



Halina KIRYLUK • Joanna GODLEWSKA • Maciej CYGLER

UNIVERSITIES TOWARDS SUSTAINABLE DEVELOPMENT – A REVIEW OF POLISH SCHOOLS' APPROACHES TO THE FORMULATION OF SD STRATEGIES

Halina **Kirylik** (ORCID: 0000-0001-6137-4418) – *Faculty of Engineering Management, Bialystok University of Technology*

Joanna **Godlewska** (ORCID: 0000-0001-9538-7014) – *Faculty of Engineering Management, Bialystok University of Technology*

Maciej **Cyglar** (ORCID: 0000-0002-7651-9824) – *Institute of International Economics, SGH Warsaw School of Economics*

Correspondence address:

Tarasiuka Street 2, 16-001 Kleosin, Poland

e-mail: h.kirylik@pb.edu.pl

ABSTRACT: Universities have an important role to play in the process of achieving the Sustainable Development Goals (SDGs) adopted by the United Nations in its 2015 Declaration, which specifically addresses their contribution in the areas of education, research and social impact. The main objective of the article is to review the approaches of Polish higher education institutions (HEIs) to the formulation of sustainable development strategies by reference to their position in international rankings. The study focused on three international rankings: UI GreenMetric, THE Impact Rankings and QS World University Rankings: Sustainability. The methodology used included literature review and critique, analysis of documents and other source materials, descriptive analysis and comparative analysis. The paper contributes to deepening and advancing the academic debate on the role of universities in achieving the SDGs and improving institutional governance to accelerate progress towards their implementation.

KEYWORDS: sustainable development, SDGs, strategy, higher education institutions (HEIs), ranking

Introduction

Higher education institutions (HEIs) can play an important role in addressing many of today's global challenges, such as global warming, air, soil and water pollution, overexploitation of natural resources, loss of biodiversity, overconsumption, social inequalities, water and food scarcity, and fossil fuel-dependent energy. In recent years, universities have increasingly aligned themselves with the sustainable development pathway and have become more actively involved in the implementation of the Sustainable Development Goals (SDGs) adopted by the United Nations as part of the 2030 Agenda. The effective implementation of the SDGs requires extensive cooperation between different sectors and stakeholders, the sharing of their financial and human resources (knowledge, skills and experience) and the exchange of good practices.

The contribution of universities to the Sustainable Development Goals can be seen at many levels. The main area is, first and foremost quality education, the education of professional human resources, professionals, future leaders and decision-makers (Alcántara-Rubio et al., 2022). Education is recognised as a key gateway to addressing inequalities, particularly between generations (Times Higher Education, 2024a). Higher education institutions can cultivate a culture of sustainability that permeates all aspects of campus life (Fissi et al., 2021), from research and teaching to operations and community engagement.

The need to identify universities' sustainability efforts and assess their performance has led to the development of various international rankings that classify universities in terms of their commitment to and performance in sustainability. Examples of such rankings include UI Green Metric, THE Impact Rankings and QS World University Rankings: Sustainability. The international impact rankings are the first global attempt to measure the progress and commitment of universities towards the SDGs. Rankings are not only a measure of performance but often a catalyst for action and an important tool for promoting universities (Times Higher Education, 2024a). The metrics employed in the rankings are also used as an important tool to measure, monitor and evaluate the university's strategic sustainability plans (UI GreenMetric, 2024a).

The contribution of universities to sustainable development largely depends on the governance model adopted by the university. Governance is recognised as a key element in the implementation of sustainable development (SD) initiatives in teaching, research and projects (Leal Filho et al., 2023b). The effective implementation of the SDGs requires the adoption of an appropriate long-term university sustainability strategy, which properly guides and integrates the actions taken by the university.

The main objective of the article is to review the approaches of Polish higher education institutions (HEIs) to the formulation of sustainable development strategies by reference to their position in international rankings. The research sample was determined on the grounds of three international rankings: UI GreenMetric, THE Impact Rankings and QS World University Rankings: Sustainability.

The methods used in this study include literature analysis and critique, documents and other source material in-depth analysis, and descriptive and comparative analysis. Following the findings of the ranking analysis, Polish universities engaged in activities aimed at implementing the SDGs and reporting on their outcomes were identified, which was followed by an analysis of their strategic documents concerning sustainable development.

A literature review

The challenges of engaging higher education institutions (HEIs) in achieving the Sustainable Development Goals are increasingly becoming the focus of research (Kalinowska & Batorczak, 2017; Uggla & Soneryd, 2023). There is a fairly widespread consensus that HEIs can play a key role in contributing to a sustainable future for our planet and its inhabitants (Saudelli & Niemczyk, 2022; Žalėnienė & Pereira, 2021), both in terms of implementing active policies and encouraging other stakeholders to participate (Blasco et al., 2021). Research shows that universities are advantaged in responding to societal challenges through their roles and activities, mainly in the areas of education, research, innovation and other academic achievements (Albareda-Tiana et al., 2018).

Studies analyse the role, pathways, activities and contributions of higher education institutions to the implementation of the Sustainable Development Goals (SDGs) (Alcántara-Rubio et al., 2022;

Chankseliani & McCowan, 2021; Rajabifard et al., 2021). This role is considered at different levels, in particular in relation to education, social awareness and the value system of society (by promoting the principles of sustainability, equity and inclusion), research and innovation (generating and transferring knowledge, creating and supporting innovation), collaboration and partnerships (creating, actively participating in and strengthening partnerships at local, regional, national and international levels), building social capital and relationship capital. Sáez de Cámara et al. (2021) show that universities should support capacity building and learning for and with society and provide opportunities for dialogue and action between stakeholders. The findings of the studies consider the higher education sector as a key factor in promoting commitment to the SDGs in different sectors and in training students to practice sustainability in their personal and professional lives (Leal Filho et al., 2024).

Education for sustainable development (ESD) is the focus of numerous studies (Holst et al., 2024; Saudelli & Niemczyk, 2022; Duda, 2022; Aleixo et al., 2020). ESD is recognised as a key enabler of sustainable development and achieves its goal through the transformation of society. It enables learners to acquire the knowledge, skills, values and attitudes to make informed choices and take responsible action for environmental integrity, economic viability and a just society, empowering people of all genders for present and future generations while respecting cultural diversity. ESD is a lifelong learning process and an integral part of quality education that enhances the cognitive, social, emotional and behavioural dimensions of learning (UNESCO, 2020). ESD research examines, among other things, which areas of sustainable development (SD) and to what extent they are implemented in higher education offerings (Aleixo et al., 2020; Saudelli & Niemczyk, 2022) and the principles and practices of sustainability in university curricula (Albareda-Tiana et al., 2018). Environmental awareness (Raji & Hassan, 2021) and social responsibility (Garde Sanchez et al., 2020; Garde Sanchez et al., 2021; Pactwa et al., 2024) are also important aspects of research in this area. Furthermore, education is not only about imparting theoretical knowledge but, above all, about shaping pro-environmental attitudes, not only in individuals but in whole societies (Sukiennik et al., 2021).

There is a considerable thematic diversity in the disciplines of research and innovation represented in the universities. Both theoretical and applied aspects of sustainable development are being examined.

Significant research attention has also been devoted to identifying, analysing and evaluating factors that can potentially influence (positively and negatively) the contribution of universities to the Sustainable Development Goals (Raimo et al., 2024; Blasco et al., 2021; Chankseliani & McCowan, 2021; De Iorio et al., 2022). A study by Raimo et al. (2024) on universities in European Union member states (N=210) shows that the contribution of these HEIs to the Sustainable Development Goals is positively correlated with the size of the university, the size of the governing board and the gender balance, among other factors. On the other hand, a study by Blasco et al. (2021) on Spanish public universities shows that the institution's presence on the Internet, the internationalisation of the university and the research and infrastructure funding it receives from the regional government have a positive impact.

Over the past decade, there has been a notable surge in research activity pertaining to sustainability reporting issues, including the sustainability indicators (Gamage & Sciulli, 2017; Larrán Jorge et al., 2019; Caputo et al., 2021; Flórez-Parra et al., 2023). Researchers have sought to assess the extent to which universities are committed to the global Sustainable Development Goals (SDGs) (Holst et al., 2024; Griebeler et al., 2021), with the use of reporting in international rankings serving as a case in point (De la Poza et al., 2021; Al-Shaer & Zaman, 2016; Andrades et al., 2021).

The growing commitment of universities to sustainability has led to the integration of the SDGs into the strategies and programmes of these institutions. Blasco et al. (2021) point out that the SDGs should be at the centre of university governance, involving all stakeholders. Therefore, it seems to be an interesting question to find out whether universities are developing sustainability strategy documents, if so, what is the structure of these documents, and what is the process of developing them and then monitoring the results of the goals set?

Sustainable development strategy was defined as a coordinated set of participatory and continuously improving processes of analysis, debate, capacity-strengthening, planning and investment, which seeks to integrate the short and long-term economic, social and environmental objectives of society – through mutually supportive approaches wherever possible – and manages trade-offs where this is not possible (OECD, 2001). The strategy should outline the main long-term orientations (direc-

tions, development trends), i.e. mission, vision, goals, and the opportunities and threats to their implementation in a 10-15 year perspective. It is a concept that precedes action. Strategic decisions enable the university to make changes to improve or strengthen its position and, above all, to achieve its overall goal of delivering high-quality education, research and the university's relations with the social and economic environment.

Nevertheless, because of the specific nature of universities' activities, they have been considered different institutions from businesses and other public sector organisations. For this reason, studies on universities have, for a long time, not focused on how they operate, how they are managed, or how they conduct their decision-making processes (Bioni & Russo, 2022).

Given that sustainable development requires a long-term approach, available research is not satisfactory, as it often focuses on short-term outcomes. Therefore, there is a need for longitudinal studies that analyse changes and trends in sustainable education practices over the longer term, taking into account the complex interactions between institutional support, teacher training, student engagement and curriculum development (Xu et al., 2024).

Despite the growing number of publications, there is still a need for research in different geographical and university contexts, particularly from a governance perspective. It also appears to be particularly important with regard to the future of Polish education and science. In the most recent forecast of higher education development, the incorporation of the SDGs and the green transformation was identified as one of the directions of its development in the next decade (Woźnicki, 2024).

Research methods

The research approach involved three main stages (Figure 1): identification of Polish HEIs participating in the global sustainability rankings, analysis and evaluation of the involvement of Polish HEIs in the implementation of sustainability measures, and analysis and assessment of the sustainability strategies of HEIs listed in the rankings.

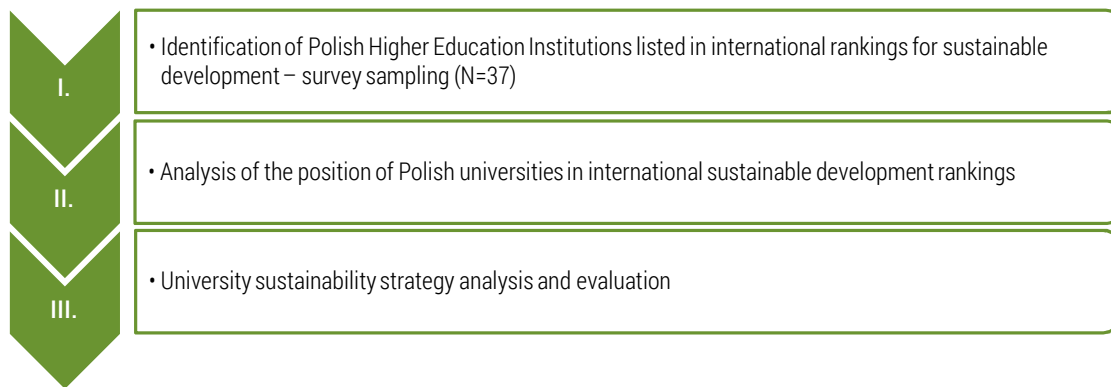


Figure 1. Research process main phases

To identify the research sample for this study, the three main global ranking systems that measure universities' commitment to and performance in sustainability were considered. These are UI GreenMetric, Times Higher Education Impact Rankings and QS World University Rankings: Sustainability. Each ranking applies different criteria in assessing a university's contribution to sustainability (Table 1).

The first global ranking to measure the sustainability performance of universities was the UI GreenMetric. The UI GreenMetric methodology assesses a university's sustainability policy and commitment in six categories: Environment and Infrastructure (SI), Energy and Climate Change (EC), Waste (WS), Water (WR), Transport (TR) and Education and Research (ED). In the first UI GreenMetric ranking in 2010, 95 universities from 35 countries responded, while in 2023, 1183 universities from 84 countries worldwide did so (UI GreenMetric, 2024b). There were 15 universities from Poland in this group.

Table 1. International university sustainability performance rankings

Ranking name	Evaluation criteria	% of the overall score
UI GreenMetric	Setting and infrastructure (SI)	15%
	Energy and climate change (EC)	21%
	Waste (WS)	18%
	Water (WR)	10%
	Transportation (TR)	18%
	Education and research (ED)	18%
Times Higher Education Impact Rankings (THE Impact)	SDG 17: Partnership for the goals	22%
	Top three SDGs	each 26%
QS World University Rankings: Sustainability	Social Impact	45%
	Environmental Impact	45%
	Governance	10%

Source: authors' work based on UI GreenMetric (2024b), Times Higher Education (2024b) and QS World University Rankings (2024).

The second ranking, the Times Higher Education Impact Rankings, assesses the performance of universities in addressing the Sustainable Development Goals (SDGs). The ranking methodology is based on an assessment of the three selected (strongest) individual Sustainable Development Goals that universities are pursuing (top three SDGs – 26% each), and the mandatory SDG 17: Partnership for the Goals (22% of the total score). The score for each SDG is based on a set of thematic metrics, which may consist of individual indicators. The Impact Rankings assess how higher education performs its teaching, research and engagement functions in support of the SDGs (Times Higher Education, 2024b).

The third-ranking, QS World University Rankings: Sustainability, assesses the ability of universities to address global environmental, social and governance (ESG) challenges. Additional criteria are used to assess a university's commitment and performance in sustainability across the pillars:

- Environmental impact: sustainability, education and research,
- Social impact: equality, knowledge exchange, impact of education, employability & opportunities, health and wellbeing,
- Governance: no additional criteria (QS World University Rankings, 2024).

The data reporting period for the QS World University Rankings: Sustainability covers the academic year, unlike the previous two rankings, which use annual data.

Analysis of rankings: UI GreenMetric, Times Higher Education Impact Rankings and QS World University Rankings: Sustainability, published in 2024, identified the research sample. In their final rankings, a total of 37 Polish universities were included. UI Green Metric ranked 15 universities, THE Impact Ranking ranked 25 universities and QS Rankings: Sustainability 2024 ranked 20 HEIs. Regarding the structure of the sample, 22 HEIs participated in only one ranking, 8 in two and 7 HEIs participated in all three rankings (Gdansk University of Technology, Adam Mickiewicz University in Poznan, Bialystok University of Technology, University of Gdansk, University of Warmia and Mazury in Olsztyn, Silesian University of Technology, Poznan University of Technology).

The scores and the position of Polish HEIs in these rankings were then analysed. The focus was placed on the criteria that were ranked highest in each ranking. This analysis has made it possible to show the areas and directions in which universities are already successful in their efforts towards sustainable development measures. In addition, the results of the rankings (scores for individual criteria) provide important guidance for universities to improve their monitoring systems and better document their contributions to the SDGs.

Furthermore, the research sought to establish whether the activities of the 37 Polish HEIs included in the international rankings are structured in any way, i.e. whether they have developed

documents outlining their vision of how to achieve sustainable development. The source of information on strategic documents was the publicly available materials of the Polish HEIs. The research included the following questions:

1. Does the university have a sustainable development strategy or other strategic document that addresses the concept?
2. What is the structure of the sustainable development strategy, including whether it includes a system for monitoring the achievement of the goals?
3. Which of the SDGs are included in the strategy?
4. Do higher education institutions produce sustainable development reports on progress towards the goals?
5. Have the strategy documents been developed in a participatory manner involving the academic community and institutions of the social and economic environment?

The research method used in this part of the study was an analysis of university documents and a content analysis of websites. The research was carried out between June and September 2024.

Research findings

International sustainability rankings

Having examined the results of three major global rankings: UI GreeMetric, Times Higher Education Impact Rankings and QS World University Rankings: Sustainability, it shows that every year, an increasing number of universities, both globally and in Poland, take part in these rankings, thus demonstrating their commitment to sustainability. However, the ranks of Polish universities in these lists are not very high.

An analysis of the UI Green Metrics 2023 ranking (Table 2) shows that the highest rank (197th in the world and first in Poland) was recorded by Gdansk University of Technology, which scored highest in Education and Research (ED) – 88.89% of the maximum achievable level, Waste (WS) – 87.5%, Transport (TR) – 86.11%. These criteria also contributed the most to the university's overall score in the global ranking. In the Environment and Infrastructure (EI) category, the university achieved 73.33% of the maximum score, while in the Energy and Climate Change (EC) category it scored 67.14%. The lowest score was achieved in the category Water (WR) with 60%. In comparison, Białystok University of Technology achieved the highest scores – 87.5% each – in the ED and WS categories. In the other categories, the university's results were as follows: SI – 71.67%, EC – 65.48%, WR – 65%, and TR – 35.28%.

Eight Polish universities – out of the fifteen that took part in this ranking – scored over 70% for education and research. Activities in the field of energy and climate change (EC) were rated highest by two universities: the University of Information Technology and Management in Rzeszow and the Adam Mickiewicz University in Poznan (72.62%). It should be noted that the maximum scores for individual criteria vary. For example, if a university receives a lower score in a criterion that has a higher weighting in the overall ranking, this has a significant negative impact on its position in the overall ranking.

The second-ranking, the Higher Education Impact Rankings 2024, which evaluates the engagement and achievements of universities in the implementation of the SDGs, showed that the highest-ranked Polish universities were: first in the country – the University of Gdańsk (ranked 301-400 globally); second – Gdańsk University of Technology, Jagiellonian University, SWPS University and the University of Warsaw (ranked 401-600) (Table 3-4). The overall score of the top-ranked Polish university was 75.8-79.2 points, while the global leader, Western Sydney University (Australia), scored 99.7 points (out of 100).

Table 2. Green Metrics 2023 ranking of Polish universities

Rank	University	Total Score	SI Score	EC Score	WS Score	WR Score	TR Score	ED Score
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	7150	1100	1525	1425	400	1200	1500
382	Białystok University of Technology	6885	1075	1375	1575	650	635	1575
670	University of Gdańsk	5670	810	1035	1050	600	625	1550
734	The Maria Grzegorzewska University	5325	565	935	975	800	575	1475
758	Cardinal Stefan Wyszyński University in Warsaw	5175	740	1175	750	360	850	1300
772	State Academy of Applied Sciences in Nysa	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	Wrocław Medical University	2635	700	700	75	60	600	500
Maximum achievable points		10000	1500	2100	1800	1000	1800	1800

Source: authors' work based on UI GreenMetric (2024b).

An assessment of the implementation of the SDGs reported by Polish higher education institutions found that the University of Gdańsk and SWPS University ranked in the top 100 globally for the implementation of SD Goal 5: Gender Equality. The number and type of goals reported by universities vary widely. Looking at the individual universities participating in the ranking, the highest-rated goals, which made it into the top three of SD goals for more than half of Polish universities, are SDG8: Decent work and economic growth (11 HEIs); SDG5: Gender equality (10), SDG3: Good health and well-being (9); SDG9: Industry, innovation and infrastructure (8) and SDG11: Sustainable cities and communities (8). Of the 25 universities that participated in the ranking, SDG4: Quality Education was included in the top three of SDGs four times, but as many as 13 universities reported on this goal (Table 4). High-quality education is essential to help achieve all the SDGs. Today's universities are increasingly engaged in other sustainability activities in addition to their educational mission, which is highly ranked. HEIs were already trying to be socially responsible and meet the requirements in this area before they called it sustainable development strategies. Therefore, there are high scores in SDG8, SDG5 or SDG3. At the same time, currently, one of the evaluation criteria (Regulation, 2019) of Polish HEIs is cooperation with the socio-economic environment, so it is relatively easy for them to demonstrate activities in the implementation of SDG9 and SDG11.

The scores assigned to Polish universities in relation to SDG12 placed them in the following positions in the global ranking: 101-200 – Gdańsk University of Technology; 301-400 – University of Gdańsk and Silesian University of Technology; 601-800 – Medical University of Gdańsk, Wrocław University of Science and Technology and Wrocław University of Science and Technology.

Regarding the implementation of goal SDG17: Partnership for the Goals, the highest scores were given to activities related to this goal at the University of Gdańsk, Gdańsk University of Technology and Warsaw University of Life Sciences – SGGW (84.8-90.0 points each). Globally, the highest score was 99.6, while the median value for the world was 52.5.

Table 3. Polish Universities ranked according to THE Impact 2024

Rank	University	SDGs																		
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Number of goals reported	
301-400	University of Gdansk	401-600		601-800	401-600	16	301-400	401-600	401-600	401-600	201-300	201-300	301-400	401-600	101-200			301-400	101-200	15
401-600	Gdansk University of Technology			1001+	801-1000	601-800	101-200	401-600	401-600	401-600								401-600	101-200	12
401-600	Jagiellonian University			201-300						301-400				301-400				101-200	1001-1500	6
401-600	SWPS University			401-600	1001-1500	74												401-600	601-800	6
401-600	University of Warsaw					101-200				201-300	301-400		401-600					401-600		5
601-800	Krakow University of Economic	801-1000		1001+	801-1000	401-600					201-300	401-600						601-800	1001-1500	9
601-800	Lodz University of Technology			1001+		301-400					101-200	401-600						401-600		6
601-800	Wroclaw University of Environmental and Life Sciences		101-200								401-600								801-1000	5
801-1000	Kozminski University				301-400	601-800												301-400	1001-1500	4
801-1000	Silesian University of Technology			1001+	1001-1500			401-600						601-800				401-600		8
801-1000	University of Lodz						201-300										201-300	601-800		5
801-1000	Warsaw University of Life Sciences – SGGW		201-300	601-800														101-200		4
801-1000	WSB Akademy				601-800	301-400													1001-1500	7
1001-1500	Adam Mickiewicz University, Poznan				601-800	301-400					201-300			401-600				601-800		5

Rank	University	SDGs										Number of goals reported							
		1	2	3	4	5	6	7	8	9	10		11	12	13	14	15	16	17
1001-1500	Białystok University of Technology					401-600					401-600	601-800			401-600	401-600		601-800	5
1001-1500	Medical University of Białystok			201-300	1501+	601-800			601-800									1001-1500	5
1001-1500	Medical University of Gdańsk			101-200	1001-1500	401-600		801-1000	401-600	401-600	801-1000	601-800	601-800		401-600	801-1000		1001-1500	13
1001-1500	Poznan University of Technology			1001+				401-600	401-600									601-800	5
1001-1500	The John Paul II Catholic University of Lublin			1001+	1001-1500			801-1000	801-1000	401-600	401-600						301-400	1001-1500	10
1001-1500	University of Warmia and Mazury in Olsztyn			601-800											401-600	401-600		1001-1500	4
1001-1500	Wroclaw Medical University			101-200	1001-1500								401-600					1501+	4
1001-1500	Wroclaw University of Science and Technology			1001+									401-600					1001-1500	9
1501+	Wroclaw University of Science and Technology																	1001-1500	7
1501+	SGH Warsaw School of Economics			1001+	1001-1500													1001-1500	4
1501+	University of Economics and Human Sciences in Warsaw			1001+														1001-1500	4
1963	Number of universities in the ranking in total (in Poland)			1498(17)	1681(14)	1361(12)	867(7)	987(5)	1149(14)	1018(13)	1108(11)	1026(12)	825(6)	924(10)	628(1)	741(6)	1037(10)	2031(25)	

Source: authors' work based on Perspektywy (2024).

Table 4. Highest ranked SD goals at Polish universities in THE Impact 2024: Top Tree SDGs+17SDG

Rank	University	SDGs																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Overall
301-400	University of Gdańsk					75.6			61.2-65.1								61.9-66.8	84.8-90.0	75.8-79.2
401-600	Gdańsk University of Technology							62.5-71.7										84.8-90.0	69.9-75.7
401-600	Jagiellonian University			71.9-75.8								71.5-78.3					72.7-79.6	36.9-52.8	69.9-75.7
401-600	SWPS University			60.0-67.6		70.0					62.2-68.7							59.9-67.4	69.9-75.7
401-600	University of Warsaw					63.1-68.2					56.5-62.1							67.5-75.3	69.9-75.7
601-800	Krakow University of Economic					48.2-55.2			65.2-59.2		62.2-68.7							36.9-52.8	64.5-69.8
601-800	Lodz University of Technology					55.3-59.1			69.3-73.8		57.3-65.1							67.5-75.3	64.5-69.8
601-800	Wroclaw University of Environmental and Life Sciences								52.8-61.1				71.5-78.3					52.9-59.7	64.5-69.8
801-1000	Kozminski University					42.1-48.1											61.9-66.8	36.9-52.8	58.8-64.4
801-1000	Silesian University of Technology								52.8-61.1		57.3-65.1							67.5-75.3	58.8-64.4
801-1000	University of Lodz							55.4-62.4									51.3-61.8	59.9-67.4	58.8-64.4
801-1000	Warsaw University of Life Sciences – SGGW			51.2-59.9												55.2-64.6		84.8-90.0	58.8-64.4
801-1000	WSB Akademy					55.3-59.1			43.1-52.7		62.2-68.7							36.9-52.8	58.8-64.4

Rank	University	SDGs																	
		1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	Overall
1001-1500	Adam Mickiewicz University, Poznan				50.0-56.2	55.3-59.1					62.2-68.7							59.9-67.4	45.0-58.7
1001-1500	Bialystok University of Technology					36.2-48.3						44.9-56.6				29.3-45.7		59.9-67.4	45.0-58.7
1001-1500	Medical University of Bialystok			71.9-75.8					26.0-41.4									36.9-52.8	45.0-58.7
1001-1500	Medical University of Gdansk			75.9-80.9	35.3-42.0					47.2-56.4								36.9-52.8	45.0-58.7
1001-1500	Poznan University of Technology							46.4-55.2		41.5-57.2				36.0-46.6				59.9-67.4	45.0-58.7
1001-1500	The John Paul II Catholic University of Lublin										47.2-56.4	44.9-56.6					61.9-66.8	36.9-52.8	45.0-58.7
1001-1500	University of Warmia and Mazury in Olsztyn			51.2-59.9												29.3-45.7	51.3-61.8	36.9-52.8	45.0-58.7
1001-1500	Wroclaw Medical University			75.9-80.9			25.7-44.1											1.7-36.8	45.0-58.7
1001-1500	Wroclaw University of Science and Technology								52.8-61.1	41.5-57.2		44.9-56.6						36.9-52.8	45.0-58.7
1501+	Rzeszów University of Technology								1.4-30.6	26.0-41.4		12.1-33.6						36.9-52.8	6.8-44.9
1501+	SGH Warsaw School of Economics			0.8-43.0			25.7-44.1		52.8-61.1									36.9-52.8	6.8-44.9
1501+	University of Economics and Human Sciences in Warsaw			0.8-43.0					30.7-43.0	62.2-68.7								36.9-52.8	6.8-44.9

Legend: - SD Top 1 - SD Top 2 - SD top 3

Source: authors' work based on Times Higher Education (2024a).

In the QS Sustainability Ranking 2024, the highest scores (in the overall ranking) were achieved by the following Polish universities: University of Warsaw, Jagiellonian University, Gdańsk University of Technology, Adam Mickiewicz University in Poznan and University of Gdańsk (Table 5). Globally, the highest positions in the QS Sustainability Ranking 2024 were awarded to the University of Toronto (Canada), University of California (United States), University of Manchester (United Kingdom), University of British Columbia (Canada) and University of Auckland (New Zealand). The University of Warsaw, the highest-ranked Polish university, scored 73.1 (out of 100), while the University of Toronto, top-ranked, scored 100.

Table 5. Polish Universities ranked according to QS Sustainability Rankings 2024

Rank	University	Environmental Impact			Social Impact					Governance	Overall score
		Sustainability	Education	Research	Equality	Knowledge exchange	Impact of education	Employability & Opportunities	Health and Wellbeing		
222	University of Warsaw	31.3	68.6	75.6	85.5	88.5	78.3	70.5	81.1	89.6	73.1
402	Jagiellonian University	31	48.9	59.9	78.3	71.4	73.2	70.3	74.2	77.2	62.3
420	Gdańsk University of Technology	41.7	57.2	69.9	68.8	65.7	53.3	54.5	72	75.9	61.6
434	Adam Mickiewicz University, Poznan	33.5	58.3	66.3	76.7	63.9	71.1	48.2	72	71.7	61
488	University of Gdańsk	14.8	57.7	72.2	81	63.2	60.1	41.2	81.1	80.9	58.9
699	Wrocław University of Environmental and Life Sciences	40.6	46.1	51.5	62.7	57.3	27.2	30.1	66.6	82.6	50.7
701-710	University of Wrocław	20.2	57	54.9	53.8	50.1	57.9	40.1	51.7	79.4	n/a
761-770	University of Warmia and Mazury in Olsztyn	15.9	56	52.8	59.2	48.5	36	43.2	68.2	69.2	n/a
761-770	Warsaw University of Life Sciences – SGGW	8.6	52	73	49.3	41.6	47.2	37.8	82.1	70.3	n/a
881-900	Lodz University of Technology	24.6	25.5	57.3	54.6	57.8	34	35.5	73.2	67.9	n/a
1001-1050	University of Silesia in Katowice	14.8	35.7	55.1	56.7	65.2	45.1	30.9	45.7	29.6	n/a
1051-1100	University of Lodz	4.5	39.5	52.2	49.5	50.8	57.4	38	59.2	24	n/a
1101-1150	AGH University of Krakow	10.1	44.8	48.6	27.7	55.6	43.6	57.5	42.2	22.2	n/a
1101-1150	Nicolaus Copernicus University	4.5	36.3	52.7	45.5	53.7	55.7	43.4	46.3	24.3	n/a
1201+	Białystok University of Technology	9.2	24.9	38.1	49.9	29.4	49.8	22.5	43.9	45.3	n/a
1201+	Poznan University of Life Sciences	4.5	41.7	57.6	30.1	38.1	26.9	25.9	48.7	22.7	n/a
1201+	Poznan University of Technology	12.3	45.3	38.9	37.3	39.7	36.2	36.2	39	43.1	n/a
1201+	Silesian University of Technology	14.4	41.1	44.1	31.1	45	46.3	38.6	47.3	28.5	n/a
1201+	Warsaw University of Technology	10.1	31.9	37.8	30.2	48.8	33.1	71.4	40	28.2	n/a
1201+	Wrocław University of Science and Technology	4.5	44.5	40.4	25.2	50.3	49.8	46.2	47.1	23.7	n/a

Source: authors' work based on QS (2024).

Governance was an important criterion for the evaluation of universities in the QS World University Rankings, as it largely determines the effectiveness of the implementation of sustainability measures. The highest scores in the governance category were achieved by University of Warsaw (89.6 points), Wrocław University of Life Sciences (82.6 points), University of Gdańsk (80.9 points), University of Wrocław (79.4 points), Jagiellonian University (77.2 points) and Gdańsk University of Technology (75.9 points).

Looking at the results of the same university participating in the three rankings, it can be observed that it does not occupy the same high positions in them. The exception is Gdansk University of Technology, which is ranked 1st in the UI Green Metrics, 2nd in THE Impact and 3rd in the QS World University Rankings. This university is an example of a conscious and consistent approach to sustainable development. This is also confirmed by the results of the analysis of the University's strategic documents presented below.

The reason for the different positions in the rankings are the different evaluation criteria used, which is why some universities deliberately choose to participate only in those where they can be evaluated highly.

Sustainable development strategies of the universities

An examination of the strategic documents of Polish higher education institutions and the content of their websites revealed diverse approaches to sustainable development, which can be broken down into three types:

1. There is a strategy document that directly addresses sustainable development.
2. There is a strategy document that indirectly addresses sustainable development.
3. There is no sustainable development strategy or other strategic documents that do not address these issues.

The first type of approach to SD is demonstrated by 10 HEIs, representing 27% of the sample. This group includes 6 HEIs that have developed a document called a sustainable development strategy or agenda. These include University of Warmia and Mazury in Olsztyn (2015), Bialystok University of Technology (2023), WSB Merito University (2022), University of Information Technology and Management in Rzeszow (2024), The Maria Grzegorzewska University (2023) and Kozminski University (2020). Another four universities have developed a single strategy that integrates sustainability and climate issues: Jagiellonian University in Kraków (2024), University of Warsaw (2021) and SWPS University (2023) or social responsibility issues at Gdansk University of Technology (2024).

The second approach, where the HEI has prepared a strategic document that is not a sustainable development strategy but addresses the concept, is represented by 8 HEIs, i.e. 21.6% of the surveyed sample. Most often, this document is a university development strategy (Poznań University of Technology, Wrocław University of Life Sciences, Ignacy Łukasiewicz University of Technology in Rzeszów, Silesian University of Technology in Katowice, AGH University of Science and Technology in Cracow, Warsaw University of Technology) or a social responsibility strategy (SGH Warsaw School of Economics, Cracow University of Economics).

The most numerous groups (51.3% of the HEIs surveyed) are those that have not developed a document on sustainable development or whose development strategies do not include the SDGs. According to the available information, two of these HEIs (the University of Gdańsk and the Tadeusz Kościuszko University of Technology in Kraków) are planning to develop a sustainable development strategy. The University of Gdansk is an example of a university that does not have a formal sustainable development strategy document, yet it is ranked highly in three rankings, including first place in THE Impact Ranking. However, it should be emphasised that this university has taken care to provide institutional and organisational support for the process of achieving its ERI goals. A unit called the Centre for Sustainable Development has been created, whose main task is to support, coordinate and carry out activities to disseminate the objectives of the 2030 Agenda for Sustainable Development within the academic community and the socio-economic environment (UG Centre for Sustainable Development, 2024).

Another element examined was the structure of the sustainability strategy. It varies widely. There is only one case (Bialystok University of Technology) where there is a mission, vision, goals structure and an implementation section (Bialystok University of Technology, 2023). Other strategies include mission, vision and objectives. There are also examples of strategies that present several selected SD goals of Agenda 2030 and the university's commitments to them. Bialystok University of Technology is also the only university to have a monitoring system for strategy implementation. The lack of such a system does not seem to be a positive feature, as, without one, the provisions of the strategy may remain unimplemented and only serve marketing purposes.

A varied approach can also be observed with regard to the specific SD Goals of the 2030 Agenda identified by higher education institutions. While there are documents referring to 17 goals, the most

common approach is to refer to only a few. It is interesting to note that in all cases analysed, HEIs commit to Goal 12: Responsible Consumption and Production, followed by SD 4: Quality Education in terms of frequency. SDG12 is relatively easy for universities to achieve as it overlaps with their statutory activities, namely education and public awareness activities (sustainable consumption). In turn, they tend to identify sustainable production as the implementation of practices on their premises, such as reducing energy and water consumption, using renewable energy sources, managing resources appropriately and significantly reducing waste generation. SD 5 Gender Equality, SD 7 Clean and Accessible Energy and SD 11 Sustainable Cities and Communities also appear frequently. Comparing these goals with the results of the THE Impact Ranking previously shown, it becomes clear that the most frequent goals in the policy documents, and also the highest rated goals, are SD 5: Gender Equality and SD 11: Sustainable Cities and Communities. This shows that universities intend to play a leading role in promoting gender equality ideas and supporting their immediate environment in their efforts to achieve sustainability (Pietrzak, 2022).

Sustainability reports, which also report on progress towards goals, were another element examined. 6 HEIs (16.2% of the sample) have been producing sustainability reports, often for several years. Interestingly, these are not always the HEIs that have developed SD strategies. There are also cases where HEIs report on SD but do not have a strategy document addressing these issues (4 HEIs), and these are Adam Mickiewicz University in Poznań, University of Gdańsk, Łódź University of Technology, University of Wrocław. However, this approach allowed them to achieve high positions in three rankings. On the other hand, 8 HEIs (21.6% of the sample) do not have SD reports but are developing social responsibility reports.

There are only three cases (Jagiellonian University, Technical University of Białystok and Maria Grzegorzewska University) where it is made public that the development of the SD strategy was carried out in a participatory process, in public consultation with the whole academic community, which deserves to be evaluated positively. In line with the recommendations of Agenda 21 (United Nations, 1992), such a document must be developed with the broad participation of all stakeholders.

Discussion/limitations and further research

The academic debate on the contribution of universities to sustainable development and to addressing contemporary development problems has grown rapidly, in particular over the last decade. Universities have been increasingly active in promoting the concept of sustainable development, both in the teaching and research fields. They, therefore, make a fundamental contribution to building social responsibility and, in particular, to raising the environmental awareness of the academic community (students, faculty, staff and contractors). This fosters the search for innovative solutions to current and future challenges and problems of civilisation development. Through research, knowledge generation and transfer to business and society, universities stimulate the development of innovation and become catalysts for progress (Raimo et al., 2024). Sustainable development is seen as an opportunity to promote new mechanisms for university governance that coherently guide internal decision-making processes and resource allocation (Sáez de Cámara et al., 2021).

Indeed, a vehicle for promoting both the university and the concept of sustainable development is to participate in international rankings (UI GreenMetric, THE Impact Rankings, and QS World University Rankings: Sustainability) that measure the university's contribution to the SDGs. Research shows that HEI's that participate in international rankings can benefit from a number of advantages, such as:

- Internationalisation of the University,
- Enhance its prestige and visibility nationally and internationally to attract stakeholders (Bautista-Puig et al., 2022; Stasiuk-Piekarska et al., 2024),
- Raise awareness of sustainable development issues and challenges,
- Orienting higher education institutions to take tangible action to address emerging global challenges,
- Self-assessing the sustainable development of higher education institutions through the use of ranking indicators,

- Create networks of ranking participants which can share best practices in sustainability (e.g. the UI GreenMetric World University Rankings Network (UIGWURN) has 1183 participating universities in Asia, Europe, Africa, Australia, the Americas and Oceania) (UI GreenMetric, 2024b).

To date, research on the involvement of higher education institutions in the implementation of sustainable development measures has often been conducted on the basis of one selected ranking or has been limited to an analysis of the position of universities in these rankings. This paper demonstrates a more comprehensive approach – an analysis was carried out on the grounds of three global ranking systems. This exercise provided a starting point for identifying the entities that measure the impact of implementing sustainability measures.

Participation in the rankings allows for comparison with universities around the world and identification of areas for improvement. Based on the individual criteria in the rankings, it is easier to identify directions and prioritise areas for improvement within the organisation.

The results of our survey confirm the findings of Raimo et al. (2024) regarding the positive correlation between the contribution of these institutions to the SDGs and the size of the university. Polish universities with high rankings are mainly the largest Polish schools. It is worth noting, for example, that the University of Gdańsk has a very high global ranking (16th) in terms of gender equality. There is relatively little research that has been conducted from a university governance perspective. The literature highlights the need to develop approaches, methods, measures and tools that can help higher education institutions systematically integrate the SDGs into university programmes (Leal Filho et al., 2021).

Korzeb et al. (2024) have developed a framework for the implementation of the SDGs in higher education institutions. Their research shows that putting European universities on a sustainable development path requires a comprehensive and integrated approach, including the development of long-term strategies aimed at achieving sustainable development goals. They see strategies as one of the key success factors in the implementation of the SDGs. However, this is not entirely consistent with our findings, which show that the mere fact of having a sustainability strategy does not determine high rankings in international rankings. The example of the University of Gdansk shows that, despite the lack of a strategy, it ranks high in the three rankings analysed. This is mainly due to the fact that it collects the information needed for the indicators in the form of sustainability reports and has an institutional and organisational background. However, framing these activities in a long-term strategy would help to communicate the university's commitment to SD.

The results obtained by the authors could be compared with the results of a study carried out on a sample of 20 strategies of Italian public universities. Polish universities attach more significance to the consideration of SD goals in their strategies. Italian universities in most cases, still pay little attention in their planning documents to objectives regarding social responsibility. The analysis found low compliance in universities' strategic plans with the 17 Sustainable Development Goals of the UN 2030 Agenda (Nardo et al., 2021). These differences are likely to be due to the fact that in Italy, strategies developed from 2015 onwards were included in the study, whereas in Poland, strategies were more recent, mostly dated after 2020.

Other Italian studies conducted in 29 public universities focused on exploring the relationship between the quality of the strategic document and the performance of the university (Angiola et al., 2019). The findings of these studies confirm the results obtained by the authors regarding the role of the monitoring system. An improvement in performance measurement systems has a positive impact on the outcomes of the organisation.

The various approaches to developing sustainable development strategies (including defining a clear vision choosing and integrating sustainability goals) identified by the authors may be due, among other things, to the different ways in which the university community understands sustainability concepts and goals. Indeed, an international study by Cuesta-Claros et al. (2024) shows that university stakeholders have different understandings of the purpose of universities, have different perspectives on sustainability goals and prefer certain types of integration of SDGs. Therefore, there is a need to formulate a clear university mission in line with sustainability goals (building a sustainable future should be the core of the mission), as pointed out by the signatories of the Forum Akademickie (2023). The research by Dziubaniuk et al. (2024) also points to the need to effectively communicate the strategic vision of higher education institutions and to take into account the multiple values of sustainable development held by stakeholders.

The limitations of this study lie mainly in the sample composition, which was made up of Polish HEIs, including only those participating in HEI rankings. Indeed, it should be noted that HEIs that do not participate in the rankings may also develop and implement sustainable development strategies. Another limitation of the study was that the analysis was carried out on the basis of general ranking results, while individual criteria and measures that show the specific actions of universities towards sustainable development were not analysed in detail.

Challenges encountered during the research were concerned with the availability of data. The analyses carried out were made on the basis of documents and information available on the universities' websites. Therefore, it is not entirely confident that the conclusions about the participatory process in the development of the strategy comply with reality, as they were formulated on the basis of published data. It may have been the case that such a process did take place but that relevant information was not included.

Further research is recommended to investigate the factors that support the effective implementation of the sustainability strategy. Research exploring the impact of the university's sustainability strategy on the attitudes and involvement of students, faculty and staff in the implementation of sustainability measures can also be identified as a focus for further research. Research on measuring and monitoring universities' progress in implementing sustainable measures should also be further extended. Research on different approaches to strategic planning and the challenges of managing a university in different cultural, geographical and economic contexts is also needed to provide a more global perspective.

Conclusions

Research demonstrates that the involvement of universities in the implementation of sustainable development measures has increased in recent years. This takes place at various levels, mainly through the education of the younger generation, interdisciplinary research, innovation, cooperation and appropriate university management. These activities serve not only the academic community but also society, the economy and the environment.

The following key conclusions can be derived from the research discussed in this paper:

- The increasing participation of universities, both globally and in Poland, in international sustainable development rankings such as the UI GreenMetric, the Times Higher Education (THE) Impact Rankings and the QS World University Rankings demonstrates a growing commitment to sustainable development. However, despite the growing commitment of Polish universities, their rankings remain relatively low compared to global leaders, indicating a certain performance gap. However, it seems that this could be improved by continuing to pursue targeted strategies and broadening the scope of sustainable development policies.
- Analysed Polish universities show a wide variety of approaches to integrating sustainable development into their activities. Some 27% of universities have a dedicated sustainability strategy, while another 21.6% address sustainability indirectly within broader institutional development or social responsibility documents. However, more than half of the universities surveyed still lack a clear strategy or have not integrated the SDGs into their strategic documents, reflecting a gap in commitment that may hinder universities' ability to effectively contribute to sustainable development.
- The SDGs most often prioritised by Polish universities in their sustainable development strategies include responsible consumption and production (SDG 12), quality education (SDG 4), gender equality (SDG 5) as well as sustainable cities and communities (SDG 11). These goals align with the areas in which universities tend to perform best in international rankings, highlighting a focus on societal issues such as gender equality and urban sustainability. Less attention is paid to some other SDGs, such as climate action (SDG 13) and affordable and clean energy (SDG 7), which could be seen as an indication for universities to broaden their sustainability efforts to a broader set of challenges. However, Polish universities with the highest sustainability rankings, such as the Gdańsk University of Technology and the University of Gdańsk, tend to score well in such areas as waste management, energy and climate change, and transport. This suggests that

Polish institutions are focusing their efforts on specific SDGs where they can have a measurable impact.

- The diversity in how universities approach sustainability and the types of SDGs they prioritise may reflect different cultural, geographical and economic contexts. For example, universities in Poland have placed a strong emphasis on social responsibility and gender equality, which may be due to the local social and political landscape. This highlights the need for universities to adapt their sustainability strategies to their specific contexts while still aligning with global sustainability goals.
- The lack of a structured monitoring system in most sustainability strategies is a notable weakness. Only a few universities (e.g. Bialystok University of Technology) have implemented such systems, which are essential for tracking progress and ensuring the implementation of sustainability measures. Without clear monitoring, sustainability goals risk becoming superficial or symbolic rather than actionable and serve only marketing purposes. A monitoring system should be an integral part of the sustainable development strategy.
- The above conclusion also has implications for reporting and transparency. Sustainability reports, which track progress toward SDG goals, are still not widespread among Polish universities. Only 16.2% of universities consistently produce these reports, while others rely on social responsibility reports. The lack of regular, transparent reporting may limit the universities' ability to effectively communicate their achievements and challenges in sustainability to stakeholders, including students, faculty, and the public. Establishing more robust reporting systems would help universities measure their performance more effectively and foster greater accountability.
- The implementation of sustainable development goals requires efficient and effective university governance systems, including the development of comprehensive sustainable development strategies with a clearly defined mission of the university, which will allow the concept to be effectively implemented in practice and respond to contemporary challenges. Governance plays a significant role in the success of sustainability strategies. Universities that score higher in governance categories, such as the University of Warsaw and Gdańsk University of Technology, tend to implement sustainability measures more effectively. This emphasises the importance of strong leadership and a governance structure that actively supports and prioritises sustainability across all university activities.
- University sustainable development strategies play an important educational, advocacy and integrative role (integrating the academic community around common sustainable development goals and values). The few cases where sustainability strategies have been developed through a participatory process (involving consultation with the university community) suggest that such processes can strengthen commitment and ownership of sustainability initiatives. Involving a wider range of stakeholders, including students, faculty and staff, can lead to more holistic and effective sustainable development strategies that are better aligned with the needs and values of the university community.

The authors believe that this paper makes a notable contribution to deepening and promoting the academic discussion on the role of universities in achieving the SDGs and improving institutional management to accelerate progress in their implementation. The study of the Polish context will enrich the body of knowledge on education for SD in higher education and allow for comparative analysis at the international level.

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The contribution of the authors

Conceptualization, J.G., H.K. and M.C.; literature review, J.G. and H.K.; methodology, J.G. and H.K.; formal analysis, J.G., H.K. and M.C.; writing, J.G., H.K. and M.C.; conclusions and discussion, J.G., H.K. and M.C.

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Halina KIRYLUK • Joanna GODLEWSKA • Maciej CYGLER

UCZELNIE NA ŚCIEŻCE ZRÓWNOWAŻONEGO ROZWOJU – PRZEGLĄD PODEJŚĆ POLSKICH SZKÓŁ WYŻSZYCH DO FORMUŁOWANIA STRATEGII ZRÓWNOWAŻONEGO ROZWOJU

STRESZCZENIE: Szkoły wyższe odgrywają ważną rolę w procesie osiągnięcia Celów Zrównoważonego Rozwoju (SDGs), przyjętych przez ONZ w 2015 r., która przejawia się głównie w sferze edukacji, badań naukowych i oddziaływania społecznego. Głównym celem artykułu jest dokonanie przeglądu różnych podejść polskich uczelni do formułowania strategii zrównoważonego rozwoju, biorąc pod uwagę pozycje zajmowane przez nie w międzynarodowych rankingach. W artykule analizą objęto trzy międzynarodowe rankingi: UI GreenMetric, THE Impact Rankings oraz QS World University Rankings: Sustainability. W pracy wykorzystano metodę analizy i krytyki piśmiennictwa, analizę dokumentów i innych materiałów źródłowych, analizę opisową i analizę porównawczą. Artykuł będzie miał wkład w pogłębienie i promowanie dyskusji naukowej na temat roli uczelni w realizacji celów zrównoważonego rozwoju i doskonalenia zarządzania instytucją, aby przyspieszyć postępy w ich wdrażaniu.

SŁOWA KLUCZOWE: zrównoważony rozwój, SDGs, strategia, szkolnictwo wyższe, ranking