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Etymology of the Definition of Risk in International Relations. The Research Perspective

Abstract

RESEARCH OBJECTIVE: The aim of the article is analysis of international risk.

THE RESEARCH PROBLEM AND METHODS: The fundamental problem of this publication is the analysis of selected research on international risk in the subject literature. The article uses traditional research tools which are literature studies. The choice of tool is dictated by the subject selected.

THE PROCESS OF ARGUMENTATION: The study consists of three fundamental elements: Genesis and essence of risk. Literature review; Typology of research on risk. Genesis; Research on risk in international relations.

RESEARCH RESULTS: Risk category is an important instrument for analysing the phenomena occurring in contemporary international environment, an attempt to deal with highly probable global threats and thanks to its successful mitigating mechanisms can be worked out.

CONCLUSIONS, INNOVATIONS AND RECOMMENDATIONS: Creating new instruments and solutions in risk management; adopting various elements of risk management; developing research and scientific consulting aimed at working out suitable

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models of risk management; defining the subjects responsible for security in individual countries; analysis of dealing with disastrous situations and securing against them.

KEYWORDS:

risk, international relations, research, mitigation, model

INTRODUCTION

The contemporary times in international relations unveil the importance of risk in various aspects of international life – including: geopolitical and geostrategic. More and more questions arise about its functionality and efficiency. Are the most important players in international relations, those of national and non-national character, able to create quite solid guarantees for the existing international order? Will the enthusiasts of the *status quo* or perhaps the revisionists and radicals prevail? Or perhaps the fate of international order is currently not dependent on the conscious actions of its creators and guarantors? Perhaps, the globalized world is getting out of any control and in relation to that the degree risk of its destruction is an all-time high? (Bremmer, 2010; Bueno de Mesquita, 2011; Eberhardt, 2013; Galbright, 1979; Beck, 2002; Sienkiewicz, 2004; Koziej, 2006).

The contemporary system of international relations is undergoing a turbulent transformation. Due to the dynamics of changes and multitude of unknowns, no one is able to predict the effect of those transformations. It is certain, however, that a deep decomposition of previous structures in contemporary global economy is taking place (Cohen-Tanugi, 2008; Eberhardt, 2013; Belniak, 2015) – one has only to look at the transformations within NATO, European Union or individual countries to understand that the world is at the stage of deep transformation.

The aim of this study is the analysis of international risk. The aim has been accomplished through discussing the following topics:

1. Genesis and essence of risk. Literature review.
2. Typology of research on risk. Genesis.
3. Research on risk in international relations.

The article uses the traditional research tool of literature study.

Own projection has also been used. The choice of tool is dictated by the subject selected.

GENESIS AND ESSENCE OF RISK. LITERATURE REVIEW.

The sources of crises and conflicts mainly comprise of premises which are favourable circumstances, causes which are specific events generating them and quite permanent endogenic factors which form their foundation and are particularly activated by the results of the change taking place within the international system. Analysts, commentators and politicians emphasize more and more clearly the term 'risk' instead of the traditionally and narrowly defined 'threat'. Marking the change of assessment methodology, this category, in place of causes and premises which constitute the catalysts of events, distinguishes the factors themselves as their foundation. This impels the recognition of a wide spectrum of challenges for the security of people and the possibility of their survival and by allowing the consideration of estimated timeframe for those challenges – gives an opportunity of optimal assessment of the priorities. The analyses calculating risk also indicate that it is a partial result of assessments and choices which are made individually and jointly. Also, for those objective and subjective causes, listing and comparing the full spectrum of dangers threatening the subjects of social relations is difficult. Various crisis phenomena, conflicts, terrorism, natural disasters and effects of economic and social inequality shall be analysed as the effect of factors creating a real threat and possibility but also as furthering the domino effect and conditioning the reaction of individuals and societies. Diversity implicated by one's own scale of values and individualized sense of responsibility leads to subjectivity of assessments. Comparing views on the hierarchy of risk, represented by governments, business representatives and social entities may help with their optimization (Barnaszewski, 2008).

The foregoing history of the world and international relations, permanently and clearly disproves the myth of the possibility for their favourable, peaceful and sustainable development which would be free from armed or political conflicts as well as any economic crises. On

that basis, an awareness has commonly developed that the world is no longer able to develop safely. People have also started to be aware of many types of risk¹ and threats which are either constantly present or being constantly generated in the contemporary world. The scale of risk in international dimension is now so big that in various parts of the world, on the decision-making level (countries, governments and economic entities) attempts have been made to diversify and mitigate it through a discipline of science – *risk management* – RM. The history of *risk management* encompasses important economic, political, military, scientific and technological events of the 20th century. They were mainly: wars, technical inventions, intensive development of communication, the great crisis of the 1930s, establishment and fall of totalitarian regimes (fascism and communism), invention and production of atomic bomb, construction of nuclear power plants, environmental threat and phenomenon of global warming as well as a number of individual incidents of negative character which took place in various parts of the world (Kaczmarek, 2015). All of those events have influenced the development of methods and theories describing and analysing the problem of risk (Beck, 2000).

The first concept of economic theory of risk was published by A.H. Willett in 1901. A H. Willett noticed the differentiation of the meaning of the term commonly used in everyday life – ‘risk’ and attempted to standardize it. According to him, risk is the state of the surroundings which shall be referred to the degree of occurrence uncertainty as opposed to the probability of materialization. According to this theory, risk is understood as the state of the surroundings, it is objective and correlates with subjective uncertainty, whilst the impression or illusion of randomness is only the effect of the imperfection of human knowledge about objective laws which

1 **Risk** – state or event which may lead to losses. It is proportional to the probability of the occurrence of that event and extent of losses which may be caused by it. Risk is an ambiguous term, difficult to define. It is interpreted differently in various scientific disciplines. Hence, according to some authors, establishing one, universal definition is impossible. For the purpose of this study, it has been accepted that risk means some kind of measure/assessment of threat or danger resulting from either probably independent events or the consequences of decision-making.

govern the processes of the external world (Willett, 1901; Dudziak & Szpakowska, 2013).

The second concept was presented by F.H. Knight in 1921 (Jarvis, 2011). The fundamental aim of F.H. Knight's works was to attempt to quantify uncertainty. In this concept, risk is a measurable uncertainty. Uncertainty which cannot be measured is the strict sense uncertainty which Knight named immeasurable uncertainty. F.H. Knight "un- equivocally stated that uncertainty was confused with risk, however, only risk is measurable whilst uncertainty is immeasurable" (On that basis, the shortest definition of risk was created which states that risk is the quantified part of uncertainty) (Knight, 1921), (Dudziak & Szpakowska, 2013, pp. 117-119).

The third fundamental concept was drafted by the USA Insurance Terminology Commission in 1966. According to it, risk is uncertainty about a particular event in a scenario with two or more possibilities. In view of this, it is a measurable uncertainty of achieving the intended aim.

As a result of those concepts, separate definitions of risk and uncertainty started to appear, according to which

uncertainty is a situation where it is not possible to determine which elements (or at least some of them) it is comprised of, what their value is or what the probability of their occurrence is. Such a situation often occurs in case of problems which have not happened in the past and are characterized by a large degree of complexity (Pasiczny, 1981),

whilst

risk is a situation where at least one of the elements it is comprised of is unknown but the probability of its occurrence is known (or their – if there are more of those elements). This probability may be measurable or only felt by the one acting (making a decision). The conditions for risk only occur where an experience from the past concerning similar events may be compared with the current situation (Pasiczny, 1981; Dudziak & Szpakowska, 2013, pp. 117-119).

Nassim Taleb (Taleb, 2006) criticized the calculation of risk based on sophisticated mathematical models and formed a theory which was named the black swan theory after the symbol of unprecedented events. Referring to the theory of chaos, he shows the power of

unpredictability. According to it, from the risk's point of view, it is crucial to manage risk or events of low probability, whilst in making business decisions, the so-called 'random luck' (the main success factor in business decisions) (Dudziak & Szpakowska, 2013).

TYOLOGY OF RESEARCH ON RISK. GENESIS

The need to carry out scientific research on risk, was born in modern times, however, professional measurement and risk control did not start earlier than the 17th century.

The first theory in that regard was the theory of probability established by the French scientist B. Pascal, who, together with P. de Fermat constructed a method of analysing future events. Such a procedure enabled the determination of the probabilities of possible outcomes, under the condition that those outcomes are mathematically measurable. On the basis of their research, they claimed that only an unreasonable man takes risk in a situation in which the rules of action are not clearly defined (Kaczmarek, 2015).

In 1662, a group of scientists from Port Royal, published a piece of work entitled *Logic or the Art of Thinking*. It contains a chapter concerning the measurement of a result's probability using the example of a coin game (Brakel, 1976; Shafer, 1996). In truth, however, it concerned an analogy to events taking place in nature. For example, the probability of being struck by lightning is little but many people are overly fearful when they can hear thunder. At the same time, a remark of fundamental importance was formulated: fear of danger should be proportional not only to the scale of danger but also to probability of its occurrence. Therefore, making decisions requires both the consideration of strength with which we desire to achieve a particular result and the degree of probability of achieving the anticipated result. The strength of desires which was later referred to as usefulness, became the key term in all theories on decision making and risk taking (Kaczmarek, 2015).

In the first half of the 20th century (Kaczmarek, 2003) subsequent results of scientific research on risk were established. Amongst them, the following ones gained great importance: the work of Frank Knight *Risk, Uncertainty and Profit*, J.M. Keynes *A Treatise on Probability* and

The Theory of Games and Economic Behavior by John von Neumann and Oskar Morgenstern. Knight's contribution is, amongst other things, was separating uncertainty from measurable risk (which was already mentioned above). Keynes, noting the dependency of economic events on the law of great numbers contributed to more common usage of probability theory in economics. Morgenstern and Von Neumann, on the other hand, were proving the usefulness of rational decision – making and decided that aiming for no losses is more of an important aim than the desire to win.

In the subsequent decades, the tools for risk assessment were being perfected in order to control uncertainty. The research was carried out by F. Galton (1822-1911). The knowledge which he and a few other researchers managed to gather, led to the creation of complex instruments for risk management and control which are used in modern times in managing companies' financial risk. Galton transformed the static definition of probability which was based on randomness and the law of great numbers into a dynamic process. Together with Oskar Morgenstern, they continued their research for a few years which was published in the book: *Theory of Games and Economic Behavior* (Berstein, 1997; Kaczmarek, 2015).

In 1926, John von Neumann, a prominent physicist and mathematician, presented his theory of strategic games at the forum of the Mathematical Association in Göttingen and the work was published in 1928. According to him, loss is a result of every strategy which aims at winning instead of avoiding loss. Bernstein notices that for the first time von Neumann talks about the probability of loss as an integral part of risk management (Kaczmarek, 2015).

In 1952, *Journal of Finance* published the article entitled *Portfolio Selection* by Harry Markowitz. The main assumption of the article was the thesis that a portfolio of securities is governed by completely different laws than securities considered individually. He viewed investors as subjects making rational choices. Markowitz used linear programming, the development of which was greatly influenced by von Neumann. He used the risk factor in constructing portfolios for investors who viewed the anticipated rate of return as a desired outcome and variance of the rate of return as an undesirable effect. His theory was built by combining the rate of return with variance. When presenting the investment strategy prepared by himself, Markowitz

did not use the word risk but specified the variance of the rate of return as an undesirable effect, the scale of which the investor wants to minimize. Risk and variance are synonymous in his works. It can be said that von Neumann and Morgenstern measured usefulness, whilst Markowitz measured investment risk (Kaczmarek, 2015).

Towards the end of the 1950s, methods of measuring financial risk which can be applied nowadays continued developing. Amongst the people who contributed to that the following should be listed: Harry Markowitz, Russell Gallagher, Douglas Barlow, Kenneth Arrow and Sir John Hicks. In 1972, the two last ones, received the Noble prize in economics proving, amongst other things, that risk can be insured by accepting the reliable functioning of the law of great numbers.

The research on diversified risk carried out in the second half of the 1990s and at the beginning of the 21st century is characterized by more and more intensely connecting risk with the natural environment. In this context, there is an interesting American report called: *The Human Choice and Climate Change (HCCC)* which constitutes a crucial supplement to research of global climate changes (Report of the UN Secretary-General, 1990).

General Assembly A/45/621, 16 Oct. 1990. Climate Report is based on the assumption that human interference with the national system causes big-scale threats which due to their global range and irreversibility of change, require the preparation of particular defence strategies, especially an early-warning mechanism. Due to the fact that a simple method of safeguarding against a global risk does not exist, there is a need for a coherent policy of safeguarding against them in many countries. Taking into consideration, the limited capabilities to solve this problem through science, politicians need to be advised to apply the traditional method of trial and error with regards to new types of threats and risk. The possibility of carrying out empirical research on the effects of a global risk practically does not exist. Also, the effects of politicians' actions where there is no coherent policy of environment protection are uncertain. This policy is carried in conditions which are uncertain and undefined which does not exclude the need for drafting and applying specific ethical norms (Kaczmarek, 2015).

In the subsequent decades, various bodies which considered risk primarily on the economic level were also established. They were:

Risk and Insurance Management Society (RIMS) and its sister associations under the name of *International Federation of Risk and Insurance Management Association (IFRIMA)*, the American society: *The Society of Risk Analysis (SRA)*, and then its European branch *E-SRA, Institute for Risk Management in London* and slightly later the *GARP association: The Global Association of Risk Professional*.

In 1990, the UN Secretariat authorized the start of *INDOR* that is *The International Decade for Natural Disaster Reduction*. It was a 10-year long research programme on the causes and effects of natural disasters, especially in developing countries, as well as methods of safeguarding against such disasters. This programme was summarized in the report called:

Natural Disaster Management, in synthetically presented the causes of risk, the fast-advancing changes of social processes, the issue of forecasting threats and changes and finally the methods of safeguarding against them. Two years later, the British *Cadbury Committee* published the aforementioned report in Great Britain, pointing out that the governments are responsible for risk management policy. Similar steps have been taken in Canada, United States, Germany and France, providing the basis for organizing the process of risk management on international level. Using the experience of Britain and Canada, the first version of *Risk Management Standard – AS/NZS 4360: 1995 – (amended in 1999)* was published in Australia and New Zealand which considered the interdisciplinary approach to risk.

Important, from the point of view of theoretical approach to the issue of risk, was publishing the book by L. Bernstein: *Against the Gods: The Remarkable Story of Risk* in 1996 which can be called a milestone on the way of building the new discipline of risk management. In the subsequent years, this research discipline started moving beyond economics and mathematics and found its supporters in social sciences who developed its methodology and application (Kaczmarek, 2015).

RESEARCH ON RISK IN INTERNATIONAL RELATIONS

According to A. Moraczewska (Moraczewska, 2015; Czaputowicz, 2003; Fudaliński, 2015), the analysis of international risk, in

a simplified form relates to researching the occurrence probability of a specific phenomenon and establishing its consequences. It relates to the idea of widely defined security and aims at establishing determinants and scales of probable losses and methods of their elimination. Most analyses of risk in the discipline of international relations concentrate on the effects of globalization (*globalization of fear*), terrorism and ecology. Scientific analyses of risk have also their application in research on the use of new technologies, GMO, creating systems safeguarding national information networks against cyber-terrorism and hacking, epidemiological risk or the risk resulting from exhausted natural resources. The important issues, although not featured as frequently in risk analyses, are for example: the identification of weak spots in countries which expose them to destabilization or constitute the source of threat or the influence of international organizations in regulating risk between countries, for example when countries are in excessive debt on the financial market. Using this research method makes it easier to identify the causes of the so-called *failed states* phenomenon and build decision models safeguarding against them or easing their consequences (Moraczewska, 2015).

The issue which requires research is determining the essence of risk and methods of managing it which shape the decisions on the national and international level. More and more international organizations use the selected models of risk analysis within the scope of their activity: IMF – loans, WTO – trade agreements, UN – promotional actions. They are also an element of bilateral and multilateral agreements between countries, e.g. in the field of sanitary and phytosanitary products concerning the transport of goods abroad or sharing aviation passenger lists between countries due to the threat of terrorism (Rasmussen, 2006; Douglas, 1986). International standards of risk management have also been worked out and they are used by entities on different levels of international relations (Moraczewska, 2015).

The category of risk became crucial when it was acknowledged that many phenomena and consequences of human activity move beyond boundaries of individual countries and their effects become characteristic of a global risk. At the beginning of the 21st century, the definition of risk became the point of reference in analyses of many phenomena for international organizations such as the United

Nations and its specialized agencies, the Organization for Economic Co-operation and Development, the World Economic Forum and on the level of individual countries. The risk analysis prepared by them usually considers the phenomena related to the core activity of those entities (Moraczewska, 2015; Clapton, 2011; Keohane & Nye, 1989).

In December 1999, *the United Nations Office for Disaster Risk Reduction* – UNISDR was established which has the form of a permanent secretariat within the UN's structure (UNISDR, 2009). The UNISDR's aim is the inclusion of the Strategy of Disaster Risk Reduction in the policy of sustainable development of member states, development and strengthening the mechanisms and institutions limiting and managing the consequences of disasters and limitation of the risk of their occurrence (Moraczewska, 2015).

During the third global UN conference which took place in March 2015 in Sendai, Japan, *The Sendai Framework for Disaster Risk Reduction 2015-2030* was drafted. The climatic changes were regarded as one of the most important factors generating the risk of disaster. In the previous programme from 2013, agencies, regional commissions as well as permanent UN bodies, the activity of which for the reduction of disaster risk was regarded as key, were specified. Moreover, twelve UN organizations: FAO, UNDP, UNEP, UNFPA, UNHABITAT, UNICEF, UNOPS, WFP WMO, WHO, UNESCO and the World Bank considered the reduction of disaster risk a priority in their strategic plans for 2014-2017. Co-operation between individual entities and countries on the regional, central and local level as well as coordination of their actions in managing the risk of natural disasters, shows the essence of risk category in shaping new interactions between the actors of international relations. It also starts new decision-making processes on the international level, the measurable effects of which are the decisions concerning reinstating the natural environment's balance and assistance programmes reducing the risk of disasters and/or their consequences. The inclusion of the majority of specialized UN agencies into the action for global risk management may be viewed as the imperative for successful dealing with probable threats which occur as a result of those disasters and expand the range of their influence (Moraczewska, 2015).

Risk analysis holds a special place in the reports by United Nations Development Programme (UNDP). They also mainly deal with

natural disasters but from a wider perspective. In 2011, UNDP investigated the relationship between disasters and conflicts and formulated a conclusion that the risk related to degradation of environment, natural disasters, food safety, financial instability and conflicts within and between countries co-generate each other as part of a complicated network of influences on the global and regional level. In the so-called UNDP Strategic Programme 2014-2017, the organization promotes the concept of *disaster risk governance* to which it refers to as “the method of co-operation of national authorities on the local, national and regional level in order to manage and reduce disasters and the risk related to climate changes.” *Disaster risk management* remains an element of this concept and it is defined as a systematic process of applying administrative regulations and operational capabilities in the execution of strategies and improvement of effectiveness in dealing with and limiting the negative consequences of probable threats and disasters. Amongst the countries which are the biggest beneficiaries of the UNDP assistance are: Ecuador, Columbia, Cuba, Mexico, Ghana, Mozambique, Uganda, Armenia, Kirgizstan, Indonesia, Vietnam, Solomon Islands, Vanuatu, and Djibouti. Determining the level of threat of natural disaster occurrence for individual countries, launches the specified decision-making mechanisms arising as a result of influences between the exposed country and the international organization and between countries on the regional level (Moraczewska, 2015).

The World Economic Forum (WEF) also drafts reports concerning global risk (since 2005) which define it on many levels and consider a much wider scope of this term than the UN. The reports are prepared on the basis of interviews carried out amongst various groups of respondents (businessmen, politicians, country leaders, main representatives of international and non-governmental organizations as well as specialists and scientists), usually during meetings at the WFE throughout the year preceding its publishing. The research includes two categories: current global trends and the risk related to them. They are classified on five levels: economic, social, geopolitical, technological and natural environment and listed according to the level of probable occurrence and the level of influence. According to table 1 and figure 1, each level is attributed with specific phenomena which constitute the sources of risk. All of them have

a wide range of influence which moves beyond the areas affected by those phenomena, triggering the phenomena of risk on the global level (Moraczewska, 2015; Kamiński, 2008). However, the number of sources of risk in individual countries is not identical and so far, their number on the technological level is the lowest. It seems that time is the determinant factor here. On the other hand, the effects of risky phenomena on the first three levels are more spectacular and currently generate higher social and economic losses than the risk of technological origin.

Table 1
Compilation of 31 types of risk in five categories according to WEF

Risk category	Types of risk
EKONOMIC	Financial crises of major world economies
	Failure of a major financial mechanism or institution
	Liquidity crises
	High level of unemployment/excessive structural employment
	High fluctuations of oil price
	Fall or deficit of critical infrastructure
	Loss of importance of the US dollar as an international currency
NATURAL ENVIRONMENT	Increase of extreme weather phenomena (e.g. floods, hurricanes, draughts)
	Increased number of natural disasters (e.g. earthquakes, volcano eruptions, tsunamis, electromagnetic storms)
	Increased number of ecological disasters caused by human activity (e.g. oil leakages into sea, accidents/malfunctions in nuclear power plants)
	Deepening phenomenon of biodiversity loss unbalanced ecosystem (on land and in the oceans)
	Drinking water deficit
	Inhibition of processes of easing and adapting the environment to the climatic changes
POLITICAL	Fall <i>global governance</i>
	Problems of countries of great geopolitical importance
	Increased corruption level
	Significant escalation of organized crime and illegal trade
	Large-scale terrorist attacks
	Proliferation of weapons of mass destruction
	Serious conflicts between countries with significant consequences on the regional level
	Increased processes of nationalization of global economies and natural resources

SOCIAL	Food crises
	Pandemic outbreaks
	Chronic diseases which are difficult to manage
	High income disparity
	Strains of bacteria which are resistant to antibiotics
	Inappropriate urbanization of areas (withdrawing plans or building inappropriate infrastructure and delivery chain)
	Deep political and social instability
TECHNOLOGICAL	Damage to critical IT and network infrastructure
	Increased number of wide-range cyber attacks
	Mass phenomena of data theft and fraud

Source: Moraczewska, 2015, p. 60; World Economic Forum, 2015.

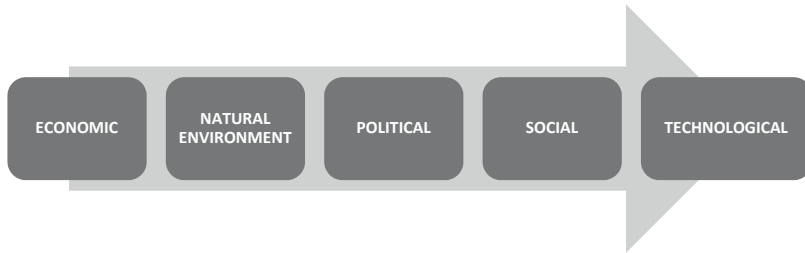


Figure 1. Perspective of global risk according to WEF.
Source: Own compilation.

Amongst the top ten of the most probable types of risk, in the WFE report – figure 2 – the greatest number relate to the occurrence of potential threats of natural origin. Those phenomena have largely superseded the risk of economic origin which had dominated in the previous period. The consequences of climate changes shall be: increase in migration processes, conflicts between countries and price of drinking water – figure 3.

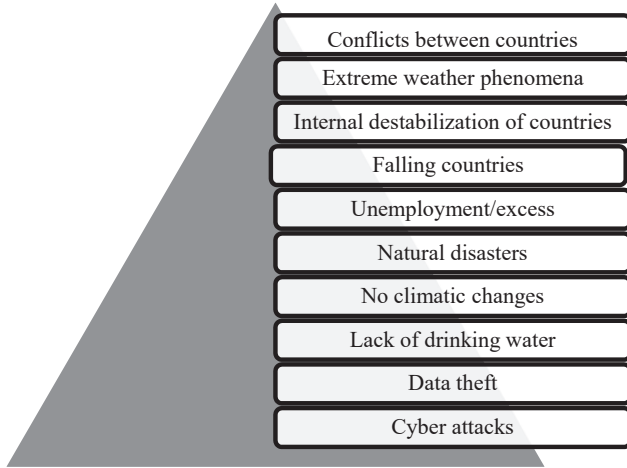


Figure 2. Global risks according to the scale of their probability in 2017.
Source: Own compilation on the basis of: World Economic Forum, 2015.

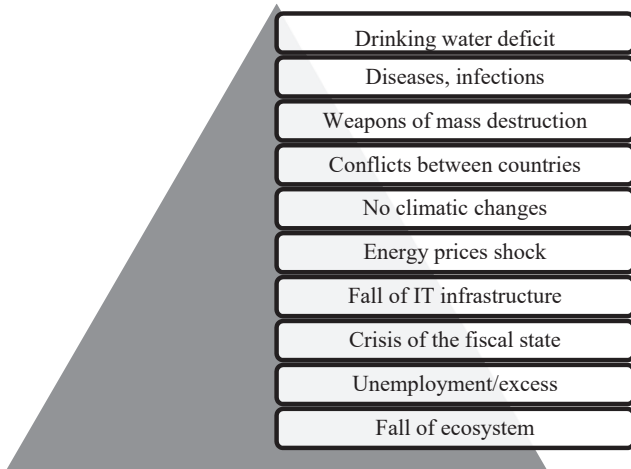


Figure 3. Global risks according to the scale of their probability in 2017.
Source: Own compilation on the basis of: World Economic Forum, 2015.

In the WEF Report, for individual regions of the world, types of risk were determined to which they are the least prepared. This can be regarded as an indicator of sensitivity of those areas to the specific risk (figure 4).

Europe	North America	Africa	East Asia	South Asia	Latin America
<ul style="list-style-type: none"> • Unemployment/excess • Migration 	<ul style="list-style-type: none"> • Cyber attacks • No climatic changes • Infrastructure shortcomings 	<ul style="list-style-type: none"> • Infectious diseases • Unemployment 	<ul style="list-style-type: none"> • Conflicts between countries • Damaged city infrastructure 	<ul style="list-style-type: none"> • Errors in spatial planning 	<ul style="list-style-type: none"> • Errors in spatial planning

Figure 4. Global risks according to the scale of their probability in 2017.
 Source: Own compilation on the basis of: World Economic Forum, 2015.

Identification of risk within individual regions should encourage the countries from those regions to coordinated co-operation with regards to building the tools, procedures and models which would help in mitigation of the threats. Lack of such coordination will lead to multi-polar instability of the international system which may additionally increase the probability of a global-range risk in the future.

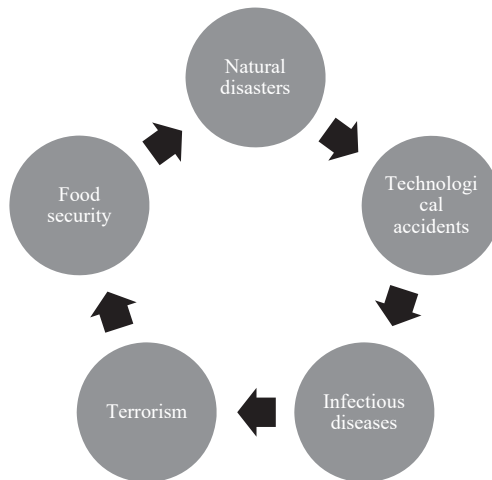


Figure 5. Global risks according to OECD in 2016.
 Source: Own compilation on the basis of: World Economic Forum, 2015.

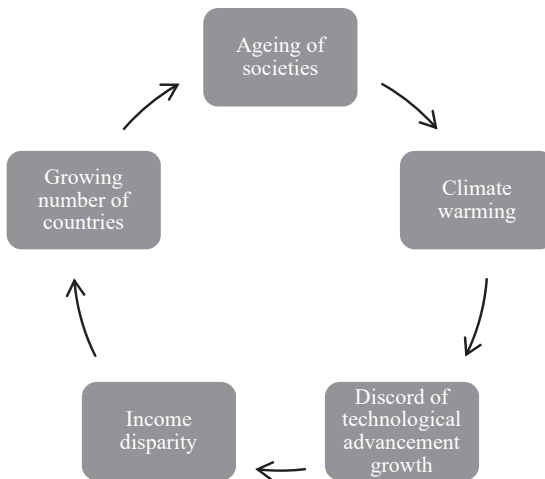


Figure 6. Global risks according to OECD in 2017 – forecast.
Source: Own compilation on the basis of: OECD, 2015.

Also the Organization for Economic Co-operation and Development (OECD) in its analyses and reports, gives more and more attention to the occurrence of risk on international markets, the evidence of which is the report *'Emerging Risks in the 21st Century. An Agenda for Action'* (Moraczewska, 2015). It distinguishes five clusters of international risk: natural disasters, technological accidents, infectious diseases, food security and terrorism (Kuźniar & Lachowski, 2003; Buzan, 1983) as part of which, the research and analyses are being carried out with respect to past and future global risks – figure 5 and 6.

Such research also allows for establishing the risks which are on the level of: *exemption* (the level of temporary acceptance of the risk by its owner until the time of its mitigation) and *egzemption* (the level of acceptance of the risk by the owner – with simultaneous lack of its mitigation). The above identification establishes the risks which are or may be difficult to be mitigated and apart from that greatly limit or worsen the security of a given region – figure 7. Thanks to such an identification, a particular country is able to secure the funds towards potential losses which will result from the materialization of the risks which are difficult to be mitigated.



Figure 7. Problems with managing international risk in 2017 – forecasts.
 Source: Own compilation on the basis of: OECD, 2015.

With regards to this classification, the OECD forecasts the occurrence of five crucial problems with risk management in 2017 (figure 6). It has also formulated its own recommendations for them. They comprise of (Moraczewska, 2015): risk 1) the growth of risk's complexity as the subject of influence of the growing number of factors, recommendation – creation of new instruments and approaches to risk management; risk 2) concentration and increase in the scale of risk's aggregation, recommendation – adaptation of various elements of risk management, from warning systems to insurance programmes, in view of increased probability of occurrence of large-scale disasters in the future; risk 3) inadequacy of previous methods of risk management to its scale and heterogeneity, recommendation – development of research and scientific consultations aimed at working out appropriate management models; risk 4) changes to the roles and responsibilities in risk management, recommendation – specifying the subjects responsible for security within individual sectors and introduction of new and diversified instruments of operation, e.g. tort law responsibility; risk 5) lack of coherence between the formal methods of management and viewing that risk by the society affected by extreme phenomena, the influence of media upon social reactions, recommendation – analyses of perception and methods of dealing by people with the occurrence of specified disasters or accidents as well as safeguarding against them. Furthermore, the Organization promotes the creation of shared responsibility of both the public and

private sectors for the prevention of phenomena which bring high socio-economic losses and triggering the synergy effect as a result of their co-operation within the management of crises and large-scale disasters.

SUMMARY

The above analysis of international risk and the actions of important global organizations show that risk category is an important instrument for the analysis of phenomena occurring in the contemporary international environment, an attempt to deal with highly probable global threats and that it allows for working out of effective mitigating mechanisms which depend on:

- distinguishing specific types of risk on the basis of probability of their occurrence and scale of damage, as well as their assessment's degree of certainty,
- the analysis of the causes, boundary conditions and types of risk and the consequences of their regional characteristics in the interaction between: man – nature – changes,
- the scientific assessment of the ensuing risk by assigning it the particular type of risk,
- accepting the strategy for action and decision-making,
- the recommendations aimed at perfecting the methods of risk control,
- the guidelines on how to manage the unknown types of risk.

The methodology of modelling, forecasting and comparing international risk shall consider the spreading of threats and encompass the finding of the influence of trans-national phenomena, often of global character and allocating many risk factors and it should assess the susceptibility and resistance of the global system as a whole.

Warning would be optimal as it would be limiting and eliminating the risk.

The view of the targets and application of various methods are the result of both cultural and civilization differences and the doctrine defining a country's policy.

The further research on international risk should include: creating new instruments and solutions in risk management; adopting various elements of risk management; developing research and scientific consulting aimed at working out suitable models of risk management;

defining the subjects responsible for security in individual countries; analysis of dealing with disastrous situations and securing against them.

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