

Analysis of the Survey

“Assessment of the Awareness of Students of Abylkas Saginov Karaganda Technical University about the Sustainable Development Goals (SDGs)”

A survey aimed at identifying the level of awareness of students of **Abylkas Saginov Karaganda Technical University** regarding the Sustainable Development Goals was conducted on **April 23, 2025**, in an online format via the following link: <https://forms.gle/bgXqxtMeoR5tgxVLA>.

A total of **500 respondents** participated in the survey.

The questionnaire consisted of **5 main sections with questions, 3 of which were based on the Likert scale from 1 to 5** (Table 1).

Table 1 – Variable Values

Likert Scale Level Percentage Value Textual Expression of Satisfaction

1	20%	Minimum
2	40%	Low
3	60%	Medium
4	80%	High
5	100%	Maximum

To analyze the level of students’ awareness of the Sustainable Development Goals, the following factors were identified:

STRUCTURE OF THE TOOL

Section A — Foundational Sustainability Knowledge

Section B — SDG & Institutional Awareness

Section C — Sustainability Competencies (ESD-based)

Section D — Behaviour & Engagement

Section E — Perception of University Sustainability Performance

SECTION A. FOUNDATIONAL KNOWLEDGE (Multiple Choice)

1. Sustainable development means:

- A. Economic growth at any cost
- B. Meeting present needs without compromising future generations
- C. Climate policy only
- D. Environmental protection only

2. The Sustainable Development Goals include:

- A. 12 goals
- B. 15 goals
- C. 17 goals
- D. 20 goals

3. Which SDG is most directly connected to universities?

- A. SDG 4 – Quality Education
- B. SDG 6 – Clean Water

C. SDG 14 – Life Below Water

D. SDG 1 – No Poverty

4. Carbon footprint refers to:

A. Water usage

B. Waste production only

C. Total greenhouse gas emissions

D. Electricity bills

5. Which of the following is part of QS Sustainability evaluation?

A. Student dress code

B. Environmental Impact

C. Cafeteria menu diversity

D. Sports rankings

SECTION B. SDG & INSTITUTIONAL AWARENESS

6. Are sustainability or SDG-related topics included in your study program?

• Yes, systematically

• Partially

• No

• Not aware

7. Does the university publish sustainability or ESG reports?

• Yes

• No

• Not aware

8. Are there student sustainability initiatives or green campus programs?

• Active participation

• Aware but not involved

• Not aware

9. Do you know the university's sustainability strategy or roadmap?

• Yes

• Heard about it

• No

10. Are SDGs linked to research or project opportunities for students?

• Yes

• Partially

• No

SECTION C. SUSTAINABILITY COMPETENCIES (Likert 1–5)

(1 – Strongly disagree; 5 – Strongly agree)

11. I understand the interconnection between environmental, social and economic systems.

12. I can analyze sustainability challenges critically.

13. I feel responsible for contributing to sustainable development.

14. I can apply sustainability principles in my field of study.

15. I am confident discussing SDGs in academic contexts.

(Aligned with systems thinking, anticipatory competence, normative competence, strategic competence — UNESCO ESD model)

SECTION D. BEHAVIOURAL PRACTICE & ENGAGEMENT

16. I reduce my personal environmental footprint (energy, waste, transport).

17. I participate in sustainability-related events or initiatives.

18. I integrate sustainability topics into assignments or research projects.

19. I support social inclusion and equity initiatives.

20. I consider sustainability in career planning.

SECTION E. PERCEPTION OF UNIVERSITY PERFORMANCE

- 21. The university demonstrates environmental responsibility.
- 22. The campus promotes inclusive and equitable policies.
- 23. Sustainability is visible in campus operations.
- 24. Students are encouraged to participate in sustainability governance.
- 25. The university contributes to SDG-related research and innovation.

(Likert 1–5)

SCORING METHODOLOGY

1 Knowledge Score (KS)

Correct answers / 5 × 100

2 Institutional Awareness Score (IAS)

Weighted 0–3 scale

3 Competency Score (CS)

Mean Likert × 20

4 Behaviour Score (BS)

Mean Likert × 20

5 Perception Score (PS)

Mean Likert × 20

STUDENT SUSTAINABILITY LITERACY INDEX (SSLI)

SSLI =

0.30(KS) +

0.20(IAS) +

0.20(CS) +

0.20(BS) +

0.10(PS)

INTERPRETATION SCALE

Score Level

80–100 Advanced Sustainability Literacy

60–79 Operational

40–59 Developing

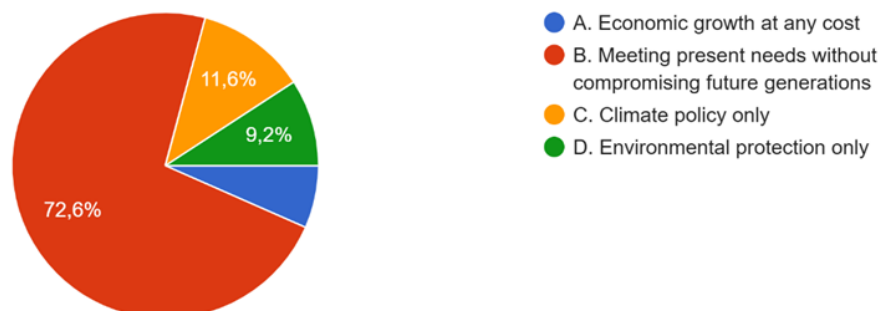
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Next, we will consider the results of each question.

Figure 1

SECTION A. FOUNDATIONAL KNOWLEDGE (Multiple Choice) 1. Sustainable development means:

500 ОТВЕТОВ

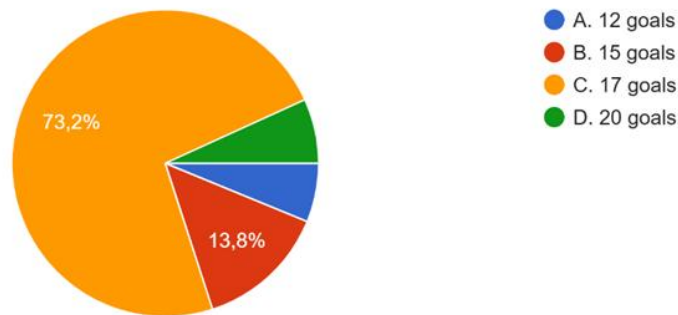


A correct understanding of the concept of sustainable development is demonstrated by **72.6% of respondents**, who define it as meeting the needs of the present without compromising the ability of future generations to meet their own needs. At the same time, **11.6% of respondents** associate sustainable development only with climate policy, while **9.2%** link it exclusively to environmental protection, which indicates a partial understanding of the concept. About **6.6% of respondents** believe that sustainable development is related to economic growth at any cost, which does not correspond to the principles of sustainable development. The data are presented in the diagram (Figure 1).

Figure 2

2. The Sustainable Development Goals include:

500 ответов

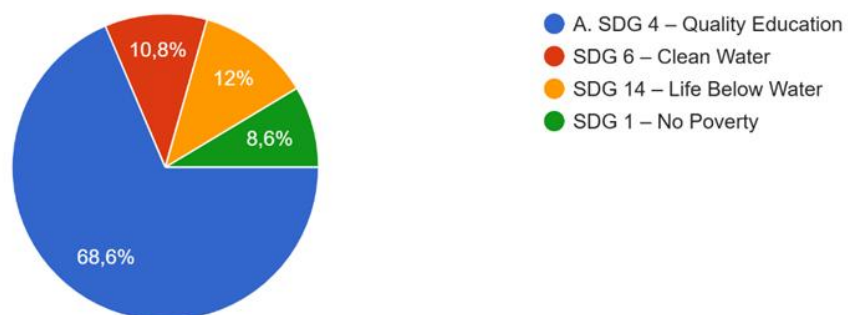


The correct number of Sustainable Development Goals is identified by **73.2% of respondents**, who selected the option **17 goals**. At the same time, **13.8% of respondents** believe that the SDGs include **15 goals**, while about **6–7% of respondents** selected the options **12 or 20 goals**, indicating incomplete awareness among some survey participants. Overall, the results demonstrate a fairly high level of awareness regarding the structure of the Sustainable Development Goals. The data are presented in the diagram (Figure 2).

Figure 3

3. Which SDG is most directly connected to universities?

500 ответов



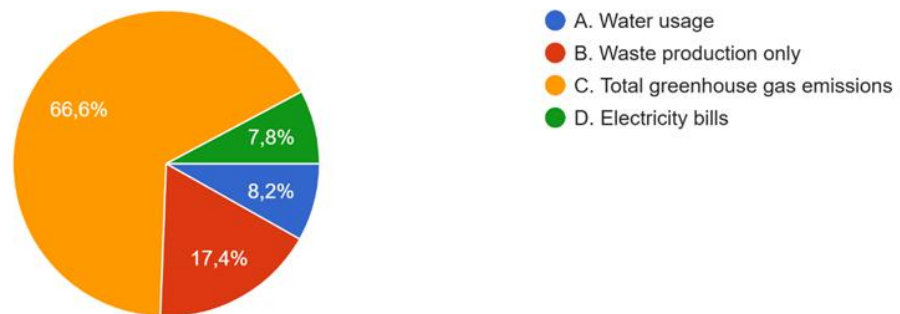
The majority of respondents (**68.6%**) correctly identify **SDG 4 (Quality Education)** as the goal

most closely related to university activities. At the same time, **12% of respondents** selected **SDG 14**, while about **9–11%** indicated **SDG 1** or **SDG 6**, which suggests different perceptions of the role of universities in sustainable development. Overall, the results confirm that universities are primarily associated with their educational mission. The data are presented in the diagram (**Figure 3**).

Figure 4

4. Carbon footprint refers to:

500 ОТВЕТОВ

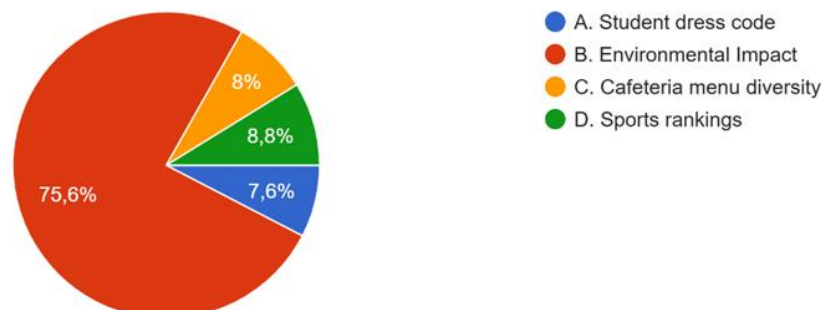


The concept of a “**carbon footprint**” is correctly interpreted by **66.6% of participants**, who selected the option “**total volume of greenhouse gas emissions.**” However, **17.4% of respondents** mistakenly associate it only with waste production, while about **8%** link it to water consumption or electricity bills. This indicates the need for additional education in climate literacy. The data are presented in the diagram (**Figure 4**).

Figure 5

5. Which of the following is part of QS Sustainability evaluation?

500 ОТВЕТОВ



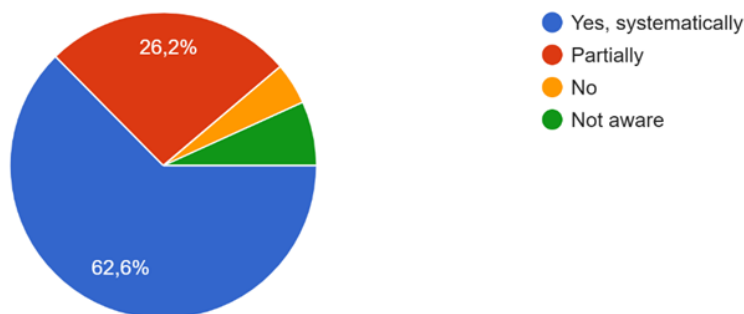
A significant proportion of respondents (**75.6%**) demonstrate awareness of the criteria used to assess university sustainability by correctly identifying **Environmental Impact** as part of the **QS Sustainability ranking**. Around **8–9% of respondents** incorrectly selected options related to sports achievements or menu diversity, while **7.6%** associated the assessment with student dress code. The high percentage of correct answers indicates an understanding of the importance of

environmental indicators in the international academic environment. The data are presented in the diagram (Figure 5).

Figure 6

SECTION B. SDG & INSTITUTIONAL AWARENESS 6. Are sustainability or SDG-related topics included in your study program?

500 ОТВЕТОВ

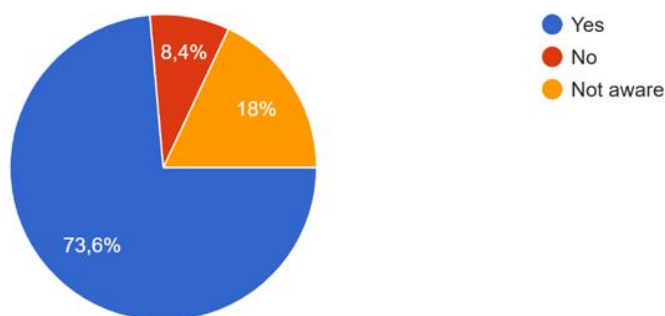


The integration of sustainable development topics into the educational process is assessed mostly positively by respondents: **62.6% confirm** the systematic inclusion of relevant topics in their academic programs. Another **26.2% of respondents** note the partial presence of these topics, while only a small proportion of participants indicated the absence of such issues or lack of awareness of them. This demonstrates a high level of institutional engagement in the SDG agenda. The data are presented in the diagram (Figure 6).

Figure 7

7. Does the university publish sustainability or ESG reports?

500 ОТВЕТОВ

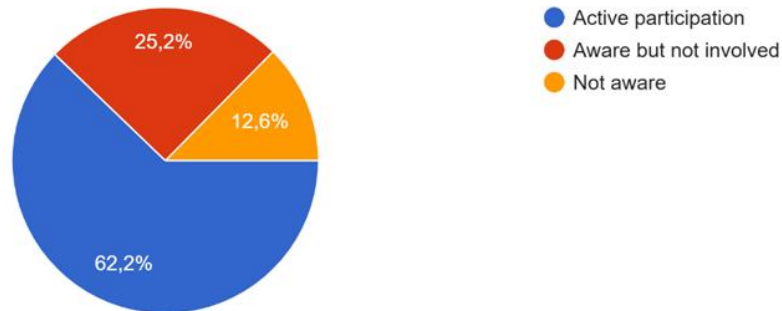


The majority of survey participants (**73.6%**) confirm that the university publishes reports in the field of sustainable development or **ESG**. At the same time, **18% of respondents** are not aware of the existence of such reporting, while **8.4%** believe that the university does not publish such documents. Overall, the data indicate a high level of transparency of the university in matters of sustainable development, although there remains a need for broader awareness among part of the audience. The data are presented in the diagram (Figure 7).

Figure 8

8. Are there student sustainability initiatives or green campus programs?

500 ОТВЕТОВ

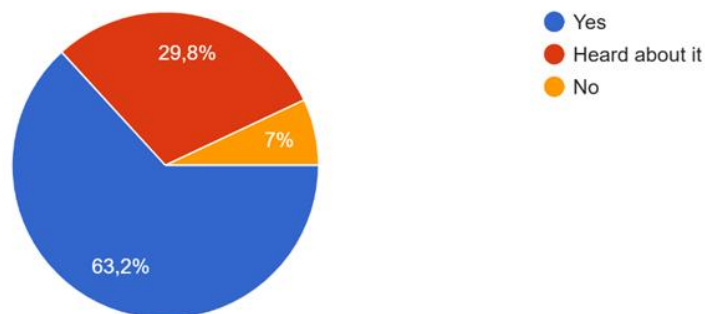


Most respondents (**62.2%**) state that they actively participate in student initiatives related to sustainable development or “**green campus**” programs. Meanwhile, **25.2% of respondents** are aware of such projects but do not participate in them, and **12.6% of participants** are not aware of such initiatives at all. These results indicate a fairly high level of environmental activism among students, while also highlighting the potential to further engage about a quarter of the audience. The data are presented in the diagram (**Figure 8**).

Figure 9

9. Do you know the university's sustainability strategy or roadmap?

500 ОТВЕТОВ

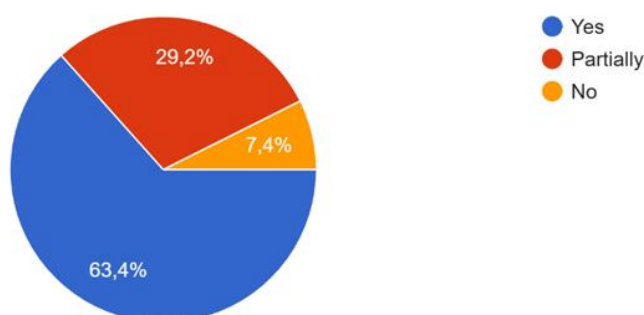


With regard to strategic planning, **63.2% of the study participants** confirmed that they are aware of the university's sustainable development strategy or “**roadmap.**” Nearly **one third of respondents (29.8%)** have heard about the existence of such a document, while only **7% of respondents** do not have information on this issue. Overall, the results indicate a high level of effectiveness of the university administration's communication channels with the student community, as well as transparency in long-term planning. The data are presented in the diagram (**Figure 9**).

Figure 10

10. Are SDGs linked to research or project opportunities for students?

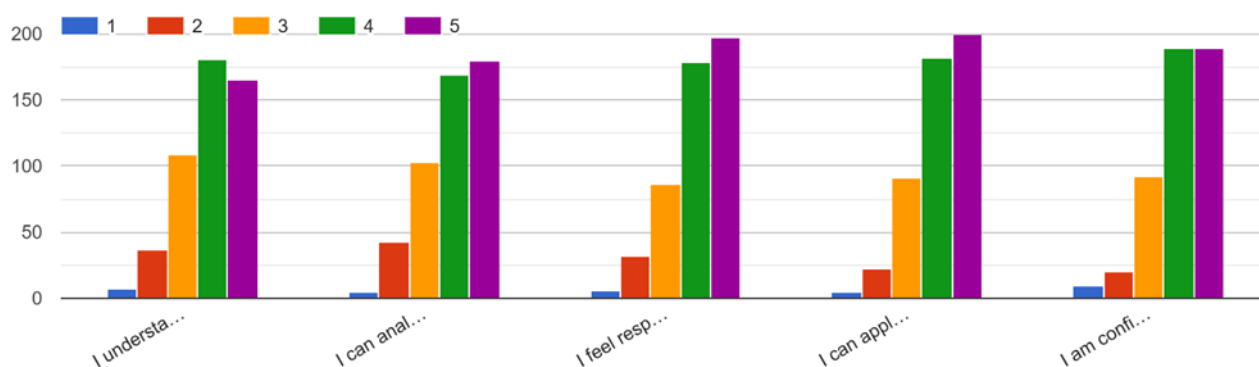
500 ОТВЕТОВ



Regarding the integration of the global agenda into research activities, **63.4% of respondents** confirm the existence of a direct link between the **SDGs** and opportunities for conducting research or implementing student projects. Another **29.2% of respondents** believe that such a connection is only partially evident, while only **7.4% of participants** do not see such opportunities within the university. Overall, the results demonstrate a high degree of involvement of the academic community in the practical implementation of sustainable development goals through project-based activities. The data are presented in the diagram (**Figure 10**).

Figure 11

SECTION C. SUSTAINABILITY COMPETENCIES (Likert 1–5) (1 – Strongly disagree; 5 – Strongly agree)



Assessment of Sustainability Competencies (Section C)

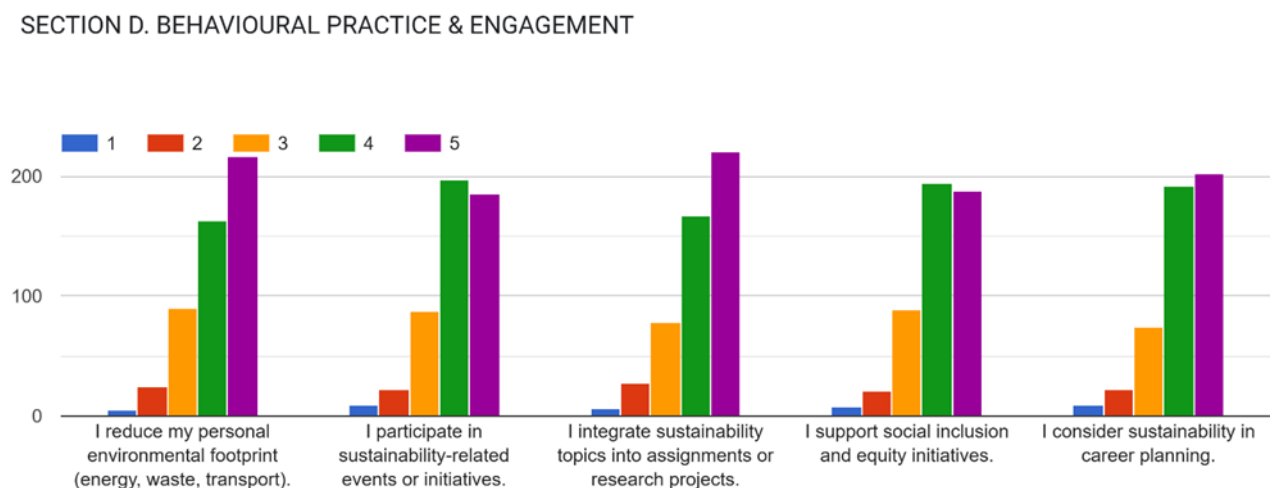
The results of the assessment of competencies in the field of sustainable development (Section C), corresponding to the **UNESCO ESD model**, are distributed as follows:

- **Systems Thinking:** Most students confirmed their understanding of the interconnection between environmental, social, and economic systems, predominantly selecting ratings “4” and “5.”
- **Critical Analysis:** The ability to analyze sustainability challenges was also rated highly, although the share of neutral responses (“3”) is slightly higher here than in other categories.

- **Normative Competence:** The highest level of agreement (around **200 responses with rating “5”**) was recorded for the statement regarding a **sense of personal responsibility** for contributing to sustainable development.
- **Strategic Competence:** Students expressed a high readiness to apply sustainability principles in their professional fields, as evidenced by the predominance of maximum scores.
- **Academic Confidence:** Confidence in discussing **SDGs** in an academic context is also at a high level, demonstrating readiness for scholarly discussion.

Conclusion: Respondents demonstrate maturity across all key **UNESCO competencies**, with **personal motivation and the practical applicability of knowledge** emerging as the strongest aspects (**Figure 11**).

Figure 12



Analysis of Behavioral Practices and Student Engagement (Section D)

The analysis of behavioral practices and student engagement (Section D) demonstrates the **active integration of sustainable development principles** into students’ daily and professional lives.

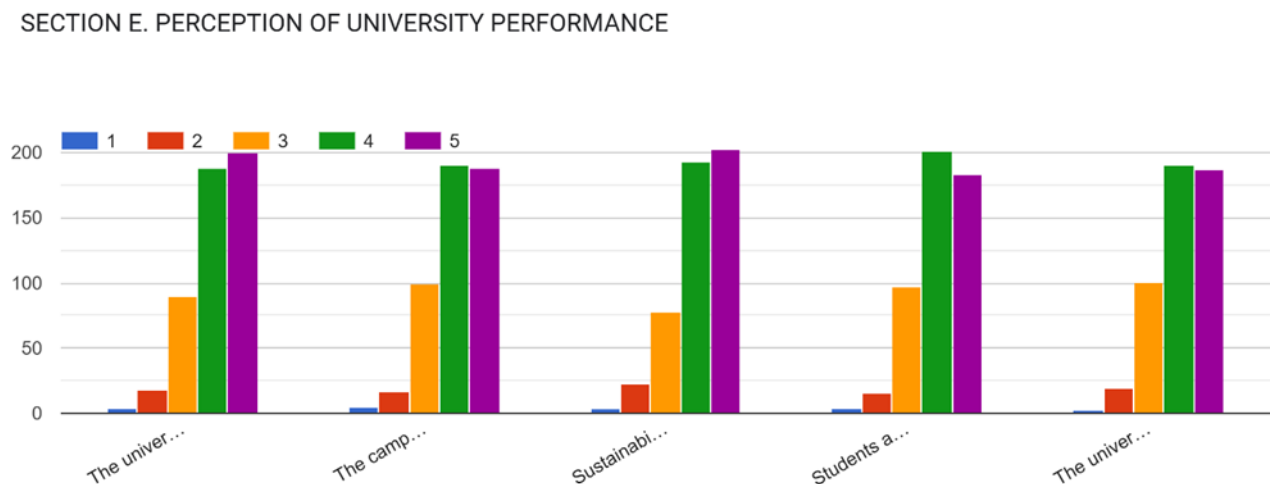
The main trends are distributed as follows:

- **Personal Contribution:** The highest number of maximum scores (“5”) was recorded in efforts to **reduce personal environmental footprint** (energy, waste, transportation) and to **integrate sustainability topics into academic projects**. In both cases, the number of highest ratings exceeds **200 responses**.
- **Career Planning and Social Inclusion:** Students show a high readiness to consider sustainable development principles in **career planning** and in supporting **initiatives for social inclusion and equality**. Ratings “4” and “5” dominate in these categories.
- **Participation in Events:** Participation in environmental events and initiatives is also high: most respondents selected rating “4,” confirming practical engagement.

- **Overall Level of Awareness:** The proportion of negative responses (“1” and “2”) across all five categories remains extremely low, not exceeding **25–30 respondents per item** within the total sample.

Conclusion: Students not only possess theoretical knowledge but also actively apply it in practice, demonstrating a high level of personal responsibility and orientation toward a **sustainable future in their professional activities**. The data are presented in the histogram (Figure 12).

Figure 13



Analysis of Perception of University Activities (Section E)

The analysis of perceptions regarding university activities (Section E) confirms a **high evaluation of the university’s efforts** to implement sustainable development principles across all areas of its operation.

The main results are distributed as follows:

- **Environmental Responsibility and Operations:** Respondents highly evaluate the university’s demonstration of **environmental responsibility** and the visibility of sustainability principles in campus operational activities. In both cases, rating “5” (**Strongly agree**) is the leading response, reaching approximately **200 answers**.
- **Inclusiveness and Equality:** Campus policies promoting **inclusiveness and fairness** received consistently high scores, with ratings “4” and “5” distributed almost equally, indicating a strong positive perception of the social environment.
- **Student Participation in Governance:** Students feel supported and encouraged to participate in governance related to sustainability issues. In this category, rating “4” became the most common response, exceeding **200 votes**.
- **Scientific Contribution:** The university is perceived as an active contributor to **research and innovation related to the SDGs**. Responses “4” and “5” dominate over neutral and negative options.
- **Overall Context:** The level of skepticism remains extremely low — the number of “1” and “2” ratings across all five categories is minimal and does not exceed statistical error.

Conclusion: The university successfully communicates its values through concrete actions and policies, fostering among students a strong belief in its commitment to the **global SDG agenda**. The data are presented in the histogram (**Figure 13**).

Conclusion

The presented analysis is based on the results of a survey conducted among **500 students of Abylkas Saginov Karaganda Technical University**. The study covers levels of awareness, competency development, and the practical engagement of students in the sustainable development agenda.

1. Institutional Awareness and Connection with the University

The survey results demonstrate that students clearly identify the role of the university in achieving global goals:

- **Leading SDG: 68.6% of respondents** consider **SDG 4 (Quality Education)** to be the goal most closely related to university activities.
- **Strategic planning: 63.2% of participants** confirmed awareness of the university's sustainable development **"roadmap,"** while an additional **29.8%** have heard about its existence.
- **Reporting:** A high level of transparency is confirmed by the fact that **73.6% of respondents** are aware that the university publishes **ESG reports**.

2. Education and Research

The integration of the **SDG agenda** into the academic environment is assessed as high:

- **Academic programs: 62.6% of students** report the systematic inclusion of sustainable development topics in their courses.
- **Research potential: 63.4% of respondents** see a direct connection between the SDGs and opportunities for conducting student research or implementing projects.

3. Competencies and Environmental Literacy

Students demonstrate readiness to address global challenges in accordance with the **UNESCO competency model**:

- **Environmental knowledge: 66.6% correctly identified** the concept of a **"carbon footprint"** as the total volume of greenhouse gas emissions.
- **Self-assessment of competencies:** The highest scores (**ratings "4" and "5"**) were recorded in the categories of **personal responsibility for sustainable development** and the **ability to apply acquired knowledge in practice**.
- **Rankings: 75.6% of participants** are aware that **Environmental Impact** is a key evaluation criterion in the international **QS Sustainability ranking**.

4. Behavioral Practices and Perception of University Activities

The transition from knowledge to action is reflected in the following indicators:

- **Personal contribution:** The leading practice is the intention to **reduce personal environmental footprint** (energy, waste, transportation), where **more than 200 respondents selected the highest agreement score.**
- **Professional orientation:** A significant proportion of students consider sustainability principles when planning their future careers.
- **Activity: 62.2% of respondents** actively participate in **“green campus” initiatives.**
- **Evaluation of the university:** Students highly assess the university’s **environmental responsibility** and the promotion of **inclusive policies**, with ratings **“4” and “5” dominating.**

The analysis confirms that **Abylkas Saginov Karaganda Technical University** has developed a **sustainable ecosystem for youth engagement in the SDG agenda.** High levels of awareness and personal responsibility among students indicate the effectiveness of the university’s information and educational policies.