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The role of traditional and new international relations actors in addressing climate change

Abstract. Addressing global climate change brings up a number of priority issues. The fundamental issue is the definition of the participants in this process and the scope of their competencies and areas of responsibility. Practice shows that modern global challenges, which include global climate change, cannot be solved individually and in a straightforward manner without the involvement of all stakeholders and the general public. The article discusses actions aimed at adapting and mitigating the consequences of global climate challenges carried out by states and their alliances (as traditional international actors) and corporations and media (as new international actors). It is shown that today state political decisions on the adaptation to and mitigation of the consequences of global climate change are associated, in particular, with the transition to a low-carbon economy. At the same time, specific and effective climate policies are also being implemented by international corporations. Global media implement their own climate initiatives from one side and shape international public opinion regarding the climate challenge from the other side. The author concludes that, despite the active presence of the theme of global climate change in international and national political discourse, as well as in media and in the social and economic projects of corporations, the general attempts to resolve the issue can't be considered as a well coordinated, and the results are not efficient enough.

Keywords: global climate change, international actors, states, corporations, media.

Introduction

Humanity's adaptation to global climate change is now regarded as a necessity for solving technical, managerial and communication issues. Managing climate change adaptation and mitigation includes interacting with many international actors and is reflected at all levels of governance – from local to international. Today there is a strong understanding of the need for short- and medium-term climate policy to be made on the basis of long-term forecasts. Climate change requires collective action at the global level; major changes must be initiated by the most influential international actors. Climate change can be considered as a global political problem, as it has many commonalities with other actual issues of international policy; moreover, methods of regulating it are similar to those used by the international community to deal with other issues.

Traditionally, states and their alliances have been the actors of international relations and world politics; they have actively shaped political processes at the international level for many years, since the birth and development of the Westphalian system. In the second half of the twentieth century, the political model of the world changed under the influence of the activities of non-state transnational actors. In the fundamental work *Transnational Relations and World Politics* J. Nye and R. Keohane (1972) formulated the idea of transforming the Westphalian Model of the World and broadened the idea of being an actor in international relations. According to the authors, "along with states, non-state actors have begun to act as actors in world politics" (Keohane, Nye, 1972). This means that the transnational interaction of other actors such as international organizations, interstate entities, transnational corporations, and media, has been added to interstate cooperation.

The purpose of the study is to identify the role and potential of states as traditional actors in international relations and to determine the extent to which intergovernmental organizations, corporations and the media act as the newest international actors. Thus it is hoped to be able to characterize their contribution to the resolving of global climate change and to define what non-governmental actors add to the traditional actors (the states) in terms of shaping, framing, mobilizing, and solving this global climate problem.

Recent literature review

The most extensive publications on the role of states and interstate entities are presented in the work of the Intergovernmental Panel on Climate Change under the leadership of R. Pachauri and also in the works of British researchers

M. Allen, J. Brum, German V. Kramer, O. Edenhofer, J. Marotzke, and American L. Clarke, K. Field, K. Mach, M. Mastrandrea, B. Preston, Norwegian J. Fuglstwedt, K. Oberin, Australian M. Hofden, S. Power, Russian V. Kattsov and others. These studies look at global causes and possible scenarios for managing global climate change.

Studies of the risks of global climate change and the role of international organizations and subnational structures in overcoming them are reflected, in particular, in international documents (UN Framework Convention on Climate Change (UNFCCC), Kyoto Protocol, Paris Agreement), materials from UN conferences (UNFCCC), official publications of the specialized UN agencies (Evaluation reports of the Intergovernmental Panel on Climate Change, UN Climate Change Reports, World Meteorological Organization Research, Global Atmospheric Service, etc.), publications by other UN agencies (including Food and Agriculture Organization, World Food Program, United Nations High Commissioner for Refugees, International Organization for Migration, UN Intergovernmental Commission on Oceanography, UN Environmental Programme), as well as in open materials of national meteorological and hydrological services, regional climate centres.

Specific areas for tackling global climate change, including the contribution of international organizations and research centres are contained in the work of the Spanish researcher XK. Abanades, Japanese M. Akai, American S. Benson, K. Keldeira, R. Doctor, Dutch H. De Koninko, B. Metz, L. Meyer, British P. Freund, D. Gale, E. Palmer and others; the role of sub-national actors are looked at in the work of A. Hsu, O. Widerberg, A. Weinfurter, S. Chan, M. Roelfsema, K. Lütkehermöller and F. Bakhtiari.

Information about the role of subnational actors in addressing global climate challenges is also provided in the special reports (Bridging the Emissions Gap, CDP Supply Chain Report 2017, Green Bonds Market Summary, Low Carbon Investment Registry Highlights and others); analytical reports of research centres (Center for Climate and Energy Solutions, Center for International Climate and Environmental Research, Climate Ark, Harvard Project on Climate Agreements, etc.); specialized communication programs on climate change at Yale University, George Mason University, the Adam Corner British Project and the Adelphi Platform. These documents identify the interplay between global climate and non--climate risk factors and the role of international organizations, sub-national actors and research centres in overcoming them.

The theoretical literature on the role of global social movements (global civil society) is quite rich and presented in particular in the work of Donatella della Porta, Alberto Melucci, Alain Touraine and other researchers.

However, the new realities of global climate change and the impact of international actors, both traditional and new, require the further exploration of this issue. Unfortunately, the interconnection of traditional and new

international actors in policy aimed at combating global climate change and its communicative support has not yet been given sufficient attention in Ukrainian and Western literature. Therefore, the study of these issues is an urgent problem of modern international communication, and their solution will be of considerable practical importance.

Main research results

UN Secretary-General Antonio Guterres called the climate change challenge "a defining issue of our time, and its solution is a turning point in history. We still have time to put an end to the negative effects of climate change, but this requires unprecedented efforts from all walks of life" (Un.org, 2019). That is, according to the UN Secretary-General, resolving global climate change is the purview of both traditional international actors (which include states, governments) and the newest (interstate alliances, coalitions, international corporations, the media, etc.). This idea is supported by the 2007 Nobel Peace Prize laureate, former Head of the Intergovernmental Panel on Climate Change (2002 to 2015), Rajendra K. Pachauri, who stated that "the most driving forces behind the implementation of adaptation and mitigation programs of global climate change are governments and political parties, the UN, international organizations, corporations and every citizen of the planet" (Bunjak, 2017). We characterize the impact of each of these international actors on resolving global climate change.

States and interstate alliances

In the Report on the Work of the First Regular Session of the 2018 United Nations Development Program, the Delegation Group emphasized that "the involvement of States in resolving global climate change is a key driver of the 2018–2021 Strategic Plan, and its implementation requires the active involvement of Member States at the country level" (*Doklad o rabote…*, 2018).

Until recently, global climate leadership was represented by three geographical centres: the US, the EU and China, that is, these countries and intergovernmental entity are the largest emitters of greenhouse gases in the world. According to BP's report, in 2016, the largest amount of emissions was generated by China – 27.3% (9,123.0 million tons), second place – by the USA – 16% (5,350.4 million tons), and the EU – 10.4% (3,485.1 million tons) (BP global, 2017). Given the termination of the US's participation in the Paris Agreement on Climate, today each of these international actors pursues its own climate policy and "considers itself a leader in this field" (Karlsson *et al.*, 2011).

It is possible to agree with British researcher Amy Below that "the most impressive results of overcoming global climate challenges today are demonstrated by the EU" (Below, 2016). Strengthening the EU's position on climate diplomacy was a logical consequence of the US's own climate policy and coincided with the EU's geostrategic goal of global leadership (Jordan *et al.*, 2012). The EU's economy is one of the most powerful in the world and, accordingly, the EU can involve all its international partners in order to achieve leadership in climate diplomacy by implementing a soft leadership strategy (Oberthür, Roche Kelly, 2008).

One of the components of the EU's climate leadership policy today is the Emission Trade Scheme (ETS). In addition, the EU's Climate Guidelines contain stricter restrictions and commitments on the part of European countries than stipulated in the Kyoto Protocol and the Paris Agreement (Oberthür, Roche Kelly, 2008). Such EU climate policy could be an example for China, as well as other developed and developing countries.

The G20 accounts for 79% of global GHG emissions (excluding forestry emissions) and about 81% of global CO2 emissions (Gfz-potsdam.de, 2015; Iea.org, 2019). As such, the measures written in international climate policy and related climate programs often align with the national interests of countries, as they meet other social needs, support the achievement of the UN Sustainable Development Goals and deliver significant economic benefits. An ambitious climate policy could create more than 65 million new low-carbon jobs worldwide and prevent 700,000 premature deaths from air pollution by 2030 (UNLOCKING…, 2018). National budget revenues could grow to 2.8 trillion dollars worldwide by 2,030 through subsidy reform and carbon pricing. On the other hand, inaction could lead to significant economic losses. According to the Brown-to-Green report, the "20 trillion USD which is being spent on energy and electricity generation in the world is a certain financial risk that can be minimized if capital will be diverted to invest in low carbon energy projects" (Climate Transparency, 2018).

All G20 countries, except Russia and Turkey which have not yet ratified the Paris Agreement (as of the middle of 2018), have submitted their Nationally Determined Contributions (NDCs) to the United Nations Framework Convention on Climate Change (UNFCCC). Each NDC contains the country's goal of reducing or limiting greenhouse gas emissions. The NDCs of some of the G20 countries, namely Argentina, Brazil, China, India, Indonesia, Mexico, Saudi Arabia, South Korea and South Africa, include national visions of adapting to global climate change. India and South Africa are the only countries from the G20 to declare their investment needs for mitigation and adaptation measures. Determining the investment required to implement the NDC is essential for reconciling the financial flows at national and international levels, as written in the Paris Agreement. Brazil, Canada, Japan, South Korea, Mexico and others

have declared in NDCs their interest in emissions trading using international market mechanisms under Article 6 of the Paris Agreement. According to the recommendation of the Talanoa Dialogue 2018, countries are advised by 2020 to update their NDC targets for 2025 and 2030 to more ambitious ones, as this will be important to bridge the gap between current emissions and those needed to achieve the objectives of the Paris Agreement.

Ambitious state climate policies require widespread political and public support. It is important that the transition to a low carbon economy takes into account the interests of those who could potentially suffer from it: workers, communities, businesses, and poor households. According to the recommendations of the International Labor Organization: "Guidelines for a just transition towards environmentally sustainable economies and societies for all", as part of "the transition to a new type of climate, economic relations should be compensated and retrained for those who could potentially lose their jobs and implement a national policy to support the development of green jobs" (*Guidelines*…, 2015). Some researchers believe that "stopping fuel subsidies and setting carbon pricing can lead to higher energy prices, creating an even greater burden on the poor" (G20 Insights, 2017). To counteract such effects, subsidy reforms and carbon pricing can be complemented by monetary compensation for poor households.

Different G20 countries are moving to a low carbon economy in different ways. Today, we can study and use their experience, in particular the practices of Australia, Canada, the European Union, France, Germany, the United States, and others. Common to all G20 countries is the involvement of trade unions and the most vulnerable regions.

For example, major Australian unions (CFMEU and ACTU), together with the Government of the State of Victoria and three private power plants, have developed a Latrobe Valley workers' transfer scheme that not only mitigates the effects of hazardous emissions, but also prevents job losses (Worker Transfer Scheme, 2018). The document foresees the employment of workers of the Hazelwood Power Plant, which was closed in March 2017, in alternative jobs, and obliges partner companies to minimize job losses, arrange the retraining of employees and introduce early retirement schemes that give an opportunities for young workers who want to stay in the industry.

The Canadian Framework Strategy, a long-term plan for adapting the country to global climate change, approved by the Government of Canada in 2016, states "a commitment to developing and educating workers in order to provide the right conditions for Canadian workers in the transition to Canada's new clean economy" (Environment, 2017). As of 2018, a special federal task force has begun developing a plan for a "clean growth" economy for coal and gas workers. Canadian unions are involved in that process through conducting information campaigns, explaining the principles and mechanisms of transition, as well as offering skills development, retraining and insurance programs.

Furthermore, they are encouraging investment in clean energy sources for indigenous territories, remote and rural communities.

The European Commission has incorporated the concept of Fair Transition into its Communication on the Energy Union, according to which a fair energy transition will require the "retraining or upgrading of workers in certain sectors and, where necessary, social measures taken at the appropriate level" (*A Framework Strategy…*, 2015). In December 2017, the Commission set up a Transition Platform for Coal Regions to assist EU Member States and regions in the structural and technological transition of Coal Regions. The concept of a "fair transition" is also mentioned in the European Union Directive on Governance, which emphasizes the need to consider these aspects of decarbonising the economy (Atavist, 2017).

The concept of "Fair Transition" has become a part of French political discourse after the election of President E. Macron in 2017, at the same time as the formation of the Ministry of Ecology (Ministry of Ecological and Inclusive Transition). The French Climate Plan prioritises the closure of four coal-fired power plants by 2022, which has caused disagreement among national coal and sea unions. The plan calls for a "managed transition", emphasizing the need to support workers who may be affected in the short and medium-term (Gouvernement.fr, 2018). The Draft Budget for 2019 envisages the creation of a ten-year fund to compensate for the loss of revenues of local authorities through the closure of coal-fired power plants (Gouv.fr, 2018). Similar community support schemes are already operating in nine regions of the country that are implementing local climate change mitigation projects or green startups as opposed to wholesale industrial restructuring.

In Germany, about 20,000 workers will have to seek new employment if the government decides to phase out lignite in electricity production in order to achieve the goals of the Paris Agreement. The government has already allocated € 1.5 billion ($ 1.72 billion) for 2017–2021 to facilitate structural change. The government also understands that, after 2021, funding for environmental projects will increase, so a commission on "growth, structural change and employment" has been set up, aimed at mitigating the effects of the abandonment of coal (Bundesministerium, 2019). The country is ready to phase out coal, notwithstanding the problem of job cuts in the coal industry and the higher cost of electricity generated from alternative sources, given that more than 40% of all fuels used in Germany are coal.

In the United States, discourse on the use of fossil fuels takes place at the state level. The states of the Appalachian Coal Region (eg, Kentucky, West Virginia) created a Power Plus initiative in 2015 to support economic diversification, which outlines employee retraining and potential benefits. In contrast to these states, there is currently no official program in California to manage the transition from oil to alternative energy sources (Coal Transition, 2016). India, Japan, Mexico,

Russia, South Korea, and the United Kingdom are also believed to suffer losses from the abandonment of fossil fuels, but have not yet taken any action to mitigate their economic or social consequences.

Given the global nature of the climate change problem, countries are working together to form intergovernmental organizations and coalitions in order to address them. Today, such interstate groups continue to develop. The following structures addressing global climate change include JUSSCANNZ (developed by non-EU countries: Japan, USA, Switzerland, Canada, Austria, Norway and New Zealand) and the G77. JUSSCANNZ today has become an umbrella group after the United States began to separate itself from countries that were in favour of large-scale climate action. Switzerland has partially abandoned the JUSSCANNZ/ umbrella group and together with Mexico, South Korea, Liechtenstein and Monaco form an Environmental Integrity Group (EIG). Other associations of developed countries, such as the G20 and G8, are also active in climate action, especially in those non-climate summits, to discuss issues and gain consensus on adapting to global climate change. The Presidents of the United States, George W. Bush and Barack Obama, organized the Major Emitters Forum and Donald Trump the Major Economies Forum. Experts consider such actions as "US attempts to coordinate developed countries and undermine the authority of the United Nations to regulate climate issues" (Happaerts, 2015).

Alliances are also emerging among developing countries, and their structures become more complex over time due to the exacerbation of existing differences. Experts believe that the causes of global climate policy disagreements lie not so much in the lack of wealth in these countries, but in the uncertainty of areas of responsibility and facilities that require such assistance, as well as the uncertainty of countries' vulnerability to global climate change. For such developing countries, the main negotiating block is the Group-77 (G-77), the largest intergovernmental organization of developing countries operating within the UN and its bodies. However, more than a dozen subgroups and groups representing the heterogeneity of the Global South have emerged within this structure. Examples of such contradictions are the relationship between G-77 and OPEC (Organization of Petroleum Exporting Countries), in which OPEC's priorities (high oil prices and poor or no climate agreement) conflict with the goals of G-77 members.

International corporations

In the context of global climate change, multinational corporations, small and medium-sized businesses are important non-governmental actors. Business structures are implementing their involvement in addressing global climate issues at national and international levels through corporate social responsibility (CSR) programs. Today, CSR projects are becoming an integral part of the development

strategy and business model of a growing number of business entities. In addition to raising public awareness and ensuring a positive impact on reputation, the cause of CSR implementation in the European Union is a political imperative. In its Communication on CSR, the European Commission redefined the concept of corporate social responsibility as "the responsibility of enterprises for their impact on society" (CRISTINA QUINTANS, 2011), instead of the previous version, when CSR was defined as "an approach whereby companies integrate social and environmental concerns into their activities and engage with their stakeholders on a voluntary basis". That is, the eco-conscious behaviour of companies has become an integral component of their operations.

EU experience is stimulating, which encourages the implementation of environmental projects by business entities in all Member States through the implementation of various tools. For example, the European Parliament and the European Council endorsed the European Commission's proposal to revise public procurement criteria. According to this document, new provisions on social and environmental criteria have been introduced, as well as ensuring the access of small and medium-sized enterprises to the European market through public procurement.

The National Action Plans of individual EU Member States set legislative requirements for CSR support in the public procurement process. Thus, in 2020, the Swedish Government plans to introduce a new tax on disposable plastic bags (Espreso.tv, 2019), whereby 3 kronor (0.28 euros) will be taxed per standard bag and 0.3 kronor (0.028 euros) per thinner one. The standard bag will cost up to 7 Swedish kronor (0.66 euros). The purpose of the tax is to get consumers to think about an alternative and also to reach the EU's goal of a maximum of 40 plastic bags per person per year.

In order to promote sustainable public procurement Austria, Denmark, France, Poland, Sweden, and the United Kingdom do not use legislative tools such as action plans and strategies but actions aimed at promoting sustainable procurement in terms of preparation or instead of developing legal requirements. For example, an action plan for the compulsory consideration of social and environmental criteria in the area of public procurement has been adopted in Austria. Several European countries have put forward initiatives that encourage dialogue between municipalities or local authorities to intensify work on sustainable public procurement. In Denmark, urban partnerships are developing a collaborative procurement approach that will help ensure transparency and provide an equal field for suppliers.

EU Member States are now at different stages of work on sustainable public procurement. The governments of countries already experienced in the field, such as Denmark, have developed guidelines for the Baltic authorities; as well as guidelines and an information website for Romania. In addition to the "CSR Compass" online project, Finland and Sweden have prepared a step-by-step guide on sustainable public procurement.

To further support responsible consumption, the Commission issued a statement on "Creating a single market for green products – Encouraging the sharing of information on the environmental performance of products and organizations" (Europa.eu, 2013), where it required, in particular, the use of common methods for measuring and communicating the environmental life cycle of products.

In 2012, the European Commission decided to make mandatory CSR disclosure for retail investment projects aimed at increasing the market reward for socially responsible investments. The Commission also co-financed a project aimed at building capacity for socially and environmentally responsible investments (adopted in February 2013). In addition, all top executives of European multinational corporations were invited to sign the UN Principles for Responsible Investment (UNPRI).

According to the directives of the European Parliament since 2014, the disclosure of social and environment-related information became mandatory for European businesses. Openness to non-financial reporting is a must for large, medium-sized and small businesses operating in the EU market. Unlike NGOs, where there are no uniform standards for non-financial reporting, European business practices are based on a single universal methodology for measuring and comparing environmental performance across enterprises. Specific provisions for multinational enterprises' obligations to implement environmental protection projects in their CSR strategies are contained in the Organization for Economic Co-operation and Development (OECD) Guidelines, first adopted in 1976 and updated in 2011.

Considering the best European practices, most of the climate projects of large corporations are related to the transition to renewable energy. This is confirmed by the words of UN Secretary-General Antonio Guterres, who noted that

> more than 130 of the most influential companies in the world have committed to fully switching to renewable energy; 18 multinational corporations have committed to using solely electric vehicles; and countries whose economies are closely linked to fossil fuels seek to diversify it (Novosti OON, 2018).

Today there are already successful examples of climate-friendly projects around the world implemented by large corporations. The Lego Group has already reached 100% of renewable energy. The duration of this project was 4 years and cost 6 billion kroner of investment in an offshore wind farm. Since 2012, more than 160 megawatts of renewable energy have been generated with the support of the Lego Group. Today, the total output from Lego Group's investments in renewable energy will exceed the amount of energy consumed by Lego's production facilities, stores and offices worldwide (Lego.com, 2018). Another example of mitigating the effects of climate change and the transition to independent energy sources is the experience of the

Swiss company Umwelt Arena, which in 2016 commissioned an energy-independent residential building in the commune of Brütten in the Canton of Zurich. The house is not connected to the electricity grid and gas supply as the structure provides itself with heat and electricity. Moreover, it fully complies with the Swiss standard of energy-efficient buildings. Similar projects have already been implemented in Norway, Sweden and Japan.

One of the most popular tools that confirm companies' conscious approach to social responsibility and high environmental standards of production is creating awards or promoting responsible and sustainable practices through labelling. In an increasingly global economy, efforts to create regional or globally recognized labels and awards, in order to raise awareness of the topic, are also critically important. One of the interesting examples in this area is the Norwegian eco--labelling scheme Nordic Swan Ecolabel. The Scandinavian project, created in 1989 by the Nordic Council of Ministers as a voluntary eco-labelling scheme for the Nordic countries of Denmark, Finland, Iceland, Norway and Sweden, is to "facilitate consumers' choice of the best environmental products and services" (Nordic Ecolabel, 2020). The presence of such a label is a signal to the consumer that the company meets strict environmental requirements at all stages of the product life cycle, the products meet the established requirements for the presence of chemicals, and that the manufacturer supports the ideas and creates conditions for sustainable development. In the European Union, more than 25,000 different products are already being marketed under the Nordic Swan eco-brand, and their number is growing, which confirms the effectiveness of this tool. In 1994, the Eco--labelling Global Network was one of the founders of the ISO 14024 International Network for Type 1 Eco-labels, GEN and the Global Eco-Brand Network.

Another popular tool in the European Union is the award of CSR best practices, which also encourages the exchange of best practices in the field of environmental and climate CSR practices. Thus, in Denmark, Germany, Italy, Poland, Slovenia, awards for the best CSR projects can be given to companies that are performing well in the field of responsible business practice; in Latvia and Slovenia, such CSR areas are noted as "an effective governance" and engagement with families as key stakeholders. In Ireland, in addition to promoting responsible business, organizations are rewarded for promoting responsible consumption. In Lithuania, the data on companies with the status of "responsible business" can be found in open online databases.

Thereby, the activities of major European corporations in managing global climate change are determined, in particular, by a number of factors: political decisions by EU governing bodies and national governments that are imperative for business structures (eg the adoption of national action plans; the adoption of relevant legislation, in particular, one that obliges all business entities to disclose non-financial information; the defining of public procurement criteria; and an obligation for corporations to implement projects of environmental protection

in their CSR practices); the development of Corporate Social Responsibility policies with a mandatory environmental component; and by encouraging small businesses to comply with environmental standards throughout the product life cycle (through the introduction of eco-labelling and related awards). Important milestones of European businesses' efforts to tackle global climate change are the information component and stakeholder engagement.

International media

The media contributes significantly to the process of shaping public opinion on climate change as part of a global social challenge through news reports on extreme weather events, linked to the work of the Intergovernmental Panel on Climate Change (IPCC), and the United Nations Annual Conventions. There are many influential tools for shaping public opinion on global climate change that include but are not limited to references to competent climate specialists, policymakers, experts, comments of journalists etc. Therefore, it is important to work with climate journalists and provide them with complete and objective information.

In recent decades, the role of journalists in highlighting the climate issue has transformed significantly. Today, in addition to traditional climate journalism, new ways of communicating with target audiences about climate change are emerging due to the development of digital media. American researcher M. Brugman (2017) believes that "climate change is a challenge for contemporary journalism" and identifies four stages of change in climate journalism: from sporadic to routine coverage of climate change; from ignoring scientific consensus in covering climate change as a serious problem to baseline assumptions about the anthropogenic cause of such changes; from neutral coverage of those who agree and those who disagree with the facts of climate change to authoritative publications that contain an analysis of different approaches; from the dominance of traditional journalism to modern online journalism (Brüggemann, 2017).

The scientific research outlines the challenges of global climate change for international journalism because, as noted by R. Kunelius and E. Eid (2012),

> climate change is international, supranational, and requires the further development of established journalistic norms such as negativism (disclosure of what is happening in society), focusing on facts and short-term events and reporting, rather than providing context and analysis (Kunelius, Eide, 2012).

Sustainable journalism is considered as a promising direction for the development of modern media since it focuses on those moments that are not related to the commercial component or hidden advertising. Some researchers claim that environmental journalists understand the topic well, and therefore

report on specific environmental crimes, although there are cases of dependence of the context of climate information and the political component.

In the articles *The need for knowledge-based journalism in politicized science debates in the United States*, US researchers M. Nisbett and D. Fahy (2015) developed the concept of "knowledge-based journalism". The basic idea of the concept is that journalists should gain environmental knowledge and scientific topics, such as climate change, to further be "knowledge brokers", "dialogue brokers" and "policy brokers" that could provide and extend the context of the perspectives that are polarized and the ideologically based debates on climate change (Nisbet, Fahy, 2015). As an example of a "knowledge journalist", these researchers cite Andrew Revkin, a blogger on climate and science at the New York Times, and note that knowledge-based climate journalism will continue to evolve.

Given the dominance of the media as a source of information on climate change for most of the European and global public, understanding how the media covers climate change is important for understanding public opinion on climate change. In addition, there has been identified a direct correlation between the influence of news and journalistic norms on the coverage of this issue, including in online media (Chadwick, 2017).

To this list we can add another factor of influence on public opinion on climate change – this is fake news. Many researchers consider that a large amount of fake news on this issue is one of the possible reasons of a lack of consensus on understanding the manifestations, causes and consequences of global climate change in European and the world community. The problem of fake climate news is not new, but it has become especially relevant since the Paris Agreement. Climate change fake news may include direct disinformation, selective coverage of the problem, fabricated contradictions, and alternative facts that lead to misunderstandings and confusion among target audiences. The introduction of media literacy programs aimed at building critical thinking and fact-checking skills has become one of the solutions to overcome the impact of fake news on public opinion on global climate change. Facebook and other social networks have already implemented their own way to combat fake news by cooperating with organizations that are specialized in verifying climate change facts and helping to identify conflicting content in news feeds.

According to British journalist Sunny Handan, effective communication of the issues of climate protection and global warming requires different rhetoric,

the problem is not that people choose between bad and good news or between hope and fear. The stories we tell are too abstract in nature: they have little to do with people's daily lives. […] So let's try to take this into account, at least in conversations with friends and beloved ones. This will help to change the way you look at the problem, as well as encourage people to start acting faster and more actively. Every such conversation should start with what is close, clear and important to us (topics, euro, 2018).

Successful trends in the dissemination of true information on global climate change are fact-checking projects, of which the most popular today according to MediaSapiens' experts are Global Climate Change, Climate Feedback and Inside Climate News (Kucaj, 2017). The main purpose of these resources is to tackle "alternative facts" about climate change. Global Climate Change is a project of the National Aeronautics and Space Administration (NASA), which provides evidence of global warming, its causes and effects. A separate block is devoted to scientific discourse. The Climate Feedback project is a collaborative project with programmers and climatologists with a PhD degree sponsored by the University of California. The first task of this project is scanning the internet in order to find high-profile stories about the climate, and the second is analysing and evaluating these stories on different quality criteria of the journalistic text on a scale from "very low" to "very high". The resource informs the authors of the material and the editors of the publications where they have been published that they have been reviewed and commented upon by experts. Inside Climate News is an independent news organization specializing in environmental issues, including energy development and its environmental and wellbeing impact. For example, journalists at Inside Climate News, after analysing a speech by the head of the US Environmental Protection Agency Scott Pruitt, concluded that he speculates with facts on climate change, the Paris Agreement and coal.

Many of the authors of this resource are high profile journalists who are also published in such publications as The Wall Street Journal, New York Times, ProPublica, Los Angeles Times, Bloomberg News, and have received numerous awards for their work, including the Pulitzer Prize for a series of publications on leaks of more than 1 million gallons of oil into the Kalamazoo River in July 2010, leading to the most expensive river cleanup in US history (The Dilbit Disaster, 2015).

Thus, shaping public opinion on global climate challenges has become the topical issue today and it shall be implemented only by objective and professional media coverage, as only a well informed public acts appropriately.

Research Centres

The research centres may not be actors in international relations in the classical sense. However, taking into consideration that the results of their research and observations become the basis for political decision-making and the promotion of global climate change in society, such structures can be referred to as actors addressing global climate challenges. Thus, national meteorological and hydrological services facilitate national climate assessments. As a rule, their documents are used in policy formulation and are informational and advisory. For

example, the report by the relevant Swiss Service about climate scenarios, released on November 13, 2018, notes that the climate in Switzerland is getting hotter and drier, but in the future, the country will have to face more heavy rainfalls and its famous mountains resorts will be less snowy (WMO News, 2018).

Powerful resource centres that accumulate information on global climate change include the Center for Climate and Energy Solutions, a non-governmental organization that conducts research related to the development of new energy technologies to tackle climate change; the Center for International Climate and Environmental Research (CICERO) – an independent Norwegian Climate Policy Research Center that publishes climate policy reports, news and analysis; Climate Ark, a portal and search engine that provides access to news articles, working papers, government reports and climate-change-related researches; and the Harvard Project on Climate Agreements, a project sponsored by the Harvard Center for Science and International Relations which provides access to working papers, records and comments of experts on climate negotiations.

Among the university's climate change programs are US climate change projects at Yale, George Mason University and Adam Corner's British project. It should be noted that they are not only conducting research on global climate change, they are also putting a lot of efforts into the communication of the issue to different public groups in order to raise awareness of it. Thus, within the Climate Change Communication Program at Yale, research is being conducted on global climate change to identify public attitudes to the problem, political preferences and the behaviour of the ruling political elites; as well as the major psychological, cultural and political factors that influence them. Representatives of the general public, government, media, business, and non-governmental organizations are invited to discuss climate issues on the daily national radio program Yale Climate Connections (Yale Program, 2015). The results of the research are published in open reports, interactive maps, scientific articles, and announced during public presentations and private briefings. Yale University's climate research program is used by hundreds of news organizations, including CBS, ABC, CNN, The New York Times, The Washington Post, Associated Press, The Guardian, Xinhua, and more.

One of the most powerful centres for research on global climate change in continental Europe is the Adelphi platform, which is supported by the Federal Ministry of Foreign Affairs of Germany. The main objective of the project is "the exchange of information on the environment, climate conflicts and international climate cooperation" (Dashboard, 2015). The centre's activities are focused on climate diplomacy and the development of strategies for resilience to global climate change. Climate diplomacy explores the external dimension of global climate change and climate policy, including a variety of regional and thematic approaches, such as access to drinking water, global food security, global climate risks, climate security in the UN, G7, and informing key stakeholders about climate risks and global climate

instability. The second milestone is to analyse and highlight existing approaches and projects on adaptation to, and the mitigation of, the effects of global climate change.

Impact Assessment of Actors

As shown above, projects aimed at addressing global climate challenges are being implemented today by both state and non-state actors. However, the results of their activities differ in terms of the nature of the decision, the reach of the audience, the tools used, the speed of implementation of climate initiatives and other parameters.

The decisions of states and governments as actors in resolving global climate change are imperative and relevant to the general public. These actors apply a wide range of tools, including the conclusion and ratification of international agreements, the adoption of national action plans, the adoption of appropriate legislation, including those requiring organizations to disclose non-financial information, the introduction of mandatory environmental product labelling. Moreover, state actors ensure the prohibition of advertising non-environmental friendly products; the adherence to the principles of "sustainable public procurement"; the development and maintenance of on-line databases with best environmental practices; the initiation of environmental projects; as well as distribute funding for 'think tanks' and research institutes; outline criteria and awards for environmental projects; sponsor information campaigns and information dissemination through forums, roundtables, seminars, trainings, training networks, teachers, academics, trade unions, civil society, business structures, and more. Needless to say, the speed of implementation of these instruments by states and governments is slow due to the large number of bureaucratic components.

The environmental and climate projects of business structures are imperative for a clearly segmented audience. Such long-term projects are quickly implemented through CSR campaigns, business's own projects, learning and disseminating experience through participation in forums, round tables, conferences, the involvement of online resources, as well as through joint projects with partners, authorities, NGOs.

The mass media today have become a separate influential actor in solving the global climate challenge and new the direction of journalism – climate journalism – has been formed. Its outreach activities are aimed at a well-defined mass or segmented audience, and projects related to the coverage of climate issues are being implemented quickly compared to the other actors discussed above. Traditional media tools include the production of its own content to cover the issue of global climate change; the dissemination of information on successful climate

projects; the implementation of its own climate projects; and collaboration with other stakeholders.

The results of research and projects of educational institutions and research centres are advisory and informative. The conclusions of scientific developments are the basis for political and managerial decision-making at all levels. Therefore, the target audience of the research centres is quite narrow and segmented. Their tools include, inter alia, conducting their own research and disseminating their results through the media to decision-makers and opinion leaders; conducting joint research with partner organizations, disseminating ideas through training courses; and developing and disseminating educational literature.

Conclusions

Many different actors, with their strategies and interests, are involved in managing global climate change. An integrated approach to managing global climate issues requires the development of appropriate governance mechanisms, defining levels and timing of implementation, coordination across sectors; and the choice of optimal tools, that is, everything that provides the most appropriate form of leadership. At the same time, the development of environmental initiatives at the corporate level is shaped by a number of cultural, economic, institutional and political factors that determine the priorities of the country and each enterprise. Today, in the dissemination of climate information, the role of the media as an influential international actor has increased. The media is creating awareness, shaping public opinion and the position of political leaders, as well as defining the behaviour (support or protest) of the general public or well-defined audiences.

Although the speed of decision-making and their innovational approach are the highest among new actors of international relations (non-state segment), traditional actors (governments), who are the main focus of diplomatic efforts and the sole signatories of the UNFCCC, the Kyoto Protocol and other treaties and agreements, have the greatest potential and influence. Therefore, we can fully agree with R. Pachauri's opinion, who states that "corporations fully understand what they need to change, but the impetus for change should be given by governments of countries that, in cooperation with political parties, must emphasize that in reducing carbon dioxide emissions we need to start now" (Bunjak, 2017).

We can state that new international actors, such as international organizations, media and research centres, help traditional actors (states) in resolving global climate change, shape public opinion, mobilize the international public, and build a scientific base. Civil society, represented by grassroots organizations and movements, celebrities and individuals, act as incubators and accelerators of new strategies for addressing climate challenges.

The projects of NGOs and movements, celebrities and individuals are increasingly becoming the platform for the demonstration, testing and dissemination of new, cutting-edge climate adaptation technologies, they have the opportunity to raise local proposals and ideas to an international level.

However, despite the diversity of stakeholders, programs and projects addressing the global climate challenge, "carbon dioxide emissions will increase by 0.6% in 2019" (McGrath, 2019), and since the signing of the Paris Agreement in 2015, $CO2$ emissions have increased by 4%. Furthermore, missions growth in 2018 was almost 3%. The main reason for the increase in emissions is the increase in the use of oil and gas and the high demand for coal in China, while coal consumption in the US and the EU is declining (by almost 10% in 2019). This means that the continued use of fossil fuel technologies is jeopardizing the reaching of the Paris Climate Agreement's objectives, and it is possible to speak of the inefficiency of climate projects globally.

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