

## THE POLISH NATIONAL COMMITTEE IGBP – GLOBAL CHANGE PAS ACTIVITY

As the 25<sup>th</sup> anniversary of the publication of the first volume of the journal *Papers on Global Change PAS* is reached, it is incumbent upon its Editorial Office to sum up publishing activity to date, and also to recall what has been done in organisational and editorial terms.

In late 1989/early 1990, **Prof. Leszek Starkel**, a Full Member of the Polish Academy of Sciences, was appointed by the Head of the PAS – in agreement with the then International Council of Scientific Unions (ICSU) – to the post of Chair of a newly-appearing Polish National Committee to the PAS (PNC PAS) Praesidium responsible for the implementation of the *Study of Global Change* provided for by the International Geosphere-Biosphere Programme.

The first inspiration PNC PAS was the conference in Kraków in 1992. Its framework have been transformed into articles, which appeared in the issue of “Kosmos” (1993, 42, No. 1), *Proceedings of the Conference on Global Environmental Changes – Challenge for Humanity*, L. Starkel, B. Obrębska-Starkel, M. Gutry-Korycka (eds).

The second inspiration, a important milestone, referring to this Programme was one brought out by by Z.W. Kundzewicz and L. Starkel (eds) in the same periodic “Kosmos” (2008, 57, No. 3/4) in regard to *Biological Sciences Problems*. Particular attention has here been paid to the stage of development of the new Study of Global Change approaches, as this relates to the directions IGBP- Global Change is heading in, in the immediate and further future.

It was at the Professor’s initiative that in 1994 there was launched – in the context of Poland’s already-existing *Geographia Polonica* journal, a new series of publications under the *Global Change – Polish Perspectives* title. This of course denoted an affiliation with the Institute of Geography and Spatial Organisation PAS. In line with the financial limitations, this publication was an annual (appearing just once a year), but its role in assisting with the aforesaid Committee’s organisational and scientific activity was clear.

**Professor Leszek Starkel** was the founder, head and for 7 years also the Editor-in-Chief of the journal. From the outset, he took great care to ensure and maintain

the scientific level of this publication, with every effort made to inspire authors to seek publication on its pages. However, from 1999 through to the present day the role of Editor-in-Chief has been that of **Prof. Małgorzata Gutry-Korycka**, who also took (for 8 years) on the leadership of the IGBP-Global Change National Committee following on from **Prof. Emil Nalborczyk**. Her publication concept was in line with the profile that had been maintained up to that time, which was therefore continued with. Further Heads here were **Prof. Andrzej Kędziora** and **Prof. Rajmund Przybylak**.

However, from April 2015, the IGBP-Global Change National Committee ceased to exist, by virtue of a decision of the PAS Praesidium, though issue of the journal was continued with, though the profiles of the volumes became more and more international in nature, above all from 1990 – following the publication's introduction into global circulation (via the VERSITA and then the de Gruyter Platform through to 2017, as well as its indexing by several tens of different databases). This had a clear influence on the participation of articles by foreign authors (from all continents – Figs 1, 2), with this also helping to expand the subject matter and profiles of different volumes, as well as exerting an influence in increasing numbers of citations.

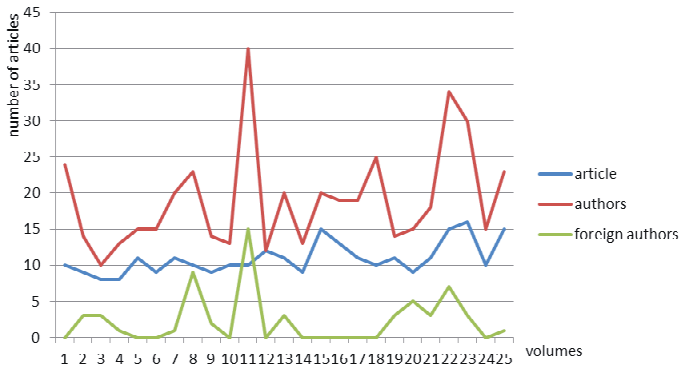


Figure 1. Number of published articles and the participation by foreign authors in volumes 1/1994–25/2018 *Papers on Global Change PAS* (G. Seliga elaboration)

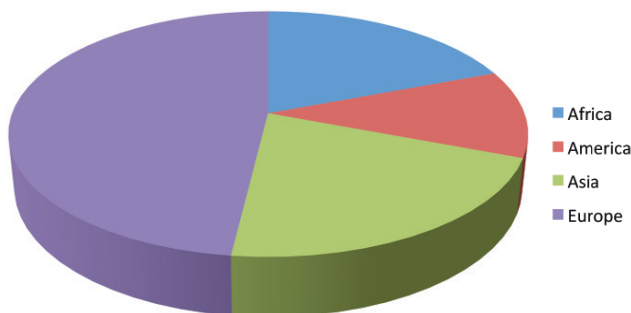


Figure 2. Origin and the participation of articles by foreign authors in volumes 1/1994–25/2018 *Papers on Global Change PAS* (G. Seliga elaboration)

The IGBP-Global Change Programme had as its aim the study and better understanding of the interactions between geophysical, geochemical and biological processes regulating the Earth system, and the mechanisms and interactions – as well as the causes and effects – that arise out of human activity.

In the course of its work, the National IGBP-Global Change Committee of the Polish Academy of Sciences has often presented variously-scaled global changes and their repercussions in the natural environment and different forms of human management. The impacts of these are exerted directly or indirectly on the living environment, or biosphere, as well as on the pedosphere and hydrosphere. They result from distortions of the chemical and physical composition of the atmosphere that has been shaped over millions of years and includes the Earth's natural greenhouse effect.

The augmentation of this natural effect with a climatic warming intensifying over recent decades is favouring quantitative changes in meteorological and climatic elements, whose first symptoms are a dramatic rise in incidences of flooding, long-lasting droughts, forest fires, tornadoes, hurricanes, heatwaves in the summer and other natural disasters.

The issue of scale in studies of the water cycle as it affects the functioning of natural geocosystems is particularly important when it comes to their classification, as well as the assessment of both the change ongoing and adaptations to it being manifested on the local, regional and global scales. Research into the symptoms of global change in air temperature as seen in Poland under the influence of a change in atmospheric circulation is still ongoing. Thermal change in Antarctica and the Arctic has also been analysed, as an example of polar geocosystem reactions to change induced by global warming.

Nor can consideration of prospects for human economic and social activity fail to take account of the global change impacting on the biotic (including the human) environment.

Through the 27 years of its existence, the Polish National IGBP-Global Change Committee PAS acted in support of scientific research and extended national and internal cooperation in respect of global changes in the geosphere and biosphere, with results disseminated via the publication referred to above, which is by definition interdisciplinary, and even trans-disciplinary, in nature.

The Committee also played its key integrating role when it came to cooperation and the organisation of scientific conferences with other Subject Committees of the PAS, such as the *Polska 2000 PLUS* Committee, the National Spatial Management Committee (KPZK), the Man and the Biosphere (MAB) Committee (cessation of activity now), and those dealing with Man and the Environment and Polar Research, or else operating in relation to the Divisions into which the PAS is organised, i.e. Nature Conservation, Demography, Geophysics, Water Management, Energy, Astronomy, Oceanology and the Geographical Sciences *etc.*, as well as the Kraków-based Polish Academy of Learning (PAU) and Cardinal Stefan Wyszyński University in Warsaw.

Conference materials gained publication in successive editions of the journal, whose profile broadened further and further, while also achieving an ever-more profound

treatment of the subject matter and its connotations, be they natural, social, economic or geopolitical. As time passed, authors and co-authors of papers were seen to be paying particular attention to global threats and the possibilities for them to be countered. Indeed this problem is so much an issue of the moment that world science can now be seen to have entered a new stage of international cooperation. Following transformation of what had been the IGBP-Global Change Programme and ICSU-IGFA into the Earth System Science Partnership, new research for global sustainability under the *Future Earth* banner was designated, with the clear oscillation here being in the direction of the search for new pathways of development and sustainability, in regard to scales ranging from the local, via the regional, to the global. *Future Earth* also seeks to determine and define the natural, humanist, social and economic dimensions and limits associated with sustainable development and the ecological system. As **Prof. Leszek Starkel** emphasizes today's *Future Earth* Programme represents a challenge, not only for the whole of science, but also – at the same time – for societies across the world.

It is our hope that Poland – as an EU Member State – will join this new worldwide programme entitled *Future Earth*, while *Papers on Global Change PAS* will be continued with in affiliation with the *POLAND 2000 PLUS* Foresight Committee PAS, and will go on setting the proper directions for global change to follow.

## THE PAPERS ON GLOBAL CHANGE PAS JOURNAL

In 1989, under the auspices of the Polish Academy of Sciences' National Committee of the International Geosphere-Biosphere-Global Change Programme, was launched the associated necessary process to achieve Polish-centred publication of knowledge on mechanisms underpinning global environmental change – as perceived at the international and national levels.

In all the time since then, the materials associated with the threats induced by global changes of climate and the Earth's environment, published in volumes linked to the Programme have represented the fruits of active cooperation between the IGBP-Global Change Committee and other Committees of the Polish Academy of, as well as the PAU (Polish Academy of Arts and Sciences).

Publishing activity began with *Newsletters* (1–6) from the Polish Academy of Sciences' Polish National IGBP Committee, reporting the organizational, scientific, publishing and informational activity of the Committee – the main topics:

- Reports of Polish IGBP Global Change Committee Activities
- The Polish Contribution to IGBP-Global Change and other International Programmes
- Chronicles of IGBP and other Programmes (International and National)
- Planning IGBP Meetings (International and National)

It was then in 1994 that cooperation with the *Geographia Polonica* journal of the PAS Institute of Geography and Spatial Organisation (IGiPZ PAN) got underway,

allowing for the launch of a full periodical of the Polish National IGBP-Global Change Committee PAS, albeit appearing under different titles:

Numbers 1–5 (Vol. 62 No. 1 of 1994 – Vol. 71, No. 5 of 1998) were entitled *Geographia Polonica: Global Change. Polish Perspectives series*.

Numbers 6–8 (Vol. 72, No. 2 and No. 6 of 1999 – Vol. 74, No. 2 and No. 8 of 2001) were effectively the same, if with a different series title, i.e. *Papers in Global Change IGBP*.

Digitised versions of Numbers 1/1994–8/2001 are available on an Open Access basis via the *Repozytorium Cyfrowego Instytutów Naukowych PAN – RCIN* (The Digital Repository of Scientific Institutes PAS). The links to issues are located on <http://rcin.org.pl/igipz/publication/156>.

In the years 2002–2016 inclusive (under numbers 9–23), a separate annual publication has been brought out regularly by the PAS Polish National Committee of the International Geosphere-Biosphere-Global Change Programme – in this whole period under the title *Papers on Global Change IGBP*. Numbers 9/2002–16/2009 has come out only on paper version. The information of articles on the paper issues is presented below. Since 2010 onwards the journal has been brought out both on paper and in an online version. The full-text original forms are accessible at the *Czytelnia Czasopism PAN* (<http://pgc.czasopisma.pan.pl>).

Given the formal cessation of activity within the IGBP-Global Change framework in 2015, the PAS management decided that the annual publication of *Papers on Global Change IGBP* marks the end of an era and from 2017 the new title *Papers on Global Change PAS* has appeared, under the affiliation of the *Poland 2000 PLUS* Foresight Committee to the Praesidium of the PAS.

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*Poznań climate summit (COP-14) in perspective* – Zbigniew W. Kundzewicz

*The European Alliance of Global Change Research Committees (2008)* – Małgorzata Gutry-Korycka, Andrzej Kędziora

### **Papers on Global Change IGBP, No. 17 / 2010**

*Foreword* – Małgorzata Gutry-Korycka

*Effects of Climate Change on Microbial Community Structure and Function in the Antarctic Glacier Lagoon* – Aleksander Świątecki, Dorota Górniak, Katarzyna Jankowska, Marek K. Zdanowski, Piotr Borsuk, Magdalena J. Żmuda-Baranowska, Jakub Grzesiak

*Recent Rapid Climate Changes in Antarctic and their Influence on Low Diversity Ecosystems* – Katarzyna J. Chwedorzewska

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*Climate Change Influences on Antarctic Bird Populations* – Małgorzata Korczak-Abshire  
*Change in N and P Concentrations in Antarctic Streams as a Response to Change in Penguin Populations* – Arkadiusz Nędzarek

*ClioCoPen Workshop* (Mondralin, August 2009) – Katarzyna Chwedorzewska

*XXXIV SCAR Conference* (Oslo, July 2010) – Małgorzata Korczak-Abshire, Katarzyna Chwedorzewska

*XXXIII Polish Polar Symposium* (Łódź, June 2010) – Małgorzata Korczak-Abshire, Katarzyna Chwedorzewska

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*Foreword* – Małgorzata Gutry-Korycka

*Air Temperature and Precipitation Changes in the Kafføyra Region (NW Spitsbergen) from 1975 to 2010* – Rajmund Przybylak, Marek Kejna, Andrzej Araźny

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*Influence of Environmental Factors on Reproduction of Polar Vascular Plants* – Wioleta Kellmann-Sopyła, Marta Pastorczyk, Irena Gielwanowska

*Antarctic Benthic Fauna in the Global Climate Change* – Anna Kidawa, Tomasz Janecki

*Biodiversity of the Arctic Ocean in Face of Climate Change* – Jan Marcin Węśławski

*Climate Change in the Arctic and its Geopolitical Consequences – the Analysis of the European Union Perspective* – Michał Łuszczuk

*Contemporary Change of Subpolar Areas – Direction and Methods of Investigations*

### ***Papers on Global Change IGBP, No. 19 / 2012***

*Foreword* – Małgorzata Gutry-Korycka

“PLANET UNDER PRESSURE” London Conference Declaration III (29<sup>th</sup> March 2012)

– *Assessment of Extremes in Air Temperature Over Northeast and West Coast Regions of India* – Jamir Tongimenba, Uday Shankar De, Gaddam Krishnakumar

*GRACE Signal Filtering as a Means of Determining Equivalent Water Thickness in Poland* – Monika Biryło, Jolanta Nastula

*Local Equivalent Water Thickness Determination as a Source of Data For Flood Phenomenon Observation* – Monika Biryło, Jolanta Nastula

*Streamflow Changes in Mesoscale Lowland Catchment under Future Climate Conditions Derived from Continuous Runoff Simulations* – Urszula Somorowska, Izabela Piętka  
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**Papers on Global Change IGBP, No. 20 / 2013**

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*Forecast changes of heat and cool stress in Warsaw in 21<sup>st</sup> century and their possible influence on mortality risk* – Krzysztof Błażejczyk, Danuta Idzikowska, Anna Błażejczyk

*Demographic processes: past, present and future – selected issues* – Ewa Zofia Frątczak  
*Modern-Day demographic processes in Central Europe and their potential interactions with climate change* – Jerzy Bański

*Environmental Ergonomics – A new area of research into the impacts of climate change, International conference (Queenstown, New Zealand, 11<sup>th</sup>–15<sup>th</sup> February 2013)* – Krzysztof Błażejczyk

*Population dynamics and the human dimensions of climate change, International seminar (Canberra, Australia, 27<sup>th</sup>–29<sup>th</sup> November 2012)* – Jerzy Bański

*The Future Earth regional workshop for Europe (Paris, France, 13<sup>th</sup>–14<sup>th</sup> May 2013)* – Małgorzata Gutry-Korycka, Andrzej Kędziora

**Papers on Global Change IGBP, No. 21 / 2014**

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*INTIMATE – Selected Remarks Following the COST Action* – Danuta J. Michczyńska, Leszek Starkel

*INTECOL 2013, Into the Next 100 Years, XI International Congress of Ecology (London, 18<sup>th</sup>–23<sup>rd</sup> August 2013)* – Andrzej Kędziora

*The Science of Climate Change – How to Talk with Society? International Conference (Warsaw, 24<sup>th</sup> October 2013)* – Witold J. Kundzewicz, Andrzej Kassenberg, Zbigniew W. Kundzewicz

*BE the Movement, International Workshop in parallel to COP 19/CMP9 (Warsaw, 11<sup>th</sup>–22<sup>nd</sup> November 2013)* – Krzysztof Błażejczyk

*3<sup>rd</sup> Integrated Biomass Burning Initiative Workshop within the COST ACTION NETWORK (Schloss Ringberg, 23<sup>rd</sup>–25<sup>th</sup> April 2014)* – Małgorzata Gutry-Korycka



**Papers on Global Change IGBP, No. 22 / 2015**

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*Climate change – Is it worse than expected?* – Zbigniew W. Kundzewicz,  
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Alaka Gadgil, Gaggam Krishnakumar,

*Agroforestry systems in Poland – a preliminary identification* – Robert Borek

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*The energy efficiency of willow biomass production in Poland – a comparative study*  
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*Changes, Challenges, Responsibility*, International Geographical Union Regional  
Conference (Kraków, Poland, 18<sup>th</sup>–22<sup>th</sup> August, 2014) – Urszula Somorowska

*Novel Methods and Solutions in Hydrology and Water Management*, National Conference  
(Sosnowiec and Szczyrk, Poland, 25<sup>th</sup>–27<sup>th</sup> May, 2015) – Damian Absalon,  
Magdalena Matysik, Marek Ruman

*Climate Variability and Human Impacts in Central and Eastern Europe during the Last  
Two Millennia*, International Conference (Gdańsk, Poland, 17<sup>th</sup>–19<sup>th</sup> June, 2015) –  
Małgorzata Kinder

*Polar Climate and Environmental Change in the Last Millennium*, International Conference  
(Toruń, Poland 24<sup>th</sup>–26<sup>th</sup> August, 2015) – Rajmund Przybylak, Tomasz Strzyżewski

**Papers on Global Change IGBP, No. 23 / 2016**

*Editor's Note* – Rajmund Przybylak, Leszek Starkel, Małgorzata Gutry-Korycka,  
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*Foreword (part one)* – Leszek Starkel, Zygmunt Szymon Kolenda

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*Walthère Victor Spring – a forerunner in the study of the greenhouse effect* –  
Gaston R. Demarée, Rosiane Verheyden

*2<sup>nd</sup> Disaster Risk Reduction Conference*, International Conference (Warsaw, Poland,  
15<sup>th</sup>–16<sup>th</sup> October, 2015) – Artur Magnuszewski

*Climate and Environment, Polish and Norwegian Research on Climate and Environment  
Strategies and Actions – Polar Research – Climate Change – Technology*, International  
Conference (Sopot, Poland, 19<sup>th</sup>–20<sup>th</sup> November, 2015) – Waldemar Walczowski,  
Agnieszka Beszczyńska-Moeller

*Catastrophic Visions of Development*, National Conference (Jabłonna, Poland, 9<sup>th</sup>–10<sup>th</sup>  
December, 2015) – Konrad Prandecki

### ***Papers on Global Change PAS, No. 24 / 2017***

*Editor's Note* – Leszek Starkel, Małgorzata Gutry-Korycka, Grażyna Seliga

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*The Warsaw Appeal for the Sustainable Development of the World*

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