



# Global warming problem faced by the international community: international legal aspect

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## Abstract

Today, the world community is faced with one of the most significant challenges—climate change. Natural disasters, unpredictability of weather conditions, sea level rise etc. jeopardize life activity, increase the likelihood of natural disasters, and are the consequences of climate change, global in nature, and often of unprecedented scale. At the same time, the anthropogenic factor in climate change plays a key role. The latter relates both to the causes of climate change and to ways to counter it. The research is devoted to find out international legal acts in the field of global warming counteraction that can be subject to legislative changes, international political initiatives that may create preconditions for such changes, as well as an effect of these changes on national legislation of states. To achieve these research goals, the method of political and legal analysis and legal forecasting method are used in the study. The study reviews and analyzes political and legal trends in the scope of global warming counteraction at the international level. Namely, the authors considered an implementation of the UN Framework Convention on Climate Change, the Paris Climate Agreement, and the issue of the international legal status of “disappearing” states. Moreover, the authors reviewed recent developments concerning a consolidated approach in relation to obligations undertaken by states as part of the UN Climate Change Conferences.

**Keywords** Climate change · Reducing emissions · Greenhouse gases · UN Framework Convention · Paris Agreement · Kyoto Protocol

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## 1 Introduction

The greenhouse gases produced naturally play an important role in the survival of humans and other living beings, retaining some of the solar heat and making the Earth's climate livable. The effects of industrialization, deforestation, fuel burning, and the application of certain farming methods have led to an increase in greenhouse gas emissions into the atmosphere (Urpelainen 2012). Population growth and economic development are directly related to the increase in greenhouse gas emissions—the main cause of global warming.

The results of global warming, including, *inter alia*, changes in precipitation, rising sea levels, abnormal heat, and expansion of deserts pose a threat to human existence, representatives of the animal and plant world (United Nations 2020a). For example, sea level rise alone can lead to an event that was not previously observed in modern history—to the physical disappearance of some low-lying island states, which, in turn, will raise the question of their sovereignty and status of subjects of international law (Eyckmans and Finus 2007; Yamamoto and Esteban 2010).

To counter global warming and to minimize its consequences, national governments and international organizations have developed and adopted numerous legal acts, the most significant of which are the 1992 United Nations Framework Convention on Climate Change, the 1997 Kyoto Protocol, and Paris Climate Agreement 2015 (Solntsev 2018). The priority in combating climate change is noted in the Sustainable Development Goals (17 goals and 169 tasks that all UN member states have agreed to achieve by 2030), which also needs to be taken into account in the implementation of international and national law. Moreover, not only states and intergovernmental organizations, but also non-governmental actors (large cities, transnational corporations, and non-governmental organizations) are encouraged to implement the provisions of international legal acts (Solntsev 2018).

Despite the considerable efforts of international subjects of authority and public organizations to reduce greenhouse gas emissions, it is still quite a challenge to properly monitor this process and bring the perpetrators to justice. Thus, OECD countries produce about 39% of global greenhouse emissions. Despite the fact that the OECD already has a legal framework in the field of environmental protection that extends to its participants, legislative requirements are usually based on the self-awareness of its members, and not on the mandatory implementation thereof. At the same time, each country also has its own legal system of environmental protection. Therefore, the unification of the environmental law system for the entire organization is necessary to reduce anthropogenic greenhouse gas emissions (Tam et al. 2019). The need to unify environmental legislation is also relevant to all other states interested in preserving the environment and stopping global warming. To cope with the enormous effects of rapid global warming, governments must harmonize laws, standards and tools to protect the environment from the negative effects of human impact (Percival et al. 2017).

The relevance of this study is due to:

- Dynamic changes in the political and legal agenda, stipulated by the search for new solutions to stop the growth of global warming;
- The need to foresee possible scenarios for the development of policies and legislative regulation in this area.

Given the growing public concern about climate change, reflected in such international initiatives as the 25th UN Climate Conference, UN Climate Change Summit 2019,

the world community is looking for mechanisms to counter this phenomenon. Scientific research in this area confirms the need to adapt national regulatory legal acts to international legislation to develop common approaches (Tam et al. 2019). Thus, states parties to the Paris Agreement need to harmonize their national legislation with the latter and other international climate change instruments (Percival et al. 2017). Modern scientific papers indicate the possibility of the emergence of new areas of legislative regulation related to rising sea levels, the disappearance of territories and the emergence of the concept of “climate refugees” (Yamamoto and Esteban 2010). This problem is considered in the context of the international legal status of the so-called “endangered legal states” (Solntsev 2018). It is worth noting that the scientific community also shares critical views regarding the implementation of the Paris Agreement, which is characterized by the absence in its provisions of any sanctions or enforcement mechanisms (Bykovsky 2017; Kemp 2018).

As a result of the literature review, it can be argued that the indicated key knowledge gap is the lack of a comprehensive definition of what legal challenges the international legislation and the national legal systems may face, which international legal acts can launch legislative changes at national levels. In so doing, the studies do not assess the probable legal changes in both national and international levels considering the review and analysis of international acts in the context of modern politically-organizational initiatives.

This study aims to identify the challenges faced by international and national legislation related to climate change.

The events of the 25th United Nations Climate Conference 2019, the World Economic Forum in Davos 2020 significantly influenced trends in the international legal regulation of legal relations related to counteracting global warming, which created the basis for complex scientific developments in this field. The current research aims to define international legislation on counteracting global warming that can be subject to legislative changes, international political initiatives that can create the background for such changes, as well as an effect of these changes on national legislations. The method of political and legal analysis and the legal forecasting method are used in the study. To achieve the goal of the study, a task was set to analyze the sources of international law governing legal relations in the above field, the practice of their application, as well as a review of political initiatives, decisions and scientific developments in this field.

## 2 Materials and methods

This study is based on an analysis of the United Nations Framework Convention on Climate Change (UNFCCC), the Kyoto Protocol, the Paris Climate Agreement, which are the main international acts in the field of combating climate change.

The materials used in this study are the 2019 UN Climate Summit in New York, the 25th UN Climate Conference, the 50th World Economic Forum in Davos, as well as analytical materials from international publications (Guardian, Independent) and international audit firms (KPMG). These materials contain extensive discussions on state policy regarding the reduction of greenhouse gas emissions and make it possible to follow the dynamics of political and legal initiatives in the fight against global warming.

With the use of the method of political and legal analysis and the legal forecasting method, an analysis was made of legislative changes in the existing legal field in the scope of global warming counteraction, trends in scientific research, and the prerequisites for a possible integration of scientific ideas into legislative provisions. Changes in the

international legal framework, as well as the political initiatives reflected in the work, show how the issue of global warming has become a priority in the global political agenda. The work considers in stages the evolution of international legislation in the field of combating global warming, taking into account key milestones such as the United Nations Conference on the Human Environment, the signing of the Kyoto Protocol, agreements reached during the United Nations Climate Change conferences, the Paris Agreement on Climate Change and recent world trends in this area due to the US withdrawing from the above-mentioned Agreement and others. The study considers the Paris Agreement from the perspective of its political and legal status. The method of legal forecasting allows to foresee the possible changes in the field of international legal regulation on counteracting global warming. Analysis of the existing legislative framework includes a study of acts of international law in terms of their practical application, advantages and disadvantages.

The results of the study suggest that the development of legal regulation in the field of combating global warming in the coming years, taking into account the growing level of international concern about climate change, will become increasingly significant. Despite the considerable efforts undertaken by world governments and international organizations in the fight against global warming, the study confirms that many legal relations in this area remain unresolved. The latter is connected, first of all, with the issue of practical implementation of the Paris Climate Agreement of 2015. This applies, first of all, to the aspects related to the control over the implementation of the Paris Agreement, the enforcement mechanisms of its implementation. At the same time, many states see in the Paris Agreement a certain political subtext, with the help of which the Paris Agreement can become a lever of influence of some countries on others to achieve their economic goals. In addition to the foregoing, the predicted results indicate that sea level rise caused by anthropogenic factors in the near future may put the world community in need of a number of political and legal measures. Namely, those that relate to the preservation of island states, the development of international legal documents confirming their status (since the issue of sovereignty directly relates to the concept of the state's territory), and the legal status of their citizens. There is also reason to believe that following the above, a question will arise regarding the responsibility of countries whose activities have led to catastrophic natural changes. At the same time, the following should also be taken into account:

- A high degree of involvement of international organizations in the development of mechanisms to prevent global warming;
- The awareness of these organizations concerning the complexity of the problem and their willingness to make important political decisions;
- The presence of political will.

### 3 Results and Discussion

Measures taken in the international arena with regard to combating climate change can be divided into several areas:

- Measures to prevent further climate change;
- Measures to adapt to climate change to limit the harmful effects;
- Financial and other measures to combat climate change and adapt to its consequences;

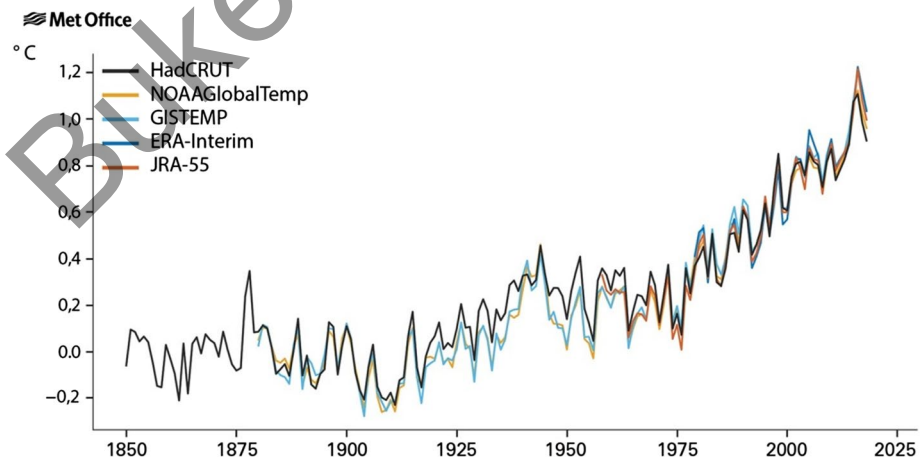
- Measures to promote implementation and compliance with relevant standards at the national level (Solntsev 2018).

In the context of developing three equal sustainable foundations: environmental, social, and economic one, the choice of soft or hard laws to solve environmental problems is always an issue for any government. In contrast to the rules of hard law implemented by the authorities, soft law is applied when at least one of these aspects of legal regulation is violated: obligation, accuracy, and delegation. Thus, at the international level in the field of environmental protection, there were both acts of soft and hard law, among which:

- The Stockholm Declaration (1972);
- The Geneva Convention (1979);
- The Vienna Convention (1985);
- The Montreal Protocol (1987);
- The UN Framework Convention on Climate Change (UNFCCC) (1992) (Tam et al. 2019).

In 1997, the Kyoto Protocol was adopted, which became the first international document that specified mechanisms aimed at the implementation of the UNFCCC (United Nations 1992, 1997). The essence of the protocol is to reduce greenhouse gas emissions to the level of 1990, by each country in accordance with its emissions. In 2015, in Paris, as part of the implementation of the UNFCCC (regulating measures to reduce carbon dioxide in the atmosphere), the Paris Climate Agreement (Paris Agreement) was concluded, which replaced the Kyoto Protocol.

The 2015 Paris Agreement set a global goal to stop the temperature increase at a level of 1.5 degrees Celsius higher than in the pre-industrial period, in order to avoid potential catastrophic climatic effects (see Fig. 1). According to the report of the Intergovernmental Panel on Climate Change published in 2018, unprecedented funds and efforts will be required to achieve this indicator. The United Nations Environment Program says that achieving the stated goal will require a reduction in greenhouse gas



**Fig. 1** The difference in global average temperatures relative to the base level of 1850–1990. *Source:* World Meteorological Organization (2019)

emissions of 7.6 percent per year from 2020 to 2030. According to the World Resources Institute, the implementation of this grandiose change will require significant investments in effective low-carbon technologies (McAfee 2016; McKenzie 2019). The Paris Agreement, like the UNFCCC, includes the basic principles of climate policy of states and the procedure for interaction between its participants. An important feature that unites them is the principle of “common but differentiated responsibility”. The concept of shared responsibility implies that absolutely all countries should be held accountable for improving the quality of the environment, as well as share responsibility for managing the climate system. The second part of the principle considered indicates the need to increase attention to responsibility for failure to comply with the first definition of the principle, primarily about the types, amounts and methods of responsibility.

One of the key differences between the Paris Agreement and the Kyoto Protocol is the principle of voluntariness of commitments, as well as the freedom to choose the policies and measures with which the country ensures the reduction of emissions, which in turn is marked by the absence of a carbon quota system. However, unlike the Kyoto Protocol, where commitments were set for five years, countries’ commitments under the Paris Agreement are designed for a much longer period (Davydova 2016).

During the 2019 UN Climate Summit, many large companies demonstrated steps taken to tackle climate change. The group of the world’s largest shareholders, responsible for investing more than \$2 trillion, has committed to move to carbon-neutral investment portfolios by 2050. 87 large companies with a combined market capitalization of more than \$2.3 trillion have obliged to reduce emissions and bring their businesses in line with the criteria of the Paris Agreement. In addition, 130 banks—one third of the world banking sector—have committed themselves to bring their business in line with the objectives of the Paris Agreement. The results of the summit emphasized the need to agree on political measures to accelerate the implementation of both the Paris Agreement and the sustainable development goals (United Nations 2019).

Amid growing recognition of the effects of climate change and the need to reduce greenhouse gas emissions, the 25th UN Climate Conference, known as COP25, was held in Madrid in 2019, after which the EU countries said that a quarter of the EU’s entire next budget would be aimed at combating climate change. France has stated that it will not conclude free trade agreements with a state that does not comply with the Paris Climate Agreement. France has also joined a number of countries that have committed to prohibit the exploration of coal and oil deposits on its territory and in coastal waters.

77 COP25 member countries have pledged to completely transfer the economy to the environmental path by 2050, making it neutral in terms of greenhouse gas emissions—that is, to compensate for the inevitable emissions with appropriate measures to clean the atmosphere from them. Other 70 countries, including China, India and the EU countries, have promised to review their environmental strategies, taking into account the latest recommendations of scientists for next year. The delegation of China, the state that is the largest producer of greenhouse gases, has promised to reduce emissions by 12 billion tons annually and look for ways to improve the economy in terms of reducing greenhouse gas emissions to a minimum (Voronin 2019).

In 2020, countries must submit new or updated national climate action plans. COP25 also aimed at developing guidelines for international carbon markets (Article 6 of the Paris Agreement). Other priority areas include adaptation to climate impacts, losses, and damage that developing countries suffer from climate change, as well as financing for decarbonization, and much more (McKenzie 2019).

The 50th anniversary World Economic Forum in Davos, held in February 2020, regarded climate problems. For the first time since 2005, climate change-related threats have taken the first five lines out of the ten most anticipated ones, overshadowing concerns about recession and economic inequality. Andrew Liveris, the former CEO of Dow Chemical, a large international chemical company, who is currently on the board of directors of Saudi Aramco, Saudi Arabia's national oil company, stated the need to abandon fossil fuel (Pomeroy 2020).

In the above context, it is worth noting that the issue of climate change is reflected not only in international political documents and acts of international public law, but also in international private law. The UN Human Rights Committee has for the first time examined an asylum case due to climate change. A citizen of Kiribati, seeking asylum in New Zealand, complained to the Committee about the decision of the New Zealand court to deport him to his homeland, although, according to him, such a move violates his right to life. Prior to this event, the New Zealand Immigration and Protection Tribunal refused to grant this citizen refugee status. All lawsuits to challenge this decision in court were not satisfied by the New Zealand judicial authorities (Amnesty International 2020). Although the UN Committee ruled that the applicant's right to life was not violated because sufficient protective measures were taken in Kiribati, committee member Yuval Shany suggested that the resolution set new standards that could contribute to the success of other cases involving asylum request due to climate change.

The committee also clarified that "climate refugees" were not required to prove that they would be in imminent danger if deported to their countries of origin or permanent residence. Their rationale has been that since climate-related events can occur as suddenly—for example, intense storms or floods—or gradually—as a result of slow processes such as sea level rise and land degradation, any situation can encourage people to seek security in another place. In addition, members of the Committee have emphasized that the international community should assist countries affected by climate change (United Nations 2020b).

The above problem is inextricably linked with the issue of sovereignty of "endangered island states". Due to the projected rise in sea level caused by rising levels of carbon dioxide in the atmosphere, several island states are likely to be under water over the next century, which will lead to the resettlement of their inhabitants in other countries, as well as raise the question of sovereignty of such states (Yamamoto and Esteban 2010).

In this case, states that suffer from the adverse effects of climate change may have questions to the "culprits", whom they can call to account through international courts and administrative bodies. For example, through the Paris Agreement Compliance Committee or the UN Committee on Economic, Social and Cultural Rights (Solntsev 2018).

The sharply opposing views on climate change point to probable ways in which global warming and attempts to mitigate its effects can change the balance of political and geopolitical forces. Global warming could be a major factor in political instability. Since 2010, wind electricity has fallen in price by 22%, the average cost of solar energy has decreased by 73%, and the price of lithium-ion batteries for automobiles—by 80%. If this trend continues, a large-scale replacement of fossil fuels in the coming decades based on commercial considerations will become uncontested. However, the process of phasing out fossil fuels today is not straightforward. The positions of some of these fuels may be strengthened. While coal production is shrinking in the US and Europe, continued coal use in Asia and elsewhere is driving coal production up among major producers such as Russia, Indonesia and India, and according to the International Energy Agency estimates the global coal use will remain in generally stable over the next five years (Turton 2020). If hydrocarbons

cease to be the driving force of the global economy, then for the United States it will not be efficient to maintain its dominant position in the Middle East. Russia, Iran and Saudi Arabia will also face significant challenges related to the loss of their markets (Lieven 2019). According to a study by a group of Canadian scientists, over the next fifty to one hundred years, the northern territories of Canada and Russia will become suitable for growing crops, but at the same time, this poses a threat of environmental disaster (Hannah et al. 2020).

In accordance with the provisions of the Paris Agreement, each of the participating countries undertakes to develop at the national level a program to reduce the level of emissions that it intends to achieve by using national measures to prevent climate change. Developed countries, as indicated in the Paris Agreement, should continue to play a leading role by setting targets for the absolute reduction of emissions throughout the economy. Developing countries have the responsibility to continue to step up their efforts to prevent climate change. The agreement encourages them to move over time to targets for controlling or reducing emissions across the whole economy, taking into account different national circumstances. Parties that are developing countries should regularly report on progress made in implementing plans, policies, actions or measures to implement the Paris Agreement (United Nations 2015). The financial obligations of the parties to the Paris Agreement are enshrined in Art. 9. Developed countries are expected to provide financial resources to assist developing countries in their efforts to mitigate climate change and adapt to the adverse effects of this phenomenon (Art. 9 (1)). Other parties (i.e. everyone except developed countries) may provide such support on a voluntary basis. In addition to reporting on funds already provided, developed country Parties undertake to provide indicative information on future support every 2 years, including projected levels of public financial resources.

An important achievement of the Paris Agreement was the separation of the issue of losses and damage into a separate article (Art. 8). The parties decided to act through the existing Warsaw International Mechanism for Loss and Damage (Warsaw Mechanism) (Art. 8 (2)). This mechanism was created on the basis of the decision of the 18th Conference of the Parties to the UNFCCC. In accordance with its mandate, the Warsaw Mechanism has three main functions: facilitating risk management, strengthening communication between stakeholders and increasing action and support. At the 20th Conference of the Parties, the initial two-year work plan of the Executive Committee of the Warsaw Mechanism was approved, and the mechanism itself became a permanent structural unit in the UNFCCC system (United Nations Climate Change 2020).

As can be concluded from the provisions of the Paris Agreement, in addition to environmental goals, the Paris Agreement also has political goals. The latter are reflected in the possibility of using levers of influence on developing economies, which can lead to negative consequences, for example, in the hydrocarbon production industry. Thus, during the 22nd Conference of the Parties to the UN Framework Convention on Climate Change (COP22), the Russian representative said that Russia does not consider the abandonment of hydrocarbons as a way to reduce greenhouse gas emissions, in the framework of fulfilling its commitments in the medium term. At the same time, at the national level, Russia recognizes the importance of reducing greenhouse gas emissions and carries out relevant work in the field of adapting national legislation to international criteria (Bykovsky 2017). To date, the Paris Agreement has been signed by Russia but not ratified (Doff et al. 2019).

In June 2017, fulfilling his campaign promise, U.S. President Donald Trump announced the U.S. withdrawal from the Paris Agreement, which caused a flurry of criticism of his actions by other parties to the Paris Agreement and did not find support

among U.S. citizens. A survey conducted in 2018 by the Yale Program on Climate Change Communication (YPCCC) has shown that 77% of Americans believe that the United States should remain in the Paris Agreement. Among registered voters, 66% have said they oppose Trump's decision to withdraw from the Paris Agreement (Farand 2019).

When Trump first announced his decision to leave in 2017, representatives of the private sector of the economy, local government, public and other organizations formed the "We Are Still" declaration, with the aim of sending a clear signal of support for the Paris Agreement from all over the United States. Thus, many companies acting contrary to the official position of the state declare support for the Paris Agreement and their views on the vectors of development of national environmental policy. In early 2019, more than 75 U.S. companies met with U.S. lawmakers to urge Congress to enact new environmental laws, and insisted that the government pursue a clear and consistent policy aimed at accelerating the transition to full decarbonization of the economy by 2050 (Austin 2019).

In scientific circles, there is an opinion that the main reason for the US lack of a national policy in the fight against global warming is the opposition from influential corporations. This opposition is expressed in many different ways—from total rejection to objections to trade restrictions and participation in international agreements such as the Kyoto Protocol (Rose and Stevens 2001; Tam et al. 2019).

After the formal withdrawal from the agreement, the United States will still be able to participate in climate negotiations and participate in discussions related to the Paris Agreement as an observer, not being able to make decisions or block consensus, but being able to use soft power to continue to influence international climate change policies (Farand 2019). At the same time, taking into account the information of the US Presidential Administration, there is reason to believe that D. Trump has changed his position on global warming and now considers it to be a serious problem, which might significantly affect US priorities in the field of climate change (Trump 2020).

The criticism of the Paris Agreement is based on the fact that it does not contain norms regarding an effective coercive mechanism for the implementation of the agreements reached, and also does not provide for any measures of influence on the parties in case of failure to fulfill their obligations (Bykovsky 2017). Opponents of the Paris Agreement state that support for the Agreement is based mainly on reckless optimism about the use of political pressure and the "investment signal". At the same time, real levers of influence on the participating countries have not been established, and the effectiveness of its action has never been the main priority of the Agreement, but only universal participation. A systematic criticism of the Paris Agreement shows that although feedback mechanisms exist, they are unlikely to be effective. Neither political pressure nor investment signals are a proven lever of influence on the subjects of the Agreement (Kemp 2018).

According to its legal origin Paris Agreement is a treaty within the definition of the Vienna Convention on the Law of Treaties. But not every provision of this agreement creates a legal obligation. It contains a combination of mandatory and non-binding provisions regarding the parties' contributions to mitigating the effects of climate change. It cannot be said unequivocally how important the legally binding nature of the Paris Agreement and its various provisions is. The adoption of a legally binding provision can provide a better signal of commitment and a greater guarantee of compliance. But transparency, accountability, and accuracy can also be more important, with legal binding being ambiguous if it forces states not to participate or to accept less ambitious commitments. Thus, a legal issue, although important, is only one factor in assessing the significance of the Paris Agreement (Bodansky 2016).

Within the framework of international law, the terminology of “soft law” (applied in Paris Agreement) remained relatively contradictory due to its rejection by international lawyers (practitioners), and for others there is sufficient confusion regarding its status in the field of law. However, it can be assumed that the development of soft law instruments is an accepted part of the trade-offs required for daily work in the international legal system, under which countries are often reluctant to take on too many obligations that can lead to national indignation connected with a volume of means and resources for international purposes.

Empirical studies comparing the obligations of hard (binding) and soft law in terms of compliance and effectiveness are ambiguous, but the accuracy of the obligations and effective mechanisms for non-compliance with the documents of the contract level are important. So, when states show a strong political will, it is believed that contractual instruments with strong obligations are more likely to be effective. The development of elements of the Paris Agreement regarding transparency, review and non-compliance is important, but it cannot replace a strong political will to reduce emissions (Lawrence and Wong 2017).

The growth of greenhouse gas emissions and global warming puts the world community in the face of another major problem that international law may face in the near future. According to recent studies, the world may face the threat of the extinction of a number of small island states (in particular, Tuvalu, Vanuatu, the Marshall Islands) due to rising sea levels caused by global climate change. Thus, as a precaution, residents of the low-lying islands of Vanuatu in the Pacific Ocean were evacuated. The disappearance of the island of Lohachara, in the Indian Ocean where 10,000 people once lived, is unprecedented (Lean 2006).

Accordingly, a question will arise regarding the sovereignty of endangered states caused by the disappearance of their territory. Other questions will arise regarding, for example, the delimitation of territorial waters as a result of changing borders, citizenship of environmental refugees from these countries (Byrnes and Harrington 2019). The Intergovernmental Panel on Climate Change (IPCC) emphasizes that climate change threatens the long-term sustainability of society in island states and that some island states are threatened with complete disappearance from the map due to rising sea levels.

The consequences of climate change leading to migration causes new concerns about the legal status of the population forced to leave their territory due to the impact of this factor. International efforts on climate change since the 1972 United Nations Conference on the Human Environment (UNCHE) have not created the necessary prerequisites for addressing climate change-related population migration. UNCHE rather identified Common Heritage of Mankind and sovereignty of states in exploiting their natural resources, with the mind of its effects on others. The United Nations Framework Convention on Climate Change (UNFCCC) addresses the issue of determining the legal status of “climate migrants” only indirectly. (Amusan and Jegede 2014). Subsequent international documents such as the Kyoto Protocol and the Paris Agreement also do not answer the question about the status of climate refugees (migrants) and the status of “disappearing states”.

In the context of the distinction between the concepts of “climate refugee” and “environmental migrant”, it should be noted that according to the International Organization for Migration (IOM), the word “refugees” implies that the displaced persons in their homeland were in immediate danger. Since many climate changes occur, albeit inevitably, but gradually, the term “refugees” is not always applicable to such situations. So in the absence of direct danger, the IOM usually refers to environmental migrants. However, this term is not endowed with any legal status. Despite the lack of legal definitions of “climate refugees” and “environmental migrants”, this does not mean that they do not

really exist. IOM stresses that the need for a legal solution to the problem is growing along with global climate change (Environmental Migration Portal 2020).

In the circumstances of African countries, when general migration takes place in response to the harsh realities of climate change, the need for survival can revive the debate on borders. This development potentially challenges the concept of “defined territory” as most ethnic population in Africa are sparsely spread over different countries. Based on the historical circumstances and legal realities of African countries, it is likely that the legal principle of *Uti Possidetis* applicable in many African countries (endorsed by the Organization of African Unity, since 1964) will require revision (Amusan and Jegede 2014).

Nowadays the concept of a “deterritorialized state”, which can provide the institutional tools people need to maintain a certain degree of self-determination even after they have been forced to leave their home country is being studied. International law is fully capable of responding to the issue of disappearing states in such a way that it positively recognizes their sovereign rights excluding factor of subjecting them to further victimization caused by the loss of not only their territory, but also their sovereign existence (Ödalen 2014). Despite the absence of a statutory definition, the concept of a “deterritorialized state” is not new and is not rejected by current international law (Rayfuse 2010). An example is the Holy See, which was recognized as a state despite having no territory between 1870 and 1929, when the Papal States were annexed by Italy as well as the Order of Malta, now viewed as statelike entity (Ödalen 2014).

Respectively to island states, such a special type of international entity may allow these states to survive in a case of the disappearance of their territory. Moreover, it can be argued that the main emitters of greenhouse gases should consider a promising issue for the protection of the rights of residents (citizens) of endangered territories, since the responsibility for raising sea levels will most likely be assigned to them (Yamamoto and Esteban 2010).

Currently, only one attempt has been recorded on the above issue to obtain an advisory opinion in the UN International Court of Justice. In 2011, the Palau-Initiative Conference of Small Island Developing States called for a petition to the UN International Court of Justice for an advisory opinion on whether states bear international responsibility for greenhouse gas emissions. The issue concerned an international obligation of states to ensure that any activity within their territory related to the release of greenhouse gases does not harm other states. This initiative was not supported by most states in the UN General Assembly. In general, it cannot be ruled out that such a request will not be repeated, and the adoption of an advisory opinion by the International Court of Justice in the future will have a positive impact on the solution of the problem of climate change. The difficulty, in this case, is the proof of a causal relationship between the activity and the harm caused, i.e. the fact that the greenhouse gas emissions of a particular state have led to the flooding of a certain endangered island country (Solntsev 2018).

The foregoing once again emphasizes that soon a significant part of the planet may become unsuitable for human life. Even 1.5 °C warming will have dramatic climatic consequences. Even to keep warming at the level of 1.5 °C by 2030, greenhouse gas emissions should be reduced by 7.6% annually over the next decade. The solution could be a significant strengthening by countries of the world of their obligations on greenhouse gas emissions. In the final statement, the participants in COP25 called on states to implement measures to fulfill the conditions of the Paris Agreement, but there were no specific mandatory steps in this document. Chairman of the Conference, Minister of the Environment of Chile Carolina Schmidt expressed hope that the final statement would help to reach an agreement at the next conference in 2020 in Glasgow (Timperley 2019).

In connection with the foregoing, it should be borne in mind that the creation of a legal and economic justification for reducing greenhouse gas levels is only part of the challenge of combating climate change. The basis of effective international legal regulation of global warming should, first of all, be the change in social values and behavior. The report, published in the Proceedings of the National Academy of Sciences of the United States of America (PNAS), identifies six “turning points”, or “interventions” (instruments of influence), that can serve as a catalyst to ensure rapid social and technological change toward a sustainable future. The study emphasizes the importance of such interventions for positioning fossil fuels as less economically and morally attractive. Such a move can lead to tipping points that will reorient investment and consumer demand from fossil fuels towards more sustainable energy sources. This can be done with:

- Abolishing subsidies for activities related to the extraction of fossil fuels and stimulating the transition to decentralized energy systems and increasing the competitiveness of clean energy production and storage systems;
- Encouraging investors associated with fossil fuels to channel investments in less polluting technologies, as a result of which investors will seek to avoid the prospect of linking “inactive assets” to fossil fuels;
- Urban construction based on the principles of sustainable development and renewable energy sources;
- Identification of the “moral consequences” of fossil fuel use;
- Providing the public with relevant information on greenhouse gas emissions;
- Promotion of interest in environmental education (Wood 2020).

The above emphasizes the fact that future developments in politics and legal regulation in the field of climate change should be based, first of all, on the information and educational component. The latter is closely related to the need for society to recognize the impossibility of returning to the traditional capitalist model of economic development that prevailed in the 20th century without taking into account environmental impact.

## 4 Conclusions

Climate change is one of the main challenges faced by modern society. The efforts of the world community, including in the legislative field, are gaining momentum every year. This study emphasizes the fact that in order to effectively combat global warming, governments must synchronize national legislation, standards and tools to protect the environment from the negative effects created by society as a whole and deliberate outside interference. National legislation should also be harmonized with international legal instruments.

This work makes it clear that the Paris Agreement, which is today the key strategic document in the field of combating climate change, may be primarily subject to legislative changes. This directly refers to aspects related to control over implementation of the Agreement, enforcement mechanisms of its implementation. National legislative acts related to the implementation of decisions adopted at COP 25, held in 2019, can undergo changes, since the obligations of participating countries imply the development of certain legal mechanisms for their implementation. International law will have to deal with the issue of determining legal status of “disappearing states”, which may soon be reflected in the adoption of a separate international act. A Resolution of the 2020

UN Human Rights Committee regarding asylum due to climate change had set a precedent that could affect national legislation regarding the prohibition of the deportation of environmental (climate) refugees.

The results of the 25th UN Climate Change Conference have shown a widening gap between what is needed to tackle climate change and what many governments are proposing to do. The widespread public perception that governments should do more is not yet fully reflected in politics. As the effects of climate change become more apparent and alarming, governments that are currently seen as lagging behind may be forced to adopt more stringent policies in the future. In particular, the question arises of the possible need to establish responsibility for the failure of state parties to fulfill international obligations in the field of environmental protection and climate change, expanding the powers of competent supranational bodies in the field of monitoring the implementation of such obligations.

As can be seen from the study, raising the question of the responsibility of countries producing more greenhouse gases towards the bodies of international jurisdictions seems quite probable and this issue will obviously require the development of appropriate legal mechanisms for the realization of people's rights to a safe environment. However, the creation of effective legal mechanisms and the question of their implementation, as can be noted, is an outgoing factor. The primary factor in the implementation of effective legal measures to combat climate change is primarily political will. For example, the abolition of subsidies for mining activities under the conditions of a state is primarily of a pronounced political connotation, however, one way or another, it is capable of putting into effect a long chain of legislative changes.

The problem of legislative regulation of issues of sovereignty and international legal status of disappearing states caused by climate change, as well as the status of "environmental refugees" should also be reflected in international law. In addition, in the near future, international institutions will have to develop criteria for determining liability and a mechanism for recovering losses in relation to this kind of climatic consequences.

At the same time, the positive results of international cooperation in the fight against global warming should be noted. Climate policy is starting to take clear directions in many countries of the world. States that have committed or intend to reduce their carbon emissions to net zero by 2050 now account for about two fifths of global GDP, and it can be assumed that the decarbonization trend will remain unchanged now and in the future.

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## Compliance with ethical standards

**Conflict of interest** The authors declare that they have no conflict of interest.

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