Jacek Kuźnicki
International Institute of Molecular and Cell Biology in Warsaw
https://orcid.org/0000-0001-6486-0657
https://doi.org/10.35765/slowniki.590en

Science policy in Poland

Summary

DEFINITION OF THE TERM: State science policy influences science in ways that enable optimal economic growth and social development through the best possible use of research funding.

HISTORICAL ANALYSIS OF THE TERM: The scope of science policy in the modern world was first outlined in 1939 in John Desmond Bernal's book *The Social Function of Science*. In the 1960s, the *Frascati Manual* was developed, providing definitions and methodologies for collecting and analysing R&D data in OECD countries. This manual laid the foundation for the creation of formal science policies.

DISCUSSION OF THE TERM: Poland does not have a clearly defined science policy, despite the existence of various documents addressing this area. One such document was submitted for public consultation in 2020 by the Ministry of Science and Education. The National Science Centre prepared an opinion on it, highlighting elements in need of revision. In 2022, a shortened version of the document was published. However, neither version presented a genuine strategy nor set precise objectives that could establish clear directions for state science policy.

SYSTEMATIC REFLECTION WITH CONCLUSIONS AND RECOMMENDATIONS: Developing an effective state science policy requires the definition of priorities, a rational assessment of national capabilities, legal stability, and securing research funding at a higher level than at present. The successful implementation of such a policy is possible only if politicians refrain from interfering in the management of science, education, higher education, and innovative or applied research activities.

Keywords: state science policy, university evaluation, apolitical character of science, academic career system, pathologies in science

Does Poland have a science policy? Unfortunately, the answer is no – Poland does not have a science policy. How is it possible that such a large country – with so many distinguished scientists past and present – lacks one? There are several reasons. First, society shows little interest in science and is unwilling to support it. Second, politicians are uninterested in science policy, since science does not translate into significant electoral gains. And third, scientists themselves are not sufficiently motivated to ensure that a coherent and beneficial national policy is created and implemented. Such a policy could disrupt the status quo and push many out of their comfort zones. As a diverse community, we tend to focus on our own disciplines, institutions, and careers. This is why – despite years of debate, lengthy reports, and the creation of successive teams and committees to draft strategies, smart specialisations, or research priorities – Poland has never had a genuine, effective science policy. Will such a policy ever emerge? What should it contain? And, if eventually developed, will it actually be implemented?

Definition of the term

There is no universally accepted definition of science policy. According to the OECD, science policy focuses on actions aimed at improving the efficiency and effectiveness of public investment in research (https://www.oecd.org/en/topics/science-policy.html). A similar definition appears on the Polish Wikipedia page, which describes it as an activity influencing science in ways that enable optimal economic growth and social development through the best possible use of research funding (https://pl.wikipedia.org/wiki/Polityka_naukowa). By contrast, the Britannica AI chatbot defines science policy as the evaluation, creation, and implementation of principles and directions of action designed to improve economic, social, and public outcomes (https://www.britannica.com/chatbot). It emphasises that science policy is a process that should adapt to changing social, political, and economic conditions, helping policymakers understand and meet the evolving needs of society. What unites these perspectives is the recognition that science policy must ultimately serve society, which provides the financial resources that sustain it.

Historical analysis of the term

The emergence of the concept of 'science policy' is generally traced to 1939, when John Desmond Bernal – a physicist, scientist, inventor, and Marxist – published *The Social Function of Science*, in which he analysed the problems confronting science in his time (Bernal, 1939). In 1967, a meeting of OECD member states in Frascati, Italy, produced the *Frascati Manual*, which became the globally recognised standard for statistics on research and development (R&D) (https://www.oecd.org/en/topics/science-policy.html; unless otherwise noted, online sources were accessed on 1 June 2025). The manual set out definitions and guidelines for science policy, establishing a shared language for the collection and analysis of R&D data. It shaped the development of science policy in OECD countries and led to the creation of governmental bodies responsible for it. In countries with coherent science policies, where society recognised research as a driver of innovation and socio-economic development, R&D expenditures could increase or remain at high levels.

The effects of science policy – though not yet known by that name – can be seen as early as ancient China (https://en.wikipedia.org/wiki/Mohism). In 17th-century Britain, the Royal Society was founded as a network of scientists, which continues to exist today (https://en.wikipedia.org/wiki/Royal_Society). Around the same time, Francis Bacon published the *New Atlantis*, in which he presented a vision of an ideal institution of learning, a precursor to the modern university (https://en.wikipedia.org/wiki/New_Atlantis). In Italy, Galileo even proposed that his research be funded through taxation (https://oll.libertyfund.org/titles/galilei-dialogues-concerning-two-new-sciences). It was not until 1863, however, that the United States established the National Academy of Sciences, followed in 1911 by the founding in Germany of the Kaiser Wilhelm Society for the Advancement of Science (*Kaiser-Wilhelm-Gesellschaft*), which was reconstituted as the Max Planck Society (*Max-Planck-Gesellschaft*) in 1946.

In Poland, the Society of Friends of Science (*Towarzystwo Przyjaciół Nauk*) was established in 1800 in Warsaw, then under Prussian rule following the partitions of Poland. It flourished for several decades before dissolving, and its successor became the Warsaw Scientific Society

(*Towarzystwo Naukowe Warszawskie*), founded in 1907. Its activities were repeatedly interrupted by historical upheavals but were revived in 1991 (https://www.tnw.waw.pl/index.php/27-historia/geneza-tnw/101-od-tpn-do-tnw). In the Austrian partition, the Kraków Scientific Society (*Towarzystwo Naukowe Krakowskie*) was founded in 1815 and transformed in 1872 into the Academy of Learning (*Akademia Umiejętności*), which in 1919 became the Polish Academy of Arts and Sciences (*Polska Akademia Umiejętności*, PAU). From the outset, the Academy functioned as a national scholarly and cultural institution, bringing together researchers from Poland and abroad. Its activities continued until 1952, when its assets and responsibilities were transferred to the newly established Polish Academy of Sciences (*Polska Akademia Nauk*, PAN). However, PAU was never formally dissolved and resumed its activities after the political transformations of 1989 (https://pau.krakow.pl/index.php/pl/akademia/historia). The idea of creating the Polish Academy of Sciences was presented at the First Congress of Polish Science in 1951 by Professor Jan Dembowski, later its president. The Academy was envisioned as both a central research institution and a coordinating body for scientific development nationwide. It was intended to operate a network of its own institutes, overseen by four divisions responsible for supervising their scientific work, as well as organising and regulating academic and extra-academic scientific life (Kuźnicki, 2018). In practice, these ambitions were only partly realised as no attempt was made to exercise comprehensive oversight of the organisation, planning, and control of science across the country. Instead, both the leadership and new members of PAN concentrated on building new institutes. The oldest still-active non-governmental organisation supporting science in Poland is the Józef Mianowski Fund – The Foundation for the Advancement of Science (*Kasa im. Józefa Mianowskiego – Fundacja Popierania Nauki*), founded in Warsaw in 1881 (https://www.mianowski.waw.pl/misja/).

Discussion of the term

Since regaining sovereignty on 4 June 1989, Poland has developed without a long-term strategy, without clear priorities, and with a consistent devaluation of domestic scientific and technological activity.

The prevailing assumption was that economic and social problems had to be solved first, with the promotion of science and technological progress deferred until later (Kuźnicki, 2002). Today, science in Poland still operates without priorities and without a long-term strategy. The system resembles a 'free-for-all', where the aim is often to extract public funds for unfulfilled promises, to build superficial prestige for oneself or one's institution, or to secure personal financial gain. Being an academic in Poland, once permanent employment is achieved, is not the best-paid profession. Yet, relative to the privileges it brings, such as flexible working hours, supplementary income, tax breaks, foreign travel, generous leave, and, most importantly, the lack of real pressure to demonstrate measurable results, it remains attractive. As a consequence, many university and research institute employees conduct research simply for the sake of research, while far fewer pursue genuine discovery, produce new knowledge, or make meaningful contributions to global science. Determination is lacking because the evaluation system, both at individual and institutional levels, does not require breakthrough results, the training of new generations to meet 21st-century challenges, or the optimal use of researchers' intellectual potential and modern research infrastructure. Instead, the focus is on personal comfort and the prosperity of one's own institution, with the common good largely disregarded. At the level of official rhetoric, however, the picture looks different: university and institute leaders proclaim ambitions to achieve competitive results, publish in increasingly prestigious journals, internationalise Polish science, and ensure that research fosters innovation. Unfortunately, these are often little more than declarations aimed at securing local recognition and the approval of national policymakers.

Why does this happen? Because Poland lacks a genuine science policy that would define long-term goals and the steps needed to achieve them. Such a policy would require the identification of priorities, a rational assessment of national capacities, stable and sufficient funding, legal consistency, and, crucially, insulation of science from political interference. The last point is especially relevant given the recent dismantling of strong research institutions such as IDEAS NCBR and PORT in Wrocław.

The question posed here – and its negative answer – may provoke disagreement from those who have participated in drafting documents labelled as science policy. One such attempt was the 70-page document submitted for public consultation in 2020 by the Minister of Science, referred to here as PNP2020 (*Polityka Naukowa Państwa* – State Science Policy, 2020). In his cover letter, Minister Przemysław Czarnek explained that the document was the result of:

> […] the work of a team under the direction of Professor Grzegorz Wrochna, Undersecretary of State at the Ministry of Science and Higher Education. Work on this document was initiated by Prime Minister Jarosław Gowin, continued by Minister Wojciech Murdzek, and it fell to me to bring it to completion.

The minister emphasised the difference between the PNP and the *National Research Programme* (*Krajowy Program Badań*, KPB), which "[…] sets out the strategic directions of scientific research and development work, defining the goals and assumptions of the state's science, technology, and innovation policy." In practice, the KPB specifies what scientists, universities, research institutes, and PAN institutes should do. The PNP, by contrast, is a governmental "strategic document identifying priorities for the functioning of the higher education and science system". It therefore defines what the government, the minister, and the ministry are to do, but it does not establish priorities for specific fields.

I participated in preparing the National Science Centre (*Narodowe Centrum Nauki*, NCN) opinion on PNP2020 and signed it as Chair of the NCN Council (Uwagi Rady NCN, 2021). The NCN Council noted that the draft PNP2020 contained many commendable principles, including commitments to "protect and support politically independent, reliable, and ethically conducted high-quality scientific research" and to "provide adequate funding and conditions for high-quality education". The Council also welcomed the call to increase the impact of Polish research on global science by, for example, encouraging international publication and supporting researcher mobility. The draft clearly articulated the state's responsibility to "ensure optimal conditions for realising science's cognitive function". Another positive element was the recognition of the need for a science advisory system, an important step toward improving state governance. Creating an apolitical, evidence-based system would open the way to more rational decision-making and to "better use of the knowledge of Polish scientists for the effective management of the country". The absence of such scientific advice is felt most acutely during pre-election periods and in the course of unsuccessful campaigns (https://resfutura.pl/144222-2/).

At the same time, the NCN Council criticised the claim that publication standards in the social sciences and humanities differ fundamentally from those in the natural sciences. While acknowledging the value of monographs, the Council stressed that high-quality international journals remain the most respected form of international research communication. Researchers in fields such as psychology, sociology, political science, and economics should also maintain international visibility and be assessed according to the same quality standards as natural scientists. Furthermore, humanities research is not limited to the low commercialisation potential implied in PNP2020. A sound state science policy should create “optimal conditions for the impact of humanities and social science research on society, the economy, and the state’s educational, cultural, and social policies and institutions”.

PNP2020 proposed that science policy be evaluated at least once every five years, aligned with the cycle of government or parliamentary terms. The NCN Council, however, argued that

> such evaluation should take place mid-term in the Sejm’s mandate, thereby insulating the assessment of progress from electoral politics and enabling cross-party consensus on what had been achieved and what needed improvement.

The Council further recommended that “evaluation of the PNP implementation should be carried out by a body other than the Science Policy Committee, which reports to the Minister”; instead, it should be replaced by, for example, “a panel of international experts, similar to the one that selected research universities”.

Although PNP2020 listed institutions tasked with implementing science policy, it did not specify tools or mechanisms for this process. It remained unclear whether the policy was to be enforced through legal mandates or supported by adequate funding. The PNP2020 project was concluded as follows:

> In the view of the NCN Council, the proposed State Science Policy project is necessary and important for discussion on the structure of research in Poland. Continuing this discussion is essential if the document is to become an effective element of national policy. The Council expresses the hope that the issues raised will be taken into account in further work on the final version of PNP2020 and declares its readiness for continued consultation.

Regrettably, the NCN Council was not included in subsequent discussions.

In 2022, the Ministry of Education and Science, under Minister Czarnek, published a shortened, 50-page version of the PNP, revising and condensing PNP2020 (Polityka Naukowa Państwa, 2022). Unfortunately, it reproduced most of the flaws of its predecessor. While it contained legitimate goals for science and education, such as increased funding, internationalisation, support for young researchers, and prevention of brain drain, these were framed so generically that they could apply to any country. Although the document referred to important areas supported by science, including defence, it failed to specify priorities tailored to Poland or practical strategies for implementing its general recommendations. Instead, it relied heavily on aspirational language: the words "should" or "ought to" appeared 39 times. Apart from general statements, however, no details were provided regarding what would be implemented, when, or how, nor who would be responsible for it. Moreover, the text contained numerous references to European Union science policy, such as the Green Deal, the European Research and Innovation Area, and the work of the Club of Paris and other international institutions, without clarifying why or how Polish science was expected to participate in these initiatives, or why such roles should define the direction of Poland's national science policy.

Systematic reflection with conclusions and recommendations

In developing a state science policy, the drafting process should follow scientific methods. It should include the following stages: diagnosing the current state of science in Poland as a starting point; identifying key problems; defining the main objective along with a timeline and methods for its realisation; and, finally, designating the institutions or individuals responsible for implementation. Such a document should be concise, contain specific proposals and – most importantly – be grounded in a cross-party, cross-ideological consensus supported by a significant portion of the political class. Thus, the first step in preparing the Recommended State Science Policy (*rekomendowana Polityka Naukowa*

Państwa, rPNP,) is the depoliticisation of all decisions concerning education and science, accompanied by the establishment of a politically independent body tasked with formulating a coherent vision that integrates primary, secondary, and higher education with research activities (Kuźnicki, 2023).

The next stage in drafting the rPNP should be an assessment of the quality of primary and secondary education, higher education, and the state of science in Poland in comparison with other countries, using internationally recognised indicators and evaluation methods defined by the commission. Such indicators could include: Polish students' performance in the international PISA study and the results of advanced-level secondary school leaving exams and their dynamics (for primary and secondary education); the graduation rate compared to student intake and the proportion employed in leading domestic and international firms (for higher education); and the position of Polish institutions and researchers in international rankings (for science).

One of the central elements of the current science policy is the four-year evaluation of all universities and units. This process assigns categories A+, A, B+, B, or C, which determine, among other things, the right to confer doctoral and habilitation degrees (minimum B+) and partially affects funding levels. Unfortunately, the current system relies overwhelmingly on point scores, which has fostered distortions and even fraud. For research institutions, there is no substitute for expert review by committees whose members have no conflicts of interest. It is therefore difficult to justify maintaining the 2022–2025 evaluation under its existing principles despite repeated appeals from the academic community to abolish this pseudo-evaluation. Collecting points is not scientific activity (Kuźnicki, 2025). Poland's evaluation system has only local – indeed parochial – relevance. Polish publication points cannot be used to compare the level of science in Poland with that in other countries. As a result, the system functions merely as a mechanical method of distributing funds on the basis of an unreliable assessment, while often reinforcing an unjustified sense of achievement among academics. Only a robust comparative evaluation of the state of Polish science relative to scientifically advanced countries can provide a credible foundation for developing an rPNP that addresses real challenges. Otherwise, we will remain "champions of Poland in Poland", while the rest of the world continues to move ahead. What is needed is the identification of our strengths, of the best teaching units and educational practices, of research institutions conducting high-quality basic research, and of organisations and companies engaged in serious commercialisation. Equally essential is the identification of weaknesses in education, higher education, and research systems, and of institutions requiring support, modernisation, or even closure.

In May 2025, the Ministry of Science and Higher Education established a commission to design a new evaluation system. It may propose an expert-based model, as used in many scientifically advanced countries, though, regrettably, there is also talk of retaining publication points. Expert review proved successful in 2019, when, under the "Excellence Initiative – Research University" (*Inicjatywa Doskonałości – Uczelnia Badawcza*, IDUB) programme, ten research universities were selected. The process was exemplary, due largely to the professionalism and authority of the international experts involved. Introducing a quality-oriented system of expert evaluation, particularly involving reviewers from abroad, would be a crucial step in implementing the rPNP. Alongside supporting the strongest institutions and research teams, the rPNP should also stipulate that units receiving negative evaluations be dissolved or merged into universities, creating space for new institutes capable of addressing contemporary challenges.

As part of rPNP implementation, new institutes could be established outside the largest academic centres, much as the Max Planck Institutes that were founded in the former East Germany. In connection with the planned reform of the Polish Academy of Sciences (PAN), establishing new institutes in smaller towns could be achieved by recruiting a handful of leading scientists around whom new teams would be built. Such a deliberate decentralisation of scientific excellence would strengthen local communities and help retain young local talent. New centres of excellence would also increase the success rate of National Science Centre (NCN) grant applications in regions currently lacking strong academic institutions.

Only on the basis of a rigorous diagnosis of the state of education, higher education, and science in Poland will it be possible to hold a substantive discussion among policymakers, scientists, and representatives of various social groups about what we, as a country, want to achieve over at least the next decade. For example, do we want to exert greater influence on European Union policy? Do we want to participate actively in transformations driven by the development of artificial intelligence? Should we focus on rapidly raising the standard of living in Poland to the level of wealthier countries? Should we strive for social equity that guarantees a dignified life for all groups and a sense of stability? Or, conversely, should we prioritise preserving as much of our past as possible and limiting the influence of science on everyday life? Finally, as is increasingly emphasised today, should we focus on enhancing our sense of security? While none of these aspirations necessarily excludes the others, it is unrealistic to achieve them all simultaneously. Effective implementation of a long-term national science policy requires broad social consensus. Although this may appear unrealistic given the current political climate and sharp divisions, it remains imperative to make the attempt. Indeed, issues related to science can unite us more easily than other areas of life.

What elements should be included in the Recommended State Science Policy (rPNP)? A central issue is the method and level of funding for education, higher education, and research, both basic and applied. The direction of the country's development and its future will depend directly on this decision. It is evident that current funding, particularly in education, is inadequate. The rPNP should therefore clearly articulate a vision for Polish education: what kind of citizens we wish to cultivate, and consequently, what kind of academics, scientists, engineers, and specialists our system should produce.

Increased funding for universities should be directed toward building new forms of excellence, e.g., through the creation of new centres of excellence. The rPNP should also introduce reforms in higher education, including changes to the election and accountability of rectors. One of the key challenges now facing higher education is the rapid development of artificial intelligence (AI). The way in which we adapt the education system to the challenges posed by AI will significantly determine the quality of graduates and, in turn, the future of the country.

Undoubtedly, Polish science also requires thorough reform, which must be another key component of the rPNP. Reform should rest on two pillars: increased funding and greater competitiveness. However, increased funding will yield meaningful results only if the rules for allocating resources are revised so that additional funds go to institutions pursuing competitive, quality-oriented policies that foster a genuine international presence for Polish science.

Not only is science funding in Poland too low, but it is also partly misallocated or wasted. Directing additional resources exclusively to institutions and research groups conducting science at the highest level would represent a sound course of action under the rPNP. Expert evaluation makes it possible to identify institutions with sufficiently high scientific standards, i.e., those corresponding, under the legislator's intent, to categories A+ and A. These institutions should be the primary beneficiaries of increased funding for basic research.

Within the rPNP, it is essential to preserve the role of the National Science Centre (NCN) in maintaining a quality-oriented grant policy and to expand its budget so that the success rate does not fall below 25%, while enabling the employment of highly qualified permanent staff (Kuźnicki, 2022). It is also necessary to increase funding for the National Programme for the Development of the Humanities, which could support research with strong social application potential, such as combating disinformation, addictions, school violence, digital dependency among youth, or the use of AI in education and higher education.

In the 1990s, Poland experienced a sharp increase in the number of students, which for some time was considered a success of systemic transformation. Unfortunately, quantity did not translate into quality, and educational standards declined. Many private institutions emerged whose sole purpose was profit. No proper and effective system for assessing educational quality was developed, and growing inequalities – manifested, e.g., in the increasing stratification of students by social background and place of residence – were largely ignored. Students from less affluent families and smaller towns were particularly disadvantaged as the lack of material support forced them to work while studying in large academic centres. The rPNP should address this problem by ensuring that all students have comparable opportunities to study at public or leading private universities.

In international rankings, the best Polish universities are ranked around positions 300–400. It is therefore not surprising that an increasing number of families send, or wish to send, their children to study abroad. Those able to do so include the most talented, who secure hard-to-obtain scholarships, but more often they are well-educated children from wealthy families who can afford years of living expenses abroad. The rPNP could establish a system that, on the one hand, enables talented children from less affluent families to study at the world's top universities, and on the other hand, ensures that such investment ultimately benefits our country.

Most data place Poland's innovativeness at the bottom of European and global rankings. In the Global Innovation Index 2022, Poland ranked 94th worldwide for university–industry collaboration in research and development (*Działalność naukowa*, 2022). This low position persists despite substantial financial outlays from both EU funds for innovation support and the state budget, which finances, among others, the institutes of the Łukasiewicz Research Network, established to conduct applied research. Since 2009, the National Centre for Research and Development (*Narodowe Centrum Badań i Rozwoju*, NCBR) – described as a "key centre for supporting and creating innovative technological and social solutions" and as an institution that "initiates and implements undertakings contributing to the civilisational development of the country" – has invested tens of billions of zlotys in grants. Yet it remains difficult to identify genuinely innovative solutions that have resulted from NCBR funding: its official website contains no information on them and lacks even a dedicated section showcasing the achievements of its beneficiaries. Press coverage of this government agency most often reports on questionably allocated funds and, at times, on grants awarded in violation of ethical or legal standards.

Poland has produced many distinguished inventors. The Łukasiewicz network itself bears the name of the Polish inventor of the kerosene lamp. Mieczysław Bekker, after whom one of the programmes of the National Agency for Academic Exchange (*Naukowa Agencja Wymiany Akademickiej*, NAWA) is named, designed the lunar rover used in the Apollo missions while working in the United States. Jacek Karpiński created the first microcomputer, which surpassed competing American machines, but was unable to develop his invention further due to professional envy and resistance from the communist authorities. The contributions of Jan Czochralski, who discovered the method for producing monocrystals and designed a prototype scanning microscope, also fell into obscurity (https://polskieradio24.pl/

artykul/3486720,dzien-nauki-polskiej-oto-pieciu-nieslusznie-zapomnianych-polskich-uczonych). Can our current system for supporting scientist-inventors identify and sustain such individuals so that their ideas yield practical and economic benefits in Poland? Unfortunately, the answer is negative, as confirmed by recent achievements of Poles abroad, who helped lay the foundations for ChatGPT (https://www.youtube.com/watch?v=6QhGUQ5iTdk) and developed a microsatellite system (https://www.youtube.com/watch?v=5tPX21cQye4). For this reason, the concept of supporting innovation in the Recommended State Science Policy (rPNP) requires a radical overhaul. The NCBR should be dissolved and replaced by a new institution operating under transparent rules that eliminate the risk of systemic dysfunction. The future of the Łukasiewicz Research Network remains an open question; however, one of the fundamental elements of the rPNP should be to ensure its complete independence from political interference. The primary activity of these institutes should be implementation-oriented research, but the outcomes of their work are, for now, difficult to discern. The establishment of the Medical Research Agency (*Agencja Badań Medycznych*, ABM) helped fill a gap in funding for projects directly linked to clinical research. Unfortunately, oversight by the Ministry of Health makes this institution susceptible to pressure from the medical lobby, which may limit its ability to pursue genuinely innovative studies.

The rPNP must also address the structure of the academic career system, which is currently based on the gradual attainment of independence: doctorate, habilitation, university or institute professorship, and finally, professorship awarded by the President of Poland, with some researchers also gaining membership of the prestigious academies of PAN and PAU. This system is outdated and incompatible with those operating in Western countries, hindering the recruitment of foreign scholars and fostering an obsession with titles rather than the recognition of scholarly quality. One of the rPNP's priorities should therefore be the dismantling of this system, particularly the requirement of habilitation for supervising doctoral students, as well as the elimination of the politicised state-awarded professorship (called *belwederska*) in favour of professorships conferred directly by research institutions. It should be the prestige and international standing of the institution that determine the authority of the professorial title.

The requirement to obtain the habilitation degree delays the scientific independence of young researchers (Kuźnicki, 2024). A less frequently acknowledged problem with habilitation in Poland is that it is based on quantitative rather than qualitative requirements and involves multi-stage procedures that fail to prevent irregularities, including the possibility of non-merit-based obstruction or even outright blocking of promotion proceedings. It is a system in which those already holding habilitation can make younger scholars dependent on them and restrict their development. At the same time, it fails to prevent individuals without significant scholarly achievements from obtaining a degree. Abolishing this requirement would align the Polish system with that of the European Research Council (ERC). Eliminating habilitation within the framework of the Recommended State Science Policy (rPNP) would grant universities and research institutes autonomy in selecting staff entitled to supervise doctoral students. Restricting the influx of new researchers and building institutional growth on 'academic inbreeding' hinders development, a problem exacerbated by the low mobility of Polish researchers between domestic and foreign institutions. Poland ranks last in Europe in terms of the share of EU researchers who went abroad between 2005 and 2022 (*Działalność naukowa*, 2022). Programmes under the National Agency for Academic Exchange (NAWA) only partially address this issue. A system that supports the development of the younger generation of scholars and enables the best candidates to secure positions not only reduces 'brain drain' but also creates opportunities for 'brain gain', as academic positions in Poland would become attractive to researchers from abroad. Appropriate recruitment policies and measures to foster academic mobility should therefore be integral to rPNP strategies.

Another key element of the rPNP must be the radical reduction of pathologies in science, such as academic fraud, plagiarism, publication 'cartels', falsification of research records, as well as corruption, lobbying, bullying, cronyism, and nepotism. The prevailing sense of impunity and tacit acceptance of such practices within the academic community negatively affects not only the quality of research but also who remains within universities and research institutes, and how scientific results authored in Poland are perceived internationally. The absence of effective countermeasures has allowed these pathologies to proliferate and be passed on to subsequent generations. To address this, an independent body with significantly greater authority than the current Committee on Ethics in Science at the Polish Academy of Sciences (PAN) should be established.

I will begin my final words with a quotation from an article co-authored eight years ago with Janusz Bujnicki:

> Only those who understand that investments in science are key to the country's development, who can identify ways of supporting the advancement of science and higher education, and who are able to use knowledge and reliable data in political decision-making, including social policy (evidence-based policymaking), will lead Poland toward further civilisational progress (Kuźnicki & Bujnicki, 2017).

Unfortunately, there is little evidence of willingness or ability to use knowledge and reliable data to foster the country's optimal development. The reason lies not only in the absence of a proper long-term strategy or science policy document. Other factors include society's and political representatives' lack of faith in the power of science, as well as politicians' short-term thinking, driven by cyclical parliamentary and presidential elections. This does not mean, however, that Poland should abandon efforts to develop an appropriate rPNP or attempts to persuade decision-makers of the necessity of its implementation. The example of Asian countries such as South Korea, Singapore, and China demonstrates that investment in science is the best – though long-term – pathway to civilisational progress and prosperity. Yet, as Professor Piotr Moncarz of Stanford University has stated, "Polish science is invisible internationally" and only now "must we begin consciously building our presence", even though "Polish science has made a real contribution to global innovation" (https://www.pulshr.pl/edukacja/polskiej-nauki-na-swiecie-nie-widac-musimy-zaczac-swiadomie-budowac-nasza-obecnosc,112166.html). I will close with another appeal from the article co-authored with Janusz Bujnicki:

> We believe that in order to improve the organisation of science in our country and achieve positive effects quickly, Poland must draw upon proven models from abroad as well as successful domestic examples. Accomplishing these tasks requires bold political decisions that will ensure scientists the freedom necessary for effective work, while at the same time aligning that freedom with

responsibility. Thanks to individuals willing to undertake this mission and to use the opportunities offered responsibly, Poland will have a chance for rapid civilisational progress. Investment in science is crucial for the development of every country (Kuźnicki & Bujnicki, 2017).

References

Bernal, J.D. (1939). The Social Function of Science. London: Faber & Faber.

Działalność naukowa – niedoceniany czynnik rozwoju cywilizacyjnego Polski (2022). Warszawa: Instytut Problemów Współczesnej Cywilizacji im. Marka Dietricha. https://www.ipwc.pw.edu.pl/wp-content/uploads/2022/11/Dzialalnosc-naukowa-niedoceniany-czynnik-rozwoju-cywilizacyjnego-Polski.pdf (Accessed: 01.06.2025).

Kuźnicki, J. (2022). Mniej niż zero, czyli budżet przetrwania. *Forum Akademickie*, *11*, 8–9.

Kuźnicki, J. (2023). Nie tylko jak, ale kto zreformuje naukę w Polsce. In: M.J. Nowak & R. Rakoczy (ed.), *Nauka polska. Szanse, bariery i wyzwania* (pp. 23–45). [An abridged version: Kuźnicki, J. (18.11.2023). *Reforma PAN, koniec z habilitacjami i jeszcze więcej pieniędzy. To uzdrowi polską naukę.* https://wyborcza.pl/magazyn/7,124059,30397171,reforma-pan-koniec-z-habilitacjami-i-jeszcze-wiecej-pieniedzy.html (Accessed: 01.06.2025)].

Kuźnicki, J. (14.04.2024). *Konkurs zamiast habilitacji? Są jednostki, w których tę procedurę stosuje się od lat*. https://wyborcza.pl/7,75398,30884724,konkurs-zamiast-habilitacji-niektorzy-juz-takrobia.html (Accessed: 01.06.2025).

Kuźnicki, J. (19.01.2025). *Jak uzdrowić polską naukę? Sugestie dla nowego kierownictwa Ministerstwa Nauki*. https://wyborcza.pl/7,75398,31623635,jak-uzdrowic-polska-nauke-sugestie-dla-nowego-kierownictwa.html (Accessed: 01.06.2025).

Kuźnicki, J., & Bujnicki, J.M. (2017). Nie ma wolności bez odpowiedzialności. *Nauka i Szkolnictwo Wyższe*, *2*(50), 205–222. DOI: 10.14746/nisw.2017.2.10

Kuźnicki, L. (2002). *Autobiografia. W kręgu nauki*. Warszawa: Polska Akademia Nauk.

Kuźnicki, L. (2018). *Polska Akademia Nauk 1952–1998. Zamierzenia i realizacja*. Warszawa: Wydawnictwo Retro-Art.

Polityka Naukowa Państwa – projekt do prekonsultacji przez NCN otrzymany od ministra Przemysława Czarnka 8 grudnia 2020 r. (State Science Policy – draft for pre-consultation received by the National

Science Centre (NCN) from Minister Przemysław Czarnek on 8 December 2020). https://www.gov.pl/attachment/0ab85e9a-2434-41b8-adf7-de5c5e987e69 (Accessed: 01.06.2025).

Polityka Naukowa Państwa (2022). Warszawa: Dokument Ministerstwa Edukacji i Nauki (*State Science Policy* (2022). Warsaw: Ministry of Education and Science). https://www.gov.pl/attachment/d08e5355-13da-46f5-ae11-19d81cadfc99 (Accessed: 01.06.2025).

Uwagi Rady Narodowego Centrum Nauki do projektu Polityki Naukowej Państwa z 8 grudnia 2020 r. Uchwała Rady NCN nr 1/2021 z dnia 8 stycznia 2021 r. (Comments of the Council of the National Science Centre on the draft State Science Policy of 8 December 2020. Resolution of the NCN Council No. 1/2021 of 8 January 2021).