellbeing, Environmental Sustainability, Environmental Education, Environmental Research, and Good governance.

20 universities from Poland joined the QS ranking. In the Sustainability category, they took places from 222 to over 1,200. These were, in order from the highest position: University of Warsaw, Jagiellonian University, Gdansk University of Technology, Adam Mickiewicz University in Poznan, University of Gdansk, Wroclaw University of Environmental and Life Sciences, University of Wroclaw, University of Warmia and Mazury in Olsztyn, Warsaw University of Life Sciences, Lodz University of Technology, University of Silesia, University of Lodz, AGH University of Science and Technology in Krakow, Nicolaus Copernicus University in Torun, Bialystok University of Technology, Poznan University of Life Sciences, Silesian University of Technology, Warsaw University of Technology, Wroclaw University of Science and Technology (Table 2). What is noteworthy is the advantage of the leader (University of Warsaw - 222nd place) over the second Polish university in the ranking (Jagiellonian University - 402nd place).

Table 2. Position of Polish universities in the Sustainability Ranking QS 2024 (publication: December 5, 2023). Source: own study based on: [36].

Ranking QS 2024	Ranking in Poland	University
222	1	University of Warsaw, Warsaw
402	2	Jagiellonian University, Krakow
420	3	Gdansk University of Technology, Gdansk
434	4	Adam Mickiewicz University, Poznan
488	5	University of Gdansk, Gdansk
699	6	Wroclaw University of Environmental and Life Sciences, Wroclaw
701-710	7	University of Wroclaw
761-770	8/9	University of Warmia and Mazury in Olsztyn, Olsztyn
761-770	8/9	Warsaw University of Life Sciences SGGW
881-900	10	Lodz University of Technology, Lodz
1001-1050	11	University od Silesia in Katowice
1051-1100	12	University of Lodz, Lodz
1101-1150	13/14	AGH University od Krakow, Krakow
1101-1150	13/14	Nicolaus Copernicus University, Torun
1201+	15-20	Bialystok University of Technology, Bialystok
1201+	15-20	Poznan University of Live Sciences, Poznan
1201+	15-20	Poznan University of Technology, Poznan
1201+	15-20	Silesian University of Technology, Gliwice
1201+	15-20	Warsaw University of Technology, Warsaw
1201+	15-20	Wroclaw University of Science and Technology (WRUST), Wroclaw

Polish universities - despite the signing of the Declaration of Social Responsibility of Universities by 160 universities in Poland (in 2017, 2019, 2022) and the activities of the Working Group on Social Responsibility at the Ministry of Funds and Regional Policy - occupy far places (Table 2).

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Among all competing global universities, the University of Toronto took first place in the Sustainability Rankings, with scores: 1 (Environmental), 4 (Social) and 15 (Governance), ahead of the Universities of Berkeley in California (1, 6, 74) and Manchester in Great Britain (7, 12, 5) (Figure 2).

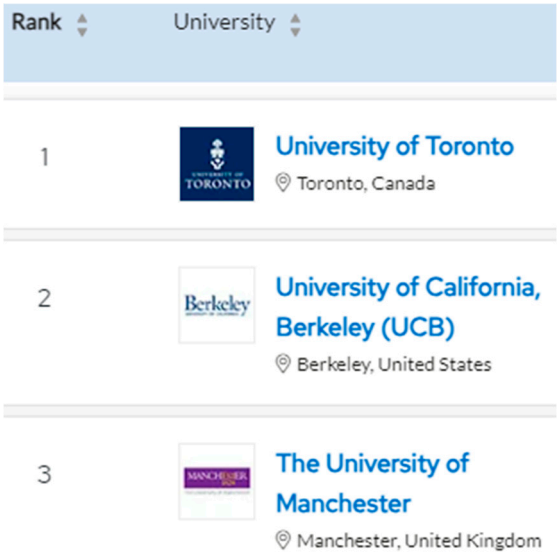

Figure 2. QS World University Rankings: Sustainability 2024 – Top 3 (published: December 5, 2023). Source: [36].

The Impact Ranking 2023 is already in its fifth edition, and the overall ranking includes 1,705 universities from 115 countries and regions.

The Impact Rankings for 2023 indicate three Polish universities in first place: the University of Gdańsk, the Jagiellonian University, and the University of Economics in Krakow. The second place among Polish universities was taken by five institutions: Gdańsk University of Technology, Lodz University of Technology, University of Warsaw, Wrocław University of Environmental and Life Sciences, and WSB University. Third place in a row was taken ex aequo by four more Polish universities: Koźmiński, Medical University of Gdańsk, Poznań University of Technology and Silesian University of Technology. Fourth place is also ex aequo taken by: the University of Adam Mickiewicz University in Poznań, University of Economics and Humanities in Warsaw, University of Jan Kochanowski in Kielce, Medical University of Lodz, Rzeszow University of Technology, Warsaw School of Economics, University of Social Sciences and Humanities in Warsaw, University of Warmia and Mazury in Olsztyn, Warsaw University of Life Sciences, Warsaw University of Life Sciences and Technology and University of Wroclaw (Figure 3) [33].

The first place in the ranking, out of 1,705 universities from 115 countries around the world, was taken by the Australian Western University, obtaining a total of 99.4 points (Poland's best result in this ranking - 66.9-72.6 p).

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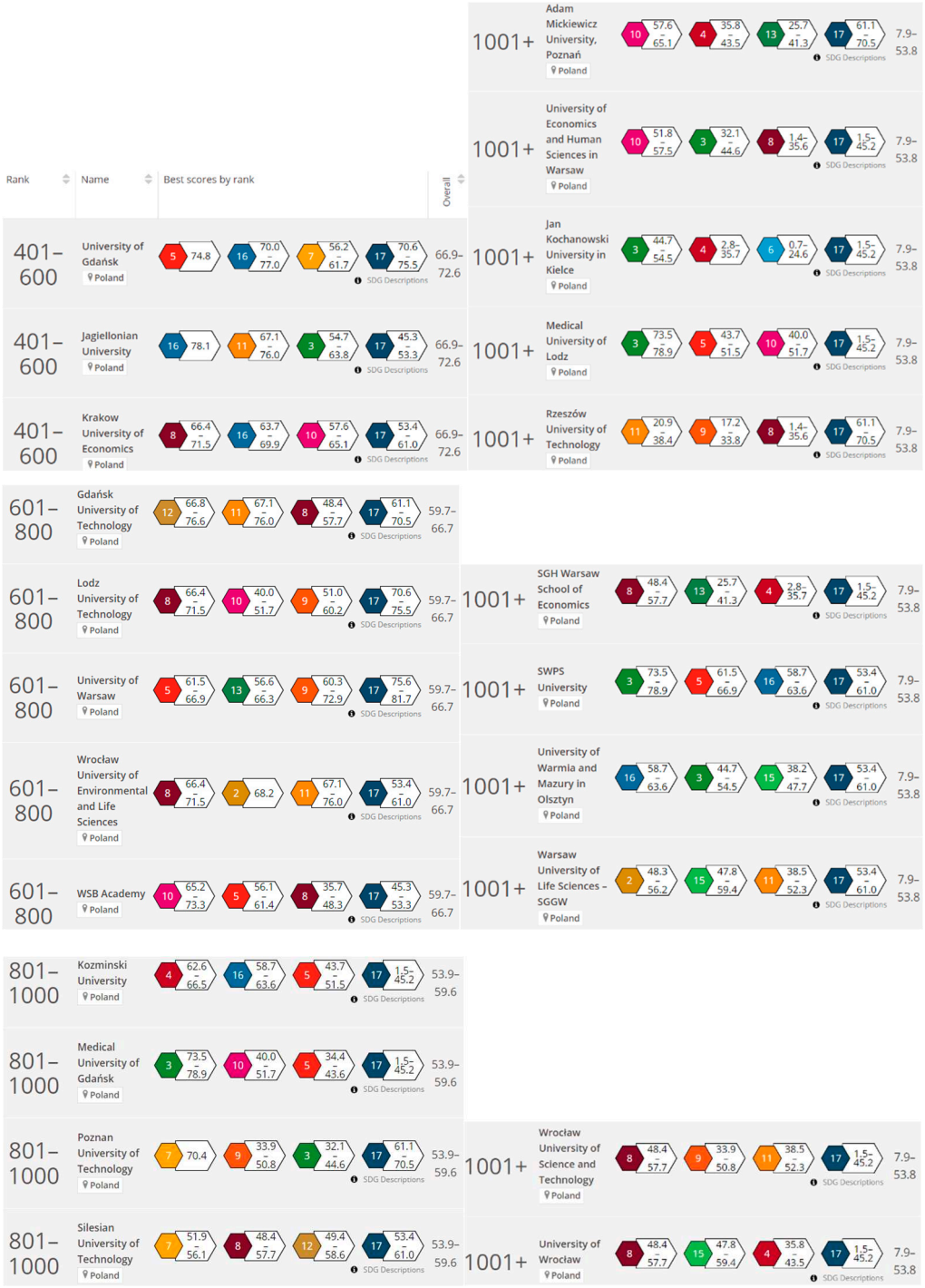

Figure 3. The Impact Rankings results for 2023 - Universities from Poland. Source: [33].

23 Polish universities reported in the Times Higher Education Impact Rankings 2023. The 12 highest-ranked ones were listed (Table 6), and then the information regarding their activities in the field of sustainable development was checked, it was also important whether this information was available to stakeholders on the Internet, awarding scores using a zero-one system: 0 points if the university does not publish information on the Internet. Then, it was checked whether the universities reported in the QS and GreenMetrics rankings, awarding one point for each report regardless of their place.

The degree of sustainable development requirements, but also of meeting the requirements of the QS ranking, seems to be confirmed by the GreenMetric ranking, to which 15 universities from Poland registered to participate (Figure 2).

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UI GreenMetric World University Rankings [32] is a ranking regarding the implementation of the principles of sustainable development and campus greening by universities. Initiated by Universitas Indonesia in 2010 using 39 indicators and 6 criteria, i.e. environment and infrastructure (15%), energy and climate change (21%), waste (18%), water (10%), transportation (18%), education and research (18%), UI GreenMetric World University Rankings evaluates the environmental commitment and initiatives of universities. Among Polish universities, the Gdansk University of Technology was ranked 197th highest, followed by: University of Information Technology and Management in Rzeszow, University of Adam Mickiewicz in Poznan, Bialystok University of Technology, University of Gdansk, Academy of Special Pedagogy Maria Grzegorzewska in Warsaw, University of Cardinal Wyszynski in Warsaw, State Academy of Applied Sciences in Nysa, University of Warmia and Mazury in Olsztyn, Silesian University of Technology in Gliwice, WSB University in Dabrowa Gornicza, Poznan University of Technology, Krakow University of Technology. Tadeusz Kościuszko, Vistula Academy of Finance and Business in Warsaw, Medical University of Wroclaw.

In the overall ranking, the best University from the Netherlands - Wageningen University & Research, obtained 9,500 points, and the best from Poland - Gdańsk University of Technology - 7,835 points (place 197) - in percentage terms losing more than 1,000 points to the leader at the world level (Table 3). Using benchmarking, it was decided to determine the percentage of meeting the criteria in relation to the leader (Table 4).

Table 3. UI GreenMetrics ranking – Polish universities about the top-ranked Wageningen University & Research University in the Netherlands. Source: own study based on: [32].

Ranking GM 2023	University	Total Score	Setting& Infrastructure	Energy and Climate Change	Waste	Water	Transportation	Education
1	Wageningen University & Research	9500	1350	1825	1800	1000	1750	1775
197	Gdańsk University of Technology	7835	1100	1410	1575	600	1550	1600
325	University Of Information Technology And Management In Rzeszow	7150	1100	1525	1425	400	1200	1500
339	Adam Mickiewicz University, Poznan	7100	1100	1100	1575	600	1175	1550
382	Bialystok University of Technology	6885	1075	1375	1575	650	635	1575
670	University of Gdansk	5670	810	1035	1050	600	625	1550
734	The Maria Grzegorzewska University	5325	565	935	975	800	575	1475
758	Cardinal Stefan Wyszynski University in Warsaw, Poland	5175	740	1175	750	360	850	1300
772	Państwowa Akademia Nauk Stosowanych w Nysie	5065	440	1090	1200	210	900	1225
775	University of Warmia and Mazury in Olsztyn	5060	1015	510	1200	500	735	1100
818	Silesian University of Technology	4845	570	765	900	160	950	1500
903	WSB University	4270	385	885	750	350	800	1100
947	Poznan University of Technology	3985	505	1150	525	110	635	1060
1032	Tadeusz Kosciuszko Cracow University of Technology	3305	520	890	450	310	610	525
1105	Vistula University	2705	475	635	525	10	385	675
1114	Wroclaw Medical University	2635	700	700	75	60	600	500

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Analyzing the above data (Tables 4 and 5), it can be seen that Polish universities on average obtained the entire classification just over 50% of the scores obtained by the leader - Wageningen University & Research from the Netherlands. Analyzing in detail, the best result is observed for the criterion related to Education (68%), and the lowest in the areas of Water Management (38%) and Transportation (47%). The lowest score in these areas was obtained by: the Medical University of Wroclaw - (Water 4%) and Vistula University (Transportation 1%) to the score obtained by No. 1 in the ranking.

Table 4. Percentage result of Polish universities in the GreenMetric ranking to the best result (Wageningen University & Research in the Netherlands), marked as 100% in each category. Source: own study based on: [32].

Ranking 2023	University	Ranking in Poland (wg Green Metrics)	Total score	Setting and Infrastructure	Energy and Climate change	Waste	Water	Transportation	Education
1	Wageningen University & Research	---	100%	100%	100%	100%	100%	100%	100%
197	Gdańsk University of Technology	1	82%	81%	77%	88%	60%	89%	90%
325	University Of Information Technology And Management In Rzeszow	2	75%	81%	84%	79%	40%	69%	85%
339	Adam Mickiewicz University, Poznan	3	75%	81%	60%	88%	60%	67%	87%
382	Bialystok University of Technology	4	72%	80%	75%	88%	65%	36%	89%
670	University of Gdansk	5	60%	60%	57%	58%	60%	36%	87%
734	The Maria Grzegorzewska University	6	56%	42%	51%	54%	80%	33%	83%
758	Cardinal Stefan Wyszynski University in Warsaw, Poland	7	54%	55%	64%	42%	36%	49%	73%
772	Państwowa Akademia Nauk Stosowanych w Nysie	8	53%	33%	60%	67%	21%	51%	69%
775	University of Warmia and Mazury in Olsztyn	9	53%	75%	28%	67%	50%	42%	62%
818	Silesian University of Technology	10	51%	42%	42%	50%	16%	54%	85%
903	WSB University	11	45%	29%	48%	42%	35%	46%	62%
947	Poznan University of Technology	12	42%	37%	63%	29%	11%	36%	60%
1032	Tadeusz Kosciuszko Cracow University of Technology	13	35%	39%	49%	25%	31%	35%	30%
1105	Vistula University	14	28%	35%	35%	29%	1%	22%	38%
1114	Wroclaw Medical University	15	28%	52%	38%	4%	6%	34%	28%

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Table 5. The result of averaging the grades awarded to Polish universities in the UI GreenMetric ranking after comparing the results to 100% of the best result for Wageningen University & Research in the Netherlands. Also converted as a percentage. Source: own study based on: [32].

	Total score	Setting and Infrastructure	Energy and Climate change	Waste	Water	Transportation	Education
Average for PL:	5134	740	1012	970	381,3	815	1215,7
average in [%] for PL:	54%	55%	55%	54%	38%	47%	68%

The Times Higher Education Impact Rankings are the only global scoreboards that assess universities against all 17 United Nations Sustainable Development Goals (SDGs). The metrics used are carefully calibrated to provide comprehensive and balanced comparisons across four broad areas: research, management, outreach, and teaching.

In the overall ranking, for the second year in a row, the Australian Western Sydney University is in first place, the British University of Manchester is in second place, and the Canadian Queen's University is in third place. In the top 100, the most represented country is Great Britain with 26 institutions, followed by Australia with 16 institutions, and Canada with 15. In the fourth hundred, Iraq is in first place in terms of the number of reporting universities with 56 institutions, followed by Poland in second place with 23.

The next column (Tabl. 6) contains the number of university activities in the field of publications, based on the list prepared in 2022 by P. Pietrzak (Institute of Management of the Warsaw University of Life Sciences), in which he compiled (the report "The Involvement of Public universities in Poland in promoting the Sustainable Development Goals ") quantity of articles published in 2021 by academic teachers of public universities in Poland and other people carrying out classes, research activities and participating in them, corresponding to the Sustainable Development Goals (SDGs). In the report, the author divided public universities in Poland in terms of scientific productivity in promoting the Sustainable Development Goals (SDGs) in 2021 (measured by the number of publications per academic teacher and other people carrying out classes, and scientific activities).

The next column contains a summary of the number of good practices reported by universities to two registers: the previously cited "Catalogue of good practices in ESG areas", prepared in 2023, prepared by the Ministries of Funds and Regional Policy and Education and Science for 2022, and the report of the Ministries Science and Higher Education and Investment and Development and the Working Group on the social responsibility of universities, who three years earlier developed a similar document (also containing a collection of good university practices) (2019) "Social responsibility. Importance for universities and methods of implementation" [35]. This report not only presents the importance of sustainable development for universities but also identifies good practices in this area.

The points on Table 6 were added up, which allowed us to select one most outstanding universities and three second-place universities whose achievements in the field of SOU are worth commenting on, serving as a guide for those universities that are just starting to implement the sustainable development goals.

Table 6. Polish TOP 12 based on: The Impact Rankings 2023, activities visible on the Internet, participation in QS and Green Metrics Ranking in 2023, leadership in the number of publications in the area of a given goal (Report for 2022), and the number of reports submitted practices (Reports 2019 and 2022). Based on data contained in the publication: [37]; **according to the list included in: [25], [35], [38], [39], [40], [41], [42], [43], [44], [45], [46], [47], [48], [49].

no.	Higher education institution/place in The Impact Ranking ' $R3562024 of Polish universities/place in	Actions towards SD, ZR or CSR reports (link) [if present-1, missing-0]	QS Ranking Sustainability* and Green Metrics	Number of publications promoting SD in 2021* [number of activities for a	Number of good SD practices total: 2019 and 2022**	Togehther	Rating

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	the general classification of Impact Rankings 2023		[2 points if both]	given purpose as top]	number of revised practices]		
1	University of Gdansk / 1 / 401-600	https://czrug.ug.edu.pl/raport-razem-dla-ludzi-srodowiska-i-dobrobytu-spoleczne-zaangazowanie-uniwersytetu-gdanskiego-przez-pryzmat-celow-zrownowazonego-rozwoju/	2	1	4	13	2
2	Jagiellonian University / 1 / 401-600	https://przelamuj.uj.edu.pl/	1	3	3	13	2
3	Cracow University of Economics 1 / 401-600	https://d30mzt1bxg5llt.cloudfront.net/public/uploads/PDFs/UEK_raport_26-10-2020.pdf	-	-	-	6	7
4	Gdańsk University of Technology/ 2 / 601-800	https://pg.edu.pl/zrownowazony-rozwoj/2023-10/trzecia-edycja-raportu-zrownowazonego-rozwoju-pg-juz-dostepna	2	-	-	7	6
5	Lodz University of Technology / 2 / 601-800	https://p.lodz.pl/uczelnia/zrownowazony-rozwoj/politechnika-na-drodze-zrownowazonego-rozwoju-raporty-za-rok-akad-202021-i-202122	1	-	5	11	3
6	University of Warsaw / 2 / 601-800	https://www.uw.edu.pl/wp-content/uploads/2021/10/agenda-na-rzecz-klimatu-i-zrownowazonego-rozwoju.pdf	1	5	7	18	1
7	Wroclaw University of Environmental and Life Sciences / 2 / 601-800	https://upwr.edu.pl/aktualnosci/filtr,zrownowazony-rozwoj,21.html	1	-	-	6	7
8	WSB Academy in Dąbrowia Górniczaj / 2 / 601-800	https://wsb.edu.pl/uczelnia/strategia-zrownowazonego-rozwoju-akademii-wsb-do-roku-2030	1	-	4	10	4
9	Koźmiński University / 3 / 801-1000	https://www.kozminski.edu.pl/pl/o-uczelni/zrownowazony-rozwoj	-	-	1	5	8
10	Medical University of Gdańsk / 3 / 801-1000	https://bip.gumed.edu.pl/attachment/attachment/90233/zal_nr_1_do_Uchwaly_Senatu_823_Strategia_GUMed_2019_2025_aktualizacja.pdf	-	-	5	9	5
11	Poznan University of Technology / 3 / 801-1000	https://www.put.poznan.pl/strategia	1	3	5	13	2
12	The Silesian Technical Uniwersity / 3 / 801-1000	https://www.polsl.pl/uczelnia/wp-content/uploads/sites/880/2022/02/Stategia-rozwoju-Politechnika-Slaska-2022.pdf [49]	1	2	3	10	4

*Place The Impact Ranking 1 – 5 points, 2 – 4, 3 – 3, 4 – 2, 5 – 1, above fifth place 0 points.

In the analysis of the results in three rankings: QS World University Rankings: Sustainability 2024, UI GreenMetric World University Rankings, and THE (Times Higher Educations) Impact Rankings, universities such as: the University of Warsaw, the Jagiellonian University and the

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University of Gdansk are repeated; Among the technical universities: the Poznan, Lodz, Silesian and Gdansk Universities of Technology; the leading medical universities are the Medical University of Gdansk; the economic universities: the University of Economics in Krakow, and the natural science universities: the Wroclaw University of Environmental and Life Sciences; among non-public universities, the leading ones are the WSB University in Dabrowa Gornicza and Kozminski University (Table 6).

The University of Warsaw, as number in this ranking, deserves a few words of comment. In THE Impact Rankings, the University of Warsaw took 2nd place among Polish universities, and first in QS World University Rankings: Sustainability 2024 (it did not report to UI GreenMetric World University Rankings). In 2019, the University of Warsaw was the first and only Polish university to report to THE Impact Rankings, initiating this good practice. Holding the baton of precedence undoubtedly has a huge motivating effect to maintain the position and be an example for others, which the University of Warsaw effectively implements: a very well-constructed report - The Climate and Sustainable Development Agenda [50] is, however, not a publication in which we will find precisely calculated indicators and a list of numbers. It is an action plan for the coming years. The milestones are scheduled for 2023, 2025, 2030 and 2040. Each is one task, respectively: Sustainable Nutrition, Sustainable Consumption, Education and Research, Sustainable Transport and Sustainable Use of Natural Resources and Energy, and for 2040 - preparing for the effects of Changes Climate.

Many of the activities are housekeeping activities, cost-free and possible to implement with low financial outlays. More organizational changes are planned, related to the implementation of new models of operation in accordance with closed circulation and zero waste principles, as well as educational panels and training (partly already carried out by research and teaching staff of the University of Warsaw, which explains the number of publications). All of the materials are publicly available on university websites. These are guides and tutorials written in an interesting but accessible language - both students and people from outside the university will benefit from them.

The University of Warsaw organized the implementation of the sustainable development goals with a good idea: a solid, well-functioning team was established (Rector's Team for Ecology and Climate Crisis), real tasks were set (6 priority goals were selected), a plan was formulated and, above all, the tasks were spread over time, giving time to prepare for the most difficult tasks, which will probably also require raising funds.

The UW Press Office and the UW Promotion Office worked on the preparation of the Agenda, rightly aware of the social reception and, above all, the marketing impact of a well-prepared plan to implement the SDG goals.

The priority of every university is goal the 4th - to provide high-quality education to all and promote lifelong learning. The University of Warsaw pursues this goal clearly as a priority, which can be found in the report "Commitment..." by P. Pietrzak [37]. The data included in the report show that the University of Warsaw seems to be unbeatable because, above all, it implements the educational process towards sustainable development very seriously - beating the competition in the number of publications in as many as five categories (categories identical to the sustainable development goals): The end of poverty 18% share in the total number of publications in 2021, gender equality - 17%, economic growth and decent work 6%,

Less inequality 15%, Peace, justice and strong institutions 14%. And although the Jagiellonian University obtained the highest result for goal 3 (the largest number of publications in 2021 - 20%), when it comes to the number of goals in the category in which a given university was classified with the largest number of publications in 2021 - the University of Warsaw has no equal. In Poland, in 2021, the Jagiellonian University had the largest share in the number of publications corresponding to the Sustainable Development Goals (SDGs) and amounted to a total of 7%.

4. Discussion

On January 5, 2023, EU Directive 2022/2464 on corporate sustainability reporting (CSRD) entered into force, extending the reporting obligations of companies. It obliges companies to submit annual reports containing information on their impact on the environment, society, human rights and

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corporate governance. It is worth emphasizing that the obligations arising from the new regulations will not immediately apply to all entities covered by the directive, but will be implemented gradually.

The first group of enterprises required to report will have to submit their CSRD-compliant sustainability reports for 2024 (subsequent large entities - for 2025; and listed SMEs - for 2026). The CSRD Directive radically increases the number of enterprises in the European Union obliged to report on environmental protection, social responsibility and respect for human rights and changes the scope of reporting resulting from the previously applicable regulations. So far, the obligation to disclose non-financial information in the area of sustainable development based on the NFRD (Non-Financial Reporting Directive) only applied to approximately 12,000 companies. After the CSRD enters into force, it is estimated that these obligations will apply to approximately 50,000 companies in the European Union. In Poland, the CSRD directive already covers 150 companies, and soon new reporting obligations will apply to a group of over 3,500 Polish enterprises. Enterprises obliged to report in the area of sustainable development under the CSRD will have to present not only planned and undertaken activities, but also their measurable results or their lack. Enterprises covered by CSRD will have to report on:

- ✓ strategy and business model, sustainable development goals, and progress towards achieving them,
- ✓ management about sustainable development factors,
- ✓ policies regarding sustainable development issues,
- ✓ incentive programs related to sustainable development offered to stakeholders,
- ✓ *due diligence* process implemented about sustainability issues,
- ✓ the most significant negative impacts on sustainable development factors,
- ✓ any actions taken to prevent, mitigate, remedy or put an end to actual or potential adverse effects of their results,
- ✓ main risks related to sustainable development,
- ✓ the scope and manner in which the information covered by the report is identified.

For many enterprises, this will mean the need to modify current business processes and undertake new projects and activities. Organizations covered by the directive and the reporting obligation will have to include the entire supply chain and life cycle of their products in the report. To fulfill this obligation, reporting organizations will require detailed information from their contractors regarding the origin of products, activities to protect human rights, and their carbon footprint. In this way, the directive will also affect the activities of those enterprises that are not subject to reporting obligations - including the SME sector. This will significantly expand the number of companies that need to understand and implement the concept of sustainable development, the SDGs, as well as the actions and metrics related to these goals.

As a result, organizations will show a growing demand for competencies in the areas of sustainable development and for experts who have a good understanding of the connection between the Sustainable Development Goals (SDGs) and the company's strategy and operations, as well as the interdependence between financial and non-financial data. The recently published (January 2022) European Competence Framework [51] for Sustainable Development distinguishes 12 competencies within four competence areas, the development of which is necessary from the point of view of the green transformation.

Companies covered by reporting, as well as companies included in the value chain of reporting companies, will need employees or consultants prepared to diagnose the organization about the sustainable development goals and international, national, and regional policies in this area. Will need employees or consultants to shape and implement the sustainable development strategy on to a company and to report the organization's sustainability performance. Therefore, in addition to those responsible for reporting, many employees must be involved in data collection and operational implementation of reported provisions of the sustainable development strategy.

Universities, as units cooperating with business and, above all, educating for business, in addition to implementing ESD content into the education program, see the need to implement ESG

reporting elements (e.g. Catalog of good university practices in ESG areas) [25] reported provisions of the sustainable development strategy. Already, according to the Global Green Skills Report 2022 [52] developed by LinkedIn, among the fastest-growing green jobs in 2016-2021 in terms of annual growth, the leader is the Sustainability Manager, recording a 30% increase per year. Polish research also shows an increase in demand for business and management managers with competencies in the area of sustainable development - in general, an increase in the number of employees is expected by approximately 26,000. people, including approximately 2.6 thousand people in the areas of green transformation (The expected changes in the number of employees in 2021-2030 were developed based on historical changes in 1995-2020 and analyzed as part of the research project entitled "Forecasting system of the Polish labor market" (POWR.02.04.00-00-0083/ 17) [53].

At the environmental level, in connection with the above, analyses are undertaken in the area of the impact on climate change, pollution, water and marine resources, biodiversity and ecosystems, resource use, and the circular economy. In the social area, the following are analyzed: employment - at the university level, the structure according to age and gender can be considered, as well as reference to professional promotions, ensuring appropriate staff replacement and continuity of scientific and research work and teaching, Employees in the supply chain - at the university level, they may be are university employees, including administrative and technical ones. The social environment of consumers and end users - in the case of universities, these may be students, their satisfaction with the level of education, as well as economic entities cooperating directly with scientists and indirectly using the achievements of universities. At the corporate governance level, the way of doing business is verified - in the analyzed scope, i.e. the way the university is managed, as well as activities counteracting exclusions, including mobbing, nepotism, etc.

5. Conclusions

When examining the development of Polish universities in the context of sustainable development and reporting, it is noted that there is a need to further build structures supporting the discussed idea. Although universities sometimes compete with each other, support in promoting good practices - in particular in building structures designed to collect information on activities carried out at universities continuously, enables the management of data regarding meeting the criteria on which various types of rankings are built. Better results are achieved by organizations that have units dealing with sustainable development built into their structure, especially if these are units subordinated to the highest university authorities, which in Poland means direct reporting to university rectors. This makes it easier to collect data, but also to supervise and develop activities already performed. As noted in universities' documents - their strategies, but also when undertaking reviews of organizations' websites, universities collect a lot of data, but they are not always presented appropriately.

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