Challenges of the Sendai Framework for Disaster Risk Reduction Adaption in Russia

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Abstract. The article discusses a number of difficulties associated with adaptation and implementation of the main targets of the Sendai Framework for Disaster Risk Reduction 2015-2030 in Russia. A review of Russia's responsibilities for the implementation of the PSA shows that they were fully transferred to the Ministry of the Russian Federation for Civil Defense, Emergencies and Elimination of Consequences of Natural Disasters (EMERCOM of the Russian Federation). An audit of existing research on this topic is being carried out, in particular, a massive block of foreign and domestic works of scientists and practitioners. An analysis of the documents of the electronic fund of legal and regulatory documents of various governmental bodies directly or indirectly involved in the adaptation of the Sendai Framework for Disaster Risk Reduction also was carried out. It was concluded that there is no uniform informing of the population within the EMERCOM system of the Russian Federation in southern Russia despite a functioning system for monitoring and forecasting emergencies in Russia based on Ministry of Emergency Situations and Roshydromet.

1. Introduction
This publication is a continuation of a study on the impact and relationship of natural hazards and the formation of disaster policy in Russia at the country level [1]. However, at the present stage, the growth in the number and scale of catastrophic events, as well as damage from them, are clearly nonlinear, and often insignificant negative impacts can lead to catastrophic consequences. Risk management relies on activities to identify risk, predict the development of hazardous processes and phenomena, as well as possible accidents, and activities to develop management decisions to reduce the risk of emergency situations.

The most general approach in predicting the development of hazards and their damaging effects on the population, objects and territories is a statistical analysis of time series of parameters and data on accidents for the subsequent construction of trend dependences of the development of hazardous processes and their consequences. But due to the nonlinearity of the impact of damaging factors according to trend models, it is not always possible to predict the consequences of the impact of negative factors and the degree of damage to the object and the adjacent territory. Therefore, the toolkit based on the analysis of statistical data needs to be supplemented with other methods of analysis and forecasting of the development of both emergency sources and the assessment of their consequences, taking into account the state of economic and infrastructure facilities, systems of...
engineering protection of populations and territories. In addition, the growing threats of a transboundary, global nature require joint efforts to predict and prevent natural and man-made emergencies at the international level, which entails the need to bring national risk assessment systems to uniform standards for assessing and measuring risk indicators. In this direction, it is advisable to get acquainted with some available foreign and domestic approaches to disaster risk management within the Sendai Framework for Disaster Risk Reduction 2015-2030.

2. Research methodology
The article contains qualitative method aiming at the critical analysis of essential sources number devoted to the Sendai Framework for Disaster Risk Reduction, specifically its adaption in Russia. The study was tested within the framework of the XVI Annual Youth Scientific Conference "South of Russia: Challenges of Time, Discoveries, Prospects" in Rostov-on-Don in April 2020 at the Southern Scientific Center of the Russian Academy of Sciences. The research problem was identified, which is revealed by many authors - the insufficient efficiency of the Sendai Framework implementation in the Russian Federation and the partial absence of practical useful results from its realization [2].

3. Sources
The research is based on the analysis of the electronic fund of legal and regulatory documents of various governmental bodies, directly or indirectly involved in the adaptation of the Sendai Framework for Disaster Risk Reduction. In particular, they include the Ministry of the Russian Federation for Civil Defense, Emergencies and Elimination of the Consequences of Natural Disasters (EMERCOM of the Russian Federation), the Ministry of Health, the Ministry of Finance, etc.

Special attention is paid to the study of official documents of the UN and the Ministry of Emergencies: technical papers issued by the United Nations Climate Change Secretariat [], state reports on the state of protection of the population and territories of the Russian Federation from natural and man-made emergencies for several years, passports of the target programs of the Ministry of Emergencies of the Russian Federation for 2012-2015, preceding the process of adaptation of the Sendai Framework in Russia. The development of this topic was carried out by Russian scientists, including M I Faleev [4], a group of researchers led by I Yu Rodionova [2], A A Ryzhenko and N Yu Ryzhenko [5], I Yu Oltyan, T L Lyakhovets, R L Galiullina [6], R V Knaub [7], N V Bugakova [8], I T Arabidze and I Yu Rodionova [9], N V Kropotova [10], S A Bockeria and V V Plyushikov [11] and others.

At the same time, many domestic studies reflect to a greater extent the problems of the Sendai Framework implementation in Russia, emphasize exclusively its country level of functioning and significant difficulties in adapting a number of target tasks to the Russian space.

Among foreign researchers, it is worth highlighting: I Kellman [12] and M H Glantz [13], E Carabine [14]. Though, L Pearson and M Pelling [15] paid attention to the interaction of science and expert practitioners in the framework of the Sendai Framework implementation, M Wahlström [16], V Marchezini [17], M Mizutori [18] and others. The key work of foreign authors was the joint research by J Weichselgartner and P Pigeon [19], where the authors argue that despite the importance of the critical link between the Sendai Framework and knowledge, many questions posed more than a decade ago have not yet been fully answered. The authors also emphasize that the role of knowledge requires attention in research, policy and practice of the Sendai Framework. They urge scientists dealing with hazards, vulnerabilities, risk and disasters to integrate knowledge into their research.

4. Findings and discussions
The global approach to the management of natural and man-made disaster risks is based on the Sendai Framework for Disaster Risk Reduction 2015-2030 developed under the auspices of the United Nations, adopted at the UN World Conference on Disaster Risk Reduction on March 14-18, 2015 in Sendai (Japan). The priority areas for disaster risk reduction, as endorsed in the Sendai Framework, are: understanding disaster risk; improving the institutional and legal framework for disaster risk
management; investing in disaster risk reduction to build resilience; improving disaster preparedness to ensure effective response in recovery, rehabilitation and reconstruction activities. In the Russian Federation, the implementation of the Sendai Framework is carried out on the basis of the adopted national obligations and the Resolution of the Federation Council of the Federal Assembly of the Russian Federation No. 70 (February 26, 2016). Russia's participation in the Sendai Framework suggests that the issues of reducing the vulnerability of citizens are now a priority state task within the framework of national security.

A review of Russia's responsibilities for the implementation of the PSA shows that they were fully transferred to the Ministry of the Russian Federation for Civil Defense, Emergencies and Elimination of Consequences of Natural Disasters (EMERCOM of the Russian Federation). As a result of the analysis of the array of official documents and its assessment, there are significant difficulties in meeting the global targets (GTS) at the country level of the Russian Federation. For example, GT (A) provides for a significant reduction in mortality due to disasters per 100 thousand people. While this figure is reflected annually in the State of National Security and Measures to Strengthen it, the situation is different with the number of people missing as a result of disasters, as well as taking into account the number of missing persons. The calculation of these indicators is carried out by the Ministry of Internal Affairs of Russia, and separate statistics on missing persons in emergencies are not kept. In addition, the Russian Federation opposed the use of this indicator in the Sendai Framework, since it has a significant amount of uncertainty.

GT (B) is focused on significantly reducing the number of people affected. Its implementation also has difficulties in adapting to Russian conditions, not only in the field of statistics, but also in understanding the very term "injured in an emergency", which is defined in the national standard (GOST R 22.0.02-2016) [20] and differs from that defined in the UN glossary. At the same time, the official statistics in the Russian Federation do not take into account separately a number of other indicators that are important for the implementation of GT (B) - injured or suffered from diseases as a result of disasters; people whose livelihoods have been affected or destroyed by disasters. It is possible that this information is aggregated by the Ministry of Health, the Ministry of Finance, and directly by the Ministry of Emergencies.

GT (C) provides for the reduction of direct economic losses from disasters. It also reveals a shortcoming in the implementation of the Sendai Framework in the Russian Federation due to the fact that data on damages are provided directly by the constituent entities of the Russian Federation, and there is no uniform methodology for collecting and processing. The current "Unified interdepartmental methodology for assessing damage from emergencies of a man-made, natural and terrorist nature, as well as classification and accounting for emergencies" [21], approved in 2004, has lost its relevance and needs to be revised.

GT (D) suggests a significant reduction of damage caused by disasters to critical infrastructure. Indicators in the Sendai Framework are the number of health facilities destroyed or damaged by disasters; the number of educational institutions destroyed or damaged by disasters; the number of other critical elements and infrastructure facilities destroyed or damaged as a result of disasters is not tracked in the RF. It is highly likely that such data is not collected or analyzed at all.

There are no local disaster risk reduction strategies at the legislative level, and their development is not planned. A number of aspects of disaster risk reduction are contained in the action plans for the prevention and elimination of natural and man-made emergencies at the regional level. The problem of organizing public access to understandable, practical information and assessments related to disaster risk at the national and local levels has not been resolved. According to official data, within the framework of the Sendai Framework, a national network was built on the basis of the Ministry of Emergency Situations of the Russian Federation, united almost 90 local crisis centers, 2 thousand organizations for monitor and forecast emergency situations.

GT (E) is associated with a significant increase in the number of countries that have adopted national and local disaster risk reduction strategies. In this case, the Ministry of Emergency Situations of Russia, on the development of strategic planning documents in the field of protecting the population
and territories from emergencies, has undertaken to develop precisely the key elements of the disaster policy until 2030, in particular: Fundamentals of the state policy of the Russian Federation in the field of protecting the population and territories from emergencies until 2030, Strategies for the development of civil defense, protection of the population and territories from emergencies, ensuring national security and safety of people at water bodies for the period until 2030.

GT (F) is focused on significantly expanding international cooperation and allocating the total volume of official international support. However, the situation is different with GT (G). The challenge is to develop early warning systems. A system for monitoring and forecasting emergencies operates in the Russian Federation, based on the agreement of the Ministry of Emergencies of Russia and Roshydromet on cooperation in solving problems in the field of forecasting, prevention and elimination of emergencies. An analysis of the practical use of this system on the example of the coastal part of the Southern Federal District of Russia led to the following conclusions.

In the Rostov region, 527 warnings about adverse hydrometeorological events were recorded from August 27, 2013 (the first date with available information) until May 30, 2020;

There is no identical information for the Krasnodar Territory, access is only possible to the daily updated content "operational forecast", which does not have a warning function for the population. According to the keywords "natural disaster" on the corresponding website, only one informational message was revealed, dedicated to the commemoration of the earthquake in the village of Neftegorsk ("Today, 25 years ago, an earthquake occurred in the village of Neftegorsk" dated May 27, 2020, 12:33);

In the Republic of Crimea, there were 821 "storm and emergency warnings" recorded since July 7, 2014 (the first date with available information).

Thus, the lack of development of a unified system of informing the population within the system of the Ministry of Emergencies of the Russian Federation in the district was revealed. This entails the corresponding consequences for the information and coverage of natural hazards and emergencies in the media (there is also no system, the advantage is for the federal media, which partially reflect information about the most destructive natural hazards).

5. Conclusions
A critical analysis of foreign studies on the specifics of the Sendai Framework for Disaster Risk Reduction 2015-2030 made it possible to determine the value of integrating academic knowledge and its integration in the practical sphere. Domestic studies, on the contrary, mainly demonstrate the problems of the Sendai Framework implementation in Russia, emphasize exclusively its country level of functioning and significant difficulties in adapting a number of global targets. The Framework implementation takes place "from top to bottom", with a number of difficulties in the form of inconsistencies, including the terms used in the UN and in Russia. As a result of the research carried out, a problem was identified - the insufficient efficiency of the Framework implementation in the Russian Federation and the partial absence of practical useful results from its implementation []. There is almost no information on the implementation of the Sendai Framework in the regions of the Russian Federation.

6. References
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