A thesis submitted to the Department of Environmental Sciences and Policy of Central European University in part fulfilment of the Degree of Master of Science

Understanding the development of global environmental governance through environmental discourse of the United Nations

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July, 2020

Budapest

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ABSTRACT OF THESIS submitted by:

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Global Environmental Governance (GEG) is a mainstreaming approach in analyzing the global level politics in the field of environment, climate change and sustainable development. Scholars often notes the fragmented nature of the GEG across problems, levels, actors, instruments and forms of interaction in addressing the complex environmental issues. Despite the growing number of GEG studies, no attempt had been made to define what the "environmental" part in the GEG term actually means since it is extremely broad. This paper studies the contribution of the two United Nations organs (the General Assembly and UNEP) into the formation and following clustering of the environment as a field of policy. The combination of quantitative and qualitative methods was used in order to address this aim: content analysis and text-mining analysis. This research reveals a rapidly expanding network of environmental themes in the resolution of the General Assembly and the decisions of UNEP and blurry lines between problems that are usually referred to as political, politicaleconomic and the actual environmental ones. It was also revealed that the UNGA and UNEP, within the framework of environmental protection, perform functions that include managing the accumulation of knowledge, developing norms, promoting recommendations and institutionalizing ideas. It confirms the existing understanding of the role of the United Nations in global environmental governance.

Keywords: global environmental governance, environmental discourse, UN General Assembly, UNEP, content analysis, text-mining, environment, desertification, ecosystem, ocean

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List of Abbreviations

- ECOSOC United Nations Economic and Social Council
- GEG Global environmental governance
- IGO -- Intergovernmental organization
- MEA Multilateral environmental agreement
- NGO Non-governmental organization
- UN United Nations
- UNEP United Nations Environment Programme (UN Environment)
- UNGA United Nations General Assembly
- UNICEF -- United Nations Children's Fund

1. Introduction

1.1. Problem definition and background

The question of how existing institutions address rapid global environmental changes often is studied from normative or critical standpoints with the intention of elaborating suitable proposals for their reform. The different understandings of global environmental governance (GEG) between academia and practitioners in diplomacy require empiric examination of evolution of environmental discourse and its connections with institutional changes. Despite the growing number of GEG studies, no attempt had been made to define what the "environmental" part in the GEG term actually means since it is extremely broad. What is the scope of "Environment" in global policy: which problems, sectors, resources, and objects it embraces, linkages across problems, in what context they emerge and develop?

The environmental challenge is an established research subject in political and international studies. Generally, scholars highlight the historical background of the modern international environmental agenda and global environmental policy (Caldwell and Weiland 1996; Kenny 2016). The dominant view is that introducing environmental issues into the international agenda is related to a series of significant United Nations conferences and adoption of international environmental agreements. However, in recent years, the role of intergovernmental organizations in the international relations continues to grow. Including due to the fact that their range of responsibilities is expanding (Barnett and Finnemore 2004; Biermann and Siebenhüner 2009). At the moment, it is possible to say that IGOs are able to manage the accumulation of knowledge, develop norms, promote recommendations and institutionalize ideas (Weiss and Thakur 2010). In addition, the emergence of international environmental organizations has changed and continues to influence environmental discourse (Conca 1995) it seems important to examine how environmental discourse of environmental IGOs develops for understanding the formation of global environmental governance.

In this regard, this work will investigate the role of the largest IGO, the United Nations, in the development of environmental discourse, namely, two of its institutions: the General Assembly and the UN Environment. The reason for choosing these two UN entities is determined by two factors. First of all, this is due to the role they play in the international arena. The General Assembly is the largest forum in which member countries can raise issues related to various aspects of international regulation, including political, economic, social and environmental ones (Kenny 2016). In addition, the UN General Assembly is one of the institutions that influence the formation of international discourse and governance, including the environmental one (Kopylov et al. 2013). The UN Environment, in turn, is the only institution in the UN system whose activities are exclusively related to environmental protection. Prioritizing the need for coordination and cooperation functions (UNGA 1972), UNEP has diversified its work in the following areas: climate change, disasters and conflicts, ecosystem management, environmental governance, chemicals and waste, resource efficiency, and environment under review (UNEP 2020). In addition, some scholars see UNEP as an institution that can help improve the situation related to the development of the global environmental governance process (Esty and Ivanova 2002).

Secondly, despite the fact that both UN entities are popular research subjects, the range of empirical studies that would address issues related to the role of these UN entities in the development of environmental policy and discourse is rather narrow. In the case of UNEP, the main vector of research, since the creation of this institution of the UN system, has been associated with improving its work and increasing the effectiveness of its activities. In particular, one of the areas of analysis of UNEP activities is its role as a leading institution in the system of global environmental governance and possible ways to strengthen this role (Ivanova 2012; Najam 2002; Biermann 2001). For similar purposes, scholars examine specific areas of UNEP work, such as UNEP's environmental monitoring system (Jensen and

Brown 1975; Caroli *et al.* 1996; Aronczyk 2018). At the same time, studies that would use quantitative methods are quite rare and also cover only one specific aspect of Programme's work (Mazzarino *et al.* 2020).

Typically, the UN General Assembly is examined in the context of its role in maintaining peace and security (Kenny 2016). However, quantitative methods for studying issues related to the General Assembly are not the main ones. One of the main areas of research in which these methods are actively used is the study of patterns of voting behavior of Member States (Bailey et al. 2017; Carter and Stone 2015) and their blocks (Kurşun and Parlar 2017). Such a quantitative method as content analysis is used to analyze the activities of the General Assembly and the topics discussed in its framework are also extremely rare. For example, it is used to study changes in the agenda of the UN General Assembly in the period from 1946 to 1957. (Petersen 1958). The content analysis method can be considered promising from the point of view of one of the current trends within the United Nations system - the greening of the organization process (Conca 1995). But there are only few attempts to trace evolution of the substantive content of the international environmental agenda drawing on the analysis of the General Assembly documents. For example, content analysis is used to study the formation of the UNGA environmental agenda in the period from 1946 to 2016 (Bliznetskaya and Vasilenko 2018). But the result of the study is only the identification of the main issues that make up the environmental agenda of the General Assembly, such as sovereignty over resources, environment, sustainable development, desertification, climate, natural disasters. For a more complete understanding, an analysis of the texts of the resolutions themselves is also necessary to determine the context within which these issues were discussed.

In addition, the General Assembly is not the main and only body in the UN system that deals with environmental issues. Accordingly, there is a need for a more comprehensive study, which would include an analysis of the environmental discourse of other UN institutes from

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the perspective of both quantitative and qualitative assessment, which would allow drawing conclusions about the formation of international environmental discourse and international environmental governance.

1.2. Project aims and objectives

The *main aim* of this research is to study the contribution of the two United Nations entities (the UN General Assembly and UNEP) into the formation and subsequent clustering of the environmental issues as a field of global governance.

Research questions are listed below:

- 1. What is the scope of the "Environment" in the discourse of the UN General Assembly and UNEP from 1972 to 2018: which problems, sectors, resources, and objects it embraces?
- 2. In what context do the identified environmental issues emerge and develop in the discourse of the analyzed United Nations entities?
- 3. Are there linkages across these issues between the UN General Assembly and UNEP, and if so what kind of linkages are they?

To achieve these aim and objectives I am going to conduct study of documents of these UN entities (UNGA resolutions and UNEP decisions). These documents are analysed using a computer-assisted approach that includes content analysis and text-mining techniques. Such an analysis will make it possible to identify a range of environmental issues in the UN General Assembly resolutions and UNEP decisions, as well as to see the context in which they are discussed within the framework of the work of these UN institutions. A more detailed description of the methods used and the research approach will be discussed in the methodology section

1.3. Outline

The literature review (*Chapter 2*) contains the main provisions characterizing the current state of the concept of global environmental governance and the role of environmental intergovernmental organizations in it. In addition, this chapter examines the theoretical and practical aspects of transforming environmental problems into policy issues. It also analyzes the concept of environmental discourse with its approaches, subtopics and roles of different actors in the formation of environmental discourse. *Chapter 3* introduces the methodology used in this study. In particular, this chapter justifies the choice of methods and the prospects for their use for studying environmental discourse, and also describes the data used in this study. *Chapters 4 and 5* present the results of this study and discuss the overall results of the research. In particular, *Chapter 4* provides an overview of environmental topics on which the UNGA and UNEP adopt policy documents. A description of the context that relates to the environmental issues identified in Chapter 4 within the UNGA and UNEP is contained in *Chapter 5*. *Chapter 6* provides the summary of the work. If not mentioned differently, figures and tables were created by author.

2. Literature review

This chapter of the thesis contextualizes the research problem in the field of existing academic literature and outlines and shows how this work contributes to knowledge in the area. First of all, this chapter examines issues related to global environmental governance, including approaches to understanding this concept, as well as key provisions that characterize its development at the present stage. In addition, special attention is paid to the role of actors in the global governance system. In particular, the activities of the United Nations and its institutions. The second part of this chapter presents theoretical and practical approaches to social construction of environmental problems, which is necessary for these problems to become policy issues, and therefore part of a policy discourse. The final part of the literature review provides an analysis of such a direction of research as environmental discourse. This part covers aspects related to the diversity of the idea of environmental discourse, namely approaches to its definition and classification, as well as those actors which, in addition to states, create an environmental discourse in the international arena. In general, this chapter and the ideas and concepts presented in it are united by one goal - to show that it is possible to study the UN contribution to the development of global environmental governance by analyzing the discourse of this IGO, as well as the relevance of such studies.

2.1. Global environmental governance and the United Nations

2.1.1. Global environmental governance: development of the concept and its main characteristics

At the moment, the main processes that characterize international relations are economic globalization, as well as the unification of the world through ultra-fast communication tools, common standards and typical regulatory mechanisms of the most important areas. However, all these processes did not lead to political globalization. The global political system is still

state-centered and relies on multilateral diplomacy and treaties rather than world government. The system of agreed rules, norms, institutions and practices, with the help of which the world community collectively manages issues of common interest, is usually characterized in the scientific literature as global governance.

The Commission on Global Governance (1995) defined global governance as a set of individuals and institutions, public and private, who govern issues common to all. It is an ongoing process in which conflicting or differing interests can be considered and acted upon together (Commission on Global Governance 1995). Rosenau (1995) considers global governance equally broadly: "systems of rule at all levels of human activity - from the family to the international organization - in which the pursuit of goals through the exercise of control has transnational repercussions". As defined by Weiss and Thakur (2010), global governance is a set of rules, norms, policies and institutions that define, constitute and coordinate cross-border relations between states, citizens, intergovernmental and non-governmental organizations, and the market. It covers the entire community of institutions, practices, procedures and is initiated by states and their citizens in an attempt to achieve greater predictability, stability and order in their responses to challenges such as war, poverty, environmental degradation, which exceed the state's capacity to cope with them and are recognized by the latter as such.

Probably, the point of view of Frank Biermann (2004) is right. According to it absolutely all definitions of global governance are correct, but he himself prefers that for the purposes of analysis it makes sense to single out empirically a number of phenomena that characterize the current state of global governance. Among them, he distinguishes three:

• global governance delineates world politics that is not limited to nation-states, but is characterized by the broader participation of actors that have so far been largely active at the subnational level.

- increased participation gives rise to new forms of institutions, in addition to the traditional system of legally binding documents. Politics nowadays are often organized in networks, and in new forms of public-private and private cooperation, and they develop relations between states and individuals.
- the emerging system of global governance is characterized by a new segmentation of decision-making processes, both vertically (multi-level governance) and vertically (multipolar governance), which results in the coexistence of policy-making processes at the subnational, national, regional and global levels in ever increasing spheres of life , which can potentially serve as a basis for both conflicts and synergies between different levels of regulation (Biermann 2004).

Similarly, speaking about global environmental governance, one should remember that this concept can be viewed from the perspective of three vectors: "as an analytic description of current transformations of global politics, as a political program in the affirmative sense, and as a political program in the critical sense" (Biermann and Pattberg 2008). However, in general, the concept of global environmental governance can be understood as "the sum of organizations, policy instruments, financing mechanisms, rules, procedures and norms that regulate global environmental protection" (Najam *et al.* 2006).

Despite the fact that this concept can be called relatively new, its origins are connected with the 1972 United Nations Conference on the Human Environment and the subsequent beginning of a comprehensive study of international cooperation in the field of environmental protection (Kennan 1970; Johnson 1972). Further development of the scholars' view of global environmental governance took place already in the 1980s and 1990s under the influence of research on international environmental regimes (Krasner 1983; Young 1989; Wettestad 1999). At the moment, global environmental governance, just like the concept of global governance, is characterized by an increase in the number of stakeholders other than states, which were historically considered the only and key players in the international arena. Intergovernmental organizations, NGOs, business and groups of experts are becoming increasingly important. In addition, the system of global environmental governance itself becomes more complex, as new mechanisms and institutions are being created and implemented. This process, in turn, leads to further segmentation and fragmentation, which is the third feature that characterizes the current state of this concept (Biermann and Pattberg 2008).

Speaking about the ever-increasing role of new actors of global environmental governance, and especially about the role of environmental intergovernmental organizations, it should be noted that this process is primarily associated with an increase in the number of such organizations. In recent years, their number, including the secretariats of environmental conventions, has reached 200 (Biermann and Pattberg 2008). However, qualitative changes associated with the role and place of IGOs in the system of international relations are also important. Environmental intergovernmental organizations have acquired new responsibilities and at the same time have become more independent from the national governments that created them. The new role of environmental IGOs is expressed in their ability to create environmental discourse and share knowledge about environmental problems, as well as find solutions for them. In addition, these organizations have the right ideas and expertise to influence the negotiation process (Barnett and Finnemore 2004; Biermann and Siebenhüner 2009).

All these factors indicate the relevance of studies on the contribution of intergovernmental organizations to the formation of global environmental governance. And since the United Nations is the largest IGO, it seems necessary to further consider the role of this organization in the development of global environmental governance.

2.1.2. Role of the UN in the emerging system of global environmental governance

The expansion of the UN in breadth, its structural complication and diversification of the services it provides to the international community raise the issue of its identification rather sharply. By "the UN," scholars and experts mean the decisions of the Security Council, and peacekeeping missions, and a statistical report and humanitarian aid to earthquake-hit areas. It is quite obvious that the philistine consciousness does not distinguish between the UN as an interstate forum and as an expert community that writes reports for the Organization, between its normative and operational activities, not to mention more subtle things, such as organizational hierarchy, mandates of global conferences and legal the power of various UN documents.

Accordingly, all the numerous failures and rare successes are attributed to the abstract UN, as if this Organization has a will that differs from the will of its constituent states, and complex and inflexible procedures and rules of work were created by an independent international bureaucracy. The analysis of any activity of this global structure, for the purpose of description or criticism, requires clarification, and what will be understood by the UN? Where does the Organization fit into the emerging architecture of global governance? How fair is it to speak of the UN as an independent actor? How powerful is the UN in relation to states and non-state actors?

Strictly speaking, the UN is an intergovernmental organization, the Charter of which establishes the principles and rules of behavior of states in the world arena, and the Organization itself is called upon by its activities to put these principles and rules into practice. The UN consists of six main bodies: the General Assembly, the Security Council, ECOSOC, the Secretariat, the International Court of Justice, the now defunct Trusteeship Council (UN 1945), and the subsidiary institutions created by these bodies: UNEP, Human Rights Council, UNICEF, etc. Intergovernmental organizations that make up the UN system

and administrative entities of international agreements (secretariats) are bound by treaties with the UN^1 ,. Together with the principal and subsidiary organs of the United Nations, they form the United Nations system (UN 1945).

Already from the definition of the UN it follows that this intergovernmental organization occupies a special position in the world political system. It was created by the victorious powers of the world war during the period of the final transition to a system of national sovereign states, and the Preamble to the Charter proclaims that the Organization is being created on behalf of the peoples². The goals of the UN, the functions and powers of its main bodies are spelled out in such a way that they allow to include in the mandate of the Organization an infinite number of issues. The establishment of relations with other intergovernmental organizations performing functions important for the fulfillment of the UN goals, the performance by the Secretary General of the functions of the Depositary of all international treaties (UN 1945), placed the UN at the center of the institutional structure of interstate cooperation.

At the time of its creation in 1945, the UN, with a family of specialized agencies, was the most influential transnational player in the world after states, and the organizationally most developed embodiment of multilateral diplomacy. Over the past 70 years, the world has changed a lot and interstate regulation has become only one, albeit leading, format for regulating international relations. The number of states has almost quadrupled, numerous non-

¹ Food and Agriculture Organization, International Civil Aviation Organization, International Fund for Agricultural Development, International Labour Organization, International Maritime Organization, International Monetary Fund, International Telecommunication Union, United Nations Educational, Scientific and Cultural Organization, United Nations Industrial Development Organization, Universal Postal Union, World Bank Group, World Health Organization, World Intellectual Property Organization, World Meteorological Organization, World Tourism Organization

² "We the peoples of the United Nations determined to save succeeding generations from the scourge of war, which twice in our lifetime has brought untold sorrow to mankind, and to reaffirm faith in fundamental human rights, in the dignity and worth of the human person, in the equal rights of men and women and of nations large and small, and to establish conditions under which justice and respect for the obligations arising from treaties and other sources of international law can be maintained, and to promote social progress and better standards of life in larger freedom...". (UN 1945).

state actors began to influence international affairs more and more, the process of globalization has made the borders of states transparent.

The UN has responded to each of these phenomena with varying degrees of success. Remaining in form as an interstate forum and representing a governance structure based on institutionalized practices and internationally accepted norms (Weiss and Thakur 2010), it quickly reacted to the growing influence of non-state actors or the private sector. The Global Compact and the 2000 Millennium Summit are often cited as examples of two events that have recognized the private sector as a necessary partner for governments and IGOs. Although earlier, during the preparation of the 1992 Earth Summit, a new concept was introduced for interstate negotiation practice - "major groups", which meant communities of farmers, women, indigenous peoples, youth, scientists and townspeople, and who were invited to participate in the conference. Then, in the early 90s, it was an aspiration to democratize representation in international negotiations and to involve "ordinary" people in solving problems that relate to their daily concerns and needs, to connect the local and the global. Yes, the practice of involving major groups remained a characteristic of "Rio-style diplomacy," but it definitely influenced later initiatives to go beyond the interstate format. Today it has become generally accepted that international monitoring of human rights is impossible without organizations such as Human Right Watch and Amnesty International, and taking into account foreign direct investment in UN statistics and development programs, which is many times higher than the volume of official development assistance provided by states and IGOs.

The UN also initiated the emergence and replication of such a form of cooperation as partnerships, which act, on the one hand, as voluntary allies in the implementation of internationally recognized political goals, and on the other, as "contractors" in the implementation of the operational activities of IGOs. An important milestone in the formation

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of this process was the 1972 Stockholm conference, as well as the preparation for it. As a result of these developments, environmental concerns have increased, which in turn has led to the increasing involvement of environmental NGOs in the work of the United Nations system (Conca 1995).

As for rule-making, this is what is in principle inherent in the Organization, since through it international rules are also created, assistance is provided for the development of national law and policy (especially in developing countries). At the same time, as some scholars note, the United Nations was and remains "the most important arena for the making of multilateral environmental agreements" (Andersen 2001). Moreover, since the 1970s, the number of MEAs has increased significantly compared to the previous period (Andersen 2001).

The UN contribution can also be viewed from the perspective of filling the five "global governance gaps" formulated by Thomas Weiss and Ramesh Thakur (2010), arising from one fundamental gap - the absence of a central source of power in world politics: in understanding and knowledge (knowledge gaps) ; rule-making, (normative gaps); policies (policy gaps); institutions (institutional gaps); compliance gaps. The UN fulfills four key functions in relation to them - managing the accumulation of knowledge, developing norms, promoting recommendations and institutionalizing ideas. In this regard, one can observe a growing demand for the UN to act as an information and analytical center and a coordinator of various initiatives of the international community.

At the moment, the institutions of the UN system, which to one degree or another include in their mandates the goals of environmental protection, are included in the so-called UN Environmental Management Group (EMG), created at the suggestion of the UN Secretary General. Among them (Najam *et al.* 2006):

Basel Convention Secretariat Convention on Biodiversity (CBD) Secretariat Convention on International Trade in Endangered Species (CITES) Secretariat Convention on Migratory Species (CMS) Secretariat Economic and Social Commission for Africa (ECA) Economic Commission for Europe (ECE) Economic and Social Commission for Latin America and the Caribbean (ECLAC) Economic and Social Commission for Asia and the Pacific (ESCAP) Economic and Social Commission for West Asia (ESCWA) Food and Agriculture Organization (FAO) Global Environment Facility (GEF) International Atomic Energy Agency (IAEA) International Civil Aviation Organization (ICAO) International Fund for Agricultural Development (IFAD) International Labour Organization (ILO) International Maritime Organization (IMO) International Strategy for Disaster Reduction (ISDR) Secretariat International Trade Center (ITC) International Telecommunication Union (ITU) Office for the Coordination of Humanitarian Affairs (OCHA) Office of the High Commissioner for Human Rights (OHCHR) Ramsar Convention Wetlands on Secretariat

Convention to Combat Desertification (CCD) Secretariat UN Conference Trade and on Development (UNCTAD) UN Department of Economic and Social Affairs/Division for Sustainable Development (UNDESA/DSD) United Nations Development Programme(UNDP) United Nations Environment Programme (UNEP) United Nations Educational, Scientific and Cultural Organization (UNESCO) United Nations Framework Convention on Climate Change (UNFCCC) Secretariat United Nations Population Fund (UNFPA) United Nations Human Settlements Programme (HABITAT) United Nations High Commissioner for Refugees (UNHCR) United Nations Children's Fund (UNICEF) United Nations Industrial Development Organization (UNIDO) United Nations Institute for Training and Research (UNITAR) United Nations University (UNU) Universal Postal Union (UPU) World Food Program (WFP) World Health Organization (WHO) World Intellectual Property Organization (WIPO) World Meteorological Organization (WMO) The World Bank World Trade Organization (WTO) World Tourism Organization (WTO)

However, despite so many organizations with environmental objectives in their mandates, the only UN institution that deals exclusively with environmental issues is UNEP. Founded in 1972 by resolution 2997 of the UN General Assembly, UNEP has become a new subsidiary body of the UN General Assembly together with its Governing Council and Environment Fund (UNGA 1972). According to this resolution UNEP is responsible for coordination and

cooperation in the sphere of environmental issues, monitoring of the state of the environment, and promotion and support of international scientific and professional communities. All these years UNEP has remained the only part of the UN system whose mandate is devoted exclusively to environmental issues. Nowadays activities of the United Nations Environment Program include wide range of issues such as climate change, disasters and conflicts, ecosystem management, environmental governance, chemicals and waste, resource efficiency, and environment under review (UNEP 2020).

Speaking about the contribution of UNEP to the development of global environmental governance, it should be noted that it managed to draw the attention of the world community to environmental problems and make them an integral part of the international agenda (Najam 2002). Separately, it should be mentioned that UNEP has managed to involve developing countries in solving environmental problems that pose the greatest threat to these countries. This is largely due to the fact that the Program headquarters is located in a developing country (Nairobi, Kenya). Today UNEP is the only organization of the UN system located in a developing country, this fact contributes to the development of dialogue with this group of countries (Ivanova 2012).

Moreover, as noted by Downie and Levy (2000), UNEP has contributed not only to the emergence of environmental issues on the international agenda, but also to its further development of the agenda in this direction, including new goals and objectives, such as combating desertification and organic pollutants, ozone layer protection. The expansion of the range of issues within the international environmental agenda, in turn, led to the development of international environmental law and the emergence of new international environmental agreements (Charnovitz 2005). The merit of UNEP in this regard is its role as a "negotiation-manager", a platform on which countries managed to agree on issues such as protecting the

ozone layer and setting trade restrictions for trade in endangered species as well as in hazardous wastes (Najam 2002).

Finally, according to Najam (2002), another key achievement of UNEP is the involvement of civil society institutions in the discussion of environmental issues. Moreover, in this regard, UNEP is more successful than a number of other international organizations (Banuri and Spanger-Siegfried 2000). This fact also allows to speak of general public legitimacy as one of the features of UNEP, which also positively distinguishes it from other programmes and organizations of the UN system (Najam 2002).

Unlike UNEP, the UN General Assembly does not explicitly include environmental objectives in its mandate, it is one of the institutions that influence the formation of international discourse and governance, including the environmental one (Kopylov *et al.* 2013). This principal body has the universal competence and the very democratic rules of procedure. Also, the General Assembly is a platform for discussing political issues, rather than «technical» ones. This underlines the specific features of the UNGA agenda: the environmental issues raised by the Member States require a political decision or cannot be addressed in specialized bodies and organizations for any reason (Kenny 2016).

Thus, it can be concluded that, since its creation and today, the United Nations continues to be one of the most influential intergovernmental organizations, which, among other things, often acts as an innovator, thereby developing a system in global governance. And despite the fact that the UN General Assembly and UNEP have different goals of their activities and deal with environmental protection issues in different ways, the contribution of these UN entities to the formation of global environmental governance can hardly be overestimated. However, in order to better understand the role of UN institutions in global environmental governance as actors who manage the accumulation of knowledge, develop norms, promote recommendations and institutionalize ideas, it is also necessary to understand how environmental problems come into their field of vision.

2.2. Social construction of environmental problems and its role for the formation of environmental governance

2.2.1. Theoretical and practical approaches to socially construct nature and environmental problems

Before talking about environmental policy and governance as well as an analysis of environmental discourse, it is necessary to understand how environmental problems become part of political discourse, and also form their own direction in discourse. Often it happens after environmental issues become "socially constructed" (Feindt and Oels 2005).

In social sciences there is number of approaches which allow us to socially construct nature as well as environmental problems. Basically, two kinds of construction talk stand out: construction-as-refutation and construction-as-philosophical-critique (Hacking 1999). Within the framework of the first approach, which is probably the most common and largely correlates with orthodox philosophical stances, such as positivism and realism, the understanding of a particular phenomenon or process is based on the denial of their natural nature with the subsequent justification of their exclusively socially constructed origin. It should be noted that such language is often politically charged (Demeritt 2002). Also, often in science and in the formation of environmental policy, the concept of ignorance, adjacent to refutation, is used. The use of this approach is primarily due to the complexity of the physical processes and phenomena that underlie environmental problems, and the consequent need to present them in a simplified form for making political decisions. Rayner (2012) defines several mechanisms by which it is possible to ignore "uncomfortable knowledge": denial, dismissal, diversion and displacement. In the case of denial, the existence of any fact or

phenomenon that is uncomfortable knowledge is completely denied. Unlike denial, when using such a strategy as dismissal, the very existence of uncomfortable knowledge is not only not denied, it is possible to recognize the existence of such knowledge in order to prove that it is unreliable or irrelevant. Often, when an "uncomfortable issue" appears, activities are organized that divert attention away from the problem. Such actions can be considered an example of the application of a diversion mechanism. The last strategy used to interact with uncomfortable environmental knowledge is displacement. Within this mechanism, "an object or activity, such as a computer model, designed to inform management of a real-world phenomenon actually becomes the object of management" (Rayner 2012).

However, social construction of environmental issues and nature is based not only on different forms of denial of problems. So, the second type of construction talk (constructionas-philosophical-critique) (Hacking 1999) "uses the construction metaphor to question the culture/nature, subject/object and representation/reality dualisms that provide the conventional philosophical foundation for distinguishing true conceptions of nature from false ones" (Demeritt 2002). In this regard, the phenomenological approach can be distinguished as part of the construction-as-philosophical-critique. This approach is based on understanding environmental issues as "products of particular constructions of social reality, rather than necessarily of actual physical conditions" (Spector and Kitsue 1987). This distinction between "social reality" and "actual physical conditions" forms, in turn, one of the main tasks for sociologists in the analysis of socially constructed environmental problems - determining how the activities leading to social construction of nature and environmental issues are organized and supported (Burningham and Cooper 1999). Accordingly, this requires the existence of scientific objectivity and some political detachment, which is the key difference between this type of construction talk and construction-as-refutation, which is largely politically motivated (Demeritt 2002).

In practice, expert opinions, studies, technology and conceptual framework become the tools that shape society's view of environmental issues precisely as problems that people need to solve at a local, national or international level. For example, thanks to the research of a group of scientists from the Massachusetts Institute of Technology led by Meadows, which used computer modeling (Meadows *et al.* 1972), the problem of resource depletion and the future resource crisis began to be widely discussed. Similarly, the development of sophisticated computer models, as well as the expansion of the monitoring system, has expanded research aimed at studying a process such as climate change (e.g. Wohlforth 2004). The creation of a global monitoring system for flora and fauna has also contributed to the emergence of the issue of biodiversity loss as a global problem (e.g. Biota Africa 2005; Bulte *et al.* 2005).

2.2.2. Further transformation of environmental problems in political context

Only by becoming "socially constructed" environmental issues become also political issues. However, often in order to develop an effective policy aimed at solving a particular problem, this problem is somewhat simplified. Such a step most often leads to the fact that the undertaken political actions do not bring the expected results, since they affect only some aspects of the environmental problem, and not its whole (Novikau 2016). Also, there are a number of situations in which policy makers have to choose the most urgent environmental problems, even when several environmental issues arise simultaneously (Simon 1997). At the same time, some environmental problems of the government are considered not acute enough to make any political decisions aimed at mitigating or eliminating them (Anderson 2006).

In addition, a quantitative and thematic analysis of environmental legal acts and political decisions suggests that the attention of the public, governments, and international organizations is constantly shifting from one environmental issue to another (Downs 1972; Klyza and Sousa 2008). Similar trends can be seen in the United States environmental policy. Beginning in the last century, environmental issues such as conservation of wildlife, forest

protection, reduction of natural resources, pollution of natural environments, mainly water and atmospheric air, as well as climate change and the use of renewable sources of energy for its mitigation, have come to the forefront of public attention (Kraft 2001). The mechanisms used to solve environmental problems are changing in a similar way (Novikau 2016). Initially, the main approach was administrative, including various prohibitions and fines. At present, preference is given to market mechanisms, such as, for example, the emissions trading system under the Kyoto Protocol.

The social conditionality of environmental problems also means that they have not one but several interpretations that can be discussed, criticized by other experts (e.g. scholars or policy-makers) and refuted. Such processes ultimately lead to the formation of a sphere of environmental discourse (Feindt and Oels 2005). And since the study of discourse makes it possible to understand how various stakeholders defend their point of view regarding one or another environmental issues, the discourse analysis of environmental policy, in turn, can give an idea of political processes and how political proposals become part of environmental policy (Rydin 2003). So, for example, Hajer (1995) in his work on ecological modernization and its political and social dimensions, on the example of the formation of policies aimed at solving the problem of acid rain in Great Britain and the Netherlands, shows that "policy-making is an interpretative activity where different actors struggle over the meaning of a policy problem, and the definition affects the ways in which solutions are sought and found "(Hajer 1995).

2.3. Environmental discourse: approaches to understanding and formation

2.3.1. Definition and classification of environmental discourses

Since its formation in the 1980s, the concept of environmental discourse continues to be a fairly multifaceted concept. First of all, this is manifested by the existence of various

approaches to the definition of discourse, as such, and environmental discourse, in particular. Thus, according to one approach, the discourse is "an ensemble of ideas, concepts, and categorizations that is produced, reproduced, and transformed in a particular set of practices and through which meaning is given to physical and social realities" (Hajer 1993). This approach is based on the assumption that discourse can affect how political entities and societies interact with various social and physical phenomena and phenomena that are important components of environmental policy. This fact also determines the importance of discourse as a factor influencing the formation of political preferences of individuals or groups regarding reforms (Fischer 2003; Leipold and Winkel 2017).

It should also be noted that the ideas of Foucault (1973) had a great influence on the formation of the idea of environmental discourses. From his point of view discourses are "systems of ideas and practices that create "truths" about various objects and subjects, as well as social realities" (Foucault 1973). In other words, discourse becomes a link between power and knowledge, which in turn are an integral part of social relations. In the framework of this approach, discourse acts as a phenomenon that simultaneously creates, like the subject itself, and its limitations. In this regard, Foucault believes that the goal of research on discourse should be to understand how discourse creates similar "truths" in different contexts, rather than finding a universal "truth".

In addition, for the analysis of environmental policy, it is possible to analyze discourse from purely linguistic perspectives. In this case, researchers use the term "discourse" to mean "the linguistic devices articulating arguments about the relationship between humans and their environment" (Mühlhäusler and Peace 2006). In the framework of the sociolinguistic approach, scholars study how social structures, power effects and linguistic content influence each other with different aims such as to identify different meanings embedded in a particular

text (ideological, discriminatory) or facilitate the participation of stakeholders in political decision-making (Fairclough, 2003; Wodak, 2013).

The versatility and complexity of this concept, in addition to differences directly related to the understanding of environmental discourse as a phenomenon, also manifests itself in the existence of many approaches to the classification of environmental discourses (Hajer 1995; Dryzek 1997; Benton and Short 1999; Darier 1999; Rydin 2003; Oels 2005). Perhaps one of the most widespread approaches to classifying environmental discourses is the approach proposed by Dryzek (1997) in his study "The Politics of the Earth: Environmental Discourses". This classification is based on the division of existing environmental discourses into two dimensions: reformist or radical on the one hand, and prosaic and imaginative on the other hand. At the intersections of these dimensions are four types of environmental discourses:

- environmental problem solving, whose supporters oppose changes in the current
 political and economic systems. But at the same time, they allow the adoption of
 measures aimed at solving environmental problems, such as legal and institutional
 mechanisms for environmental protection, as well as economic mechanisms in the
 form of various types of payments for environmental damage.
- limits and survival, which is based on the idea of limited reserves of natural resources that can exhaust uncontrolled economic growth and population growth. In this regard, a large-scale change in existing economic models and a rethinking of the very concept of "economic growth" are proposed.
- sustainability is a direction of discourse that has received active development in the 1980s, which is based on the establishment of a balance between environmental and economic components.

• green radicalism brings together a variety of ideologies and trends from ecofeminists, deep ecologists and social ecologists to eco-Marxists, eco-socialists and ecoanarchists. However, despite such a multifaceted approach, they all see as their ultimate goal either a change in how people perceive the nature around them, or a change in approaches to the treatment of the environment and natural resources within the framework of political decisions.

And although the types of discourse presented above are significantly different from each other. Dryzek (1997) identifies a number of common characteristics for these four discourses. Both problem solving and sustainability are reformist. But problem solving is oriented to change the existing political-economic model to solve environmental problem with the help of democratic or economic or administrative tools, so it is prosaic, while sustainability is more imaginative because the core idea of this discourses is to create a new system in which economic, social and environmental spheres are in harmony. The limits discourse as well as green radicalism are in turn radical. The limit discourse is also prosaic it offers solutions without changes in the current model of industrialism, only "greater control of existing system by administrators, scientists and other responsible elites" (Dryzek 1997). In case of green radicalism its imaginativeness can be found in the wish to "reject the basic structure of industrial society and the way the environmental is conceptualized" (Dryzek 1997).

In addition to the above approach to the classification of environmental discourses, it is also necessary to mention scientific, moral, economic, and aesthetic macro discourse by Harré *et al.* (1999). Among micro discourses scholars, green economic policies (Gerbig 2000), green consumerism (Elkington *et al.* 1988), and green advertising (Mühlhäusler 1996; Luke 1997) are distinguished. Depending on a person's relationship to nature and its place in it, there are three "centric" dimensions of environmental discourses analysis: ethnocentric, ecocentric, and anthropocentric (Herndl and Brown 1996).

2.3.2. Subtopics in environmental discourse

Talking about the analysis of environmental discourse, it is also necessary to take into account the specificities of the environmental problems existing today. One of such characteristics is their interconnectedness, which manifests itself, for example, in the case of such environmental problems as climate change, loss of biological diversity and deforestation. The consequences of these processes are inextricably linked, although these problems are possible study separately (Novikau 2016). This factor leaves its mark on the process of making political decisions aimed at solving such environmental problems. As a rule, environmental issues are simplified to develop effective policy programs and solutions (Novikau 2016). In this regard, studies related to discourse analysis of environmental policy also most often focus on specific topics or environmental issues, or have a specific geographic location. On the other hand, this leads to the fact that at the moment there is a lack of studies on the comparative analysis of environmental discourse, both in the context of various subtopics and in the spatio-temporal context (Leipold *et al.* 2019). In addition, the number of studies that provide a comprehensive overview of existing areas in which environmental discourse is developing remains insignificant (Keller and Poferl 2011).

It is also worth noting that the number of subtopics of environmental discourse is constantly increasing. Feindt and Oels (2005) examined discourse related to environmental issues such as air quality, climate change, toxic substances, and nature protection. Leipold *et al.* (2019) divide subtopics of environmental discourse into three groups: "old" discourses, "new" discourses, and prominent research areas. The first group ("old" discourses) includes topics researched since many years, for example, agricultural policy; climate governance; forest policy; nature conservation policy; and renewable energy policy. The topics that appeared in the scientific literature on the study of environmental discourse, since 2010s, the authors refer to the "new" discourses: bioeconomy; and transition/transformation. Prominent research areas

include discourse studies on topics such as biodiversity; ecological modernization; environmental neoliberalism; nature conservation; participation; and sustainable development. Moreover, as noted above, each subtopic has its own specific specificity. Studying the "old" discourse of climate governance scholars pay attention to how attitudes towards projects related to carbon sequestration in tropical ecosystems and carbon sinks in the Clean Development Mechanism of the Kyoto Protocol changed at the Conference of the Parties (COP) meetings of the UNFCCC between 2009 and 2015 (Bäckstrand and Lövbrand 2006), as well as how different actors (government, international organizations, non-governmental organizations) influence the formation of policy discourses on adaptation and mitigation and, consequently, the success of the reduction emissions from deforestation and forest degradation (REDD +) mechanism in a number of countries (Somorin *et al.* 2012). In addition, a significant area of research is issues related to the creation of a public administration system capable of effectively addressing climate change (Oels 2005). Another vector in the study of the discourse of climate governance is the analysis of the gender aspects in climate change policy (Acosta Frances *et al.* 2019).

Studies in the field of forest policy and forestry discourse are more systematic (Leipold et al. 2019) and are aimed at identifying the main vectors of the formation of forest discourse, as well as analyzing the roles of actors, institutuions and instruments in international forest governance in general (Arts *et al.* 2010; Di Gregorio *et al.* 2017). In the case of the discourse of renewable energy policy, the discourse analysis focuses on the role of the media in shaping attitudes towards renewable energy sources and sustainable energy technologies in general (Sengers *et al.* 2010), as well as studies adopted by countries on transition policies energy (Stevenson 2009; Winfield 2014).

Talking about prominent discourses, it should be noted that in the context of research related to discourse of sustainable development, two areas of discourse analysis can be distinguished.

The first is related to the identification of historical roots of the concept of sustainable development (Harlow *et al.* 2013), the second one to the definition of linkages and limitations between environmental discourse and sustainable development (Haque 2000). When studying a discourse on nature conservation and biodiversity, scholars not only consider a discourse related exclusively to these topics (Bryant 2000; Buijs *et al.* 2014; Durand and Vázquez 2011; Väliverronen 1998), but also study them in relation to such environmental issues as forest conservation (De Koning et al. 2014), climate change (De Koning *et al.* 2014; Tyrrell and Clark, 2014).

2.3.3. Role of actors in the formation of environmental discourse

Another important discourse feature that needs to be considered in discourse analysis is its dependence on addressers (Mühlhäusler and Peace 2006) or actors (Hajer 1995). Each of the discourses is created and supported by various actors, including institutions, as well as material structures (Hajer 1995). Currently, there are several approaches to who should be considered actors and how to classify them. Based on the classification of discourses proposed by Dryzek (1997), one can distinguish addressers such as survivalists, prometheans, democratic pragmatists, and green rationals. If we consider the actors from the point of view of their dominant behaviors, then we can talk about the existence of ecofreaks, tree-huggers, ferals, greenies, NIMBY (not in my backyard), and NIABY (not in anybody's backyard) (Mühlhäusler 2003). It is also possible to divide actors creating environmental discourse into activists, academics, and practitioners (Jamison 2001).

This complexity of classifications is largely due to the increasing number of actors who actively construct and influence discourse. If at the beginning of the formation of environmental discourse in the 1960s, the leading role was played by concerned individuals, who were mainly Western scholars (e.g. Carson 1962, Ehrlich 1969), then governments and international organizations come to the forefront, whose interests can be divided into two
groups: some are interested in creating and strengthening an environmental management and governance system, while others are more concerned with moral and environmental ethics issues (Mühlhäusler and Peace 2006). At the same time, the role in creating environmental discourse of transnational bodies such as the United Nations, the European Union and World Bank continues to be strengthened, along with organizations such as Greenpeace, World Wildlife Fund, and the Sierra Club (Mühlhäusler and Peace 2006).

However, despite such a diversity of actors and their ever-increasing role, this factor is still not adequately covered in studies repenting of discourse analysis (Phillips *et al.* 2004). In this regard, it is necessary to develop new discourse analysis approaches that take into account the influence of stakeholders, and, as many scholars note, there is a need "to find new ways of contextualizing agency so that it takes into account the fluidity and idiosyncrasy of a discursive field, at the same time acknowledging that some actors are more active and consequential in creating and using texts to influence organizing processes"(Hardy 2004).

Thus, at the moment, in research on the topic of environmental discourse, a number of trends can be identified. First of all, it is necessary to note the complexity and versatility of this concept, expressed in many approaches to its definition and classification, as well as dividing into a large number of subtopics. The latter is due to the complexity of environmental problems and their relationship. In this regard, most of the current studies of discourse of environmental policy focus on individual subtopics. At the same time, there are only a few works that deal with environmental discourse in general. Secondly, there is a lack of research aimed at studying the role of various actors in the formation of environmental discourse. The research presented in the following chapters is aimed at closing these gaps in scientific knowledge regarding environmental discourse and the role of international organizations.

3. Methodology

This section includes the rationale for the choice of methodology, which is supposed to provide an answer to the research questions posed. This chapter also contains a description of the applied methods (content analysis and text-mining) and the prospects for their use in research related to environmental policy and environmental discourses. In addition to the methodology, a detailed description of the research procedure is provided, including the compilation of the database and the choice of keywords for analysis.

3.1. Methods of the research

The methodology of this study is based on the use of a mix of quantitative and qualitative methods. The first of the methods used to achieve the goals in this work is content analysis. This research method allows us to systematically analyze the content of different kinds of messages (Pashakhanlou 2017). These can be articles, websites, diaries, speeches, letters, interviews, images, videos and beyond. Due to a number of characteristics, the content analysis method can be considered one of the most effective among the methods used in discourse research (Pashakhanlou 2017). First of all, it should be noted that the use of such a method as content analysis allows us to describe the phenomena and processes under study, as it primarily concentrates on "what" questions and explaining what was stated, not how and why was stated (Holsti 1969). In addition, content analysis makes it possible to concentrate on the issue under study when conducting research, since when using this method, unnecessary semantic elements in the studied texts are cut off (Schreier 2012). Another characteristic of this method is the ability to give one interpretation of the problem under study in the presence of several (Treadwell 2014).

All these factors also make this method promising in terms of international politics research. Moreover, the first studies in which content analysis is used to study international relations date back to the 1940-1960s, when quantitative and manual approaches to data analysis were used (Pashakhanlou 2017). In recent years, computer-assisted content analysis has become increasingly popular among scholars. Also, this method has found wide application in research related to environmental policy and related discourse. For example, qualitative content analysis of literature is used to identify the key themes within which the concept of degrowth developed in the 21st century (Haapanen and Tapio 2016), as well as to describe the state of scientific knowledge related to sustainable development in small and medium sized enterprises (Prashar and Sunder M 2020). In addition, the content analysis method is used to analyze various policy documents, such as climate action plans (Tang *et al.* 2013), environmental reports (Hooks and van Staden 2011), as well as documents of international organizations: UNEP publications (reports, protocols, guides and bulletins) (Mazzarino *et al.* 2020) and the UNGA resolutions (Bliznetskaya and Vasilenko 2018).

In this study, a content analysis is supposed to give an opportunity to identify topics which are part of the environmental discourse of the UN General Assembly and UN Environment, and to restore the chronological sequence of appearance and "vitality" of certain environmental issues in discourse of the two United Nations entities. Also, this method gives a quantitative estimation for each of the identified topics.

Then I use qualitative data analysis method - text mining. This method is an automatic process that uses natural language processing to extract valuable insights from unstructured text. By transforming data into information that machines can understand, text mining automates the process of classifying texts by sentiment, topic, and intent. The advantage of text-mining analysis is the ability to extract the information you need from large amounts of data. However, it should be noted that at the moment it is quite difficult to assess the effectiveness of the application of this method, since there are no clear criteria for this. Typically, scholars rely on trial-and-error methods using text-mining (Kugo *et al.* 2005).

And although text-mining analysis has not yet received such widespread use in studies of environmental policy and discourse, a number of studies can still be distinguished in which this method is used. It is becoming popular in the study of public opinion on the most important aspects of anthropogenic impact on the natural environment, for example, regarding high-level radioactive waste disposal (Kugo *et al.* 2005). Also, the text-mining approach is used to identify research narratives (Schober *et al.* 2017) and to determine the context in which certain words characterizing environmental problems are used in policy documents (van der Geest and Warner 2019).

In this study, the use of text-mining analysis is driven by the need to identify the thematic content of the decisions and patterns in the environmental discourse within the UN organs. In particular, the use of this method makes it possible to understand in combination with which words are used in the documents of the UNGA and UNEP.

3.2. Database

As in the conduct of content analysis and text-mining analysis, this study uses a database that includes the following documents:

- resolutions adopted by the UN General Assembly during the annual sessions from 1972 to 2018;
- decisions adopted by the UNEP Governing Council during the sessions from 1973 to 2018 (since 2012 resolutions of the UN Environment Assembly).

It should be noted that the choice of the study period from 1972 to 2018 was determined by a number of factors. This is primarily due to the fact that UNEP was established in 1972 (UNGA 1972), and the first session of the UNEP Governing Council was held in 1973. In addition, there are studies concerning the study of the environmental agenda of the UN

General Assembly in the period up to 1972 (Bliznetskaya and Vasilenko 2018). At the same time, the 2018 sessions are the last completed.

This database includes 15147 resolutions of the UN General Assembly which were adopted by the UN General Assembly at its annual sessions from 1972 to 2018. During this time, 47 sessions of the UNGA were held. Additional information regarding a year and a session at which resolutions were adopted is included for each database element. Resolutions and their titles presented in this database were downloaded from the Dag Hammarskjöld Library website (http://research.un.org/en/docs/ga/quick/regular/74).

Also, the database consists of 823 decisions of the UNEP Governing Council (1973-2013) and resolutions of the UN Environment Assembly (2014-2018). In addition, the database includes information regarding a year and a session at which decisions and resolutions were adopted. Information for this database was collected from Reports of the UNEP Governing Council of the work of its sessions. These reports were downloaded from the wed-site of the United Nations Digital Library (https://digitallibrary.un.org/?ln=en). Each report contains a list of decisions made, as well as their full texts. In total, 41 reports, one for each of the sessions are used in this study. It should be noted that between 1973 and 2017, 26 sessions and 12 special sessions of the UNEP Governing Council, one universal session and three sessions of the UN Environment Assembly were held.

3.3. Research procedure

For the most complete and accurate research I conduct it in three steps (Fig. 1). The first step is a content analysis of the titles of resolutions and decisions adopted by the three United Nations entities. For this step, 40 keywords were selected as the main environmental topics from three key environmental documents: the Action Plan for the Human Environment (UN 1972), adopted after the 1972 United Nations Conference on the Human Environment, the 1992 Agenda 21 (UN 1992) and the 2012 Future We Want (UN 2012).

Agriculture Atmosphere Biodiversity (biological diversity) Biotechnology Chemicals Climate Conservation Deforestation Desertification Development Disaster Drought Ecosystem Education Endangered species Energy Environment Environmental quality Food security Forest	Health Human settlements Land degradation Mining Mountain Ocean Pollution Population Poverty Resources Sanitation Sea Sustainable agriculture Sustainable agriculture Sustainable cities Sustainable cities Sustainable consumption and production Sustainable development Sustainable tourism Sustainable transport Wastes Water
Step 1	Step 2 Step 3
 Database creation; List of keywords; Content analysis of the titles of resolutions and decisions; <i>Result:</i> identification of the scope of the "Environment" Sele resolutions and decisions; <i>Result:</i> identification key 	 Analysis of the results for two UN entities <i>Result:</i> checking for linkages across identified environmental issues between two UN entities.
Objective 1	Objective 2 Objective 3

Fig. 1. Summary of the research procedure

Also, a database is created in MS Excel containing the UNGA resolutions and UNEP decisions adopted and their number, as well as information about the year and session at which they were adopted, and about the organs that adopted them (Table 1). This database is used for the content analysis, which is carried out using qualitative data analysis software

(QDA Miner/WordStat). Data from the database are loaded into this data analysis software, which automatically searches for matches in the titles of UNGA resolutions and UNEP decisions with the keywords selected for analysis. In addition, at this stage, those documents in which keywords are found, but they are not related to environmental issues (e.g. UNGA Resolution A/RES/3041(XXVII) Report of the United Nations Conference on Trade and Development on its 3rd session) were also excluded. So, the result of this step should become the identification of the issues that form the environmental discourse of the UN General Assembly and UNEP. This step allows as to determine the frequency of repetition of the chosen words and phrases, which are the basic terms in the field of environmental protection.

Year	Session	No	Title	UN entity
1972	27	A/RES/3049(XXVII)A- C	The financial situation of the United Nations	UNGA
1972	27	A/RES/3049(XXVII)C	The financial situation of the United Nations	UNGA
1972	27	A/RES/3049(XXVII)B	The financial situation of the United Nations	UNGA
1972	27	A/RES/3049(XXVII)A	The financial situation of the United Nations	UNGA
1972	27	A/RES/3048(XXVII)	Use of travel funds	UNGA
1972	27	A/RES/3047(XXVII)	Revenue-producing activities	UNGA

	Table	1.	Exam	ole a	lata	as	an	excer	pt	from	the	datal	base
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At the second step, for text-mining analysis using QDA Miner/WordStat, sentences are selected that contain environmental keywords from UNEP decisions and UNGA resolutions. QDA Miner/WordStat then selects words most often used in combination with keywords from these sentences. In doing so, the program automatically excludes words that convey little intrinsic meaning, such as about, above, according, across, etc. The result of this stage is a set of words that characterize the environmental context of the UNGA resolutions and UNEP

decisions. The final step in this study is to compare the findings in order to identify common themes or differences in the environmental discourse of the UN General Assembly and UNEP.

However, the approach in this paper has several limitations. First of all, this study uses documents from only two UN entities. Although, as noted in the second chapter, the environmental goals include a larger number of UN institutions in their mandate. In addition, another limitation is directly related to the methods used. Despite the automated nature of data analysis, the use of QDA software cannot fully guarantee the identification and understanding of the entire environmental context, which includes documents of both UN entities. In this regard, it may be necessary to refer directly to the sources themselves (resolutions and decisions).

4. Building a thematic framework of the UNGA resolutions and the UNEP decisions

4.1. General trends in environmental discourse of the UN General Assembly and the UN Environment

The result of the content analysis was the definition of a range of keywords with which environmental discourse of the UN General Assembly and the UN Environment Programme can be described. Also, content analysis allowed us to describe their quantitative and temporal characteristics.

First of all, it should be noted that of 40 keywords selected for the content analysis, there are 32 keywords from the general list in the headings of documents of both the UN General Assembly and UNEP. The study showed that the keywords list of the environmental discourse of the UN General Assembly and UNEP does not include such keywords as "deforestation", "environmental quality", "sustainable cities", and "sustainable transport". In addition to these keywords, UNEP's environmental discourse does not include the following topics: "biotechnology"; "food security"; "mountain" and "sanitation". In the case of the UN General Assembly, there are no resolutions that would raise topics related to "endangered species", "land degradation", "mining" and "sustainable consumption and production".

Figures 2 and 3 show the lists of keywords characterizing the environmental discourse of the UN General Assembly and UNEP, respectively. Despite the general similarity of the lists, it can be noted that the keyword "environment" has the highest frequency only in the UNEP discourse (Fig. 2). In this case, it is necessary to pay attention to the gap in the number of mentions between the keyword-leader and the rest of the keywords. So, the keyword "environment" has 395 mentions, and the keyword "desertification", which is the second in the list, has only 49 mentions. Further, the number of mentions varies slightly. Thus, among

the leaders in terms of the number of mentions within UNEP, in addition to "environment" and "desertification", the following keywords can also be identified: "development" (44 mentions), "chemicals" (38), "waste" (29) and "sustainable development" (27 mentions). In turn, the UNEP environmental discourse has a minimum number of mentions in decision headings for keywords such as "drought" and "land degradation" (4 mentions), "atmosphere" and "endangered species" (3 mentions), "agriculture" and " mining "(2 mentions), and" sustainable tourism "(1 mention).



Fig. 2. Frequency of mention of keywords in UNEP documents

In the case of the General Assembly, the keyword "sustainable development" (173 mentions) had the largest number of mentions, and the keyword "environment" (111 mentions) came

second. However, in general, there are no sharp changes in the number of mentions to keywords (Fig. 3), and the next keyword - "sea" - is mentioned 110 times in UNGA resolutions. Also, the group of keywords with the most mentions includes "disaster", "desertification" and "human settlement". As with UNEP, the keyword "agriculture" has only 3 mentions, and it also a part of the group of keywords with the least number of mentions. In addition to this keyword, this category also includes "chemicals" (3 mentions), "ecosystem" and "ozone layer" (2 mentions), "biotechnology" and "pollution" (1 mention).



Fig. 3. Frequency of mention of keywords in UNGA documents

In total, from 1972 to 2018, the total number of repetitions of environmental keywords in the headings of General Assembly resolutions increased from 84 to 321 (Fig. 4). However, an analysis of the total number of resolutions adopted by the UN General Assembly during the period under review does not provide enough information on exactly what trends have changed in the number of environmental topics that came to the attention of the UN General Assembly. In this regard, it seems necessary to break down the obtained results of content analysis for the period from 1972-2018 into several time periods. In particular, the division into five-year periods will allow a more detailed study of all the quantitative changes taking place. A similar approach will be used in the future when analyzing data on UNEP decisions. Therefore, if a breakdown by five-year time intervals is used, it becomes possible to see that a sharp jump in the number of environmental topics considered by the UNGA took place only in the 2000s, when the number of mentions to keywords in the headlines of resolutions doubled at once. In previous periods, there was a tendency to a gradual increase in the number of mentions ranged from 84 to 110.



Fig. 4. Total number of mentions of keywords in UNGA documents

It should be noted that an increase in the total number of repetitions of keywords in the documents of the General Assembly from one time period to another correlates with an increase in the number of environmental resolutions of the UN General Assembly, that is, those resolutions that have at least one keyword from the list used in this study in their headings. In the period from 1972-1976 57 resolutions were adopted (Fig. 5), which can be classified as environmental. By 1992, their total number had increased to 246, while starting from the period 2002-2006. and each subsequent period, the number of resolutions incorporating environmental issues increased by more than 100 in each period. Thus, the total number of environmental resolutions adopted from 1972 to 2018 is 813. However, as can be seen from the graph (Fig. 4), the total number of resolutions is also increasing. Accordingly, in percentage terms, the share of environmental resolutions of the General Assembly in the framework of the period under review did not change and amounts to 5-8% of the total number of resolutions.



Fig. 5. Total number of environmental resolutions and other UNGA resolutions

A similar relationship between the number of repetitions of keywords and the number of decisions made by the UNEP Governing Council is also characteristic of the UNEP environmental discourse. However, in contrast to the trend towards a constant increase in the

number of both keyword mentions and environmental resolutions themselves, the UNEP environmental discourse is characterized by significant changes in these quantitative parameters, when sharp growth is followed by the same sharp decline during 1972-2006 (Figs. 6 and 7) At the same time, the maximum number of keyword mentions (152 mentions) fell on the period from 1987 to 1991. In total, 467 environmental decisions were made within the reporting period, which on average account for 57% of the total number of decisions, despite the fact that the mandate of the UN Environment is to address precisely environmental issues. The total number of repetitions of keywords is 841.



Fig. 6. Total number of mentions of keywords in UNEP documents

It is also necessary to pay attention to the number of mentions of keywords and the number of decisions made by UNEP in the last two periods - from 2007 to 2017. From 2007 to 2011, the number of repetitions of environmental keywords in the headings of UNEP decisions continued to decrease (from 76 to 58). However, the number of environmental decisions continued to grow: from 30 in the period from 2002 to 2006 to 43 in 2007-2011. At the same time, with a relatively small increase in the number of environmental resolutions in the period 2012-2017, the number of repetitions of keywords increased to 82.



Fig. 7. Total number of environmental decisions and other UNEP decisions

4.2. Formation of environmental discourse of the UN General Assembly and the UN Environment

In addition to the findings described above, at this stage it is possible to draw conclusions about how the environmental discourse of both the UN General Assembly and the UN Environment was formed, which environmental issues were in the focus of the international community in different periods. In this regard, it is first necessary to note the following trend, characteristic of both UN entities: gradual expanding the range of topics of environmental discourse. This fact is confirmed by the constant increase in the number of keywords that appear in documents of the UNGA and UNEP. Since 1972 the number of keywords has increased from 15 to 18 in the UNEP decisions and from 12 to 25 in the UNGA resolutions. Moreover, as it can be seen from the graph (Fig. 8), the General Assembly is characterized by a gradual increase in the number of environmental issues raised. In the case of UNEP, there are constant fluctuations in the number of keywords that are part of the environmental discourse in a given period. Moreover, the maximum number (20 keywords) was noted in the period from 1977-1981.



Fig. 8. Distribution of the total number of keywords by time periods

In addition, the content analysis allows us to study not only the quantitative characteristics of the environmental discourse of UN entities, but also makes it possible to track how certain environmental topics appear and disappear in the documents of the UN General Assembly and UNEP, thereby forming their environmental discourse.

In the decades following the United Nations Conference on the Human Environment (which was held in Stockholm in 1972) and the previous organization of the United Nations Conference on Environment and Development (1992), such topics as "environment", "human settlement" and "desertification" dominated by the number of mentions in the discourse of the General Assembly and the UN Environment (Figs. 9a and 9b). The minimum number of mentions in this period was for such keywords as "chemicals", "climate" and "water".



Fig. 9. Frequency of mention of keywords in 1972-1986

However, despite some similarities between the two lists, there are a number of trends that are unique to the UNEP or UNGA environmental discourse. First of all, it is worth noting that the UNEP environmental discourse in this period was thematically wider and, unlike the UNGA, included issues related to ecosystems, ozone layer, endangered species, education, forest and wastes. Also, already in 1972-1987, a tendency is observed that is characteristic of describing the entire discourse of these UN entities and noted above. The graphs (Fig. 9a and 9b) clearly demonstrate that the number of mentions of the keyword "environment" significantly exceeded the number of mentions to other keywords in UNEP documents. In turn, in the UNGA environmental discourse in 1972-1987, a number of keywords were highlighted, which, in addition to the keyword "environment", were also in the center of discussion. They are "human settlement", "resource", "desertification" and "sea".

Another interesting detail that characterizes the environmental discourse of the UN General Assembly and the UN Environment at this stage is related to the keywords "desertification" and "drought". If the first of the words is one of the main in the discourse of both UN entities, then the keyword "drought" is part of the discourse only in UN GA documents. Also, in the period from 1972 to 1987, the keyword "energy" was of interest. In the 70s, this topic was part of the UNEP discourse exclusively, and in General Assembly resolutions this keyword appeared later, from 1977 to 1981. However, it was in the UNGA environmental discourse that the "energy" keyword became more widespread (13 mentions) (Fig. 9a). At the same time, the number of mentions of this keyword in decisions of the UNEP Governing Council ranged from 1-3 mentions (Fig. 9b).

The next period from 1987 to 2001, which included the publication of the results of the World Commission on Environment and Development (1983-1987) and the United Nations Conference on Environment and Development in 1992, was marked by the further development of the environmental discourse of the UN General Assembly and the UN Environment. Documents from both UN entities began to address issues related to keywords such as "atmosphere" and "agriculture", "biodiversity", "land degradation", "mountain" as well as "sustainable development" and "sustainable tourism". However, all these keywords in this period have not yet become a significant part of the environmental discourse of both UNEP and the UNGA. This conclusion can be made based on the number of mentions of these keywords (Figs. 10a and 10b). Moreover, along with the emergence of new topics, in particular regarding the protection of biodiversity, in the UNEP discourse from 1987 to 2001, keywords such as "endangered species" and "ecosystem", as well as the keyword "education" ceased to appear.

It should also be noted that the period under review largely repeats the trends laid down in the previous stage. This is primarily reflected in the fact that the number of mentions to the

keyword "environment" in UNEP documents continued to significantly exceed the number of mentions of other keywords (Fig. 10b). In the case of the General Assembly, the keywords "environment", "human settlement", "resource", "desertification", "sea", and "development" continue to be leaders in terms of the number of mentions (Fig. 10a). However, in 1992 the number of mentions of the keyword "environment" begins to decline. If in the period from 1987 to 1991 this keyword had 20 mentions in the headings of UNGA resolutions, then in the period 1992-1996 their number decreased to 13 (Fig. 10a).



Fig. 10. Frequency of mention of keywords in 1987-2001

Perhaps one of the key events that influenced the formation of modern environmental discourse and characterizes it at this stage is the appearance of the term "sustainable development" in documents of UN entities. This keyword appeared in the discourse of the UN General Assembly already in 1987-1991 (Fig. 9a). In total, from 1987 to 2001, this term

appeared in the headlines of UNGA resolutions 30 times. In UNEP decisions this keyword appeared only after 1992 and the total number of mentions was only 11 (Fig. 10b).

The quantitative analysis of environmental keywords in recent years from 2002 to 2018 once again demonstrated differences in the environmental discourses of UNEP and the UNGA. The keyword "environment" continues to be the leader in terms of the number of mentions in the headings of UNEP decisions and resolutions. However, as it can be seen from the graph (Fig. 11b), starting in 2007, the number of mentions to this keyword has almost halved (from 45 in the period 2002-2006 to 24 in the period 2007-2012). In the discourse of the General Assembly, the keyword "environment" has ceased to play a leading role in the number of mentions (Fig. 11a). At the same time, the keyword "sustainable development" has the most mentions in the UNGA resolutions.



Fig. 11. Frequency of mention of keywords in 2001-2018

Also, based on the number of mentions to keywords and their appearance in documents of both UN entities, at this stage it is possible to single out topics that are mostly part of the discourse of only the UN General Assembly or only UNEP (Figs. 11a and 11b). For example, the environmental discourse of the General Assembly, unlike UNEP, is concentrated around issues such as resources, agriculture, mountains, sustainable tourism, energy and sea. In turn, the following keywords are part of UNEP documents exclusively: pollution, chemicals, atmosphere and land degradation. In addition, the UNEP discourse has expanded due to the emergence of topics such as sustainable consumption and production, as well as the return of the keywords "ecosystem" and "education" to the decisions of the UNEP Governing Council.

Despite these differences over the years, a list of common topics has also been formed that came into focus when discussing environmental issues both on the sidelines of the General Assembly and in the work of the UN Environment. Among them are biodiversity, climate, desertification, forest, sea, environment, wastes and water (Fig. 11a and 11b).

4.3. Discussion of the results

As a result of the research carried out at this stage, it was possible to determine the range of environmental issues included in the discourse of the UN General Assembly and the UN Environment. At the same time, it was noted that a number of key words are found both in UNEP decisions and in UN General Assembly resolutions. Also, in addition to analyzing the total number of mentions of keywords obtained in the framework of content analysis, the distribution of the number of mentions of keywords over five-year time intervals was considered. This approach led to the conclusion that there is a rapidly expanding network of environmental themes in the resolution of General Assembly and the decisions of UNEP.

However, despite such an extensive thematic spectrum characteristic of the environmental discourse of UNEP and the UN General Assembly, among the 32 keywords mentioned in the

documents of the two UN entities, only 3 keywords are found in each of the considered time frames. They are "environment" and "desertification". In other words, these keywords and related topics of the environmental discourse of the UNGA and UNEP can be called "nested problems". The reverse trend is also true. A number of keywords, for example, such as "climate". "ecosystem", "ocean", "waste", are "flashing" ones. It means that within the study period from 1972 to 2018, these keywords were present initially, but then disappeared and reappeared in General Assembly resolutions and UN Environment decisions. Moreover, only the keywords "ecosystem" and "ocean" are "flashing" for both the UNGA and UNEP. In turn, the keyword "climate" is such only in resolutions of the General Assembly, and the keyword "waste" is in decisions of the UN Environment.

Although the content analysis made it possible to determine the thematic component of the environmental discourse of the UN General Assembly and the UN Environment, as well as to trace the main stages of its formation, at this stage it is not possible to determine in which specific context the identified keywords were used in the documents. In this regard, it is precisely the keywords related to "nested problems" and "flashing" ones that are most characteristic of the environmental discourse of both UN entities, and the context associated with them will be examined in more detail.

5. Environmental context of the UNGA resolutions and the UNEP decisions: clustering of the UN discourse

As noted above, one of the results of the content analysis carried out at the first stage of the study is the formation of lists of UN General Assembly resolutions and UNEP decisions that can be considered environmental, since environmental keywords are found in their titles. It is these decisions and resolutions that became materials for analysis at the second stage. The purpose of this stage is to define the context in which keywords are used in the documents of the UN General Assembly and UN Environment. For this, a method such as text-mining analysis is used.

For the analysis, 9925 sentences out of 567 UN documents were selected from the texts of decisions and resolutions using qualitative data analysis software (QDA Miner / WordStat), which contain keywords that are either "nested" problems (keywords "environment" and "desertification") or "flashing" problems (keywords "ecosystem" and "ocean"). The quantitative characteristics of the data used in text-mining analysis are presented in Table 2.

Table 2.	Data	charact	teristics	for the	text-mining	analysis
					0	~

Keywords	Number of sentence	es with keywords	Number of documents					
	in UNGA	in UNEP	UNGA	UNEP				
	resolutions	decisions	resolutions	decisions				
	"Nested" problems							
Environment								
(including	1170	1907	109	204				
environmental and	1170	4007	108	294				
environmentally)								
Desertification	1004	410	65	23				
"Flashing" problems								
Ecosystem (including	21	100	2	14				
ecosystems)	51	100	2	14				
Ocean (including	2222	80	16	15				
oceans)	2323	00	40	15				

The result of the text-mining analysis is the identification of words used in combination with the chosen keywords in sentences. Then these words are analyzed along two axes: the existence of topics or a context in which two or more keywords intersect, as well as the definition of a problematic context for each of the examined UN institutions. Further, based on these two axes, the context of each of the key ones under study in UNEP decisions and UN General Assembly resolutions will be analyzed.

5.1. Problem context for "nested" problems: diversity of "environment" in the UN system and evolution of the global desertification regime

In the first part of the study, it was determined that the keyword "environment" is the leader in the frequency of mentions. At the same time, as can be seen from Table 2, the number of UN documents that include this keyword is also significantly larger in comparison with the remaining examined keywords. In this regard, it can be assumed that the number of terms found together with the word "environment" will also be greater, which in turn will allow us to speak about a wide thematic coverage.

Indeed, the text-mining analysis carried out confirms this assumption. Figure 12 shows tag clouds with the words that appear together the keywords "environment" in the same context in UN General Assembly resolutions (Fig.12a) and in decisions of UNEP (Fig. 12b). The larger the word size, the more often mentioned in relation to environment. Thus, as shown in Figure 12, the word that occurs the most times with the keywords "environment" is "development" (1350 times in UNGA resolutions and 3989 times in UNEP decisions). In addition to development, the top 20 most mentioned words in combination with environment for the UN General Assembly include sustainable development, protection, economic, resources, disarmament, social, marine, tourism, ecotourism, arms, settlements, waste, poverty, sea, natural, health, management, law, monitoring. For UNEP they are sustainable development, law, assessment, management, information, resources, protection, marine,

health, scientific, water, economic, education, sea, financial, training, governance, monitoring, conflict. Each of these words is mentioned in UN documents more than 100 times.

AGRICUL TURE 10PROBLE/MS QUALITY NOWLEDGE OCEAN RESOURCE E/NERGENCY VE INDUSTRIAL NUCLEAR U/MPED CHE/MICALS ERADICATION DESERTIFICATION DEGRADATION ION DECI DECLARATION POVERTY CONSERVATION ARMS MONITORINGTOURIS/M FOOD PROTECT EARTHWATCH DROUGHT ECOTOURIS BIODIVERSIT EFUL LAW HAZARDOUS DAMAGE DESTRUCTION PEACEFUL ₩0/MEN SSMENT ECOLOGICAL ECOSYSTEM EDUCATION HEALTH SERVICES CLI/MATE PROHIBITION RESE NATURAL DEFORESTATION SETTLE/MENTS ATMOSPHERE DISAR/MA/ME GOVERNANCE BOUNDAR SOCIAL. DEPLETION TOXIC Word ItO a. UNGA TERRA TRADE OUALITY MONIT GEMENT MENT ASSISTANCE TRAINING MARTNE CONTROL AGRICULTURE SEA EMERGENCY INFORMATION VERNANCE GREEMENTS AW ONVENTIONS UNEF POLLUTI ECONOMIC DISASTER Word ItOu **UNEP** b.

Fig. 12. Tag clouds – Words used in one sentence with the keyword "environment"

It can be seen that both in the case of General Assembly resolutions and UNEP decisions the keyword "environment" is used in combination with the other keywords (Fig. 13a and 13b respectively). More than half of the keywords used in this study are covered. Of the 40 keywords included in the original list, 22 keywords appear in the same context as the "environment" keyword in decisions of the UN Environment and 21 keywords in UNGA resolutions. In view of such a number of keywords interconnected with the word

"environment", below the problematic context only for those words that are mentioned the greatest number of times will be considered.



Fig. 13. Frequency of mention of keywords used in combination with the keyword "environment"

As noted above, the keyword "development" is mentioned along with environment the most times (Fig. 13a and 13b). In most cases, in documents of both UNEP and the General Assembly, these words are found in the context of the preparation and holding of one of the key conferences that have influenced the formation of the global environmental agenda: the United Nations Conference on Environment and Development (1992) (e.g. UNGA 1989; UNEP 1989), and then implementation of the decisions made at this conference, in particular, the implementation of the provisions of the Rio Declaration on Environment and Development (e.g. UNGA 1993; UNEP 2014). In addition, in the 1970s and 1980s, countries at the sessions of the UN General Assembly drew attention to the need for research on the relationship between population, resources, environment and development (e.g. UNGA 1974). In the 1990s, the UNEP Governing Council also introduced an issue related to the role of women in environment and development (UNEP 1999a). Gender perspectives have also been included in the context linking environment and sustainable development issues in General Assembly resolutions (UNGA 1991). In general, within the framework of "environment sustainable development", both UNEP and the UN General Assembly raised the issue of achieving the environmental component of the concept of sustainable development (e.g. UNGA 2012; UNEP 1999b) and enhancing complementarities among international instruments relating to environment and sustainable development (e.g. UNGA 2000).

Also, initially, "environment" is found in the same context with keywords such as "resource" and "chemicals". In the case of resources, the main concern of the General Assembly and the Governing Council of UNEP was the development of co-operation in the field of the environment concerning natural resources shared by two or more States (e.g. UNGA 1973; UNEP 1975). The keyword "chemicals" in the environmental context of both UNEP and the UNGA is often referred to in conjunction with another keyword "waste". Together they constitute one of the most important topics of environmental regulation - environmentally

sound management of harmful chemical substances and hazardous waste (e.g. UNEP 1987; UNGA 2010a). In this regard, it should be noted that issues related to the health and healthy environment in the documents of UNEP and the UN General Assembly turn out to be connected precisely with this topic - protection against products harmful to health and the environment (e.g. UNGA 1982; UNEP 1999d). In addition, General Assembly resolutions also address the impact of the military impact on climate and its impact on the health and well-being of the population (UNGA 1975b).

However, contextually, the keyword "environment" is related not only by the words presented in Figure 13. The context related to environmental issues has evolved, not only expanding and covering more and more thematic areas, but also delving directly into the issues of environmental protection and factors, influencing its condition. It is into these two categories that the remaining words that characterize the discourse for the keyword "environment" in the resolutions of the UN General Assembly and the decisions of UNEP can be divided (Table 3).

Table 3. Problem context of the UNEP and UNGA documents for the keyword "environment" (in descending order, threshold for inclusion in the table was set at 100)

Environme	ental topics	Influencing factors			
UNEP	UNGA	UNEP	UNGA		
Law	Protection	Economic	Economic		
Assessment	Marine	Conflict	Disarmament		
Management	Ecotourism	Emergencies	Social		
Information	Management	Settlements	Arms		
Protection	Law	Trade	Settlements		
Marine	Monitoring	Palestinian	Trade		
Scientific	Assessment	Occupied	Nuclear		
Governance		Armed	Damage		
Monitoring		Damage			
Coastal					

It is when these categories are compared that the differences between the context in which the UN General Assembly resolutions and UNEP decisions address issues united by the "environment" theme are revealed. First of all, this can be seen when analyzing words that represent factors affecting the state of the environment. And if words such as "economic", "settlements", "trade" and "damage" are found in the documents of both UN institutions, then words such as "disarmament", "arms" and "nuclear" are only part of the GA resolution UN, and "conflict", "Palestinian", "occupied" and "armed" characterize the environmental discourse of decisions of the UNEP Governing Council. All these words are related to such an aspect as the impact of weapons and military conflicts on the environment. In the case of UNEP, the UNEP Governing Council adopts decisions about the state of the environment in the occupied Palestinian territories. Since 1979, the UNEP Governing Council has been concerned about this issue. The Council's first steps in addressing it were to organize an environmental assessment in the region (UNEP 1979), as well as assist the Palestinian people in the areas covered by the UN Environment's mandate (UNEP 1980a). In subsequent years, the Council directed all its efforts to monitoring the environmental situation in the region in order to obtain the most accurate and complete understanding of the problems that the Palestinian people face due to the actions of the Israeli side (UNEP 1993; UNEP 2002). In the case of the General Assembly, environmental norms in the drafting and implementation of agreements on disarmament and arms control have become a topic according to which the UN General Assembly has adopted resolutions every year since 1996. In these resolutions, the UN General Assembly draws the attention of the world community to issues such as the need to comply with agreements such as the Treaty on the Prohibition of the Emplacement of Nuclear Weapons and Other Weapons of Mass Destruction on the Seabed and the Ocean Floor and in the Subsoil Thereof, the Antarctic Treaty, the Convention on the Prohibition of the Development, Production, Stockpiling and Use of Chemical Weapons and on Their Destruction and the Convention on the Prohibition of the Development, Production and Stockpiling of Bacteriological (Biological) and Toxin Weapons and on Their Destruction (UNGA 1996). In addition, the General Assembly emphasizes that Antarctica and outer space should be used exclusively for peaceful purposes (UNGA 1996).

Also, unlike UNEP, the environmental discourse of the General Assembly contains such a topic as ecotourism. This topic appeared in the discourse of the UN General Assembly in the 2010s and is also associated with the keyword "poverty". In accordance with the adopted resolutions, the development of ecotourism and sustainable tourism can be one of the mechanisms that contribute to the eradication of poverty through the creation of new jobs and the generation of income, while not harming the environment (UNGA 2010b).

Despite the fact that such words and phrases as environmental management as well as environmental monitoring and assessment are found in the resolutions of the UN General Assembly, these topics have not been widely developed within the framework of this UN body (the word "monitoring" is mentioned 108 times, and the word "assessment" 83 times) and are limited to the context of calls for increased international cooperation in environmental monitoring and assessment, with particular emphasis on these activities in relation to various environmental emergencies. Unlike the General Assembly, for UNEP, these issues are primarily part of its mandate (UNGA 1972a). Based on this, it can be concluded that it is thanks to this fact that the issues related to the monitoring and assessment of the environment are widely represented in the discourse of this UN entity. This is also confirmed by the number of mentions that fall on these words - 1547 times for assessment and 500 times for monitoring. In general, all decisions of the Governing Council taken on these topics are organizational in nature and are focused on building a global system of environmental monitoring and assessment. This is evidenced by the presence in this context of words such as "Outlook" and "toxic", referring respectively to the Global Environment Outlook and the International Register of Potentially Toxic Chemicals, as well as Earthwatch, which in different years were part of the environmental monitoring and assessment system (Jensen and Brown 1975; Caroli *et al.* 1996; Aronczyk 2018).

The situation is similar with the role of the topic "environmental law" in the environmental context of both UN institutions. In this matter, the General Assembly also sets the general tone concerning "need for further elaboration of conventions and protocols in the field of the environment" (UNGA 1975a), and defines the main vectors of its development. At the same time, substantive issues are already being discussed within the framework of the work of the UNEP Governing Council. For example, a mid-term review of the Program for the Development and Periodic Review of Environmental Law for the 1990s (UNEP 1997) and for the first decade of the twenty-first century (UNEP 2001) or strengthening the role of UNEP in promoting collaboration among multilateral environmental conventions and in providing programmatic support to multilateral environmental conventions (UNEP 1999c).

Unlike the keyword "environment" which is characterized by an extensive thematic agenda, the context for the keyword "desertification" describes the main milestones of the formation of the international regime aimed at combating desertification. Tag clouds for this keyword (Fig. 14a and 14b) show words that characterize a given discourse. At the same time, the largest number of mentions falls on the term "combat" in the case of UNEP (mentioned 596 times) and the term "convention" (mentioned 1827 times in the documents of the UN General Assembly). Both of these words occur in the same context related to the UN Convention to Combat Desertification in Those Countries Experiencing Serious Drought and/or Desertification, particularly in Africa. Also, among the other identified words that describe the context for the keyword "desertification" and have the largest number of mentions, the following can be distinguished: action, plan, environment, development, convention, Africa, drought, land degradation, Sudano-Sahelian, sustainable development, deserts and financial for UNEP (Fig. 14b); and drought, combat, Africa, land degradation, environment, plan,

development, sustainable development, economic, arid, Sudano-Sahelian and resources for the UNGA (Fig.14a). It should be noted that all these words are mentioned an order of magnitude less than the words occurring in the same context with the keyword "environment". As with the "environment" keyword, desertification is also thematically related to other keywords, including environment, as well as drought, land degradation, development, sustainable development, climate, biodiversity and poverty. However, in contrast to the keyword "environment", in which the relationship with other keywords indicated an expansion of the thematic context. In the case of the "desertification" keyword, all of the above words describe either the consequences to which the desertification process can lead, or those factors that lead to the development of this process.



a. UNGA



Fig. 14. Tag clouds – Words used in one sentence with the keyword "desertification"

As mentioned above, text-mining analysis for this keyword helped to identify the main steps taken by the international community to combat desertification (Table 4). Based on this analysis it can be concluded that in the 1970s, the attention of both UN entities was primarily focused on the need to organize a Conference on Desertification, which was held in 1977. The main outcome of this conference was the adoption of the Plan of Action to Combat Desertification, and then the Plan of Action to Combat Desertification in the Sudano-Sahelian region. In 1994, the UN Convention to Combat Desertification in Those Countries Experiencing Serious Drought and / or Desertification, particularly in Africa, was adopted. However, in recent years, the focus of the UNEP Governing Council has shifted from directly related issues related to desertification to determining the relationship between desertification, land degradation and drought and climate change, as well as the need for promoting sustainable pastoralism and rangelands (UNEP 2016).

Table 4. Problem context of the UNEP and UNGA documents for the keyword"desertification"

Time frame	Торіс
1975-1978	United Nations Conference on Desertification 1997
1979-1996	Plan of Action to Combat Desertification 1977
	Plan of Action to Combat Desertification in the Sudano-Sahelian region
1997-2018	• UN Convention to Combat Desertification in Those Countries Experiencing
	Serious Drought and/or Desertification, particularly in Africa
	• Combating desertification, land degradation and drought and promoting
	sustainable pastoralism and rangelands

5.2. Problem context for "flashing" problems: identifying the ways of formation of ecosystem and ocean discourses of the UNGA and UNEP

Unlike the keywords "environment" and "desertification", resolutions and decisions on which were adopted at almost every session of the UN General Assembly and the UNEP Governing Council, respectively, the keywords "ecosystem" and "ocean" appear on the agenda of these institutions of the UN system, then disappear. In this regard, when analyzing the results of text-mining for these keywords, special attention was also paid to how the context that characterizes the keywords "ecosystem" and "ocean" changed over time.

Considering the general differences characteristic of the set of words that occurs together with the ecosystem in the same context, then already when analyzing the text-mining analysis tag clouds (Fig. 15a and 15b), it is possible to determine the key differences in the ecosystem discourse of the UNGA and UNEP. In the case of the latter (Fig. 15b), the words describing the context for the keyword "ecosystem" and mentioned most of the times are water, environment, biodiversity, adaptation, climate, quality, services, sustainable development, intergovernmental platform, pollution. The UN General Assembly, during the study period from 1972 to 2018, adopted only two resolutions related to ecosystems. In them, such words as biodiversity, sustainable development, environment, conservation, land degradation, forest,

loss, management, climate, services received the greatest mention. (Fig. 15a). In general, both lists are almost identical, however, each of them contains a word that distinguishes the discourses of both UN entities. For UNEP the word is water, and in the case of the UNGA it is "forest".



Fig. 15. Tag clouds – Words used in one sentence with the keyword "ecosystem"

Despite the fact that in the UNEP ecosystem context the word "water" has the most number of mentions (379 times), the topic was not discussed at the sessions of the UNEP Governing Council until the 1990s. (Table 5). Initially, this UN institute focused on issues related to the

terrestrial ecosystems. In particular, in the 1970s and early 1980s, one of the aspects raised in UNEP decisions was the problem of the spread of desertification in the Sahelian and North African regions and the need to organize research in this area (UNEP 1981). Another issue during this time period was the beginning of studies and research and the training of the specialists essential to rational use of the African tropical rain-forest (UNEP 1976). In 1990, the direction of the discourse changed from terrestrial ecosystems to coastal and marine ecosystems. The main focus was on the importance of developing new and strengthening existing institutional, legal and other measures aimed at protecting these ecosystems (UNEP 1990). Then, after an almost 15-year pause, issues related to the conservation of ecosystems reappeared on the agenda of the UNEP Governing Council, but with new aspects related to the organization and support of the Intergovernmental science-policy platform on biodiversity and ecosystem services (UNEP 2011), as well as an appeal to the participating countries direct efforts to prevent pollution of aquatic ecosystems (UNEP 2017).

UN	1976	1979	1981-1982	1990-1999	2014-2019
institution					
/ time					
period					
UNEP	Terrestrial ecosystem Arid and semi-arid lands Africa Sahelian region African rainforest	Terrestrial ecosystem Forest ecosystem Tropical woodland Tropical forest	Terrestrial ecosystem Arid and semi- arid lands Desertification Sahelian and North African regions Freshwater ecosystem Rehabilitation	Coastal ecosystem Ocean Protection	<i>Ecosystem</i> <i>services</i> <i>Ecosystem-</i> <i>based</i> <i>adaptation</i> Climate systems Water-related ecosystems Climate change International water quality guidelines for
UNGA				Forest ecosystems	<i>Ecosystem</i> <i>restoration</i>

Table 5. Problem context of the UNEP and UNGA documents for the keyword "ecosystem"
		Conservation	Prevent, halt
		and sustainable	and reverse the
		management	degradation
		Central Africa	Biodiversity
		Desertification	loss
			Carbon
			sequestration
			Climate
			change
			Land and
			ecosystem
			degradation
			Ecosystem
			services

As noted above, the UN General Assembly does not pay much attention to issues related to the protection and preservation of ecosystems. However, even despite this fact, it can be noted that the context for this keyword within the framework of the UNGA is also quite diverse thematically (Table 4). It includes issues on conservation and sustainable development of Central African forest ecosystems (UNGA 1999) as well as ecosystem restoration, highlighting their important role in maintaining the balance of the entire environment (UNGA 2018). And it is in these aspects that the ecosystem discourse of the UNGA intersects with the discourse of UNEP, within the framework of whose decisions in 2014-2019 issues related to ecosystem services and their role in mitigating the impact of climate change were also discussed.

In matters related to the protection of the marine environment, the development of the discourse of the UNGA and UNEP also took place independently of each other. As it can be seen from the tag clouds for this keyword in the UNGA resolutions (Fig 16a), the words sea, law and convention are most often used with the word "ocean". All of them are related to the United Nations Convention on the Law of the Sea, the development of which is one of the key themes of the UNGA discourse (Table 6). In addition, words such as acidification and fertilization are part of the UNGA maritime context, indicating the challenges facing marine

ecosystems. The regulation of these problems within the framework of the work of the UN General Assembly began only in the 2010s (Table 6). Initially, issues related to peaceful use of the sea-bed and the ocean floor were discussed on the sidelines of the General Assembly (UNGA 1972b). Then, in the 1980s, the issue of regulating large-scale pelagic drift-net fishing came to the fore (UNGA 1990), with the goal of conserving the living marine resources in the seas and oceans (UNGA 1995). The tsunami that hit the Indian Ocean regions of Southeast Asia in December 2004, as well as measures to rebuild the region, were another topic in the maritime context of the UNGA (UNGA 2004).



Fig. 16. Tag clouds – Words used in one sentence with the keyword "ocean"

It is this theme, the Indian Ocean tsunami, that is the only theme that unites the maritime discourse of the UNGA and UNEP (UNEP 2005). Otherwise, the context for the word "ocean" in the decisions of the UNEP Governing Council is those that do not overlap with the activities of the General Assembly. In general, despite the fact that issues related to marine ecosystems periodically disappear from the UNEP agenda, the thematic component has remained largely unchanged since the 1970s, and includes two main aspects (Table 6). The first of them is the development of the Regional Seas Programme (e.g. UNEP 1980b), which brings together agreements concluded by coastal countries aimed at protecting the marine environment and environmentally sound use of marine resources (Grip 2017). The second issue regulated within this discourse is the support and development of the Global Program of Action for the Protection of the Marine Environment from Land-based Activities (e.g. UNEP 2013).

UN	1972-1978	1980-1991	1997-1999	2000-	2010-2018
institution				2005	
/ time					
period					
UNEP	Marine	Protection of	Oceans	Indian	Long-term
	pollution	the marine	management	Ocean	conservation,
	Regional seas	environment	Protection of	tsunami	management
	programme	from land-	the marine	disaster	and sustainable
	Conservation of	based	environment		use
	marine	activities	from land-		Marine
	mammals	Regional seas	based		resources
	Regional	Marine	activities		Coastal
	agreements	pollution from			habitats
	Monitoring	land-based			Regional seas
	Conventions	sources			conventions
	against marine				and action
	pollution				plans
UNGA	Reservation for	Large-scale	Large-scale	Indian	Conserve and
	peaceful	pelagic driftnet	pelagic driftnet	Ocean	sustainably use
	purposes of the	Living marine	Living marine	tsunami	the oceans
	sea-bed and the	resources	resources	disaster	Oceans and the
	ocean floor		Oceans and the	Oceans	law of the sea
			law of the sea	and the	

Table 6. Problem context of the UNEP and UNGA documents for the keyword "ocean"

Internationa	International		
year of	the	the sea	
ocean			

5.3. Discussion of the results

Summing up the general results of this stage of the research, first of all, it should be noted that the context for both "nested" problems and "flashing" issues turned out to be extremely multifaceted. In case of the word "environment" the context associated with the keyword is really quite diverse thematically and the assumption made at the beginning of this section that the environmental discourse of UNEP and the UNGA includes many different topics has been confirmed. Moreover, this statement is true, both for the decisions of UNEP and for the resolution of the UN General Assembly. It was found that this keyword occurs in the same context with a number of other keywords used in this study. Moreover, the subtopics linking the "environment" keyword with other keywords are the same for both the UNGA and UNEP. However, in a number of cases, the same subtopic appears in the discourse of UNEP and the UNGA at different periods (e.g. issues regarding environmentally sound management of harmful chemical substances and hazardous waste).

Also, work with words identified in the text-mining analysis allowed us to define two categories of topics within the environmental discourse of the UN General Assembly and UN Environment: the so-called "true" environmental topics, describing environmental protection activities (e.g. environmental management and assessment; environmental law etc.), and topics, describing factors influencing on the environment (e.g. conflicts; emergencies; and trade etc.). It is in these aspects that the differences in the discourses of the General Assembly and the UN Environment emerge. For example, based on the results of a text-mining analysis, it was possible to identify that subtopic "environment and conflicts" in the context of the UNGA is associated with issues of compliance with environmental norms in the drafting and

implementation of agreements on disarmament and arms control. In the case of UNEP, this subtopic has a connection with the issue regarding the state of the environment in the occupied Palestinian territories.

In the case of the keyword "desertification", which is also referred to as "nested" problems, it is not possible to talk about thematic diversity. The context for this keyword reflects the main stages in the formation of international regulation aimed at combating desertification. In accordance with this, words found in the same context with desertification reflect the main characteristics of this regime. Moreover, this is true, as for those keywords that turned out to be thematically related to desertification (drought, land degradation, development, sustainable development, climate, biodiversity and poverty), as well as for all other identified words and phrases.

The nature of the development of discourse of "flashing" problems is somewhat different from "nested" issues, which include the keywords "environment" and "desertification". These topics periodically became part of the environmental discourse of UNEP and the UN General Assembly. However, their each new appearance is associated with the appearance of a new problem on the agenda of these UN entities. In the case of the keyword "ecosystem," the associated subtopics ranged from protecting African rainforest and countering the spread of desertification to preserving marine ecosystems and ecosystem services in the case of UNEP. In turn, the UNGA ecosystem discourse includes the protection of forest ecosystems and ecosystem restoration. Accordingly, the discourses of the UNGA and UNEP related to this keyword have evolved independently of each other, with the exception of issues related to the role of ecosystem services that appeared on the agenda of both UN entities in the 2010s.

Similar tendencies were found for the keyword "ocean", the context for which was also constantly changing, especially in the case of the UN General Assembly. Within the framework of its resolutions, such issues as reservation for peaceful purposes of the sea-bed and the ocean floor, preservation of living marine resources and the law of the sea can be distinguished. In the case of UNEP, the marine context can be summed up to two main themes: Regional Seas Program and protection of the marine environment from land-based activities.

At the same time, for the context for these keywords, a feature characteristic of such a "nested" problem as desertification is valid. Despite the fact that other keywords used in this study are included in the context for the keywords "ecosystem" and "ocean", their relationships do not lead to thematic expansion of the context, but rather clarify it.

Secondly, based on the analysis carried out, it can be concluded that in the discourse of both UNEP and the UN General Assembly there is a tendency to the emergence of blurry lines between problems that have usually referred to as political, political-economic and the actual environmental ones. This is especially true for the environment keyword. For example, references to environmental issues can be found in policy topics such as drafting and implementation of agreements on disarmament and arms control and the Arab – Israeli conflict. Also identified are the links between socio-economic issues and environmental problems: environment and trade; the impact of the economic crisis on the environment; and promotion of ecotourism for poverty eradication and environment protection.

The third characteristic that can be identified by studying in detail the environmental discourse of the UNGA and UNEP is associated with the two previous conclusions. This characteristic is the difference in approaches to environmental protection between the UNGA and UNEP. This is especially evident in the example of the subtopic "environmental law". Within the framework of this subtopic, the role of the UN General Assembly is summed up to drawing the attention of the international community to the problem, in other words, to identify this problem. At the same time, UNEP acts as a body coordinating the development and periodic review of environmental law. In the case of issues concerning for example the

state of the environment in the occupied Palestinian territories or the spread of desertification in the Sahelian and North African regions, the UN Environment plays the role of an institution that accumulates knowledge about these problems. Thus, the analysis of the context of UN General Assembly resolutions and UNEP decisions confirms the role of these UN entities in global environmental governance, as institutions that manage the accumulation of knowledge, develop norms, promote recommendations and institutionalize ideas (Weiss and Thakur 2010).

6. Conclusion

The main aim of this research was to study the contribution of the two United Nations entities (the UN General Assembly and UNEP) into the formation and subsequent clustering of the environmental issues as a field of global governance. Based on this goal, in this work, three research questions were formulated:

- 1. What is the scope of the "Environment" in the discourse of the UN General Assembly and UNEP from 1972 to 2018: which problems, sectors, resources, and objects it embraces?
- 2. In what context do the identified environmental issues emerge and develop in the discourse of the analyzed United Nations entities?
- 3. Are there linkages across these issues between the UN General Assembly and UNEP, and if so what kind of linkages are they?

To achieve this goal and answer the research questions presented above, an approach was chosen that combines quantitative and qualitative methods, namely content analysis and textmining analysis. The materials for the study of the discourse of these two UN entities using these methods were the resolutions of the UN General Assembly and the UN Environment decisions adopted from 1972 to 2018.

First of all, as a result of the study, a range of environmental issues were identified that are part of the discourse of the General Assembly and the UN Environment. Moreover, the environmental discourse, like UNEP and the UN General Assembly, turned out to be thematically diverse, as evidenced by the number of keywords found in the documents of these UN entities. Thus, the documents of both UNEP and the UN General Assembly contain 32 keywords out of 40 words included in the list for research. Of these words, the largest number of mentions falls on such keywords as environment, desertification, development, chemicals, waste and sustainable development for UNEP. In the case of the UNGA, they are sustainable development, environment, sea, disaster, desertification and human settlement. When analyzing the number of mentions of key words broken down by time intervals, two more features were identified that characterize the environmental discourse of the UNGA and UNEP. The first is the constant expansion of the environmental agenda of these UN institutions. The second characteristic of the discourse of the UN General Assembly and UNEP in the field of environmental protection was the identification of the so-called "nested" and "flashing" issues. "Nested" problems are found in each of the considered time frames. These include keywords such as "environment" and "desertification". In the case of "flashing", ones they were present initially, but then disappeared and reappeared in the General Assembly resolutions and the UN Environment decisions. They are "ecosystem" and "ocean".

Exploring the context of these keywords - "nested" and "flashing" ones - allowed us to consider how they are used in the discourse of the UNGA and UNEP and what subtopics are divided into. This analysis identified three key trends that characterize the environmental discourse of the UN General Assembly and the UN Environment. First, the context for the keywords "environment", "desertification", "ecosystem" and "ocean" is quite multifaceted and includes many subtopics. This is especially true for the "environment" keyword. In the case of "flashing" issues, the context analysis also made it possible to understand how the topics changed, which is especially important due to their constant disappearance from discussion in the framework of the work of UNEP and the UNGA. Second, there is a tendency to include environmental considerations in issues that are inherently political, economic or social. For example, environment and conflicts: environment and trade; the impact of the economic crisis on the environment; and promotion of ecotourism for poverty eradication and environment protection. Third, the analysis of the context made it possible to identify the roles and functions that UNEP and the UNGA perform in order to protect the

environment. In general, they are managing the accumulation of knowledge, developing norms, promoting recommendations and institutionalizing ideas (Weiss and Thakur 2010).

However, even in spite of the fact that in the second stage the research focused on the context analysis of only four keywords "environment", "desertification", "ecosystem" and "ocean", it can be described as an overview research. And this fact is both the strength of this study and its limitation. On the one hand, such a character also indicates that it is quite comprehensive. In turn, due to this factor, it can be considered that this study closes a gap in research related to the comparative analysis of environmental discourse, both in the context of various subtopics and in the space-time context, which is noted by many scholars (Leipold et al. 2019; Keller and Poferl 2011). On the other hand, this approach does not make it possible to consider the issues included in the environmental discourse of the UNGA and UNEP in more detail. This fact can be considered a kind of confirmation of the need to follow one of the tendencies indicated in the theoretical part of this study. It lies in the fact that research related to discourse is most often devoted to one of the environmental subtopics (Leipold *et al.* 2019). In general, these limitations in work can become the ways in which research in this direction can be continued. In particular, it is possible to further continue research on "nested" and "flashing" issues or consider other keywords and at the same time analyze the activities of other institutions of the UN system.

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