



CLIMATE CHANGE AND RUSSIA

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By Vladimir Otrachshenko, Leibniz Institute for East and Southeast European Studies (IOS) and Ural Federal University, and
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CERGE-EI, and Ural Federal University.
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Can Russia Afford Climate Change?

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Abstract:

Given its resource richness, large territory, and population, Russia is a key partner in global efforts on mitigating the adverse impacts of climate change. The majority of Russians agree that the Earth's climate has become unpredictable and global warming will have a negative impact on Russia. Extreme temperature events lead to social, economic, and health consequences. These consequences might be partially mitigated through encouraging low carbon development and energy-efficient production, improving regional economic conditions, and providing job opportunities. However, it remains an open question whether the Russian population and the Russian economy can adapt to the steadily increasing influence of global warming.

Russia and the Paris Climate Agreement

On 21 September 2019, Russia approved the 2015 Paris Climate Agreement. This agreement sets a long-term goal of limiting the global temperature increase to 2°C until 2030 and fosters low carbon technological development. Each country that formally joined the Agreement commits to individually set, fulfill, and regularly report greenhouse gas emissions targets to keep them below the pre-industrial level by 2030. Russia's self-specified target is about 25–30% below the emissions level in 1990. Russia's approval of the Paris Climate Agreement provides an important contribution to the global efforts on mitigating the adverse impacts of global warming, since the country is currently the fourth largest emitter of greenhouse gases globally and the largest emitter that has not formally adopted the Agreement until now (see Figure 1 on the countries' shares in fossil CO₂ emissions in 2017).

The Paris Climate Agreement is also an important step toward the country's sustainable development, since global warming is becoming an acute problem for Russia. According to the 2018 report by the Russian Federal Service for Hydrometeorology and Environmental Monitoring, the annual temperature growth in Russia over the period 1976–2018 is 2.5 times higher than the global average temperature growth (0.47°C per 10 years in Russia vs. 0.17–0.18°C per 10 years in the rest of the world).¹ Moreover, according to a recent opinion poll by the Russian Public Opinion Research Center (<https://wciom.com/index.php?id=61&uid=1433>), a majority of Russians agrees that the global climate has become unpredictable, global warming will have a negative impact on

Russia, and such changes are due to human activities (see Table 2, Table 3, and Figure 4).

While the targets set by Russia within the Paris Agreement are feasible and may indeed limit the temperature increase in Russia to 1.5–2°C by 2030, experts agree that those targets might be too low to prevent further temperature increases by the end of the 21st century. According to the Voeikov Main Geophysical Observatory, the oldest scientific meteorological institute in Russia, the predicted increase of surface air temperature by the end of 21st century is up to 2.7°C in the south of Russia and up to 4.1°C in the northern parts of Russia. The predictions of the Voeikov Observatory also suggest that the amount of precipitation will substantially increase on the whole territory of Russia, especially during winter. Climate change will lead to more frequent severe floods, storms, and thunderstorms, causing property and harvest losses, and forced migration.

Thawing permafrost and the increased frequency of extreme temperature events, both hot and cold, are especially problematic physical consequences of climate change in Russia given that neither population, nor infrastructure are prepared for such changes. For instance, thawing permafrost in the Arctic will not only raise the sea level, but will exacerbate methane releases, contributing to global greenhouse gas emissions. Moreover, in the northern regions of Russia, buildings are constructed on permafrost, and its thawing may lead to extra difficulties with infrastructure maintenance. Additionally, hot and cold extreme temperature events will foster social, economic and health consequences, as elaborated in greater detail below.

¹ Russian Federal Service for Hydrometeorology and Environmental Monitoring: A report on Climate Features on the Territory of the Russian Federation in 2018, Moscow 2019.

Consequences of Global Warming for Population Health

Beyond physical changes in the environment, it is important to consider the socioeconomic consequences of global warming and extreme temperatures. In the economics literature, mean daily temperatures above 25°C (i.e. in Russia, outdoor temperatures may vary significantly during the course of a day, for instance, from 15°C at night to 35°C during the afternoon) are considered extremely hot, since they induce physiological adjustments in the human body and influence daily activities, labor productivity, and the health condition of individuals. Extremely cold temperatures also affect human health, but the definition of extreme cold may vary from place to place. In the case of Russia, mean daily temperatures below -23°C are considered extremely cold, since according to the data from the Russian Federal Service for Hydrometeorology and Environmental Monitoring, they constitute no more than 5% of all temperature observations. Yet, such temperatures are experienced in all regions of Russia.

Russia presents an interesting case to study the social and economic consequences of extreme temperatures, as the country has a wide spectrum of experienced daily temperatures from -60°C to 35°C (see Figure 2). In 2017, the Russian Public Opinion Research Center conducted a representative survey regarding the influence of weather anomalies on the life of Russians (<https://wciom.ru/index.php?id=236&uid=116322>). The results suggest that a majority of respondents (58%) feel the influence of weather anomalies and health-related problems due to extreme temperatures (see Figure 3). The consequences include headaches and dizziness, heart diseases and unhealthy blood pressure, and apathy, among others. Such responses are in line with epidemiological literature that states that ambient temperatures outside the range of 20–22°C are not comfortable for the human body and induce thermoregulation via changes in blood pressure, heart rate, and bronchoconstriction. Recent studies based on data from the Russian regions in the period 1989–2015 suggest that both extremely hot and extremely cold temperatures lead to an increase in mortality rates, including total mortality rates and mortality from cardiovascular diseases.² Notably, the economically active, middle-aged population suffers the most. For instance, one day with mean temperature above 25°C increases the total mortality rate by 0.12% among the 30–39 year-old age group, which consti-

tutes 126 deaths corresponding to a 3.79 mln. USD loss, which is about 15.1% of daily expenditures on medicine in Russia (in 2014 prices). While the impact might seem low, one should remember that these deaths are the result of a single day and the number of such days is expected to grow with global warming.

The reports of the Intergovernmental Panel on Climate Change (IPCC) regularly suggest that both the frequency and the intensity of extreme temperatures will increase in the future. Thus, when analyzing the impact of extreme temperatures on socioeconomic outcomes such as population health, productivity, economic growth etc., it is important to distinguish the impact of single extreme temperature days from the impact of heat waves and cold spells, that is several consecutive days with extremely hot/cold temperature. A recent study underscores that in Russia, both consecutive extremely hot and consecutive extremely cold days are harmful for the population's health and lead to a significant increase in mortality.³

Apart from increasing mortality due to natural causes, extremely hot days may also exacerbate violent behavior and increase violent mortality rates. Epidemiological research suggests that this happens because extreme heat increases the levels of hormones in humans, in particular, the level of testosterone, adrenaline, and noradrenaline. These hormones may trigger aggressive and violent behavior. Research shows that in Russia, violence against women is higher on extremely hot days, and especially over weekends.⁴ In the absence of official statistics on domestic violence and against the backdrop of the recent decriminalization of many domestic violence acts, this finding sheds additional light on factors contributing to domestic violence. Another finding is that the impact of hot temperature days might be mitigated through improving regional economic conditions, regulating alcohol consumption, and providing job opportunities.

A central question in studying the impact of extreme temperature events is whether the population can adapt to mitigate the impact of hot and cold weather. Due to a lack of data for a sufficiently long span in Russia, it is hard to analyze this question directly. However, indirect evidence suggests that in colder regions, in which the population faces hot temperatures on average less frequently, such temperatures have a more harmful effect on mortality, while in hotter regions people can more easily adapt to such temperatures and suffer less. On the other hand, the impact of extremely cold days is more pronounced in hot regions

2 Otrachshenko, Vladimir; Popova, Olga; Solomin, Pavel: Health Consequences of the Russian Weather. *Ecological Economics* 132, February 2017, 290–306.

3 Otrachshenko, Vladimir; Popova, Olga; Solomin, Pavel: Misfortunes Never Come Singly: Consecutive Weather Shocks and Mortality in Russia. *Economics and Human Biology* 31, September 2018, 249–258.

4 Otrachshenko, Vladimir; Popova, Olga; Tavares, Jose: Extreme Temperature and Extreme Violence across Age and Gender: Evidence from Russia. Centre for Economic Policy Research (CEPR) Discussion Paper No. DP13989, September 2019.

and less pronounced in cold regions. This suggests that to some extent, the Russian population is able to cope with the current number and frequency of extreme temperature events. However, it remains an open question whether the Russian population and the Russian economy can adapt to the steadily increasing influence of global warming.

Social and Economic Costs

One way to obtain the economic cost estimates due to extremely hot and cold days is to measure the foregone earnings of individuals based on statistics measuring average wages in a region and average years left before retirement for a person of a given age group (see Table 1). Such estimates for Russia show that a single day with an average temperature above 25°C may lead to more than a 10 mln. USD loss (in 2014 prices). This is a substantial cost that constitutes about 0.28% of daily GDP in Russia and is incurred because persons who could have worked for an average wage until retirement forego those earnings due to premature death before retirement. This is an average estimate of economic costs that may increase depending on the average impact of a single hot day on mortality in different age groups, the number of such days, average regional wages, and the retirement age.

The economic costs incurred due to the adverse impact of hot days on mortality represent only a lower bound of overall economic costs of climate change for the Russian economy. Apart from the effects on mortality, extreme weather events will also lead to decreased labor productiv-

ity, as suggested by recent studies in economics. From this perspective, lower labor productivity due to the increasing number and frequency of extremely hot days will also inevitably lead to lower economic growth. According to a report on macroeconomic consequences of climate change in Russia by the Russian Federal Service for Hydrometeorology and Environmental Monitoring, climate change may also disproportionately affect the development and dynamics in different sectors of the Russian economy, leading to a need for restructuring daily operations to adapt to the environmental changes.⁵ Yet, such changes can also be positive. For instance, global warming will lead to a shorter heating season in some parts of Russia that leads to lower energy consumption, implying lower greenhouse gas emissions, an expansion of land areas suitable for agriculture, agricultural productivity growth, and more opportunities for water transport development due to longer seasons suitable for navigation. Moreover, given its large forest territory, Russia also has a strong potential to absorb global greenhouse gas emissions. However, the adverse consequences of climate change are still likely to outweigh the benefits.

Overall, given its resource richness, large territory, and population, Russia is a key partner in finding a solution to climate change. Whether Russia can afford climate change remains to be seen. Low carbon economic growth and increased energy efficiency have to be encouraged and given priority in the national strategic development plan.

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Further Reading

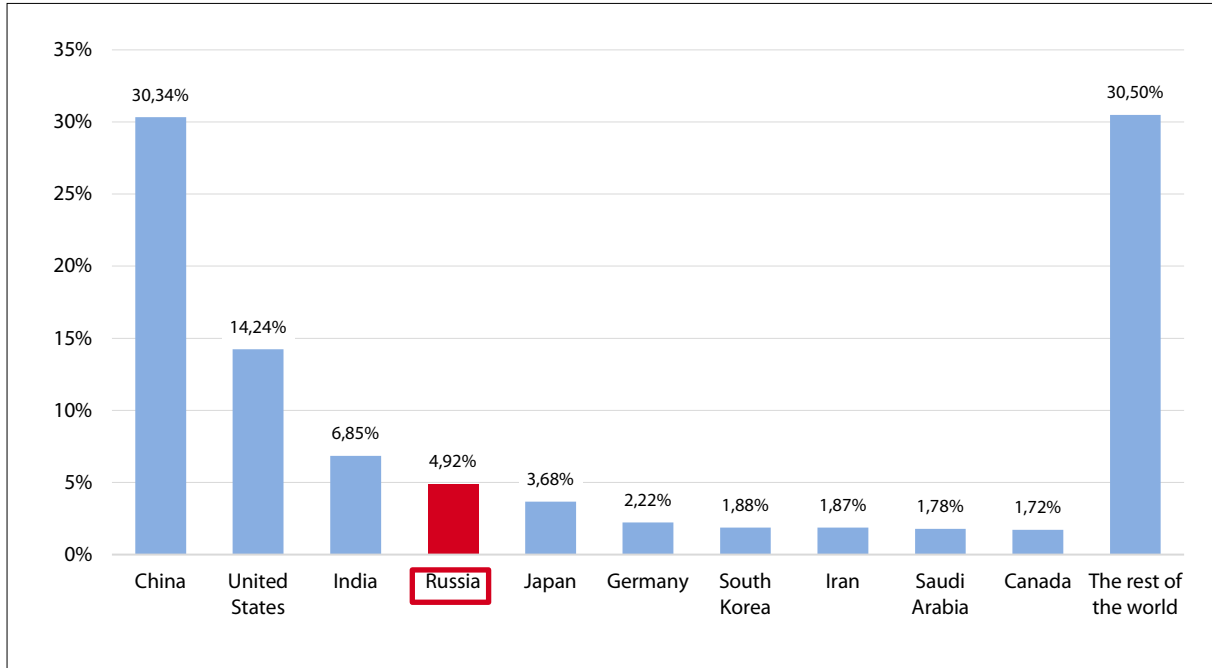
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5 Katsov, V. et al.: *Macroeconomic Consequences of Climate Change in Russian Federation until 2030 and beyond*, Moscow 2011.

STATISTICS

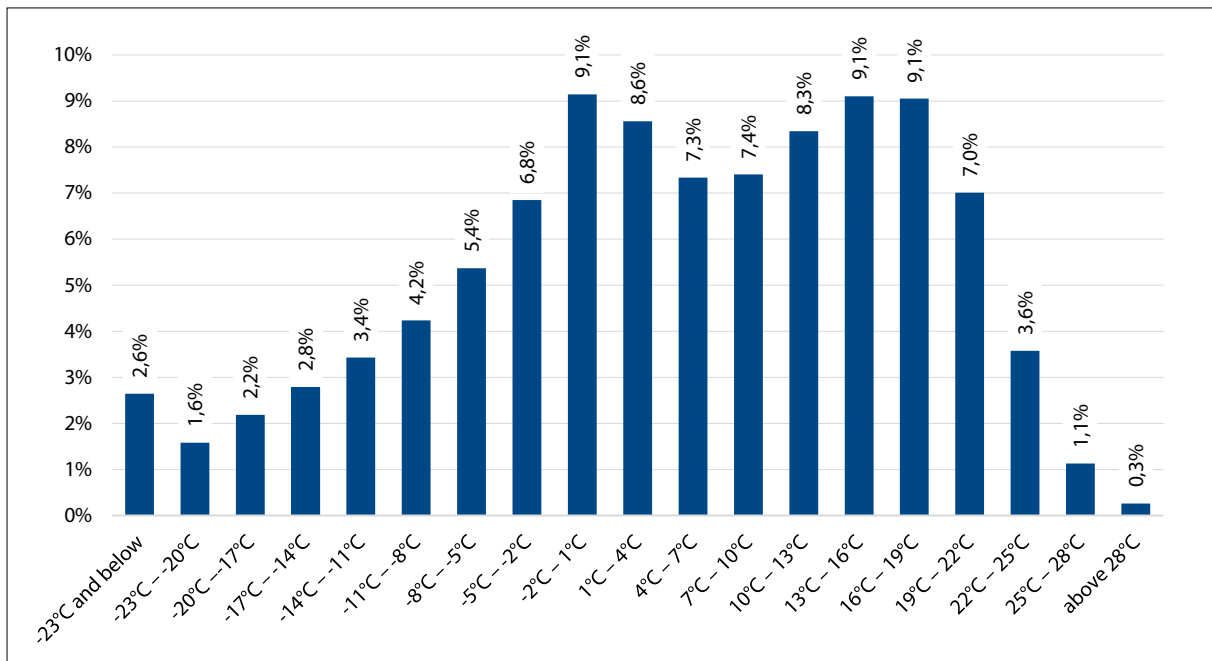
Climate Change in Russia

Figure 1: Countries' Shares in Fossil CO₂ Emissions in 2017



Source: Authors' construction based on Muntean, M., Guizzardi, D., Schaaf, E., Crippa, M., Solazzo, E., Olivier, J.G.J., Vignati, E.: Fossil CO₂ emissions of all world countries – 2018 Report, Publications Office of the European Union, Luxembourg 2018, doi:10.2760/30158.

Figure 2: Frequency of Days with Specific Mean Daily Temperature in Russia over 1989–2014



Source: Otrachshenko, Vladimir; Popova, Olga; Solomin, Pavel: Misfortunes Never Come Singly: Consecutive Weather Shocks and Mortality in Russia. *Economics and Human Biology* 31, September 2018, 249–258, DOI: <https://doi.org/10.1016/j.ehb.2018.08.008>

Table 1: The Estimated Economic Cost of One Day above 25°C in Russia

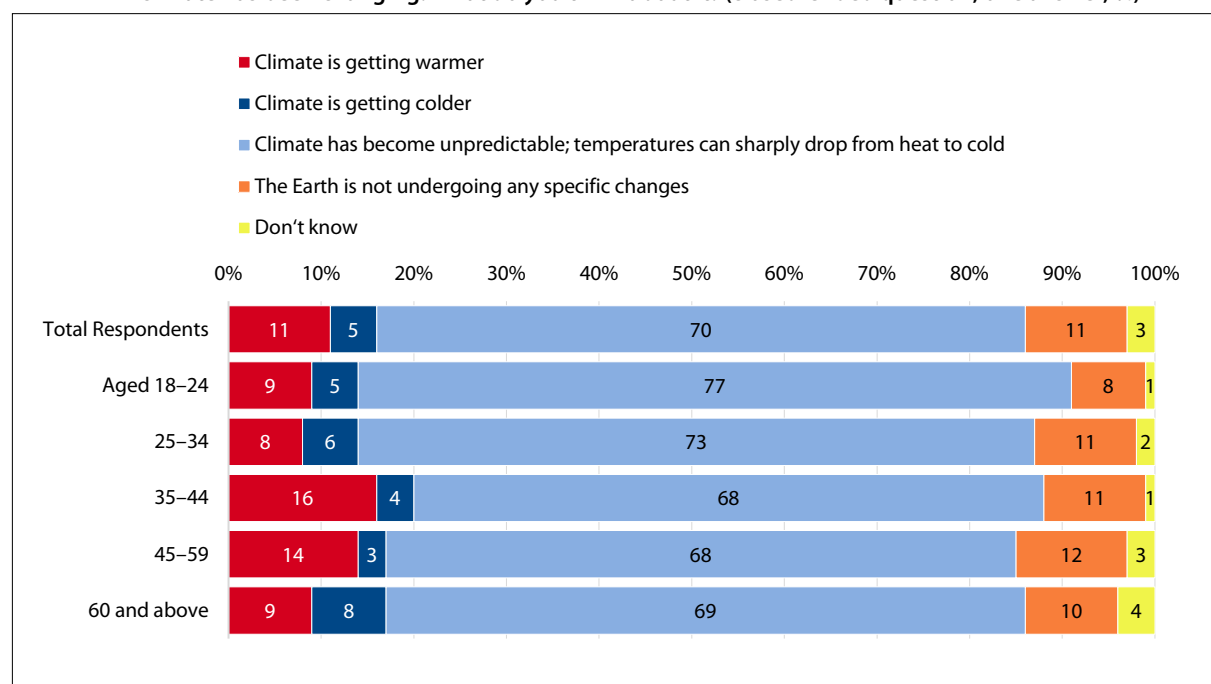
Age groups	Estimated number of deaths			Economic cost in mln. USD		
	All-causes	Cardiovascular	Respiratory	All-causes	Cardiovascular	Respiratory
20–29	41	1	0	1.32	0.03	0.01
30–39	126	16	2	3.79	0.50	0.05
40–49	158	48	4	3.53	1.08	0.10
50–59	227	106	10	1.61	0.78	0.07
60–69	160	111	6			
70+	593	721	4			
Total				10.25	2.36	0.22

Notes: The number of deaths due to all causes, cardiovascular diseases, and respiratory diseases is based on the estimated impact of one day above 25°C on mortality due to respective cause. The economic costs are estimated based on average regional wages, the number of years until retirement for a particular age group, and the estimated number of deaths. For estimation details, see the original source. Exchange rate is 1 USD=58.57 Russian Rubles (31 December 2014).

Source: Otrachshenko, Vladimir; Popova, Olga; Solomin, Pavel: Health Consequences of the Russian Weather. *Ecological Economics* 132, February 2017, 290–306, DOI: <https://doi.org/10.1016/j.ecolecon.2016.10.021>.

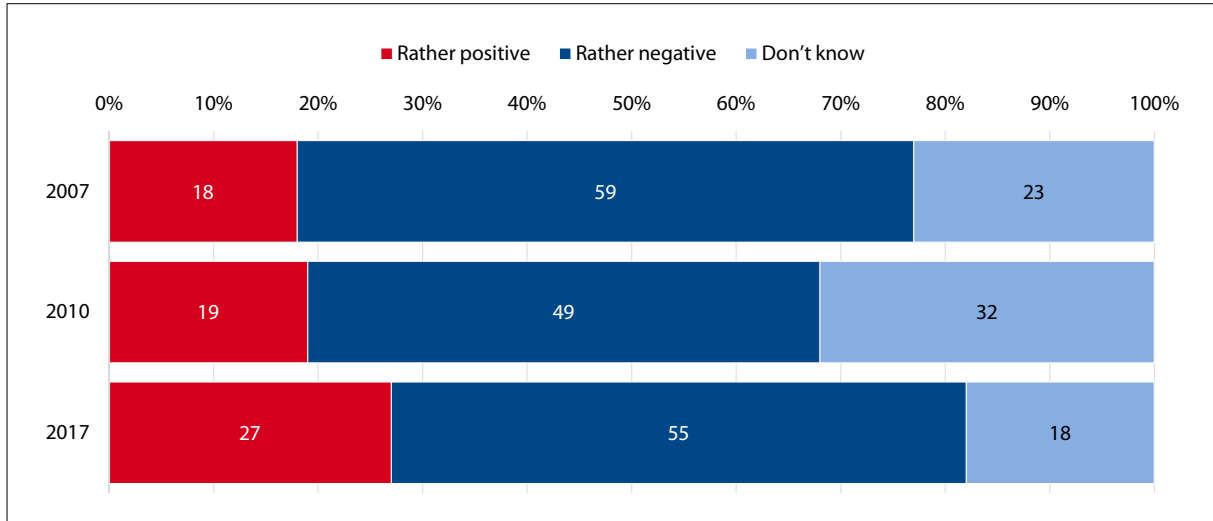
OPINION POLL

Russian Opinions on Climate Change 1

Figure 1: Opinion of Russians Regarding Climate Change: Many people think that over the recent years the Earth's climate has been changing. What do you think about it? (closed-ended question, one answer, %)

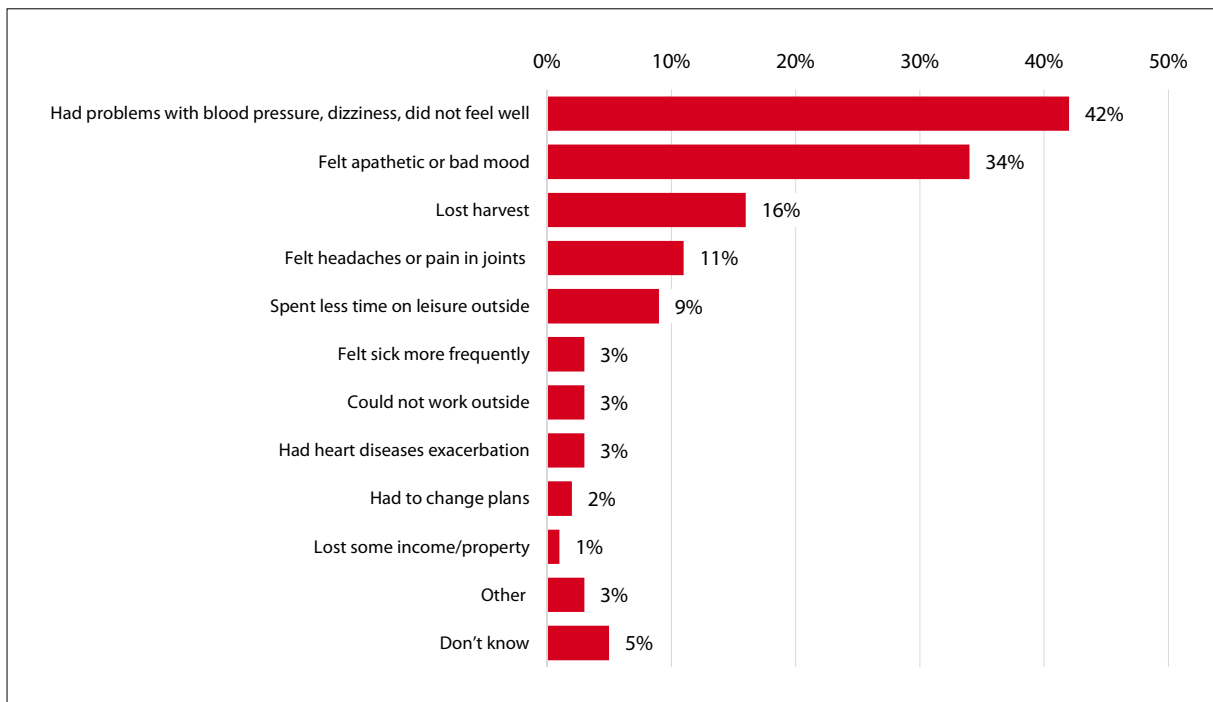
Source: representative opinion poll by Russian Public Opinion Research Center, July 16–17, 2017, N = 1200 respondents aged 18 and older, published July 24, 2017, <https://wciom.com/index.php?id=61&uid=1433>

Figure 2: Opinions Regarding the Impact of Global Warming on Russia: In your opinion, will global warming have positive or negative effects on Russia? (closed-ended question, one answer %)



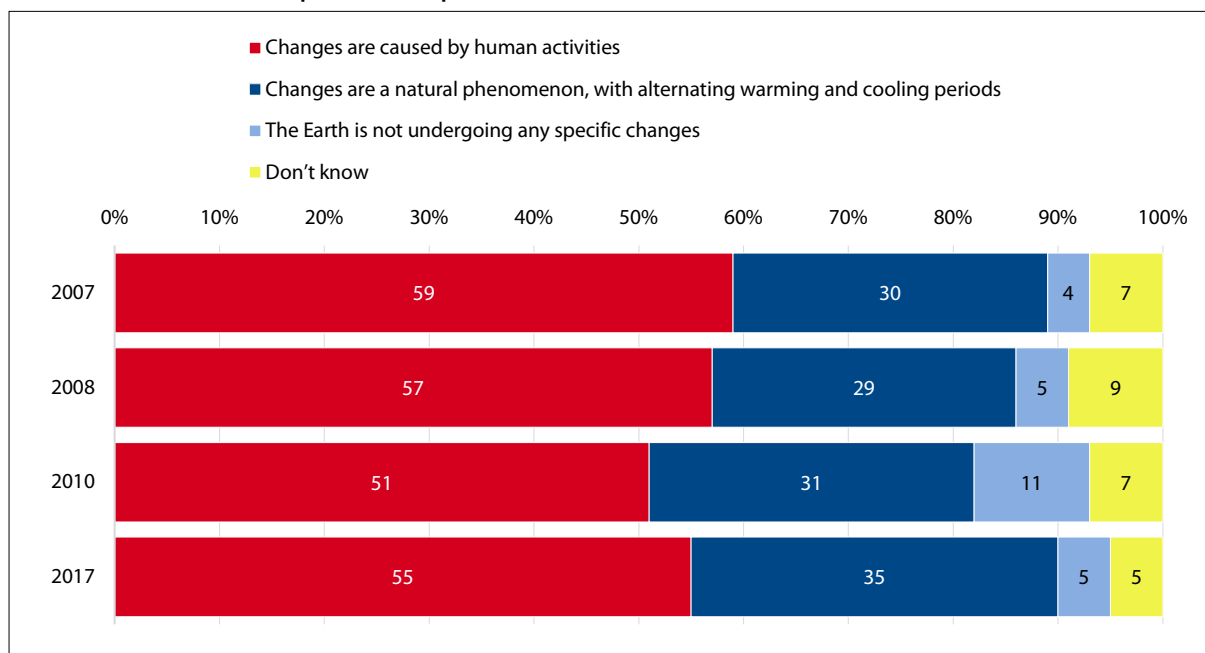
Source: representative opinion poll by Russian Public Opinion Research Center, July 16–17, 2017, N = 1200 respondents aged 18 and older, published July 24, 2017, <https://wciom.com/index.php?id=61&uid=1433>

Figure 3: How Did the Unusual Weather Affect You? (open questions, no more than three answers, percentage of respondents who agreed with the statement that the weather during this summer [2017] was anomalous and that they were affected by the weather)



Source: representative opinion poll by Russian Public Opinion Research Center, July 16–17, 2017, N = 1200 respondents aged 18 and older, published July 19, 2017, <https://wciom.ru/index.php?id=236&uid=116322>

Figure 4: Opinion of Russians Regarding the Causes of Climate Change (closed-ended question, one possible answer, %)



Source: representative opinion poll by Russian Public Opinion Research Center, July 16–17, 2017, N = 1200 respondents aged 18 and older, published July 24, 2017, <https://wciom.com/index.php?id=61&uid=1433>

ANALYSIS

Talking about Climate Change in Russia

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Abstract:

Despite Russia's significant contribution to global greenhouse gas (GHG) emissions and its vulnerability to climate change consequences, climate change discourse at the national level has been limited and delayed. While some positive developments can be observed within various parts of Russia's society, climate change continues to struggle to take centre stage in state policy.

Setting the Scene

On 23 September 2019, Russia ratified the Paris Agreement on climate change. Like other moves the Russian government has made with regard to climate change politics, this step received mixed reactions. On one side, it is undeniably a positive step toward Russia's contribution to the climate change regime. On the other side, it is disputable how big this step is. Russia, the fourth largest GHG emitter in the world, one of the largest gas

and oil exporters, and a country with one of the most extreme temperature spreads, has often been perceived as a reluctant participant in global efforts to fight climate change. This image results from its modest commitments to climate mitigation policy. For instance, according to the Paris Agreement, Russia volunteered to reduce emissions to 25%–30% below the baseline levels of 1990 by 2030, which in reality does not translate into significant decarbonisation efforts. Due to the

economic and political collapse after the Soviet Union's dissolution, Russia experienced a substantial decline in industrial activity and, subsequently, GHG emissions to the extent that even 27 years later Russia was still 32% below the baseline. Russia maintains this performance despite its dependence on the fossil fuel industry, which continues to have close ties to the national government. However, Russia is also one of the places most vulnerable to the adverse effects of climate change, with average temperature increases 2.5 times greater than the global average, a situation which has already translated into some severe natural abnormalities, including devastating wildfires and catastrophic flooding in Siberia resulting in human and economic losses, as well as destruction of local infrastructure and eco-systems. The contrasts in the contextual setting for Russia's climate policy correspond with the conflicting discourses that have evolved around climate change among various parts of society and among the various actors addressing climate change mitigation and adaptation processes.

Media Dimension

The media play an important role in the way we perceive climate change risks as they discuss complex scientific concepts and political decisions and help us to make sense of how global temperature increase will affect our everyday life. In Russia media coverage of climate change has been characterised by a relatively low level of attention to the issue (compared to its Western counterparts) and, to the extent that there is coverage, a focus on the state's position on the topic. Our comprehensive analysis of climate change press coverage over a couple of decades has also shown that the economic situation has a substantial impact on media attention to the problem. When the economic situation is worsening, less attention is paid to climate change, whereas when the economy is in recovery, research on climate change and Russia's climate commitments are more likely to be discussed in the media (Boussalis, Coan and Poberezhskaya, 2016).

The longitudinal study cited above also shows that in the Russian case, newspaper variables such as newspaper ownership structures or political leanings have a lesser impact on the coverage of climate change than the overall economic situation. This finding differs from the results of media analysis in other countries which demonstrate 'a more general trend of left-leaning news outlets being much less sympathetic to sceptics than right-leaning ones' (Painter, Kristiansen, Schäfer, 2018). While this result is related to the blurry line between Russia's political left and right, it also reemphasises the importance of Russia's domestic politics in defining popular discourse on climate change, to the extent that party affiliations or political ideologies do not mean as much

in Russia and thus have a weak impact on people's perception of this environmental problem (unlike in the USA, for example).

Reviewing media discourse on climate change in Russia, one should consider that to date, limited research has been conducted which takes into consideration local media coverage and therefore, acknowledges regional variations in climate change discourse. A pioneering study by Beuerle (2018) shows that discrepancies can be found between different regions (as is demonstrated by the differences in the coverage in Kamchatsky Krai and Vladivostok). Here a range of factors impact whether climate scepticism dominates the conversation, including local biodiversity, engagement of the scientific community, and exposure to international events. Furthermore, Russia has been experiencing fast growth in internet penetration and access to mobile technologies and is following the general trend of a widespread rise in new media.

The analysis of climate change discussion in Russian social media shows that freedom of the internet has worked to the advantage and disadvantage of climate change discourse in the country. It has allowed bloggers to air their concerns over rising temperature (in a rather alarming fashion) but it has also provided space for attacks on environmental NGOs and the spread of conspiratorial discourse. Comparing Russia's and Western media discourse, it has been noted that much like in Western online communication, 'echo-chambers', in which authors orate to a like-minded audience, could also be detected in the Russian case.

Political Dimension

At the international level, Russia's position on climate-change related issues has been rather controversial at times and sporadically attracted a lot of international attention—following the US withdrawal, Russia became the only country which brought the Protocol into force. Domestically climate-related policies and political discourse were rather slow and quiet in their development (especially, compared to other high-profile domestic issues). Consequently, Russian officials have been accused of inconsistency or indifference towards international efforts to combat climate change, whether in relation to modest pledges for GHG emissions reduction or controversial statements made by its leader. For instance, during 'Russia's energy week' in 2018, President Putin stated:

We are witnessing global warming, but we do not understand the reasons for this warming, because there are still no answers. And the so-called anthropogenic emissions, most likely, are not the main cause of this warming, it may be changes of a global nature (RIA Novosti).

While during the energy forum in 2019, the Russian president noted that:

I may disappoint you but I don't share the common excitement about the speech by Greta Thunberg. No one has explained to Greta that the modern world is complex and different and ... people in Africa or in many Asian countries want to live at the same wealth level of as in Sweden (Reuters).

At the same time, those who prefer to see the glass as half full, emphasize the positive moves in Russia's climate-related policies and narratives, arguing against the idea that Russia was able to maintain low levels of GHG emissions only due to the economic crisis in the early 1990s. This approach suggests that if this were the case, Russian emissions would have surpassed 1990s levels in 2011. While numerous economic crises did play a role in shaping Russian emissions levels throughout the last two decades, an increase in energy efficiency and decarbonisation should not be overlooked. Positive developments could also be seen in official attitudes toward the problem. For instance, in 2017 Russia, for the first time, held a national 'Climate Week' which actually lasted a month from 15 May until 15 June. The 'week' consisted of an impressive variety of 422 events involving a vast range of actors across various regions in Russia: to name but a few, a round-table 'Climate, Army, Adaptation' organised by the Ministry of Defence; the Ministry of Agriculture discussed the impact of climate change on food security; the Ministry of Nature for the Altai region organised an action for planting trees, while its counterpart in the Kaluga oblast' organised a climate quiz for students. Many similar events have taken place.

In sum, despite the economic decline in the early 1990s, which has resulted in drastic emissions reductions, Russia is still considered to be one of the most carbon intensive economies in the world, which, of course, puts it into a contentious position during international negotiations. While Russia (at least according to official rhetoric) re-emphasises its paramount importance to the international climate regime and, in fact, its global leadership in emissions cuts, it also occupies a vulnerable position, with a fossil fuel-driven economy, low levels of energy efficiency, and slow development of renewable energy sources.

Business Dimension

As mentioned above, the business discourse around climate change-related issues should be placed within the context of Russia's economic reliance on the fossil fuel industry, close links between the state and energy sector and the historical record of prioritisation of economic development over environmental concerns. The discursive

practices of Russian business on climate change have to adapt to the international context as major national energy companies need to play by the rules of the international community and introduce the sustainability agenda into their practices or, at least, their relevant documentations. Ellie Martus has conducted an extensive study of the major oil and gas companies in Russia to evaluate how prominently climate change featured in their public communication (Martus, 2018a). The overall conclusion of the study confirmed that climate change was rarely addressed directly, with only one out of the eight largest oil and gas companies under investigation having an official position on the issue and showing support to international climate change-related efforts. However, climate change is indirectly referred to within the discourse on 'energy efficiency and resource-saving measures'. Contributing to these findings, Martus' (2018b) analogous study of the mining and metal industries showed that those companies that are integrated into the international market, especially if they have bases in the states with active climate mitigation policies, have to play by the same rules as other suppliers and adopt a pro-active climate-related position. Furthermore, similar to the Russian state's approach to climate mitigation policies, businesses are happy to adopt economically sound energy efficiency measures and policies out of pragmatic reasons.

In terms of developments in Russian business discourse, the 'Climate Partnership of Russia' presents an interesting case. According to the [official website](#), it is an 'initiative' introduced by Russian companies 'to consolidate the efforts of Russian business to mitigate environmental impacts and help prevent climate change'. As of the date of writing, the initiative included 23 organisations and presents itself as an active collaborative response to climate change issues, which does not just organise events with external actors, but also represents its interests and views at the international level by taking part in the UNFCCC's Conference of the Parties (COPs) as a Business and Industry NGO (BINGO). Interestingly, the opening statement published on the website and written on behalf of 'Russian business' reaffirms the scientific agreement on the anthropogenic causes of climate change, supports international efforts at climate mitigation, and acknowledges the important role of the business community in these endeavours. Furthermore, the statement underlines the importance of the free market in the international effort to mitigate climatic changes.

Conclusion

Arguably, the media, political and business dimensions of the climate change discourse in Russia contribute to

or shape the relatively low level of climate change awareness among the local population (compared to their Western counterparts). But it can also be explained by Russia's geographical characteristics where its cold climate distorts people's perception of why global warming might be a serious problem; and socio-cultural traditions or the popular myth of Russia's invulnerability due to its territorial vastness and abundance of natural resources. The last factor also fits in with the politico-economic explanation which suggests that people prioritise economic problems over environmental concerns.

In September 2019, a number of climate change protests took place across the globe. Reportedly around 7.6 million people in 185 countries voiced their concerns

about this environmental threat. Russia could not boast near similar numbers as were seen in the USA, Spain, Italy or Germany. In fact, Russia had one of the lowest numbers of protesters (just over 80 people). However, we need to interpret these results against the state's restrictive laws on public protests, in addition to the generally low levels of awareness among the population and low coverage of the issue. The important message is that the conversation keeps going and growing in Russia and as it experiences more climate change-related problems, and as the international community becomes more assertive in prioritising climate change mitigation and adaptation policies, Russia will slowly continue to catch up and join the global discussion with a greater presence.

About the Author:

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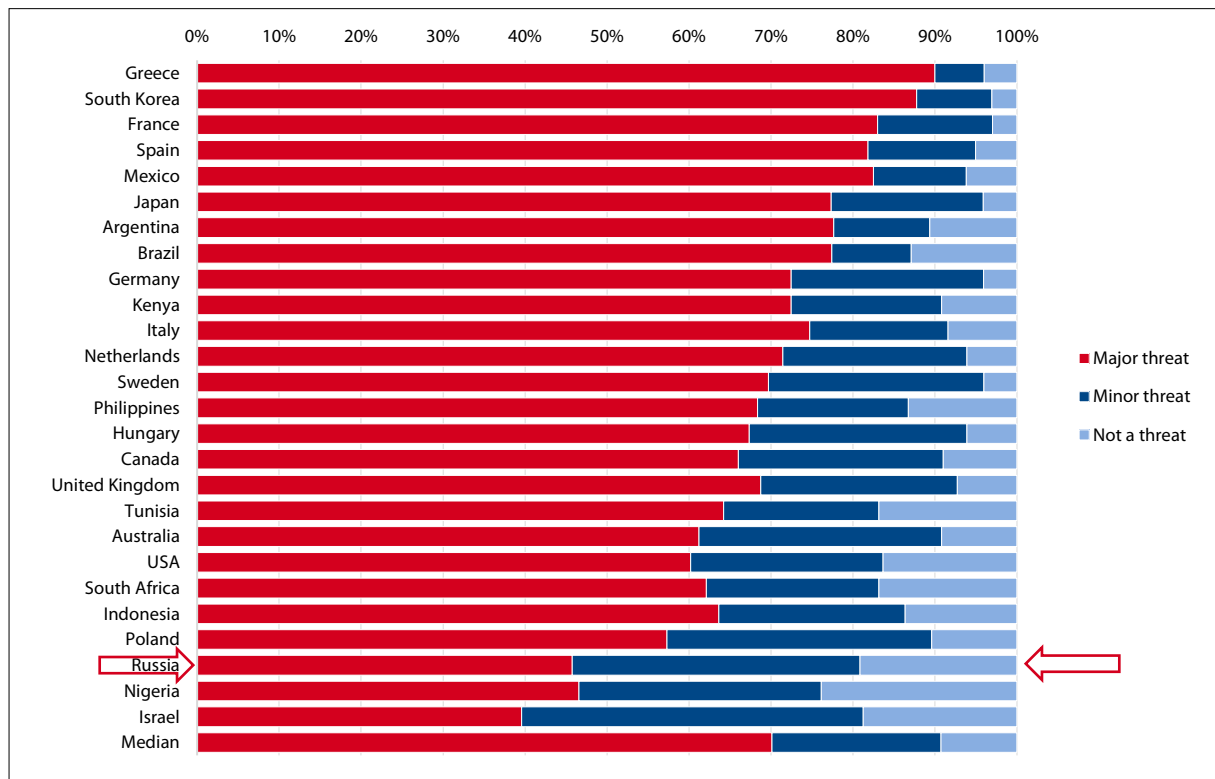
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OPINION POLL

Russian Opinions on Climate Change 2

Figure 1: Perception of Climate Change as a Threat in International Comparison: Global Climate Change Is a Major/Minor/Not A Threat to Our Country (%)



Source: Pew Research Center, Global Attitudes Survey spring 2018, published February 2019; <https://www.pewresearch.org/fact-tank/2019/04/18/a-look-at-how-people-around-the-world-view-climate-change/>

Table 1: Perception of Climate Change as a Threat in International Comparison: Global Climate Change Is a Major/Minor/Not A Threat to Our Country (%)

	Major threat	Minor threat	Not a threat
Greece	90	6	4
South Korea	86	9	3
France	83	14	3
Spain	81	13	5
Mexico	80	11	6
Japan	75	18	4
Argentina	73	11	10
Brazil	72	9	12
Germany	71	23	4
Kenya	71	18	9
Italy	71	16	8
Netherlands	70	22	6
Sweden	69	26	4
Philippines	67	18	13

	Major threat	Minor threat	Not a threat
Hungary	66	26	6
Canada	66	25	9
United Kingdom	66	23	7
Tunisia	61	18	16
Australia	60	29	9
USA	59	23	16
South Africa	59	20	16
Indonesia	56	20	12
Poland	55	31	10
Russia	43	33	18
Nigeria	41	26	21
Israel	38	40	18
Median	68	20	9

Source: Pew Research Center, Global Attitudes Survey spring 2018, published February 2019; <https://www.pewresearch.org/fact-tank/2019/04/18/a-look-at-how-people-around-the-world-view-climate-change/>

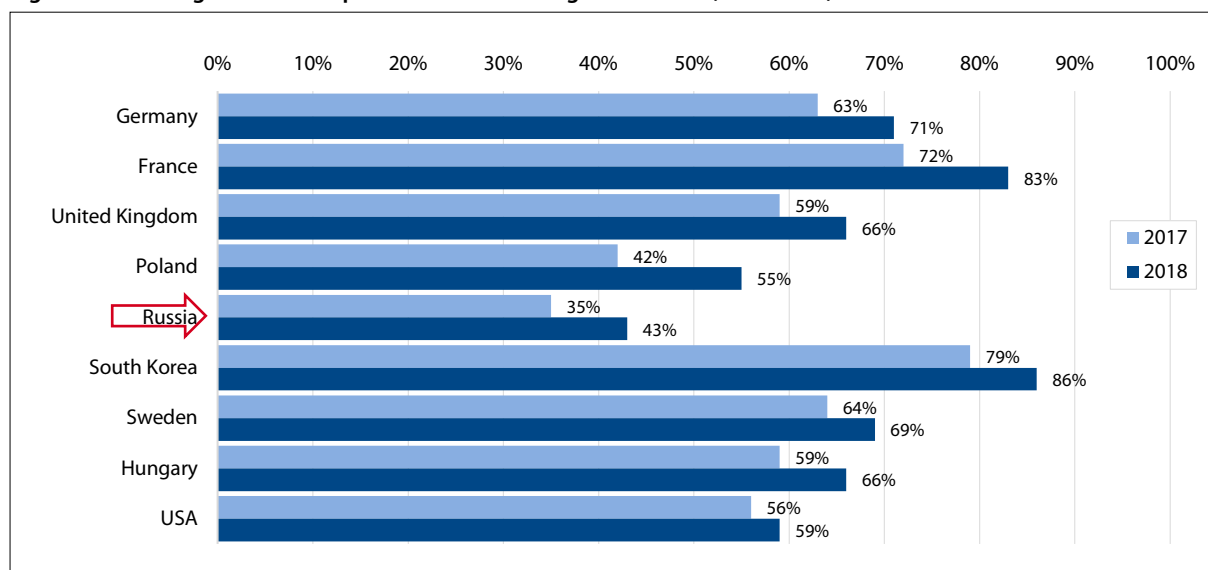
Table 2: Climate Change as a Threat in Comparison to Other Perceived Dangers

	Climate Change	The militant Islamic group known as ISIS	Cyber attacks from other countries	North Korea's nuclear program	The condition of the global economy	US power and influence	Russia's power and influence	China's power and influence
Germany	71%	68%	66%	47%	29%	49%	30%	33%
France	83%	87%	67%	55%	46%	49%	40%	40%
United Kingdom	66%	64%	64%	40%	41%	37%	45%	29%
Poland	55%	59%	53%	53%	23%	18%	65%	26%
Russia	43%	62%	36%	30%	40%	43%	*	20%
South Korea	86%	63%	81%	67%	74%	67%	44%	82%
Sweden	69%	61%	55%	41%	27%	34%	40%	22%
Hungary	66%	59%	35%	51%	28%	17%	26%	22%
USA	59%	62%	74%	58%	44%	*	50%	48%

Note: * indicates the question was not asked in this country.

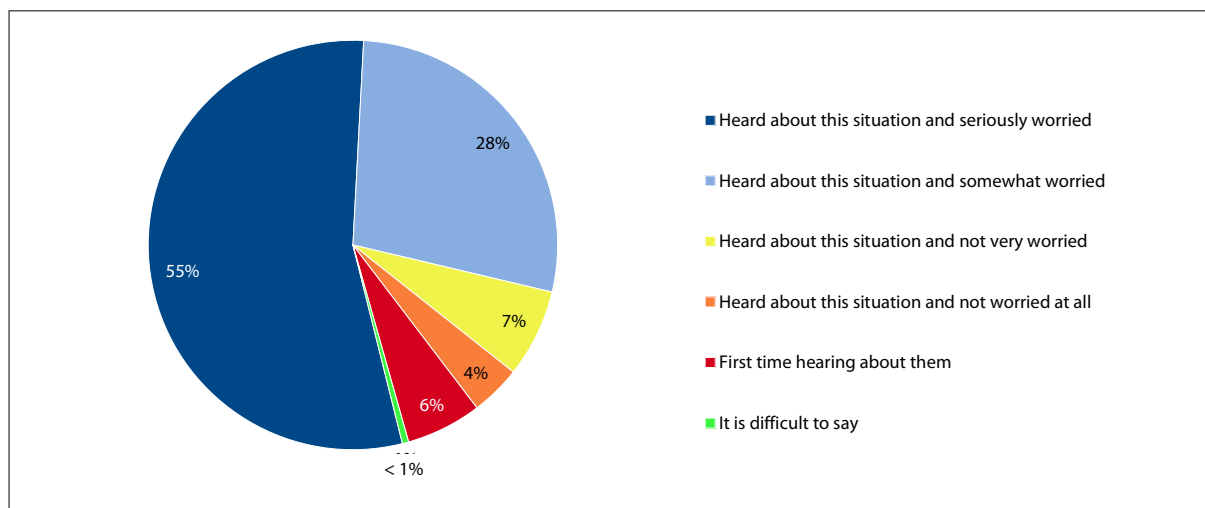
Source: Pew Research Center, *Global Attitudes Survey spring 2018*, published February 2019; <https://www.pewresearch.org/global/2019/02/10/climate-change-still-seen-as-the-top-global-threat-but-cyberattacks-a-rising-concern/>

Figure 2: Change in the Perception of Climate Change as a Threat (2017–2018)



Source: Pew Research Center, *Global Attitudes Survey spring 2018*, published February 2019; <https://www.pewresearch.org/global/2019/02/10/climate-change-still-seen-as-the-top-global-threat-but-cyberattacks-a-rising-concern/>; Source: Pew Research Center, *Global Attitudes Survey February 2017*, published August 2017; <https://www.pewresearch.org/global/2017/08/01/globally-people-point-to-isis-and-climate-change-as-leading-security-threats/>

Figure 3: Have You Heard About the Forest Fires That Happened In Siberia and the Far East? If You Have, How Worried Are You About Them? (one answer)



Source: representative opinion poll by Levada-Center, August 22–28, 2019, N = 1608 respondents aged 18 and older, published October 8, 2019, <https://www.levada.ru/en/2019/10/08/the-forest-fires/>

Table 3: In Your Opinion, What Were the Main Reasons For the Spread of the Forest Fires this Year? (more than one answer)

	Total sample	As a percentage of respondents who are somewhat worried	As a percentage of respondents who are not very worried
Desire to hide illegal logging	51	56	34
Negligence of the authorities	44	47	29
Being careless with fire in the forest	40	41	38
Weather conditions, lightning storms	26	26	24
The authorities' lack of desire to put out the fires	24	27	14
Reduction in the number of rangers	22	23	17
The remoteness of regions where the fires are happening	19	20	16
Lack of money to put out the fires	16	17	14
Lack of specialized equipment	14	15	9
Global climate change	12	12	15
Laws that allow people to not put out fires in certain areas	12	12	11
Deliberate lighting of fires	2	3	1
Other	2	3	2
It is difficult to say	3	2	3

Source: representative opinion poll by Levada-Center, August 22–28, 2019, N = 1608 respondents aged 18 and older, published October 8, 2019, <https://www.levada.ru/en/2019/10/08/the-forest-fires/>

ABOUT THE RUSSIAN ANALYTICAL DIGEST

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