

Topics of 1st round thesis of the Geography Olympiad in Poland vs. the idea of sustainable development

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Introduction

For over 40 years, the Geography Olympiad has been spreading geographic knowledge among school students in Poland. The initiator of organising multi-level geography competitions for high school students, under the name of the Geography Olympiad, was Prof. Anna Dylikowa. Her novel idea met with the approval of the Polish Geographical Society (Polskie Towarzystwo Geograficzne, PTG). In 1974, following the proposal of the Central Board of the PTG, the Minister of Education approved the creation of the Geography Olympiad and appointed its Central Committee, which was entrusted all issues related to the organisation of the competitions. The Olympiad obtained financial support from the Ministry of Education (Dylikowa 1975). In 1991 the scope of the Olympiad was extended by the inclusion of maritime topics to the Geography Olympiad. As a result of these changes, until 2010 the final

competitions of the Geography Olympiad (36th in 2010) and Nautological Olympiad (19th) had been taking place simultaneously (Szmyd & Uroda 2010).

Legal basis, organisation and the course of the competitions

The Geography Olympiad competitions are based on the existing legislation issued by the Ministry of Education, which involve, among others, selecting the competition organiser based on bids¹. The Geography Olympiad competitions are held by the Central Committee as well as subordinate Regional Committees – 14 since the school year 2016/2017 (**Fig. 1**), cooperating with regional School Authorities. Participants of the competitions are mainly secondary school students: grammar and technical schools; a smaller number – with the consent of a given regional committee – winners of the other competitions in geography, recommended by their appropriate juries; as well as primary, secondary and vocational school students who are following an individual program or course of study, and have obtained their school recommendation. The Geography Olympiad competitions are of an individual nature and the participation is voluntary.



Figure 1. Organisational structure of the Geography Olympiad.

Source: www.olimpiadageograficzna.edu.pl, modified

¹ Regulation of the Minister of National Education and Sport of 29 January 2002 on the organisation and conduct of competitions, tournaments and olympiads (Journal of Laws No. 13 dated 18 February 2002, item 125).

Individual competitions have three rounds. Rating of the participants from each round is independent, i.e. the results of the 2nd round of the competitions (i.e. the regional round) are not affected by the total points scored at the 1st round (i.e. the school level round). Similarly, the results of the final competitions (3rd round) are not affected by the results of the rounds 1st and 2nd.

The 1st round of the competitions is organised at schools by School Committees. These competitions require from the students the scope and level of knowledge and skills that correspond to the provisions of the *Core Curriculum of Geography* for the Key Stages 3 (junior high school²) and 4 (extended Geography curriculum in high schools – Lyceum) sufficient to get a very good grade at the end of the course. The school round relies on checking students' knowledge and skills by School Committees. School Committees are free to hold oral interviews or a written test. Next, students who have passed the initial round verifying their knowledge and skills independently prepare a written thesis on one of the topics of that year's Olympiad edition. The thesis needs to be based on students' own observations and measurements and/or the study of literature. Students may consult their teacher (the tutor for the Olympiad), especially in terms of the selection and use of methods. The completed thesis, both in the electronic and printed form, are subject to the assessment by the School Committee. If students receive a minimum score of 75% of available points, they are qualified for the 2nd round of the competitions.

The 3rd round of the competitions requires from the students the scope and level of knowledge and skills that correspond with the provisions of the *Core Curriculum of Geography* at the Key Stages 3 and 4 (extended range) which is required for obtaining an excellent grade at the end of the course. The 2nd round of the competitions consists of three parts. The first part is the verification of written thesis by the Regional Committee. Regional Committees qualify for the written part of the round 3 those students whose written thesis after verification obtained the minimum score as decided by the Central Committee to standardise the assessment within Poland. The written and oral competitions of the 2nd round take place at a time agreed with the Ministry of Education (first half of February) over two days (Saturday and Sunday) under controlled independence.

The written part of the 2nd round requires solving a three-part test consisting of open and closed questions, each part lasting 45 min. (**Fig. 2**). The oral part requires answering multimedia quiz questions and giving an oral presentation to the jury on a chosen topic, one of two randomly selected from the pool and at the presence of the public. Individual tasks are evaluated by the jury of the

² Before the reform of 2016 and liquidation of junior high schools.

2nd round. The written quiz and multimedia tasks are assessed independently by two jurors. Regional Committees qualify to the oral competitions 20 to 30% of the best participants in the written competition who have simultaneously met the criteria of the minimum number of points established by the Central Committee. The oral performance is assessed by the jury; its members rate the participant individually. Oral presentations are judged independently by four jurors on a scale from 0 to 5. Regional Committees announce the overall results of the 2nd round of the competition at the contest location and on the website.



Figure 2. 2nd round of the competitions (written test) held in the Gdynia Region (February 2017) in the High School No. 3 in Gdynia [A]; in the Toruń Region at the Faculty of Earth Sciences at the Nicolaus Copernicus University in Toruń in February of 2016 [B].

Source: photos by Z. Podgórski [A] and R. Stańczyk [B]

The 3rd round of the competitions (finals) is organised by the Central Committee of the Geography Olympiad and held in conditions of controlled independence. The 3rd round of the competitions requires the scope and level of knowledge and skills beyond what is contained in the *Core Curriculum of Geography for Key Stages 3 and 4* (extended range), and is necessary to achieve the top grade in the extended high school leaving exam. What is also required is the orientation in current socio-economic events and natural phenomena in Poland and in the world, as well as knowledge of suggested professional geographical literature, although the range of the questions of the 3rd round may be wider than the proposed references. The students who can participate in the 3rd round of the competitions are those who in a given year were admitted to these competitions by the Central Committee based on the results of the 2nd round results, as well as those who have acquired this right in the previous year, but did not take part due to unexpected private issues or participation in another Olympiad, on the basis of a decision by the Central Committee.

The 3rd round of the competitions consists of a written part, compulsory fieldwork³ and the oral section (held in a similar convention as in the 2nd round). During the written part of the competitions participants answer open questions and solve multiple choice tests; in the oral part they answer multimedia quiz questions and present a given topic in front of the jury. The written and multimedia quizzes are independently assessed by two jury members. Based on the results of the 3rd round, the Central Committee decides on the admission of 15 to 25% of the best participants to the oral part of the competitions. The oral performance is evaluated independently by four jurors. Based on the results of the oral competitions, the Central Committee decides to grant the title of the laureate to the best participants⁴.

It should also be noted that the Central Committee puts a lot of effort, as far as possible in the given conditions, to organise competitions in such a way and in such places so as not to exclude the participation of persons with disabilities. Competitions are held on the readily available premises, and the participation in the field work depends on the level of disability of each participant. In addition, since 2002 during the final competition there is a Continuing Professional Development (CPD) workshop for Geography teachers involving about 50

³ During the final round (3rd round) there may be an additional team field competition. In such a case, students work in groups of 4–5 randomly chosen participants and perform the task prepared by the Central Committee. Team results are not included in the individual score (Szmyd, Malantowicz 2013).

⁴ In turn, the title of the finalist is given to those students who have not qualified to the oral round but who received not less than 50% of the average score obtained by the three best competitors of the competition in the written part of the 3rd round.

participants. To a large extent, the workshops are financed by sponsors, and only part of the cost is covered by participants themselves.

The winners of the Geography Olympiad, after meeting the eligibility criteria, can participate in international competitions (Barwiński 2010, Barwiński, Uroda 2012, Sawicki 2014 a, b; www.olimpiadageograficzna.edu.pl) including:

- *International Geography Olympiad (iGeo)* – organised under the auspices of the International Geographical Union. In previous IGU Olympiads Polish students presented a high level, returning six times with the winners' title in the team classification (1996, 1998, 2000, 2004, 2006 and 2015). They also achieved considerable success in the individual classification;



Figure 3. Polish team of the iGeo competitions in Moscow in 2015.

Source: <http://files.yahoo.com/world,2064,n/z-olimpiady-wiedzy-przywiezli-zloto,177221.html>

- *CentralEuropeanRegional International Geography Olympiads (CERIGEO)*. In the years 2003–2011 biannual Central European Geography Olympiad was held. These competitions were designed for students aged 16–19. Representatives from Poland also participated. In connection with the decision of the International Geographical Union to organise the International Geography Olympiad annually (starting from 2012), the organisation of the CERIGEO competitions was discontinued.
- *Baltic Regional Geography Olympiad (Baltic iGeo)*. Competitions of the *Baltic iGeo* were held twice, in 2014 and 2015. In both years they were organised in Latvia by their local team associated with the Geography Olympiad. In 2015, Polish students took part in the Olympiad for the first time, taking high positions in the individual classification.
- *National Geographic World Championship* is an international geographic competition held biannually since 1993. The purpose of these competitions is to select the best national team in geography, and to promote this science in the world. The competitions involve national teams composed of three students aged 16+. Only team classification is conducted. Poland is represented by the best participants in the finals of the Geography Olympiad competitions who meet the age criterion. For the first time a Polish team took part in the competition in 2003.

The Geography Olympiad 1st round thesis

As part of 1st round of the Geography Olympiad students are required to prepare a thesis on one of 3–5 proposed topics. For example, in the 43rd edition of the Geography Olympiad, these were:

- A: Relation of the relief of the area X with the geological structure
- B: Changes in land use of a selected area
- C: Itinerary of a one-day geographical trip (walking or cycling)
- D: My school as a place of exploration, discovery and realisation of geographical interests in the world.

Depending on the topic, a student selects the area or object of the research and then uses field observations, measurements and data from literature or interviews, etc., to give its written characteristics. Assessing the changes, the student can present his or her point of view, but it should be justified. The student adds graphic documentation (drawings, charts, diagrams, photographs, etc.), and tables with data; he or she also uses the topographic base (e.g. maps, aerial photographs, satellite images) and complements it with additional information. Graphic design should be aesthetic and legible, and the materials must comply with the required size. Visual components must be properly placed in the text, numbered and provided with captions. The thesis (max. 15 pages) comprises (www.olimpiadageograficzna.edu.pl):

- introduction with the rationale for the choice of the study area or object and its characteristics
- description of the research procedure and source materials
- review of sources of information, as far as possible along with the assessment of their credibility
- information directly resulting from the implementation of the research
- information about the variety of effects of the characterised process, phenomenon, relation, etc. (including possible future consequences)
- summary with conclusions
- bibliography.

Every thesis should be read by the teacher (tutor). The criteria for the thesis evaluation are public and given to the participants of the competitions along with the topics.

Ideas of sustainable development in the 1st round thesis

In the editions 1. to 43. of the Geography Olympiad, a total of 61 270 participants took part in the 1st round. The topics of independent studies were highly diverse. With a total choice of 168 topics, only a few were repeated over 43 years, e.g. making a panorama of the area from a selected viewpoint. It should also be noted that some students particularly interested in geography took part a few times

in the competitions of the Geography Olympiad and thus prepared a number of theses; one of the participants did that five times.

When the Geography Olympiad was created, the ideas of sustainable development were not popular in Poland. The very term appeared in the Polish language at the beginning of the 1980s. Previously, the fact that Poland was part of the socialist bloc largely determined the curricula of all subjects, including geography. Industrialisation of the country through the development of mining and heavy industry, collective agriculture, cooperation in the framework of the Council for Mutual Economic Assistance (COMECON), a lack of due care for the environment, etc., advocated by the governments of the Polish People's Republic, translated into detailed records and the choice of teaching material.

The socio-economic transformation in Poland, launched in 1989, resulted in the announcement of a new concept of general education by the Ministry of Education. In this concept, the essential aim of education has been shifted towards supporting and directing the development of humans functioning in relation to their chosen values and viable to live within various communities. The most significant change lies in the fact that the new concept of general education is no longer scientific knowledge, but the student as a person in the development process has become an essential point of reference in the design of the program and the selection of teaching content. In such perceived reality, the concept of sustainable development has also found its place in the school curricula.

The United Nations New Agenda for Sustainable Development 2030 is as follows⁵:

Goal 1. No Poverty: End poverty in all its forms everywhere.

Goal 2. Zero Hunger: End hunger, achieve food security and improved nutrition and promote sustainable agriculture.

Goal 3. Good Health and Well-being: Ensure healthy lives and promote well-being for all at all ages.

Goal 4. Quality Education: Ensure inclusive and equitable quality education and promote lifelong learning opportunities for all.

Goal 5. Gender Equality: Achieve gender equality and empower all women and girls.

Goal 6. Clean Water and Sanitation: Ensure availability and sustainable management of water and sanitation for all.

Goal 7. Affordable and Clean Energy: Ensure access to affordable, reliable, sustainable and modern energy for all.

⁵ The document was adopted at the Summit on Sustainable Development, which took place in New York on 25–27 September 2015.

- Goal 8.** Decent Work and Economic Growth: Promote sustained, inclusive and sustainable economic growth, full and productive employment and decent work for all.
- Goal 9.** Industry, Innovation and Infrastructure: Build resilient infrastructure, promote inclusive and sustainable industrialization and foster innovation.
- Goal 10.** Reduced Inequalities: Reduce income inequality within and among countries.
- Goal 11.** Sustainable Cities and Communities: Make cities and human settlements inclusive, safe, resilient and sustainable.
- Goal 12.** Responsible Consumption and Production: Ensure sustainable consumption and production patterns.
- Goal 13.** Climate Action: Take urgent action to combat climate change and its impacts by regulating emissions and promoting developments in renewable energy.
- Goal 14.** Life Below Water: Conserve and sustainably use the oceans, seas and marine resources for sustainable development.
- Goal 15.** Life on Land: Protect, restore and promote sustainable use of terrestrial ecosystems, sustainably manage forests, combat desertification, and halt and reverse land degradation and halt biodiversity loss.
- Goal 16.** Peace, Justice and Strong Institutions: Promote peaceful and inclusive societies for sustainable development, provide access to justice for all and build effective, accountable and inclusive institutions at all levels.
- Goal 17.** Partnerships for the Goals: Strengthen the means of implementation and revitalize the global partnership for sustainable development.

The analysis of the topic of the 1st round theses in relation to the above goals shows that even before the adoption of the Agenda the participants of the Geography Olympiad had the opportunity to discuss those topics. Taking into account these two facts, namely the adoption of the reform of the education system in Poland (1989) and the adoption of the Agenda (2015), three periods can be distinguished: 1974–1989 (old education system), 1989–2015 (reformed education system) and 2015–2017 (sustainable development goals). In the first of them, i.e. in the first 15 Geography Olympiad editions, the participants were offered 16 topics regarding the actions and their evaluation in the spirit of the principles referred to today as the goals of sustainable development (**Table 1**). In the second period, covering the editions 16–41, there were 47 such topics, and in the third period (editions 42–43) 5 topics.

Table 1. Topics of 1st round theses offering the possibility of addressing sustainable development goals.

| Geography Olympiad edition | 1 st round thesis topic | Sustainable development goals | |
|----------------------------|---|--|----------|
| | | Task example | Goal No |
| 1. 1974/1975 | (1) Present changes under the influence of human economic activity, based on your own observations and interviews | Propose measures that should be applied [...] to prevent harmful changes in the environment | 3 |
| 5. 1978/1979 | (3) Present characteristics of a farm | Show the relationship between land use and natural conditions [...] crop rotation [...] varieties of crops and livestock with the reasons for their selection to local conditions. | 2 12 |
| | (4) Present characteristics of a forest holding | [...] assess forest management adaptation to the local natural and economic conditions. | 12 15 |
| 6. 1979/1980 | (1) Present change in the geographical environment as a result of economic activity | [...] besides the description of changes, explain and assess them, possibly also propose investment projects that would bring improvement in natural conditions [...] and/or would weaken the negative impact to the geographical environment. | 12 |
| | (2) Present a project of field work in physical geography | [...] show the relationships between the various components of the natural landscape and the impact of human activity on them. | 4 |
| 7. 1980/1981 | (2) Present a monography of an industrial plant | [...] Present a description of the plant's impact on the environment – including detrimental impact on the natural environment [...] | 12 |
| 8. 1981/1982 | (1) Present a geographical description of a selected locality | [...] present the impact of natural conditions and geographical location on the development of the locality [...] propose investments or other changes that could contribute to the development of the locality. | 11 |

| Geography Olympiad edition | 1 st round thesis topic | Sustainable development goals | |
|----------------------------|---|---|---------|
| | | Task example | Goal No |
| 11. 1984/1985 | (2) Present the characteristics of agriculture in a selected village | no data | 2 |
| | (3) Using text and maps present the current state of environmental degradation in the geographical area of your school and indicate the objects to be protected | no data | 13 |
| 12. 1985/1986 | (1) Present changes under the influence of human economic activity in the landscape surrounding the place of your residence based on your own observations and interviews | [...] propose measures to be applied in the described examples, in order to prevent disturbance of equilibrium of the environment, or to restore it. | 3 |
| | (3) Present an area of recreation | Propose investments necessary for the project to provide the land, taking into account the demands of landscape protection. | 12 |
| 13. 1986/1987 | (A) Present an example of positive development in human environment | Choose a small area not exceeding 10 square kilometres [...] Conduct personal observations and prove that, if properly introduced, changes are beneficial and do not lead to environmental degradation. | 12 |
| 14. 1987/1988 | (C) Present living conditions in your locality. | [...] What would you do to protect the environment and improve living conditions? | 11 |
| 15. 1988/1989 | (A) Present geographical characteristics of a recreation centre | Perform observations of the impact of the centre on the environment [...] Evaluate its location and the its management as well as the level of degradation in the zone under its immediate influence. | 3 |

| Geography Olympiad edition | 1 st round thesis topic | Sustainable development goals | |
|----------------------------|---|--|----------|
| | | Task example | Goal No |
| 15. 1988/1989 | (B) Present a housing plan in which you would want to live | Design the locality considering the needs of all users [...] | 11 |
| 17. 1990/1991 | (B) Present characteristics of a forest complex | Include the following (all or selected) elements: [...] forest management, [...] recreation and tourism [...] | 15 |
| | (C) Present a monograph of an individual farm | [...] include non-natural conditions affecting farming. | 2 12 |
| 18. 1991/1992 | (A) Present a project of a new facility in the school's immediate environment | [...] justify the aims [...] list the anticipated economic, social and environmental effects related to its implementation [...] | 12 |
| | (C) Present a description of a sea voyage | [...] economic use [...] contamination of the environment [...] | 14 |
| | (D) "Place on Earth" for future generations of a selected continent | Interpret the [...] definition of "the crisis of space – the space of the crisis" | 10 16 |
| 19. 1992/1993 | (A) Present problems in the economic development of the area | When planning economic development, keep in mind the balance between human activity and the geographic environment. | 12 |
| 20. 1993/1994 | (A) Present problems in the economic development of the area | When planning economic development, keep in mind the balance between human activity and the geographic environment. | 12 |
| | (B) Present changes in the environment caused by human activity | Consider how to reconcile economic goals (economic development, job creation) to the requirements of rational shaping of the environment, so as not to induce its degradation. | 8 |
| | (C) Polluted sea as a "victim of human activity" – how do Poland, your immediate environment and you yourself participate in the devastation of the marine environment? | The study should include: [...] short description of pollution [...] assessment of the ways and methods preventing pollution of sea waters [...] proposals for changes [...] | 14 |

| Geography Olympiad edition | 1 st round thesis topic | Sustainable development goals | |
|----------------------------|--|---|---------|
| | | Task example | Goal No |
| 22. 1995/1996 | (A) Present the river X and its contamination | [...] changes in the sources of water pollution and its effects. Suggest measures to prevent further pollution. | 6 |
| | (B) Present a monograph of an individual farm | [...] non-natural conditions affecting the agricultural economy [...] | 2 12 |
| | (C) Suggest the route of a sea voyage from Gdynia to one of the selected ports: Naples, New Orleans, Buenos Aires, Bombay | Rate the economic importance of the water bodies [...] | 14 |
| 23. 1996/1997 | (A) Present prospects for the development of your gmina (in the case of a medium or big city – a district or housing estate) | Explore the current state of the environment of your gmina [...] on this basis, offer two different variants of the economic development. | 12 |
| 24. 1997/1998 | (D) Present a monography of an industrial or service facility | [...] the impact of the plant on the local environment [...] further development [...] | 12 |
| 25. 1998/1999 | (A) Present a project of the motorway or dual carriageway course | Justify the need for the road [...] characterise factors against its construction [...] rate negative effects of the implementation [...] review benefits [...] | 9 |
| | (D) Present the river X and the problem of its contamination | [...] Present sources of contamination [...] propose measures to prevent further contamination. | 6 |
| 26. 1999/2000 | (A) Present environmental changes taking place in your geographical region under the influence of anthropopressure | Propose measures that should be applied [...] to prevent harmful changes in the environment. | 12 |
| 27. 2000/2001 | (C) Present characteristics of a forest complex | Describe the importance of the forest complex in nature and in the life of the local community. Discuss human impact [...] on the forest. | 15 |

| Geography Olympiad edition | 1 st round thesis topic | Sustainable development goals | |
|----------------------------|---|---|---------|
| | | Task example | Goal No |
| 27. 2000/2001 | (E) Global marine fishing in the 20 th century | Discuss trends [...] and ways of exploitation of marine resources. | 14 |
| 28. 2001/2002 | (A) Present alternative energy resources in the gmina X. The condition and prospects of development | Describe how you could use these resources in reality, taking into account economic criteria and environmental requirements. | 7 |
| | (E) Present causes and effects of the Baltic Sea eutrophication. | Describe international organisational and legal actions aimed at improving the purity of the Baltic Sea waters. | 14 |
| 29. 2002/2003 | (A) Compare the characteristics of the natural environment | Suggest actions to be taken to prevent or reduce the damaging effects of changes taking place in the environment. | 12 |
| | (B) Present trends in farming in a given rural gmina or village | [...] describe the anticipated trends in agriculture [...] associated with the Polish accession to the European Union [...] | 2 |
| | (D) Discuss extraction of minerals in marine areas and its impact on the environment | Introduce extraction technologies [...] and related problems. Rate the possible impact of the extraction [...] of raw materials on the environment. | 14 |
| 30. 2003/2004 | (B) Present a powiat town as a centre of secondary education | Discuss the educational market of the locality and its changes in the last decade [...] rate the education profiles from the point of view of the local labour market. | 4 |
| 31. 2004/2005 | (B) Rate tourist values of the gmina X (part of a gmina or a city district) and the state of their use | Review the status of the development of tourism and recreation [...] Present your own proposals [...] | 3 |
| | (D) Present the economy in the marine coastal zone for a selected area of Poland (seaside gmina, powiat, voivodeship) | Formulate the most important problems that occur in this area, in the context of its sustainable development [...] Try to identify possible directions of development [...] | 12 |

| Geography Olympiad edition | 1 st round thesis topic | Sustainable development goals | |
|----------------------------|---|--|---------|
| | | Task example | Goal No |
| 32. 2005/2006 | (D) Discuss geographical conditions of the location and development of a Baltic sea port | Discuss the tendencies of changes in the volume of transshipments and the current and future development opportunities of this port. Suggest improvements to its operation and necessary investments. | 8 |
| 33. 2006/2007 | (C) Discuss causes and effects of changes in the demographic structure in the last 25 years in the gmina (town) X | Introduce the main features of the demographic structure [...] age, gender, education, unemployment structure [...] | 5 |
| | (D) Present Polish sea fishing at the turn of the century – trends and their determinants | Present trends and their determinants [...] evaluate the impact of natural conditions, international law and the Polish economic situation as well as political decisions on the changes which have occurred. | 14 |
| 34. 2007/2008 | (A) Present a panorama (view) showing the impact of human activity on the landscape of an area | Assess the level of transformation of the environment [...] assess the merits of the transformation. Briefly present your own proposals of changes [...] or justify the desirability of leaving the area in the present state. | 12 |
| | (B) Propose a new management plan of an area | Briefly present the optimal [...] new direction of development [...] Please note the need to maintain a balance between human activities and geographical environment conditions. | 12 |
| | (C) Present the geographical characteristics of a selected stretch of a river | [...] water purity (pollution) [...] main causes of this condition and its effects; suggest measures that could improve the situation. | 6 |
| | (E) Discuss energy resources of seas and oceans, including possibilities and level of utilisation | Discuss the current state of marine water resources utilisation [...] The purposefulness and potential development of their use. | 7 14 |

| Geography Olympiad edition | 1 st round thesis topic | Sustainable development goals | |
|----------------------------|---|--|---------|
| | | Task example | Goal No |
| 35. 2008/2009 | (E) Discuss protection of sea coasts in relation to the risks of the sea level rise | Present threats [...] assess their scale and space-time scope [...] introduce your own proposal (suggestion) of shore protection measures [...] and the use of the coastal zone. | 13 |
| 36. 2009/2010 | (A) Present a panorama (view) showing the impact of human activity on the landscape of an area | Assess the level of transformation of the environment [...] assess the merits of the transformation. Briefly present your own proposals of changes [...] or justify the desirability of leaving the area in the present state. | 12 |
| | (E) Present environmental and economic characteristics of sea and ocean islands | Introduce your own interpretation of the possibilities (directions) of economic development [...] preserving the values of their natural environment and propose measures that could prevent or limit the development of negative phenomena and processes. | 8 |
| 37. 2010/2011 | (C) Present a project of a geotourist route | Describe the qualities of selected objects and determine their importance for expanding and popularising knowledge about inanimate nature, | 4 |
| 38. 2011/2012 | (A) Present a characteristics of a small artificial water body | Point and characterise the most important functions of the reservoir. Evaluate how well it meets the needs and indicate unused opportunities and potential hazards. | 12 |
| | (B) Discuss landscape diversity as a reflection of the interdependence between people and the natural environment | [...] which features of the elements of the natural environment have influenced the way the landscape is used [...] how human activity has changed the natural environment (including threats). | 12 |

| Geography Olympiad edition | 1 st round thesis topic | Sustainable development goals | |
|----------------------------|--|--|---------|
| | | Task example | Goal No |
| 38. 2011/2012 | (C) Present a characteristics of agriculture in the gmina X, based on selected farms | Assess rationality of the conducted agricultural activity, introduce the factors favouring and hindering such activity [...] as well as propose changes | 2 12 |
| 39. 2012/2013 | (B) Present a characteristics of an agritourist farm | Describe the use of tourist offer [...] Present your own proposals to modernise the farm and expand the tourist offer as well as the potential economic and environmental impact of these changes. | 2 3 |
| 40. 2013/2014 | (B) Present a characteristics of a selected investment in a gmina or locality X | [...] assess the anticipated interactions of the investment and the natural, social and economic environment [...] the implementation of the project will play an important role in the socio-economic development of the gmina. | 8 |
| 41. 2014/2015 | (A) Discuss the consequences of anthropo-pressure in a selected legally protected area | Analyse changes in landscape and nature [...] evaluate these changes for the functioning of the natural environment. | 15 |
| | (C) Discuss economic conditions of development of two selected gminas | Compare the barriers and factors of development of the two gminas. | 8 |
| 42. 2015/2016 | (B) A river in landscape – discuss significance and impact of the river on the formation of the settlement pattern | Observe the current state of development of the river valley; suggest measures which can be taken to make a better use of the river in various sectors of the economy (e.g. industry, transport, tourism). | 8 12 |
| | (C) Present a characteristics of changes in suburban area based on the example of a selected village | Introduce your own proposals for changes that should take place in the village or in its surroundings, to make the residents' life easier. | 12 |

| Geography Olympiad edition | 1 st round thesis topic | Sustainable development goals | |
|----------------------------|---|---|---------|
| | | Task example | Goal No |
| 43. 2016/2017 | (B) Present changes in land use of the selected area in Poland | [...] information about various effects of the changes in the type and intensity of use of the site (including possible consequences that may occur in the future). | 8 12 |
| | (C) Present a project of a geographical day trip (walking or cycling) | [...] include an explanation of the differences in the transformation of the environment along the route and determine their causes and directions of changes. | 12 |
| | (D) My school as a place of learning, discovery and implementation of geographic interests in the world | Conduct research to show the relationship of the school with the outside world [...] who the school cooperates with [...] international cooperation, twin schools in other countries [...] describe the ways to create opportunities to more fully develop the potential of students. | 4 17 |

Sources: *XII-XLIII Olimpiada Geograficzna, 1985-2016 and unpublished materials of M. and K. Sikorscy*⁶ [5]

In order to compare the presence of the idea of sustainable development in the various Geography Olympiad editions, the percentage of topics associated with it in their total number for the indicated periods was calculated. In the first period they accounted for 27% (average of 1.1 topics per edition), in the second one – 47% (1.8 topics per edition), and in the third one – 63% (2.5 topics per edition). Although the proposed rate is only indicative, it shows changes in the approach to key issues such as sustainable development. It is also worth noting that in the first period, topic loosely related to the sustainable development goals were proposed in only 10 of the 15 editions, in the second period in 24 of the 26 editions, and in the third period – in both of the two editions. In turn, analysing the goals of sustainable development offered to students preparing theses in the 1st round, we can note that the highest turnout applies to Goal 12 – *Ensure sustainable consumption and production patterns*, which appears in 26 topics (**Table 2**). Next, the students were offered the topics referring to Goal 8 – *Promote sustained, inclusive and sustainable economic growth, full and productive*

⁶ The authors of this study would like to thank Małgorzata and Krzysztof Sikorscy for sharing archival data.

employment and decent work for all (8 topics); Goal 14 – *Conserve and sustainably use the oceans, seas and marine resources for sustainable development* (8 topics); Goal 2 – *End hunger, achieve food security and improved nutrition and promote sustainable agriculture* (7 topics).

Table 2. Dissemination of the sustainable development goals by preparing 1st round theses by the competitors of the Geography Olympiad.

| Geography Olympiad (years) | Sustainable development goals | | | | | | | | | | | | | | | | |
|----------------------------|-------------------------------|----------|----------|----------|----------|----------|----------|----------|----------|----------|----------|-----------|----------|----------|----------|----------|----------|
| | 1 | 2 | 3 | 4 | 5 | 6 | 7 | 8 | 9 | 10 | 11 | 12 | 13 | 14 | 15 | 16 | 17 |
| 1-15 (1974-1989) | - | 2 | 3 | 4 | - | - | - | - | - | - | 3 | 6 | 1 | - | 1 | - | - |
| 16-41 (1989-2015) | - | 5 | 2 | 4 | 1 | 3 | 2 | 6 | 1 | 1 | - | 16 | 1 | 7 | 3 | 1 | - |
| 42-43 (2015-2017) | - | - | - | 1 | - | - | - | 2 | - | - | - | 4 | - | - | - | - | 1 |
| Total | 0 | 7 | 5 | 4 | 1 | 3 | 2 | 8 | 1 | 1 | 3 | 26 | 2 | 8 | 4 | 1 | 1 |

Source: own study

The editions of the Geography Olympiad conducted so far, have not referred to the topic that would directly concern the sustainable development goal 1 – *End poverty in all its forms everywhere*. Maybe because this phenomenon does not occur extensively in Poland it has not been included into the topics for the thesis of the 1st round of the Geography Olympiad.

In the 43 editions of the Geography Olympiad, the participants wrote over 61 000 theses for the 1st round. Many of them included references promoting sustainable development. In the last 14 editions (Olympiads 30–43), 22 394 students submitted competition entries, of which as many as 11 535 (51.5%) contained the content referring to the issues of sustainable development, in particular goals 3–8, 12–15 and 17 (Tables 2 and 3). Most such theses were submitted during the 31st edition – 2119 (82.0%). In subsequent years the percentage of the theses of this nature was diverse and ranged from 14% in 2003/2004 (30th edition) to 100% in 2011/2012 (38th edition). This ratio was largely dependent on the proposal made by the organisers, and therefore a large range of variation should be viewed as natural. It should be noted, however, that in as many as four cases it was higher than 80%, which clearly demonstrates the effectiveness of the Geography Olympiad in promoting the idea of sustainable development.

Table 3. Interest of the participants of the Geography Olympiad in sustainable development goals.

| Geography Olympiad edition | Number of submitted 1 st round theses | | | | | | | | |
|----------------------------|--|---|-------------|------|------|------|------|------|------|
| | total | including topics related to sustainable development | | | | | | | |
| | | total | | A | B | C | D | E* | F |
| | | number | (%) | (%) | | | | | |
| 30 (2003/2004) | 1955 | 274 | 14.0 | - | 14.0 | - | - | | |
| 31 (2004/2005) | 2583 | 2119 | 82.0 | - | 76.5 | - | 5.5 | | |
| 32 (2005/2006) | 1776 | 347 | 19.5 | - | - | - | 19.5 | | |
| 33 (2006/2007) | 1601 | 895 | 55.9 | - | - | 45.0 | 10.9 | | |
| 34 (2007/2008) | 1883 | 1588 | 84.3 | 6.1 | 8.6 | 14.9 | - | 52.4 | 2.3 |
| 35 (2008/2009) | 1603 | 393 | 24.5 | - | - | - | - | 5.2 | 19.3 |
| 36 (2009/2010) | 1969 | 1126 | 57.2 | 10.2 | - | - | - | 47.0 | |
| 37 (2010/2011) | 1442 | 335 | 23.2 | - | - | 23.2 | | | |
| 38 (2011/2012) | 1266 | 1266 | 100.0 | 41.0 | 25.0 | 34.0 | | | |
| 39 (2012/2013) | 1432 | 480 | 33.5 | - | 33.5 | - | - | | |
| 40 (2013/2014) | 1296 | 333 | 25.7 | - | 25.7 | - | - | | |
| 41 (2014/2015) | 1189 | 669 | 56.3 | 8.9 | - | 47.4 | - | | |
| 42 (2015/2016) | 1183 | 658 | 55.6 | - | 25.9 | 29.7 | - | | |
| 43 (2016/2017) | 1216 | 1052 | 86.5 | - | 32.2 | 42.3 | 12.0 | | |
| Total | 22 394 | 11 535 | 51.5 | | | | | | |

* in some years the Central Committee prepared more than 4 topics to choose from
 Explanation: thesis topics are given in Table 1.

Sources: data from the archives of the Central Committee of the Geography Olympiad

For example, in the last 43rd Geography Olympiad – 1216 students participated, of which up to 1052 (86.5%) characterising their chosen topic also commented on sustainable development. What is valuable, the theses did not contain detailed theoretical considerations, but specific examples showing different aspects of the implementation of the idea of sustainable development, as well as examples of activities contrary to its purposes and principles. In this way, the participants could see for themselves that the concept of sustainable development can be realised only under the condition of developing legal, organisational and economic tools, as well as through environmental education of the public.

Summary and conclusions

For years, various geography olympiads and olympic style competitions have been promoting geographical and other earth sciences knowledge and skills in the world. Such competitions are organized in many countries. In Russia (former USSR) soon after World War II Faculty of Geography of Lomonosov State University (MGU) started to organize annually Geography Olympiad, firstly only for students from Moscow region and after some years also for the secondary school students from other Russian provinces (Naumov 2007). In Estonia since the 1965/1966 academic year there have been 43 Geography Olympiads organized (Liiber & Roosaare 2007; Liiber et al. 2014). In Mexico geography olympiad started in 1987 (García-García 2007). The Australian Geography Competition (AGC) was established in 1995 by the Royal Geographical Society of Queensland (RGSQ) and the Australian Geography Teachers' Association (Childs & Berg 2015, www.geographycompetition.org.au). In the Czech Republic various school geographic competitions have been taking place since the 1960s. However, the competitions were organized regionally and on the basis of teacher volunteerism. In 1998 Zeměpisná olympiáda was established (www.zemepisnaolympiada.cz/historie.phtml, Hanus 2016). In China geography contest is organized was established in 2005 as *China National Geography Competition* – CNGC – and first edition took place in January of 2006 (Min & Dongying 2007) In Turkey Scientific Project Competitions in geography are held since 2011 (Meydan 2017). The geography Olympiads are organized also in New Zealand – *Maatangi Whenua Geography Olympiad* (Mark 1999) and since 2012 in USA as well (www.geographyolympiad.com/).

The Polish Geography Olympiad has been disseminating geographical knowledge among school students since 1974. Its main objectives are:

- fostering interest in geography and geographical sciences among school students;
- detecting and working with gifted students;
- stimulating creative thinking;
- raising the level of geographical knowledge and using it in practice;
- ensuring better preparation of candidates for higher education;
- raising the level of education and popularisation of the latest achievements of science among teachers working with gifted students;
- selecting students for international competitions.

Popularising geographical knowledge also contributes substantially to disseminating sustainable development goals. This happens primarily during the preparation of 1st round theses by students, but also through the acquisition of knowledge and various skills necessary to successful solving Olympiad tests and completing fieldwork tasks. In the analysed period of 43 years a significant number of 1st round thesis topics included the content promoting sustainable

development goals. Over 61 000 students participated in this round of the Geography Olympiad. As stated before, the amount and scope of the content related to sustainable development is now much greater than in the past. In the last 14 editions (Olympiads 30–43) 51.5% out of 22 394 submitted competition entries contained the characteristics referring to sustainable development goals. In the latest edition – 43rd Geography Olympiad – the percentage of this type of theses was 86.5%.

It should be stressed that besides theoretical considerations, students include specific examples showing various aspects of the implementation of sustainable development, as well as examples of activities contrary to its purposes and principles. This proves high social maturity of the authors of the theses, but also their sensitivity in relation to complex environmental issues.

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