

Appendix 1 to the HRS4R 2023 Report

- **Scientific conferences, workshops**

- **Conference on the occasion of World Water Day, presentation of the latest UNESCO Report "Partnership and cooperation for water", IG PAS, Warsaw, 22nd March 2023 (55 participants)**

On 22nd March, on the occasion of World Water Day, we organized a conference during which the latest UNESCO report on water was presented, three expert lectures and a panel discussion were held.

In the first part of the conference, Dr. Kinga Krauze from the European Regional Center for Ecohydrology presented the main conclusions from the UNESCO report entitled: "Cooperation and partnership for water". After the break, we listened to the presentations of three speakers. Dr. Eng. Marek Ksepko from the Office of Forest Management and Forest Geodesy, Branch in Białystok, presented the potential benefits of the synergy of small activities within Poland's forest retention. In his report, he focused primarily on the area of the Białowieża Forest. Dr. Eng. Wiesław Ptach from the Institute of Environmental Engineering, SGGW and the Science for Development Foundation talked about water in the context of humanitarian and development aid and the place of science in this aid, using the example of two selected initiatives from Chechnya and Africa. The last presentation was devoted to the citizen science initiative implemented at the Institute of Geophysics of the Polish Academy of Sciences as part of the European BRITEC project. The project organized pilot activities involving schools in the implementation of scientific research. One of the activities carried out in Poland was monitoring seasonal changes in river and riparian vegetation and the microclimate of river valleys. Prof. Monika Kalinowska, who coordinated the river pilot, presented its assumptions and effects, and Dr. Agata Goździk, who was the project coordinator, summarized the advantages of introducing citizen science initiatives to schools, but also drew attention to the accompanying challenges.

- **Jubilee conference on the occasion of the 70th anniversary of IG PAS, 7th July 2023, Warsaw**

Over 175 people took part in the celebration of the 70th anniversary of the IG PAS. It was a unique opportunity to present the Institute's activities and exchange experiences and memories. The conference was divided into three thematic blocks. The first historical and reminiscing session was a return to the beginnings of the Institute and a presentation of the entire history and outstanding scientists.

The presentation was led by the Director of the IG PAS, Prof. Dr. Eng. Beata Orlecka-Sikora. The second part was a debate entitled "Quo vadis, geofizyko?" hosted by the editor of Polish Radio, Krzysztof Michalski. The debate was attended by Prof. Barbara Romanowicz, Prof. Dr. Eng. Beata Orlecka-Sikora, Prof. Dr. Piotr Głowacki, Prof. Dr. Paweł Rowiński, and Dr. Eng. Adam Mirek. In the last session entitled "Institute of Geophysics of the Polish Academy of Sciences in anecdotes" employees of the Institute told stories related to their work, enriched with archival photos.

- CARBON ACT workshops for teachers – IG PAS, Warsaw, 7th November 2023 (29 participants)

On 7th November 2023, the IG PAS conducted free workshops for primary and secondary school science teachers as part of the Carbon ACT project. The meeting began with an introduction to the Carbon ACT project and the presentation of a report on the analysis of the core curriculum in order to incorporate the topic of climate change into school practice. Dr. Artur Szkop from the Department of Atmospheric Physics gave a lecture entitled "Climate-safe energy", and then Dr. Agata Goździk from the Department of Science Communication and Education presented "Truths and myths about climate change". The aim of the workshops was to develop lesson plans on climate change, which will be tested first in the authors' schools, and then in the schools of other teachers participating in the project.

- 2nd International Early Earth Workshop, IG PAS, Warsaw, Central Geophysical Observatory at Belsk, 11th-12th December 2023 (20 participants)

On 11th-12th December 2023, the second international workshop "Early Earth", organized as part of the PAAN Poles Together project, took place at the IG PAS. The invited guests included: Sally Pehrsson from the Geological Survey of Canada, Martin Whittehouse from the Swedish Museum of Natural History and Øyvind Sunde from the Norwegian Polar Institute in Tromsø and foreign project partners. The workshops were divided into three paper sessions, during which the speakers presented papers on research in Greenland, Labrador and Antarctica. The results were also presented by the project participants from the Polish team: Rafał Szaniawski, Dan Dunkley, Piotr Król and Tanmay Keluskar. On the second day, classes were carried out in the GeoBeLa laboratory in Belsk, summarizing the achieved effects of the project.

• **Participation in projects promoting and popularizing the results of scientific research**

In 2023, stands and educational and information activities were organized during various science-related events: including: Festival of Science and Passion, Science Festival, school science picnics, activities for universities of the third age and for children's universities. A total of **1,918 people** took part in **21 events**:

1. 10.01.2023, lecture entitled "Why does Poland need polar stations?" - Prof. Piotr Głowacki at the 27th High School in Warsaw (90 participants)
2. 12.01.2023, classes entitled "Are snowflakes unique?" - Dr. Bartłomiej Luks at Kindergarten No. 180 in Warsaw (50 participants)
3. 12.01.2023, lecture entitled "Mysterious interiors of glaciers" - Prof. Piotr Głowacki at the Polar Research Museum in Puławy (120 participants)
4. 14.01.2023, workshops "Smog in a jar" - Dr. Artur Szkop at the Kamień Educational Pavilion (32 participants)
5. 9.02.2023, "Living glaciers" classes - Dr. Bartłomiej Luks at the STO Primary School in Warsaw (58 participants)
6. 25.02.2023, workshop classes "Arctic fauna and life in the polar station" - Anna Wielgopolan at the Children's University in Orzysz (39 participants)

7. 28.02.2023, lecture as part of the Polar Areas Knowledge Competition - Dr. Jerzy Giżejewski at the 1st High School in Wieluń (150 participants)
8. 3.03.2023, lecture entitled "Life and work at the Polish Polar Station on Spitsbergen" - Dagmara Bożek at the High School in Wrocław (80 participants)
9. 3.03.2023, lecture entitled "Arctic - a litmus test of climate change" - Dr. Agata Goździk at the High School in Wrocław (80 participants)
10. 16.03.2023, lecture entitled "Smog in a jar" as part of the Science Festival in Prus - Dr. Artur Szkop at the B. Prus High School in Warsaw (23 participants)
11. 27.03.2023, classes for the University of the Third Age entitled "Mysterious interiors of glaciers" - Prof. Piotr Głowacki at the Grójec Cultural Center (43 participants)
12. 29.03.2023, connection with the Polish Polar Station Hornsund "100 questions for a polar explorer" as part of the "World Explorers" travel festival (48 participants)
13. 12.04.2023, lecture entitled "Life and work at the Polish Polar Station on Spitsbergen" - Dr. Tomasz Wawrzyniak at the University of the Third Age in Złotów (160 participants)
14. 2.06.2023, screening of 360-degree films on VR goggles from the Polish Hornsund Polar Station as part of the "Curious about the World" Festival at Primary School No. 82 in Warsaw (100 participants)
15. 3.06.2023, educational stand - water resources as part of a family picnic at Primary School No. 388 in Warsaw (150 participants)
16. 10.09.2023, polar stand as part of the family picnic in Lipie "It's cool together" (100 participants)
17. 17.10.2023, lecture entitled "Climate change in the Arctic" - Dr. Tomasz Wawrzyniak at the University of the Third Age in Otwock (170 participants)
18. 21.10.2023, lecture entitled "Life and work in polar stations" - Dagmara Bożek at the Polish school at the Embassy of the Republic of Poland in Reykjavik, Iceland (45 participants)
19. 25.10.2023, presentation of experience and research practice within the framework of PROWeek for the 1st Social High School "Bednarska" in Warsaw (15 participants)
20. 24.11.2023, lecture entitled "Scientific research in the land of ice - Polish Hornsund Polar Station on Spitsbergen" - Dr. Tomasz Wawrzyniak at the High School in Milanówek (155 participants)
21. 25.11.2023, polar and geological workshops, lecture entitled "Poles together" - Prof. Monika Kusiak for participants of the Science and Passion Festival (210 participants)

As part of the **Science Festival**, 4 open lectures, 4 stationary lessons and 2 online lessons for schools were held, as well as an open event at the observatory in Świder. A total of 1,022 people took part in the festival events organized by the Institute.

8 open lectures were organized, attended by **337 people**:

1. "Smog more dangerous than *smok* and other air pollutants" - lecture by Dr. Artur Szkop at the Kamień Educational Pavilion in Warsaw, 12th January 2023 (22 participants)
2. "Polar stories for winter evenings" - lecture by Dr. Jerzy Giżejewski at the Jan III Palace Museum in Wilanów, 21st January 2023 (47 participants)

3. "UV radiation and healthy tanning", anniversary lecture by Dr. Eng. Agnieszka Czerwińska at the Institute of Geophysics of the Polish Academy of Sciences in Warsaw, 1st June 2023 (15 participants)
4. "Healthy tanning" - lecture inaugurating the exhibition of the same title at the Kamień Educational Pavilion in Warsaw, 4th July 2023 (12 participants)
5. "History of selected geophysical research and presentation of historical measuring instruments" - lecture as part of the "Science opens the door" event at the Geophysical Observatory in Świder, 23rd September 2023 (148 participants)
6. "Floods and droughts in Indonesia. Weather and climate of a country with over 17,000 islands" - lecture by Dr. Beata Latos at the Institute of Geophysics of the Polish Academy of Sciences, 27th September 2023 (13 participants)
7. "The element of water through the eyes of scientists" - a lecture inaugurating mapping entitled "Earth Elements" by Prof. Paweł Rowiński in the Orangery of the Jan III Palace Museum in Wilanów, 21st October 2023 (59 participants)
8. "The Northern Lights - a magical spectacle in the sky" - lecture by Dr. Agata Goździk at the Astronomical Planetarium in Grodzisk Mazowiecki, 13th December 2023 (21 participants).

In 2023, the Institute of Geophysics of the Polish Academy of Sciences carried out **video mapping entitled "Earth Elements"**. We presented several examples of natural disasters, including: earthquakes, floods, droughts and hurricanes, storms. In video mapping, we talked about scientists working at the IG PAS, who in their daily work investigate the causes of these phenomena and develop forecasts of the intensity of their occurrence in the short and long term. The "Earth Elements" mapping was prepared for display on the facade of the Jan III Palace building in Wilanów as part of the Royal Garden of Light. It was presented every Friday, Saturday and Sunday from 13th October 2023. According to data received from the employees of the Wilanów Museum, in 2023 the "Earth Elements" mapping was viewed by **27,986 people**.

The IG PAS conducted **48 public webinars** on popular science topics: 20 as part of the Fascinating Earth project (for **1,135 participants**) and 34 as part of the "Geophysics for Everyone" project (for **932 participants**).

The Institute has also prepared a **series of podcasts entitled: "Geogadka"**. The series was launched in 2022 and continued in 2023, publishing a total of 12 podcasts:

Podcast #1. "Why are the tropics an engine for global circulation and how do tweets help scientists?" with Dr. Dariusz Baranowski, a physicist from the Department of Atmospheric Physics, IG PAS.

Podcast #2. "Smog more dangerous than "smok" - about the quality of our air and more" with Dr. Artur Szkop from the Department of Atmospheric Physics, IG PAS.

Podcast #3. "Why can't you winter in the Arctic if you have a cat and how do climate changes affect the hydrological regime of rivers?" with Dr. Eng. Marzena Osuch, Prof. PAS, hydrologist from the Department of Hydrology and Hydrodynamics, IG PAS.

Podcast #4. "Scary and fascinating earthquakes - what do seismologists dream about?" with Ph.D. Grzegorz Lizurek from the Department of Seismology, IG PAS.

Podcast #5. "Why do scientists study air pollution in apartments?" with Dr. Beata Górka-Kostrubiec, Prof. PAS, from the Department of Magnetism, IG PAS.

Podcast #6. "How to sunbathe healthily - the impact of UV radiation on our health" with Dr. Eng. Agnieszka Czerwińska from the Department of Atmospheric Physics, IG PAS.

Podcast #7. "Why do we study snow?" with Dr. Bartłomiej Luks, glaciologist and Assistant Professor at the Department of Polar and Marine Research, IG PAS.

Podcast #8. "Listening to melting glaciers - about studying climate change using underwater sounds" with Dr. Oskar Głowacki, glaciologist and Assistant Professor at the Department of Polar and Marine Research, IG PAS.

Podcast #9. "Why don't hydrologists step into the same river twice?" with Prof. Paweł Rowiński, Director of the IG PAS and hydrologist.

Podcast #10. "How to describe the Earth using numbers? On observations using seismic methods" with Prof. Mariusz Majdański from the Geophysical Imaging Department, IG PAS.

Podcast #11. "We want to talk about science in a simple and accessible way. The most important thing is inspiration" with Dr. Agata Goździk, head of the Department of Scientific Communication and Education, IG PAS.

Podcast #12. "Zirkons are forever" - why aren't diamonds the researcher's best friend? with Prof. Monika Agnieszka Kusiak, isotope geochemist from the Department of Polar and Marine Research, IG PAS.

- **General-environmental activities:**

The IG PAS organized four exhibitions: three popular science exhibitions as part of the "Geophysics for Everyone" project and one exhibition about the activities and history of the Institute on the occasion of the Institute's 70th anniversary.

1. "**Smog more dangerous than smok**" exhibition at the Kamień Educational Pavilion. The exhibition presented information about air pollution and their impact on our health. An innovative building material was also presented - anti-smog concrete, which was produced as part of a pilot research project in which the Institute's employees participated. The exhibition was available from 12th January to 28th February 2023, and was viewed by approximately **750 people**. Additionally, in March, the exhibition was presented for a week at the B. Prus High School in Warsaw as part of the school Science Festival, where it was watched by **500 people**.
2. The "**Healthy Tanning**" exhibition in the Kamień Educational Pavilion concerned the following issues: what is UV radiation and what does the UV index mean, what is the impact of radiation on human health, what are the dangers of sunburn, what are the benefits of sensible

sunbathing, what role vitamin D has in our body, how to determine your skin phototype and how to calculate the time of safe exposure on fresh air on this basis. WHO guidelines for photoprotection were also presented. The exhibition was shown from 30th June to 30th July 2023, and was viewed by approximately **1,700 people**. Then the exhibition was displayed on the fence at the entrance to the Institute for several months.

3. Anniversary exhibition "**70 years of the Institute of Geophysics of the Polish Academy of Sciences**". The exhibition presented the mission, history and present of our Institute. The boards presented, among others: the Institute's polar stations, network of observatories, publishing activities, doctoral studies, cooperation with industry and dissemination and educational activities. The exhibition was presented for the first time during the Institute's 70th anniversary on 7th July 2023. Then, for several months it was displayed on the Institute's fence from Newelska Street, making it accessible to a large number of people who pass there every day.
4. Exhibition "**Beauties and Beasts. Natural phenomena in contemporary scientific research**" at the Polish Academy of Sciences Earth Museum. The exhibition concerned the following phenomena studied by geophysicists: earthquakes, floods and droughts, storms, aurora borealis, and glacier calving. The presented phenomena were accompanied by an exhibition of historical measuring instruments. An additional attraction was the Stone Path of Time, with specimens of some of the oldest rocks in Polish collections. The exhibition was artistically complemented by stone images of the presented phenomena, prepared by the children of employees of the IG PAS. The exhibition was available from 29th November to 29th December 2023. It was viewed by **1,223 people**.