



WORLD GROWTH OF DAMAGE FROM NATURAL DISASTERS: THE PROBLEM OF ACTIVE WARNING AND INTERNATIONAL LAW

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ABSTRACT

Background: The increase of quantity and scale of destroying geophysical events on the Earth goes to the problem of population and economic safety that require common coordination of protective efforts of different states. **Objective:** The objective of this work was to predict the main political and legal risks on the natural path of progress in the field of protection against natural disasters, global management of the fight against disasters, carried out in the context of the development of technologies for influencing dangerous natural processes. **Methods:** In this context we should take in consideration a long-term global company – the UN International strategy of disasters risk reduction and also convocation of regular world forums in its course. **Results:** According to the actual overall result, the strategy without having authorized institutes and legal obligatory decisions has not brought the expected results for many years of its realization. **Conclusion:** In order for the future construction to be more fully in line with the national interest, a political plan is needed to develop a new area of international relations and prepare measures to influence the construction of normative and institutional framework. Consideration of the taken little-studied aspect of the emergency problem should contribute to an objective assessment of the critical situation in the global sphere of combating a steadily growing, universal, and inevitable threat and, thereby, to accelerate the creation of a legally guaranteed institutional base for global disaster risk management driven by social necessity and geodynamics.

Keywords: Natural disasters. Climate management. UN. International strategy for disaster reduction.



AUMENTO GLOBAL DO DANO POR DESASTRES: O DESAFIO DA PREVENÇÃO ATIVA E DO DIREITO INTERNACIONAL

RESUMO

Fundo: O aumento do número e da escala dos fenômenos geofísicos destrutivos na Terra levanta o problema da segurança populacional e econômica, exigindo uma coordenação unificada dos esforços defensivos dos Estados. **Objetivo:** O objetivo do trabalho é prever os principais riscos políticos e legais no desenvolvimento da proteção contra desastres naturais - o controle global de desastres no contexto do desenvolvimento de tecnologias para lidar com os riscos perigosos naturais. **Métodos:** Neste contexto, a campanha mundial de longo prazo - a Estratégia Internacional para Redução de Desastres da ONU - e sua convocação de fóruns globais regulares são considerados. **Resultados:** Na realidade, a estratégia nunca produziu o resultado esperado de uma falta de instituições autorizadas e decisões juridicamente vinculativas durante todo o período de muitos anos de sua implementação. Para que o projeto futuro esteja mais alinhado com o interesse nacional, é necessário um plano político para dominar o novo campo das relações internacionais e preparar medidas para influenciar a construção de sua estrutura normativa e institucional. **Conclusões:** A consideração do aspecto pouco estudado do problema de emergência deve contribuir para uma avaliação objetiva da situação crítica no campo global de lidar com uma ameaça em constante crescimento, universal e iminente e, assim, acelerar a criação de uma estrutura institucional legalmente garantida para a gestão global baseada nas necessidades e geodinâmica do risco de desastres.

Palavras-chave: Desastres naturais, Gestão climática, ONU, Estratégia internacional para a redução do risco de desastres, Direito internacional.

INTRODUCTION

The last half a century the world has a marked increase of large and small natural disaster number. Only during the two previous decades the number of recorded natural disasters has doubled from about 200 to more than 400 a year (EM-DAT, n.d.), although to some extent such statistics can be explained by the increase of information flow. The negative impact of this increase on society can be recognized as total: the impact of unfavorable geophysical processes creates, participates in development or complicates a very wide range of problems, different in nature and magnitude, but most



often, economic one in their basis. The blows of the element undermine the economy, the weakened economy becomes more vulnerable and, thereby, makes them even more destructive for the population and its facilities. Acting in time, the emerging destructive interdependence increases human losses, harms the material base, the environment and raises the susceptibility of society to the adverse phenomena of nature. The situation being observed at the present time allows us to talk about a completely dangerous global trend and the dynamic formation of the threat to the personality and the well-being of millions and even billions of people, usually poor countries, and, consequently, to sustainable development in general.¹

Seeking to stop the closed *circulus vitiosus*, driven by the "insuperable force", which is called the element in the doctrine of law (United Nations, 1980, pp. 66-78), the UN conducted a global program of activities of the International Decade for Natural Disaster Reduction from 1990 to 1999 (United Nations General Assembly, 1990, pp. 161-162), and at the turn of the century it proclaimed the International Strategy for Disaster Reduction. The implementation of the "strategic defense initiative" of the world community began in 2000 according to the UN General Assembly Resolution 54/219 (United Nations General Assembly, 2000, pp. 203-204). The goal is to create the effective ways to counteract natural and man-made disasters at all levels (community, municipal, national, regional, universal) to reduce human casualties, social, economic and environmental damage. To come to it, you need to accomplish the following tasks:

- to form a common understanding that disaster risk reduction must be an integral component of a sustainable development;
- to ensure that state authorities assume obligations to implement special international recommendations;
- to promote multilateral cooperation in the field of disaster risk reduction and the expansion of this profile associations at all levels;
- to raise scientific knowledge about emergency situations and their consequences.

Five years after the launch of the International Strategy for summing up the results of the past period and the determination of a long-term perspective, the World Conference on Disaster Reduction was convened. On January 22, 2005, this United Nations forum declared the Hyogo Framework Program of Action in 2005-2015 (United Nations, 2005, pp. 6-27). According to the idea of the authors, it was a "road list", the



instructions of which to pursue the following expected outcome for the next 10 years (that is, until 2015 - S.T.): The substantial reduction of disaster losses, in lives and in the social, economic and environmental assets of communities and countries." ² The Japanese guide "that guides by sustainable development" has been suggested to state institutions as a guideline to increase the effectiveness of the struggle with disasters. The summit document, in fact, was a call and was written as a basic one for the creation of national and regional strategies, treaties and non-legal normative acts of emergency subjects. In the universal sphere the next, Sendai, framework program on disaster risk reduction for the next decade and a half (2015-2030) was declared by the Third UN World Conference in Japan on March 18, 2015 (United Nations, 2015). But since the "Hyogo onslaught" of the International Strategy did not reduce the global problem sharpness by its objective result, the new expectations of the Sendai forum participants remained old in fact if compared: "Building on the Hyogo Framework for Action, this Framework aims to achieve the following outcome over the next 15 years: The substantial reduction of disaster risk and losses in lives, livelihoods and health and in the economic, physical, social, cultural and environmental assets of persons, businesses, communities and countries" (United Nations, 2015, point 16).

EFFECTIVE WARNING PROBLEM

The way of the strategic goal achievement outlined by the United Nations in order to obtain a truly long-awaited result, indicates the spirit and the letter of both documents. In accordance with the paper-based concept, this is a general increase of safety culture in the understanding that the prevention of catastrophes is a sustainable development component. This approach presupposes, first of all, *the prevention* of harm caused by extreme factors, and is reflected, in particular, by the "culture of disaster prevention" formula introduced in the text adopted in Sendai. A sufficiently deep penetration of the warning imperative into the public consciousness is convincingly demonstrated by the fact that the preventive idea is present in most provisions of the program acts to some extent.

But was it necessary to prolong the fifteen years of deceived expectations under the circumstances? This can be predicted by the rapid growth of the threat, and an objective view of the resistance it provides, which cannot go beyond the prevention



and the elimination of destruction from the inevitable impacts of nature. The prevention by the methods and the means of such a struggle has obviously and fundamentally reduced effectiveness, since it involves the reduction of harmful consequences without affecting their cause. Therefore, the direction of protection development for further improvement of the current one means the reduction of victim number and economic damage with rather limited opportunities. The latter do not correspond to the rapidly increasing danger, as evidenced by the actual result obtained today, the opposite of what was expected in Hyogo: not the reduction, but the increase in losses from natural disasters was essential. The negative result, which was completely clarified by the end of the work on the conceptual basic document adopted there, caused the recognition of the Organization in a strategic defeat per se, in which many could feel a depressive tonality, and some even catch the panic notes: "The report's predictions are *sobering* (has been stressed by me - S.T.), given the immense difficulty Governments and communities face in managing existing levels of disaster risk." (United Nations General Assembly, 2014, point 11). "The overall losses from disasters are mounting at an *alarming* (has been stressed by me - S.T.) speed and affect the global efforts to eradicate poverty and ensure a sustainable development" (United Nations General Assembly, 2014, point 12).

The summary of this disappointing report from the UN Secretary-General to its General Assembly states:

For the fourth consecutive year, economic losses from disasters have exceeded \$100 billion, *highlighting the urgency to anticipate medium- and long-term risk scenarios and to identify concrete measures* (singled out by me - S.T.) to minimize the creation of future risk, reduce existing levels of risk and strengthen social, environmental and economic resilience. (United Nations General Assembly, 2014, summary).

The things happening to this day in nature gradually lead to the opinion that the reason for the increase of natural disaster number and destructiveness is the warming on the Earth surface. For the UN, this explanation, although accompanied by a fundamental reservation, becomes more convincing: "While no single disaster event can be attributed to climate change, there is increased evidence that climate change is affecting many natural and human systems and poses significant risks to human health, ecosystems, infrastructure and agricultural production" (United Nations



General Assembly, 2014, point 11). The threat of future natural disasters, which is increasingly associated with global warming, is very serious, but society still has the most important of all strategic resources - time - that can be rationally disposed of, this requires the joint efforts of states.

In the middle of the last century, a prominent geophysicist, the Academician M.I. Budyko (1962) wrote:

The human impact on the climate with the further development of technology and energy in the near future is not only possible, but also inevitable. Such an impact ... will open the prospect of biosphere prolonged existence, the climatic conditions of which will be regulated by a man (p. 4).

Today, the limited opportunities of threat reduction and the unsatisfactory effectiveness of the fight against it orientate the search for an adequate protection from an active prevention of natural disasters - the introduction of technologies to manage natural processes (precipitation, air masses, seismic events, etc.).

"LESSER EVIL" SELECTION

However, on the way to the inevitable, predicted by well-known scientist, there are fundamental problems that deter people who are questioned by the following: will the development of the given area be good in the long run? When they create and apply the noted non-traditional protective methods, the first is the study of the affected processes in the measure necessary to prevent an unacceptable damage to the environment. This is followed by international security provision, harmonizing the sovereign interests of countries, preserving the quality of life, doubly important for the ecos transformed by this activity (Trofimov, 1991, p. 6).

It should be emphasized that these technologies are characterized by low predictability of medium-term and long-term results of their use, brought to biota. Today one can not be sure of the nature mechanism reflection adequacy left in the consciousness of a modern man, which he wants to "correct", and, consequently, that the started revolution is fully justified. The attempt of their man-made change constitutes a gross invasion of the subtlest and insufficiently clarified natural connections so far regulating the ecological balance with hardly predictable remote (in



time and in space) consequences of the desired effect obtaining. Besides, at the end of the last century the problem of such knowledge was complicated by an additional unknown element - a global increase of the average annual temperature. It is clear that warming has become an unfavorable background for the spreading practice of man-made impacts, which increases the likelihood of ecosystem stability limit violation by them. Therefore, today, working on active protection, the main issue, the decision of which should guide all further steps in the proposed perspective, should be considered the assessment of critical damage possibility to a habitat, perceived as unacceptable one. We need the conviction that the risk of forced intervention in the natural dynamics by the influence of adverse events is less than the risk of non-interference by such ways. In terms of the constant threat increase from natural disasters and the imperfection of modifications and the corresponding reduction of the main resource that it provides to prepare the measures for an adequate response, the choice of the "lesser of two evils" requires the mutual complementation of national scientific potentials.³

At present, the amount of knowledge required for this comparison has not been obtained yet, but many countries use modulating techniques not only protect themselves from the hazards caused by the element, but even to get rid of the inconveniences caused by "bad weather." The ecosphere is not divisible by the principle of sovereignty, the balance of nature processes and the results of their technogenic changes do not have strict territorial boundaries. In the absence of a uniform supervision, the control actions that are different in the world in terms of capacity, nature, location and duration promise to become a significant factor in both local tension and global environmental and military problems. In the context of the latter, the cooperation on a self-declared topic is necessary and topical, primarily because geophysical technologies have a dual purpose.⁴ The disruptions that they are capable to produce can be very extensive, severe and long-term, and, therefore, deeply affecting life interests of states. That is, if it is about an effective tool, both explicit and a hidden force influence on the situation in countries and regions. Therefore, the modifying methods should be placed within the framework of the legal development, transfer and application mode guaranteed by authoritative international institutions.⁵



Its institutional base has only been manifested *in nuce*, but it seems that the role of the main guarantor will belong to the United Nations Security Council.⁶ Besides, according to international practice, the Security Council staff in this work is represented often by expert international organizations of broad representation, since their profile corresponds to the nature of the issues being addressed. In this area, with the leadership of the Council, supervisory and control functions in relation to the implementation of norms by treaty parties can also be entrusted to the Disarmament Commission, the United Nations Environment Program (UNEP), the World Meteorological Organization (WMO), the Food and Agriculture Organization of the United Nations (FAO), The World Health Organization (WHO) and some others.⁷

Modern international law, as the most important means of general stability maintaining, has not formed the normative basis of the regime for the safe development of geophysical technologies that meet the significance of the problem. Their use with military and other hostile purpose is not allowed only in part: "disarmament" provisions prohibit only the extreme case - the preparation or the conduct of a large-scale geophysical war (United Nations, 1976, p. 10). The subject of peaceful modification legal regulation, exacerbated by unprecedented climatic anomaly today, has not been satisfactorily developed yet.⁸

In order to develop a legally binding regime system on this poorly prepared foundation that protects against the threats arising from interference in natural processes a large normative, that is, joint, work is required, especially in the field of control measures and information obtaining on technical impact by each participant.⁹ Even in the presence of political agreement, which is currently out of the question, the creation of universal international legal norms in such a sensitive area for the states is a problematic and lengthy process. And if you still imagine with an effort that such cooperation begins today, then it will establish a "slippery" boundary (it is not possible to formulate in a treaty otherwise) of their peaceful use only in the near future for the "double" geophysical technologies that are used without a supervision now. Is this not "a futile precaution?"

WORRIES AND HOPES

The Third World Conference of the United Nations is somewhat optimized perhaps the outcome of the Hyogo travel guide and the perspective of the Sendai program. In order to draw attention to the growing tension in the actual situation and not to cause accusations of alarmism, it would be reasonable and sufficient to characterize the current situation with the author's assessments of a not justifying strategy, that is, the United Nations.

Twenty-five years after the proclamation of the International Decade for Natural Disaster Reduction, and 10 years since the Hyogo Framework for Action 2005-2015: Building the Resilience of Nations and Communities to Disasters was endorsed by the General Assembly, global disaster risk continues to accumulate faster than it is being reduced. Economic losses have reached an average of \$250 billion to \$300 billion a year, severely affecting stable economic growth in low- and middle-income countries and eroding development gains in vulnerable communities. (United Nations General Assembly, 2015, point 1).

The report of the UN Secretary-General at UN session of its General Assembly on the outcome of the International Strategy was started with poorly optimistic introduction. But the past period made the result programmed by the United Nations - a "significant" reduction of damage, - less realistic and because it complicated the nature of the world problem by strengthening its linkage to the other two ones. First, the ongoing increase of disaster number and the amount of damage they cause to population, economy, environment, as was reflected in the Secretary-General's text, is a steady growth of the barrier to sustainable development. Secondly, a clear correlation between the increase of natural emergency risk and the continuing temperature rise on the planet leads, step by step, to the recognition of the causal relationship between these juxtaposed phenomena. The strengthening of three topical issues mutual conditioning - disasters, development and adaptation - finally led the UN to the need of strengthening the elemental threat counteraction with a synergistic protective effect that is expected to be achieved by integrating the triad of the Organization relevant projects: the Sendai Framework, the development and agreement agenda on climate change.



Today it is clear that the unfavorable global trend will not be able to correct significantly by the used struggle potential. According to the report: "significant progress in spreading a culture of disaster risk reduction, *the international community is running to a standstill* (highlighted by me - S.T.), as economic losses grow and mortality remains stubbornly high in many parts of the world." (United Nations General Assembly, 2015, point 2). The desire of passengers and machinists to find a salutary path suggests the perspective that is encouraging by the evasion of the approaching danger as it seems now. It seems that together with anti-war motivation it can make geophysical technologies the subject of close political attention - both as the tool for the transformation of nature and as an object of arms control. Meanwhile, the implementation of not always "transparent" projects of natural process modifications causes serious concern about the ecological balance and overall stability. At that, for the time being, until the creation of a system of guarantees, the activity, which is already being carried out in many countries, can not be restrained into "insuperable force" of scientific and technological development or left to various research and technology centers this time due to "double" designation of development subject, that is, both peaceful and military one. Which is the first one?

CONCLUSION

The examples above prove that currently available means for realizing the strategy are not enough to reduce casualties and material damage, although the intention is there. What we have is not enough to correct a negative worldwide trend that has been present for the last few decades. Facts speak for themselves: the damage from disasters grows instead of reducing, which is the opposite of what is expected. The scale of this threat requires an adequate response: a global risk management system. Imposed by the dynamic of the trend within environment, this protective action is not only a factor but also a consequence of the integration of nations' material and intellectual resources, a trend within society. Leading large numbers of people towards set goals and objectives is the job of rules of conduct. They set more or less strict boundaries and thus make people behave in a more rational way. Face to a threat, society becomes more organized, which the law, as one of the forms of collective reason, reflects by creating norms cementing discipline and



responsibility. To be efficient, such norms must have a legal power. That is why we face the problem mentioned in the beginning (the lack of means): the strategy and its documents are advisory rather than compulsory, so there is no obligation to abide. Meanwhile, the purpose of international law is to set rules which countries agree to follow as mandatory, and thus to create uniform behaviour in this or that field. The problem is that each of the states taking part in the development of such rules has its own interests and is sovereign on its territory and in foreign policy. Therefore, there are serious side effects related to matters of sovereignty and different political motivation of the sides, as well as other obstacles on the way from abstract guidelines to actual measures.

On the global level, emergency regulations take a long time to form. This slows down development of multilateral relations of emergency response. For the moment, there is no satisfactory legal basis for cooperation in this field. Nor is there a mandatory behaviour pattern officially approved by the international community (United Nations General Assembly, 2008). The two operational conventions – Tampere Convention on the telecommunication resources of 1998 (United Nations, 2006) and Framework Convention On Civil Defense Assistance of 2000 (United Nations, 2004) – are short texts which only speak of some aspects of this vast topic and put an emphasis on non-interference in domestic affairs in the event of destabilisation. UN’s proclamatory guidelines will not have a binding character until they are recognized as customary practices or enshrined in law. Neither of these has happened yet.

The high priority issues mentioned above hinder the birth of explicit rules and regulations both on paper and in practice. One of the stumbling points is intervention into a country to save its population and ensure disaster recovery. When essential systems are damaged and there is no quick response from the authorities, an intervention can protect the people but is a threat to the government. Here we witness a clash of interests between a country’s population and its leaders. Despite the liberal supremacy of the individual’s benefit and the declared intention “to reducing loss of life, human suffering and damage to property and the environment caused by disasters” (United Nations, 2006), governments are more concerned about saving their sovereignty than about humanitarian needs. In this clash, obeying the international law becomes an optional burden for authorities who cherish the freedom of power above all. Any declaration similar to the one quoted above reposes on the consent of the



parties to only take this burden on condition of 'reasonable sufficiency' defined by '*salus patriae – suprema lex*'.¹⁰ This principle is currently indisputable in the global thought and in realist foreign policy. Hence the careful wording in the above mentioned conventions, for example, "The States Parties shall, when possible, and in conformity with their national law, reduce or remove regulatory barriers..." (italics added – **S.T.**) (article 9) (United Nations, 2006).

Experience shows that the universal framework of emergency response, limited to two conventions of 1998 and 2000, is not efficient without customary practice. It also proves that a specific disaster control institution should be further reinforced and improved (Ilyushchenko, 2010). UN resolutions on the subject and verdicts of top-level forums provide useful recommendations on how to resist the threat. However, in the times when 'considerable reduction of losses' becomes difficult, a more reasonable response to growing disaster risks is imperative. It is necessary to create a 'legal ground for emergency situations' with 'fully capable' compulsory regulations – principles, rules and standards. That is, the law needs to control vital international ties which matter to each country, to one extent or another, and thus encompass a wide range of subjects. For the moment, UN's campaign, which lasts for 30 years now, is lacking solid ground and fails to reach its repeatedly verbalized goal through 'soft' coordination. Time is the primal resource of any strategy. Nature is giving us time so that we can mobilize adaptive capacity of our society and economy, and UN is not using this resource in a rational way. However, current dynamics shows that the 'catastrophic' tendency will motivate decision-makers to reconsider their priorities and pay attention to the scale of this new global problem. That will make them intensify activities related to global risk management and develop a set of relevant mutual obligations, despite the "coronavirus defeat" of the concept of globalization. The influence of the state on the formation of a legal basis for this vital but still fragile component of the international security is the guarantee of successful promotion of national interests in future when a collective disaster defense system is formed.

ENDNOTES

1. In its resolution 64/200 "International Strategy for Disaster Reduction" issued on 21 December 2009, the United Nations General Assembly emphasizes "that disaster



- risk reduction, including vulnerability reduction to natural disasters, is an important cross-cutting element that contributes to the achievement of sustainable development" (United Nations General Assembly, 2010, preamble).
2. See the Section B. "Expected outcome" of Part II. "World Conference on Disaster Reduction: objectives, expected outcome and strategic goals" (United Nations, 2005, point 11).
 3. Including the expansion of information access and exchange possibility, carried out through the mechanisms provided by existing bilateral and multilateral international treaties, thematic communication platforms (including world technology banks, global systems of innovation and scientific development distribution).
 4. See Joint Statement of the Delegations of the National Academy of Sciences of the USA and the Russian Academy of Sciences on Dual-Use Technologies 1994 (Kanaev, 1999, pp. 34-60).
 5. See the Preamble of the "Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Techniques" issued on 10 December 1976 (ENMOD Convention) (United Nations, 1986).
 6. See Chapter V of the Charter of the United Nations and the points 3-5 of the Article V of the ENMOD Convention.
 7. The idea of UNEP, WMO and FAO involvement as the experts of dispute resolution over the nature of (peacefully or hostile) specific effects produced on the environment, was of interest at the Disarmament Conference (1976) (Vavilov, 1988, p. 176).
 8. In particular, the possibility of an agreement conclusion on the peaceful use of influence means on the natural environment, the document that was raised for discussion even when the draft of ENMOD Convention was considered. Although these means are applied by many states.
 9. See point 2 of the article III, and the article V of the Convention on the Prohibition of Military or Any Other Hostile Use of Environmental Modification Measures issued on 10 December 1976 (the ENMOD Convention).
 10. The welfare of the state shall be the supreme law (Latin).

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