

CHARLES UNIVERSITY
FACULTY OF SOCIAL SCIENCES
Institute of Political Studies
Department of International Relations

**International environmental cooperation in the fields of
ozone depletion and plastic pollution in the sea**

Master's thesis

Author: Michal Janečka

Study programme: International Relations

Supervisor: doc. PhDr. Jan Karlas, M.A., Ph.D.

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Declaration

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In Prague on May 3, 2019

Michal Janečka

References

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Abstract

The thesis examines the nature of the international environmental cooperation in the regime of the ozone depletion and plastic pollution in the sea. While the international community has been able to attain a strong protection framework within a several years and currently the ozone regime constitutes an example among environmental regimes, the plastic pollution regime as a present and increasingly threatening issue to the environment encounters with an inability to find an effective solution and the international cooperation fails. The aim of the work is to put forward the main differences between the regimes and provide an explanation of the different strength within the international environmental cooperation. For this purpose, the paper initially performs the analysis of the main international contracts based on the several indicators in both regimes. Subsequently, applying the factor in the form of the interest and support of the industry and public, it identifies main aspects possessing the ability to influence the negotiation process and the resulting cooperation. Concurrently, in order to attain the necessary findings, the empirical part is placed under the theoretical framework of the Putnam's two-level game. As the thesis concludes, the established factor-based variables lead to the different nature of the international cooperation.

Abstrakt

Práce se zabývá povahou mezinárodní environmentální spolupráce v rámci režimu ubývání ozónové vrstvy a plastového znečištění moří. Zatímco u ozónového režimu bylo mezinárodní společenství schopné během několika let dosáhnout silného rámce ochrany a v současnosti představuje v tomto ohledu vzor mezi environmentálními režimy, plastové znečištění moří jako aktuální a stále intenzivnější hrozba životního prostředí se potýká s neschopností najít efektivní řešení a spolupráce na mezinárodní úrovni selhává. Práce si tak klade za cíl představit hlavní rozdíly mezi jednotlivými režimy a vysvětlit podstatu rozdílné síly mezinárodní environmentální spolupráce. Za tímto účelem nejdříve provádí na základě několika indikátorů analýzu hlavních smluv v obou režimech. Následně při aplikaci faktoru v podobě zájmu a podpory průmyslu a veřejnosti stanovuje hlavní aspekty, které mají schopnost ovlivňovat negociační proces a výslednou spolupráci. Souběžně s tím je empirická část pro dosažení výsledků zasazena do teoretického rámce Putnamovy dvoustupňové teorie her. Jak práce ve výsledku ukazuje, stanovené proměnné vyplývající z daného faktoru vedou k rozdílné povaze mezinárodní spolupráce.

Keywords

ozone depletion, plastic pollution in the sea, international cooperation, environmental regimes, negotiation process, two-level game theory

Klíčová slova

ubývání ozónové vrstvy, plastové znečištění moří, mezinárodní spolupráce, environmentální režimy, negociační proces, dvoustupňová teorie her

Title

International environmental cooperation in the fields of ozone depletion and plastic pollution in the sea

Název práce

Mezinárodní environmentální spolupráce v oblastech ubývání ozónové vrstvy a plastového znečištění moří

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List of abbreviations

CFCs – Chlorofluorocarbons

EC – European Communities

EEC – European Economic Community

EEZ – Exclusive Economic Zone

EPA - Environmental Protection Agency

EU – European Union

GESAMP - Group of Experts on the Scientific Aspects of Marine Environmental Protection

GPA - Global Programme of Action

HCFCs – Hydrochlorofluorocarbons

IGO – International governmental organization

IMO – International Maritime Organization

INGO – International non-governmental organization

NASA - National Aeronautics and Space Administration

NOAA - National Oceanic and Atmospheric Administration

ODSs – Ozone depleting substances

UN – United Nations

UNEP – United Nations Environment Programme

UV - Ultraviolet

Introduction

Although the issue of plastic pollution in the sea is at the forefront of today's environmental debate and the matter of global scope, there is no solution in sight at the international level. Nothing changes the state of affairs even when the world leaders and leading institutions are aware of the gravity of the issue, which at the time of ever-increasing plastic production constitutes an immense burden on the environment. Moreover, the implemented measures are weak and inadequate and the problem in the meantime reaches the mass proportions. In stark contrast, the international community has been in a short period of time able to completely reverse the adverse direction of the ozone depletion and solve this global problem. Today, the ozone regime is presented as the most successful and salient example of the protection framework within environmental regimes.

With regard to this different arrangement, the thesis chooses the plastic pollution in the sea as a current issue that is highly emphasized on the contemporary environmental agenda. It received skyrocketing interest in the form of many types of media coverage, general public's debate or among world leaders and prominent international institutions. In relation to the utilization tendency, the plastic production is experiencing a steep increase that with the non-existence of the sufficient material substitute will make the issue in the course of time more and more acute. Given to the topicality of the issue, as well as the narrow orientation within the marine pollution, the thesis seeks to contribute to the existing knowledge and alternatively fill the gaps in the international environmental cooperation.

In relation to the above-defined status, the work is preoccupied with the structure and nature of the environmental regimes as for the ozone depletion and plastic pollution in the sea. The aim of the thesis is to put forward the main differences between the regimes and subsequently explain the difference within the strength of the international environmental cooperation, thus to provide the underlying aspects leading to the weak and failing nature of the plastic pollution regime, contrary to ozone regime. For this purpose, the work sets three research questions. The first research question is - *What are the main differences of the international community's approach towards given fields?* The second research question is - *Why is international cooperation in the field of plastic pollution in the sea relatively weak, compared to the international cooperation in the field of ozone depletion?*

Finally, the last and central research question is defined as follows - *What constitute the main reasons for the failure of the international community in the field of the marine protection against plastic pollution?*

Regarding the structure of the thesis and the procedure to answer these questions, the thesis begins with the conceptual framework, in which it presents the chief concept of the work, defines main terms, criterion and the indicators for the first chapter, which is outlined at this point as well. As for the first chapter, it provides the development and form of the cooperation in both regimes, presents the very differences based on the established indicators and demonstrates the diverse strength of the international cooperation within the ozone and plastic pollution field. Using the analytic-descriptive approach, the paper in this part provides the answer to the first research question.

Afterwards, the thesis proceeds to the second chapter that focuses on the theoretical and methodological framework. In this section, the Putnam's two-level game theory is presented and its core principles and rules are explained. In this respect, the theory is applied within the empirical part, in which it represents the framework on which the negotiation process is at the national and international level based. The chapter also determines the individual actors of these levels and presents their actual interests and motives within the logic of negotiation. As far as the methodology is concerned, under the qualitative research, the chapter employs a comparative case study, subsequently specified into a J. S. Mill's method of difference. Finally, the part comprises the conceptualization, operationalization and data requirements. Crucially, this part defines the main independent and dependent variables and determine three corresponding hypotheses.

The third and fourth chapter, constituting the empirical part of the thesis, are particularly concerned with the negotiation process in both regimes. In this context, the thesis follows the three-stage model, starting at the national level, then proceeding to the international level and finally moving back at the national level. Primarily, the thesis is in this part focused on the motivations and interests of the individual actors, the fundamental patterns within the negotiation process, as well as the influence of the particular entities on the national governments and the relations among the very actors. Overall, the chapters present the global nature of the regimes, obtain the data for the second and third research question and evaluate the established hypotheses.

The fifth chapter represents the last part of the thesis, conducting the comparison of the results from the empirical part. At this point, it exposes the data of the independent variables of both regimes against each other. The goal of this chapter is to find out whether the independent variables explain and embody the differential aspect of the international cooperation and thus answer to the second and third research question.

As for the literature basis, the first chapter under the ozone regime predominantly draws from the publications *Ozone diplomacy: new directions in safeguarding the planet* of the Richard E. Benedick and *Protecting the ozone layer: the United Nations history* from Stephen O. Andersen and K. Madhava Sarma. Authors represent the leading experts in the field, presenting the comprehensive view of developments and painstakingly focus on the relevant details such as the individual positions of countries or the setting of the contracts.

With regard to the plastic pollution regime, the work is given to its topicality primarily based on the lately published academic articles from scientific and academic journals. The sources range from the area of the international maritime law to biology-oriented articles. Such a group allows to provide a broad perspective on the matter in question. One of the few exceptions in the field is the publication *Marine Anthropogenic Litter* from the Melanie Bergmann, Lars Gutow and Michael Klages, profoundly devoted to this topic based on many areas like history, socio-economic perspective or particular global examples.

Similarly, the ozone regime is considerably based on many articles from academic and scientific journals. In particular, the thesis draws from the *Plastic pollution in the marine environment* from the Christopher C. Joyner and Scott Frew as they deeply engage in the particular contracts of the regime. Finally, the overall part is obviously build on the primary sources in the form of the individual international treaties, and the website sources regarding their initiators, administrators or other relevant actors in the field.

As far as the empirical part is concerned, the thesis is mainly based on the same or similar types of sources, especially the relevant websites, alternatively documents or reports, and articles from academic and scientific journals. Within the part of the plastic pollution, it is appropriate to highlight the article *Why is the global governance of plastic failing the oceans?* from Peter Dauvergne, who as one of a few directly takes a look at the actors and areas of the regime and preoccupies with their deficiencies.

Conceptual framework

Conceptual framework of the thesis is composed of several successive steps that enable to appropriately delineate the core and attitude towards the theme. First, it is vital to define the main concept of the paper whose determination enables to further elaborate the analysed result. In this case, the concept of *strength* represents the core of the conceptual framework, specifically strength of the international environmental cooperation. Subsequently, in order to employ the given concept within the two analysed fields – ozone depletion and plastic pollution in the sea – it is necessary to specify the concrete aspects and perspectives from which the concept is assessed. For this purpose, the principal assessment criterion of the *contractual cooperation* is put forward. The criterion is selected on the grounds that it allows both to identify from the wider perspective the established pillars of protection within the international cooperation and thoroughly analyse the settings of the individual treaties and also the overall nature of regimes.

With respect to this requirement, the thesis provides following indicators – *ambition* and *concreteness*, *level of participation* and *centralization*, employed within the very agreements. Every contract is exposed to each indicator on which basis is subsequently analysed. Such an analysis of the main contracts will provide a comprehensive foundation to determine the overall strength of international cooperation in both regimes. The particular contracts thus become the main researched centre of attention whose content embody the subject of interest for the individual indicators. In other words, the aim is to explore the framework of the specific agreements and to obtain required data based on the indicators. As far as the particular indicators are concerned, the extent of their focus is varying so as to put forward comprehensive view of the regimes without preferring one specific and therefore more narrow perspective. The selection is thus conditioned by a considerable scope of them as well as they represent one of the main pillars that might be considered determining the agreement's strength.

The ambition and concreteness of the objectives of the particular treaties constitute the first applied indicator. These terms are in its nature relatively complicated to entirely comprehend as their assessment or measurement requires profound knowledge with overlaps to other disciplines, e.g. psychology. In view of this fact, as well as the focus of the thesis, the ambition and concreteness are in the framework of treaties used in its basic understanding and notion appearing in the public discourse, although with some specification.

In this respect, the thesis works with the notion of concreteness used in the international law¹ as it constitutes relevant realm given to the fact that the international contracts are the subject of the interest. Concreteness might be understood as a closeness and proximity of a single principle, rule or provision in relation to the objectives of the given contract. The point is that the agreement's purpose is to build a framework of principles and rules, basically to construct the law, so the concreteness is subsequently reflected as an ability to actually grasp and enforce those principles. Otherwise, if the provisions are structured rather in an indefinite and vague sense, both the direct application and enforceability cannot be appropriately put into practice.

To summarize it, it is the ability to specifically define the provisions so as to implement it on particular actors and observe in practice the actual reflection of what is stated in the contract. It is the certain specification level that is necessary for the application of provisions and ability to define the provisions to that extent that it becomes operational. Specifically, concreteness is under the indicator analysed as the ability to specify and present individual provisions of the contract, use definite phrases, work with single-meaning content, use concrete and tangible facts, figures, time definitions, etc.

Ambition might be comprehended as a certain reflection of the international development, size and severity of the issue in question projected into corresponding and appropriate provisions and tools which might by their scope at least partially change the course of events. In other words, it is an endeavour to cause tangible change and attain success through the arrangement of the treaty and set the direction of upcoming development. In this respect, it is thus applied as an extent and scope of the provisions and the overall framework of implemented tools. Specifically, thesis pays attention to range, intended strength and interest of the given goals, the time duration or territorial scope (e.g. what areas are covered).

So, while the concreteness determines the proximity and the connection between the particular provisions and individual goals of the treaty and the ability to reflect this relation in practice in the form of tangible and operational output, ambition covers scope and extent of the individual provisions and instruments reflected through the effort to achieve desirable change within the given field.

¹ KOSKENNIEMI, Martti. The politics of International Law. *European Journal of International Law* [online]. 1990, 1(1) [cit. 2019-03-17], p. 8. Available at: <http://ejil.org/pdfs/1/1/1144.pdf> or CRAWFORD, James and Martti KOSKENNIEMI. *The Cambridge Companion to International Law*. Cambridge: Cambridge University Press, 2012, p. 60. ISBN 978-0-521-19088-6.

In a similar vein, ambition and concreteness of individual state's commitments constitute second indicator. Attention is paid to the extent to which states are willing to accept the obligations stemming from the treaties, to what particular obligations they commit themselves, what is the agreed form and the wording of the treaties, and how much they are willing to pursue the common goal as far as the scope of adopted rules is concerned. Generally speaking, the overarching meaning of the indicator is the collective will of the countries to achieve set goals through their adopted provisions. At this point, it will also create a convenient output demonstrating the vital relationship – to what extent the design of the treaty (e.g. strict/loose provisions) influence the accession, ambitions or compliance of states (e.g. acceptance/refusal).

The third indicator is represented by the level of participation with its task to observe the degree of states' participation within a particular contract. In this respect, the emphasis is mainly put on the individual countries' status such as the signing and ratification. Specific figures are put forward as well. Moreover, the thesis pays attention to concrete examples of (non)participation which might to great extent influence the overall strength of the regime. Within the focus, the major powers and main polluters particularly come under scrutiny.

Laying down the final indicator, the emphasis is firstly placed on the form of cooperation with regard to the structure of the contract. The thesis analyses whether the cooperation and the progress within the fulfilment of the given goals is decentralized, under the direction of individual entities, or, on the contrary, it is in essence a coordinated, centralized procedure falling to responsibility of one entity. In this context, the work also analyses the distribution of the responsibilities, whether the content is delegated to individual actors or based upon core entity conducting these tasks. Focus is also directed to international organizations, under which mandate the contracts are often administered and their potential centralized role is further demonstrated. Moreover, the indicator preoccupies with the centralization features that are derived from the contract's structure and originate in the centralizing nature.

The scope of indicator thus also engages in administrative and coordination areas of the contracts such as collection and dissemination of the information, monitoring (e.g. implementation of particular provisions by states), and potentially imposed sanction system alongside compliance, enforcement or verification mechanisms. In this context, attention is naturally also paid to the very regulatory and control features. Finally, the indicator deals with the overall structure of the treaty and takes note of its composition.

Such a determination then provides valuable data which might imply that system of cooperation is weakened due to the application of certain structure. Moreover, the use of this indicator will also might imply whether the structure, in which the individual treaty was constructed, could represent the factor that influenced countries in their decision-making such as the accession to particular treaty or compliance with contract and hence eventually also play a vital role within the entire regime and its protection.

The determination of all these aspects and their application is further used to acquire the necessary data that subsequently provide the answer to first research question - *What are the main differences of the international community's approach towards given fields?* The presentation of particular treaties falling under the contractual cooperation, as well as the application of individual indicators, following analysis and data assessment with regard to first research question is a matter of the following chapter.

1. International cooperation in the fields of ozone depletion and plastic pollution in the sea

This chapter thoroughly presents and analyses the international cooperation in the ozone regime and regime of the plastic pollution in the sea. The goal is through the above-determined procedure come to the conclusion and answer the first research question. For this purpose, within both regimes the analytic-descriptive approach is applied that allows to provide the necessary knowledge and the development of the topic in question and also to obtain required data on the basis of indicators within the analysis.

1.1 International cooperation in the field of ozone depletion

International cooperation in the ozone regime is often set as an example as one of the most successful within the environmental regimes. This section, based on the analysis using several indicators applied to contracts puts forward the form and the overall look at the cooperation and presents the ground that clarifies the achievements.

Since the discovery of the ozone² in 1839 by Christian Friedrich Schönbein, it has been more than a hundred years since it has been discussed for its potential impact on the global climate. In this respect, the attention and interest began to revolve around the fact that ozone layer, which constitutes a part of the stratosphere, is crucially important for the life on the earth since it through the absorption protects the planet from ultraviolet (UV) radiation. Otherwise, direct impact of Sun's UV would cause life-damaging and devastating implications. The second important fact is that, "*distribution of ozone throughout different altitudes could influence the temperature structure and circulation patterns of the stratosphere.*"³ These scientific findings represent and explain the vital relationship between the ozone layer, its importance for the life, climate and potential negative consequences.

The considerable issue then emerges when ozone is disrupted within the layer and its total amount is decreasing. Such an effect is referred to as an *ozone depletion*. If there is a large loss of ozone in a certain region, this weakened, localized part is called the *ozone hole*.

² Molecule composed of three oxygen atoms.

³ BENEDICK, Richard Elliot. *Ozone diplomacy: new directions in safeguarding the planet*. Enl. ed. Cambridge: Harvard University Press, 1998, p. 9. ISBN 0-674-65003-4.

In this case, the ozone depletion is in the area severe, e.g. during springtime over Antarctic.⁴

The depletion itself is caused by ozone-depleting substances (ODSs) as it was discovered that their amount is steadily increasing in the stratosphere, mainly due to human activities and thus substantially weaken the ozone layer. Through the emission of chlorofluorocarbons (CFCs), hydrochlorofluorocarbons (HCFCs) and other organohalogens that represent the main components of ODSs and that has found its application in the number of widely used products (e.g. refrigeration, propellants), the situation started to reach the alarming point.⁵

The initial findings and a discovery of the adverse effect of ODSs on the ozone layer dates back to 1970s as the first concerning signs appeared in the scientific field. In 1972, the United Nations Conference on the Human Environment was held in Stockholm which slightly concerned with the ozone depletion as this issue was involved in the preparations preceding the conference. There was an interest to conduct a research dealing with the influence of human activities on the ozone within the stratosphere. Nevertheless, at that time the conference did not preoccupy with the matter more closely as major scientific findings were still about to be made.⁶

In 1974, a group of two scientists published research that focused on chlorine-related chemical process in the atmosphere that might eventually lead to harmful implications for the ozone in the long-term horizon. Independent of the first research, in the same year a group of two scientists came to the conclusion that CFCs possess an extremely stable structure and are able to reach stratosphere level in which might withstand for a very long time.

⁴ Scientifically specified, as an ozone hole are designated areas where the level of ozone drops below 200-220 (the exact number slightly varies in the literature) so-called Dobson Units (DU), which denotes the thickness of the layer. One DU is equivalent to 0,01 mm. Concentration around 300-350 DU (3 mm) is considered normal, and typical values around the globe oscillate between 200-500 DU.

SIVASAKTHIVEL, T. and SIVA KUMAR REDDY, K.K. Ozone Layer Depletion and Its Effects: A Review. *International Journal of Environmental Science and Development* [online]. 2011, 2(1) [cit. 2019-03-17], p. 30-31. ISSN 2010-0264. Available at:

https://www.researchgate.net/publication/269838986_Ozone_Layer_Depletion_and_Its_Effects_A_Review and HEGGLIN, Michaela I (et. al.). *Twenty Questions and Answers About the Ozone Layer: 2014 Update: Scientific Assessment of Ozone Depletion: 2014* [online]. Geneva: World Meteorological Organization, 2015 [cit. 2019-03-17], p. 5, 14, 19. ISBN 978-9966-076-02-1. Available at:

<https://www.esrl.noaa.gov/csd/assessments/ozone/2014/twentyquestions2014update.pdf>

⁵ AGGARWAL, Anjali et al. Depletion of the Ozone Layer and Its Consequences: A Review. *American Journal of Plant Sciences* [online]. 2013, 4(10) [cit. 2019-03-17], p. 1991. ISSN 2158-2750. Available at: <http://dx.doi.org/10.4236/ajps.2013.410247>

⁶ ANDERSEN, Stephen O., K. Madhava SARMA and Lani SINCLAIR (ed.). *Protecting the ozone layer: the United Nations history*. London: Earthscan Publications, 2002, p. 43-44. ISBN 1-85383-905-1.

Afterwards, scientific findings were nothing but both a groundbreaking discovery and surprise since up to this point there was no awareness of the existing relationship between CFCs and ozone layer, let alone its depletion effects.⁷ Findings considerably sparked the series of actions that brought together representatives from various spheres. With regard to debates and research campaign, prominent figures from National Aeronautics and Space Administration (NASA), universities as well as chemists or meteorologists came to the fore. However, following developments were marked by arguments as scientific tests encountered with inability to clearly verify and prove the existence of such processes in the stratosphere. At the same time, the interests of different stakeholders started to emerge as, for instance, industry designated scientific conclusions as speculative and unsubstantiated.⁸

Protection of ozone layer gradually became an integral part of the environmental regimes and far beyond started to exceed only the scientific circles. It embodied a new era of environmental issues and jointly with climate change it was viewed as the first worldwide, boundary-spanning phenomenon that relates to atmosphere, just as it prompted international community to act.⁹ The severity of the issue led to the fact that following years were filled with endeavour to tackle this imminent threat.

At that time, United Nations Environment Programme (UNEP) constituted the main actor of change striving to bring world actors close together within its leading and coordinating role. Beside the World Plan of Action in 1977,¹⁰ whose preparations primarily fell under UNEP, there were further meetings as well as outputs aspiring to finally comprehend CFCs (e.g. non-binding resolution in 1980). Despite certain difficulties within the set course (predominant countries' notion of the agreement possessing only cooperative research and data collection character, declined priority of the issue, etc.), in 1982 UNEP managed to summon representatives from 24 countries and to establish Ad Hoc Working Group assigned to prepare a global convention that would protect the ozone layer.¹¹

⁷ BENEDICK, Richard Elliot, *Ozone Diplomacy*, p. 10-11.

⁸ Ibid., p. 12.

⁹ HOFFMANN, Matthew J. *Ozone depletion and climate change: constructing a global response*. Albany: State University of New York Press, 2005, p. 8-9. ISBN 0-7914-6526-8.

¹⁰ Result of the meeting of governments and international organizations. It partially preoccupied with the progressive way to the subsets of ODSs, however, international research and monitoring still dominated the agenda and actions were primarily a matter of national level, as well as the financial responsibility.

ANDERSEN, Stephen O. and K. Madhava SARMA, *Protecting the ozone layer*, p. 45-47.

¹¹ BENEDICK, Richard Elliot, *Ozone Diplomacy*, p. 40-42.

Nonetheless, the process leading to the final agreement took three years and contended with a few obstacles. For example, a significant aspect was the discrepancy over specific form of intended convention between the two groups represented by the so-called Toronto group¹² and European Community (EC) with Japan and Soviet Union.¹³ In the course of time, differing perspectives were gradually getting closer since there was a persisting consensus to come up with a convention. However, no agreement was reached on concrete action. As an example might serve the first definite proposal from 1983 that intended to end the use of specific subsets of CFCs in certain fields. Diverging perspectives, however, led only to the adoption of the annexes of future Convention. It took several another exacting sessions and revised drafts, but in 1985 government representatives finally gathered in order to adopt Vienna Convention.¹⁴

1.1.1. Vienna Convention (1985)

It was March 1985 when representatives of 43 countries gathered in Vienna to strike an agreement with the formal name of *Vienna Convention for the Protection of the Ozone Layer*. Nevertheless, as certain stumbling-blocks (e.g. concept of control measures) emerged during the conference, the concluded agreement was in the form of convention that set out a framework for the protection with a pledge to conclude control protocol in two-years period.¹⁵ Finally, Convention came into force in September 1988.¹⁶

1) Ambition and concreteness of the treaty's objectives

Ambition and concreteness of the treaty's objectives represent within the analysis the first indicator. Initially, ambition of the objectives might be seen from the two differing perspectives. Undoubtedly, at that time the Convention constituted a breakthrough effort that was structured in a global scale and striving to unify the world based on the worldwide consensus and interest in the issue.

¹² A group of countries comprising Canada, Finland, Norway, Sweden, Switzerland and later the United States.

¹³ BENEDICK, Richard Elliot, *Ozone Diplomacy*, p. 42.

¹⁴ ANDERSEN, Stephen O. and K. Madhava SARMA, *Protecting the ozone layer*, p. 57-59.

¹⁵ BARRATT-BROWN, Elizabeth P. Building a Monitoring and Compliance Regime Under the Montreal Protocol. *Yale Journal of International Law* [online]. 1991, 16(2) [cit. 2019-03-18], p. 526-528. Available at: <https://digitalcommons.law.yale.edu/yjil/vol16/iss2/5/> and BENEDICK, Richard Elliot, *Ozone Diplomacy*, p. 44.

¹⁶ Vienna Convention for the Protection of the Ozone Layer. *United Nations Treaty Collection* [online]. [cit. 2019-03-18]. Available at: https://treaties.un.org/Pages/ViewDetails.aspx?src=IND&mtdsg_no=XXVII-2&chapter=27&clang=_en

Its extent was in the form of the global creator who eventually put the norm for the ozone protection forward and from which following steps were derived. Convention thus created a certain breeding-ground on which the upcoming control system could be set up. As far as the time-framework is concerned, there was a relatively prompt response and since the very discovery of the issue to the adoption of Convention only several years passed. And in this respect, it is important to also note that the international community was able to act at this level before the issue became irreversible.¹⁷

On the other hand, ODSs in the form of CFCs are in the Convention covered only within the context of chemical substances under Annex 1, stating that they are “*thought to have the potential to modify the chemical and physical properties of the ozone layer.*”¹⁸ The text omits further definite steps with regard to CFCs.¹⁹ Moreover and within the concept of concreteness, Convention presents rather general clauses without specifically defining its content as, for instance, within the obligations in the Article 2 notes that “*parties shall take appropriate measures (...)*”, when it comes to the protection of the ozone layer.²⁰ Looking at the situation from the broader perspective, it is vital to note that Convention was in the complicated, partially balancing position. On the one hand, there was evidence-based data proving the seriousness of the issue, on the other hand, the complexity of the situation to unite international actors with differing interests alongside economic implications of intended reduction/ban of the ODSs.²¹

So with regard to first perspective again, it was also the scientific knowledge and its concreteness which played a substantial role and that convinced the countries to accede. Reflected in the Annex I, the listing of individual chemicals and their specified relationship to the ozone layer clearly presents their influence. Besides, its structure both in terms of ambition and concreteness was already specified two years later.

¹⁷ BENEDICK, Richard Elliot, *Ozone Diplomacy*, p. 45.

¹⁸ *The Vienna Convention for the Protection of the Ozone Layer* [online]. 1985 [cit. 2019-03-18]. Available at: http://mountainlex.alpconv.org/images/documents/international/convention_ozone_layer.pdf

¹⁹ ANDERSEN, Stephen O. and K. Madhava SARMA, *Protecting the ozone layer*, p. 64.

²⁰ Article 2, *The Vienna Convention for the Protection of the Ozone Layer* (1985).

²¹ BOTHE, Michael and Eckard REHBINDER. *Climate Change Policy*. Utrecht: Eleven International Publishing, 2005, p. 82. ISBN 90-77596-04-6.

2) Ambition and concreteness of individual state's commitments

As for the second indicator, the Convention encountered with a slightly similar inconsistency when it comes to overall view of countries. In a similar vein as prior to the Convention, United States representing the Toronto Group pushed forward the more ambitious (control) system that aimed to in a short time propose a control protocol. In the context of ambition, the effort to arrive at more distinct and extensive achievements of the regime is thus clear as the legally binding character affects and has links to the ambition of the treaty.²² However, EC opposed such propositions.²³ And it was not the only issue on the agenda as disagreements persisted in other areas, such as the form of the dispute settlement system.²⁴ However, within the perspective of individual states, all major industrialized countries responsible for CFCs emission, except Japan, arrived at a decision to sign the Convention.²⁵ Not only it constituted a major success within the global effort, but such an interest of major CFCs-emitting countries to find a solution helped to enhance the endeavour to tackle the ozone depletion, set the course for the years to come and finally, encouraged the rest of the world to accede. This last point is also associated with developing countries as the Convention defines a requirement, “*taking into account in particular the needs of the developing countries (...)*.”²⁶

3) Level of participation

One of the main determinants of the later success was undoubtedly the countries' level of participation. Even though there were opinion disagreements among states both prior to the conference and during the very negotiations, the need to address this issue eventually prevailed. And it was about to manifest a significant turning point within the ozone regime, despite the fact that the final Convention was on March 22, 1985 signed only by 20 nations and the EC Commission. The treaty was signed by the global powers and large industrialized and CFCs-emitting countries that confirmed their commitments to actively tackle this global problem. Specifically, it was the United States, Soviet Union, Canada, France, Germany or

²² BODANSKY, Daniel. Legally binding versus non-legally binding instruments. In: BARRETT, Scott, Carlo CARRARO and Jaime DE MELO. *Towards a Workable and Effective Climate Regime* [online]. London: CEPR Press, 2015 [cit. 2019-03-18], p. 160-163. ISBN 978-1-907142-95-6. Available at: <https://voxeu.org/sites/default/files/image/FromMay2014/Climate%20change%20book%20for%20web.pdf>

²³ BENEDICK, Richard Elliot, *Ozone Diplomacy*, p. 43.

²⁴ ANDERSEN, Stephen O. and K. Madhava SARMA, *Protecting the ozone layer*, p. 63.

²⁵ United Kingdom acceded two months later.

BENEDICK, Richard Elliot, *Ozone Diplomacy*, p. 45.

²⁶ Article 4, *The Vienna Convention for the Protection of the Ozone Layer* (1985).

Italy. And in the course of time, it has become one of the most successful international agreements of all time since it has been ratified by 197 parties.²⁷

4) Centralization

Focusing on the individual articles, their settings and the form of fulfilment, the indicator detects that the requirements predominantly come under individual countries' competences as well as there is no governing or managing entity superior to states. This fact is to a certain extent linked to the form of the Convention that does not demand in its essence the constitution of a governing body that would oversee or unite individual countries within a coherent process of cooperation. As mentioned above, it is rather an umbrella treaty that provides a sort of a breeding ground for subsequent development. The only entity, but more of a coordination character, represents the secretariat (created on the basis of Article VII) charged with functions such as “*to prepare and transmit reports based upon information received.*”²⁸ Secretariat thus rather act in the form of supporting factor within this decentralized interaction set by the Convention.²⁹

Looking at the further parameters, Convention follows the line with its rather generally-stated articles and provisions and does not impose any enforcement measures upon states. Certain undertaking steps might be only noticed within the Article II that engages with general obligations. In this respect, it is stated that Parties shall pursue cooperation in the area of monitoring or research as well as to “*adopt appropriate legislative or administrative measures*” governing the human activities that may alter the ozone layer.³⁰ Specific regulations on the enforcement of these general obligations or procedure in the case of non-compliance are thus not covered. In the event of a dispute between Parties within the matter of interpretation or application, Article XI attends to the situation and provides several tools for the settlement. Focusing on the rest of individual items that constitute the analysed contract, it can be stated that it does not contain signs of strong global cooperation. The Convention takes into consideration the importance of the issue, but sets only the basic norm for states with regard to their national level. And except for certain data exchange, Convention does not specify any measuring or verification system.

²⁷ Vienna Convention for the Protection of the Ozone Layer. *United Nations Treaty Collection* [online].

²⁸ Article 7, *The Vienna Convention for the Protection of the Ozone Layer* (1985).

²⁹ ABBOTT, Kenneth and Duncan SNIDAL. Why States Act through Formal International Organizations. *The Journal of Conflict Resolution* [online]. 1998, 42(1) [cit. 2019-03-18], p. 11. Available at: <https://www.jstor.org/stable/174551>

³⁰ Article 2, *The Vienna Convention for the Protection of the Ozone Layer* (1985).

As a part of the continuing efforts to build on the so far intended control initiatives, the group of states managed during the conference to adopt a Resolution³¹ that enabled to hold a further negotiations and to convene a working group that would prepare the protocol covering such arrangements (definite targets for the production, emission and use of the CFCs). Correspondingly, it was arranged that in 1987 there would be organized conference in order to adopt such a protocol. Finally, patronage of the process was assigned to UNEP.³²

1.1.2. Montreal Protocol (1987)

With the end of the Vienna Conference, a significant two-year period was launched. Although the international community constructed a framework on the protection of the ozone layer, it still constituted only an initial step that was necessary to be enhanced. For that reason, the following two years were marked with negotiations whether in the form of the diplomatic meetings or two workshops. These two informal non-governmental meetings took place in 1986 and engaged in many issues such as analysis of contemporary CFCs production or possible alternative to CFCs.³³ Successively, there were four rounds³⁴ of diplomatic protocol negotiations within 1986 and 1987 that led to the Montreal Protocol.³⁵

The much-awaited conference was convened in September 1987 in Montreal with the participation of 55 countries, the European Economic Community (EEC) and six countries with observer status.³⁶ The result in the form of the *Montreal Protocol on Substances that Deplete the Ozone Layer* was already regarded as a considerable achievement at the time of adoption and it is retrospectively viewed as a landmark within the effort to combat global environmental issue.

³¹ Resolution on a Protocol Concerning Chlorofluorocarbons

³² GEHRING, Thomas. *Dynamic International Regimes: Institutions for International Environmental Governance* [online]. Frankfurt am Main: Lang, 1994, p. 218 [cit. 2019-03-18]. ISBN 3-631-47631-0. Available at: <https://opus4.kobv.de/opus4-bamberg/frontdoor/index/index/docId/51878>

³³ Ibid., p. 235-236.

³⁴ The negotiations took place in Geneva (1986), Vienna (1987), Geneva (1987) and Montreal (1987).

³⁵ HOFFMANN, Matthew J, *Ozone depletion and climate change*, p. 86.

³⁶ ANDERSEN, Stephen O. and K. Madhava SARMA, *Protecting the ozone layer*, p. 84.

1) Ambition and concreteness of the treaty's objectives

In terms of ambition and concreteness, the Protocol symbolized unprecedented formulation of the ozone layer protection. Not only it tangibly quantifies obligations for states regarding both the production and consumption of certain ODSs, but also quantifies the trade measures with regard to both non-Parties and Parties to the Protocol. Within articles it employs controlled substances, definite phrases and figures, it also implements concrete protection measures or sets a time-frame. Unambiguous provisions also determine percentage figures or the amount of production (kilograms) that further reinforce the Protocol itself as well as its general validity.³⁷ Such a phrasing then forestalls potential deviation when following the obligations and prevents different interpretation. Regarding territorial ambitions, Protocol is structured within global intentions and analysing its content, it strives to arrange the universal participation.³⁸ To provide an example, such an interest is included within Article V that establishes concessions and favourable conditions for developing countries (e.g. postpone its compliance under certain terms).³⁹

2) Ambition and concreteness of individual state's commitments

Within the boundaries set by adopted rules and provisions, substantial shift forward both in terms of ambition and concreteness is seen. In a bid to find a solution, states became more aware of the size of the acute threat and the need to address it. This certain transition is reflected in the concluded, definite and clearly defined obligatory provisions as individual states were willing to step into this binding environment based on the supranational principle. And there was a clear signal that without coherent and unified global approach the chance to reverse the development in the ozone layer is gradually diminishing. Of course, particular states also often diverged in their views and some compromises (e.g. the status of CFCs manufacturing plants) had to be made.⁴⁰

³⁷ Article 2,4, and Annex A. *The Montreal Protocol on Substances that Deplete the Ozone Layer* [online]. 1987 [cit. 2019-03-18]. Available at: <https://treaties.un.org/doc/publication/unts/volume%201522/volume-1522-i-26369-english.pdf>

³⁸ HOFFMANN, Matthew J, *Ozone depletion and climate change*, p. 11.

³⁹ Article 5, *The Montreal Protocol on Substances that Deplete the Ozone Layer* (1987).

⁴⁰ ANDERSEN, Stephen O. and K. Madhava SARMA, *Protecting the ozone layer*, p. 85.

3) Level of participation

Similarly as in the case of Vienna Convention, the Montreal Protocol followed in footsteps and builds its achievement on the pillar of the participating states. The Protocol was adopted on September 16, 1987 and signed by 25 Parties constituting major emitters such as the United States, United Kingdom, France, Germany, Italy, Japan, Canada or EEC.⁴¹ In a similar vein, when Protocol entered into force (January 1, 1989), 11 (conditional) ratifying countries constituted two thirds of the 1986-level CFCs consumption⁴², demonstrating clear interest of main concerned countries in this area. Furthermore, there was a change in the participation too, as for the first time the states of South⁴³ began to substantially engage.⁴⁴ Afterwards, in a very short period of time, dozens of countries all around the world acceded to Protocol, making it the agreement of global scope. Up to the present day, there are 197 Parties to the Protocol,⁴⁵ once again making it one of the most successful agreements in history.

4) Centralization

As in the case of the Vienna Convention, the procedure and fulfilment of the obligations fall under competences of individual states, which themselves determine individual steps in line with the adopted Protocol. On the other hand, states act in certain established framework, thus the direction of development is partially coincident (with some exception, e.g. position of developing countries, varying plan of ODSs reduction).⁴⁶ In addition, there is a mechanism of cooperation within research, development, public awareness or data exchange⁴⁷. Finally, the secretariat functions as an additional entity, which, for instance, receives data from individual states, ensures its exchange or arranges meetings of the Parties.⁴⁸

⁴¹ Montreal Protocol on Substances that Deplete the Ozone Layer. *United Nations Treaty Collection* [online]. [cit. 2019-03-18]. Available at: https://treaties.un.org/Pages/ViewDetails.aspx?src=IND&mtdsg_no=XXVII-2-a&chapter=27&clang=_en

⁴² ANDERSEN, Stephen O. and K. Madhava SARMA, *Protecting the ozone layer*, p. 96.

⁴³ States designated in the literature as those that predominantly do not rank among the main CFC producers contrary to industrialized countries in North.

⁴⁴ HOFFMANN, Matthew J, *Ozone depletion and climate change*, p. 11.

⁴⁵ Montreal Protocol on Substances that Deplete the Ozone Layer. *United Nations Treaty Collection* [online].

⁴⁶ Article 5, *The Montreal Protocol on Substances that Deplete the Ozone Layer* (1987).

⁴⁷ *Ibid.*, Article 9.

⁴⁸ *Ibid.*, Article 12.

Looking at the individual regulatory elements, at the heart of the entire agreement lies the content in the form of implemented control measures on ODSs. Overall, the Protocol deals with two groups. The first group constitutes five CFCs, three halons constitute the other group. As for the former, there was a conclusion to freeze both the production and consumption⁴⁹ of the CFCs at 1986 levels after six months of Protocol's entry into force (1989), following by 20 % reduction with the effect from July 1, 1993, and subsequently by 50 % since July 1, 1998. The second group is limited through a ban of both the production and consumption three years since the Protocol's entry into force.⁵⁰

At this point, the indicator especially emphasizes the imposed regulatory nature of the Protocol as the targets on CFCs and halons are introduced. The obligatory character is further strengthened by implementation of fixed timetables. These particular control measures introduce definite binding regulations⁵¹ with regard to production/consumption of the controlled substances based on the calculated control levels.⁵² Furthermore, the Protocol establishes a trade measures in relation to non-Parties, regulating the import and the export of products containing the addressed substances.⁵³ This step was important because the provision includes a leverage on those states that might stay out of the Protocol, operating with the potential ban on trade between the Parties and non-Parties since it states that *each Party shall ban the import of controlled substances from any State not party to this Protocol*. Moreover, this step also very conveniently addressed the possibility of free-riding as countries might otherwise choose not to accede to the treaty and carry on in using the CFCs.⁵⁴ Finally, a definite time frame is introduced in this area as well.

⁴⁹ Production is understood as the “amount of the controlled substances produced minus the amount destroyed by technologies to be approved by the Parties and minus the amount entirely used as feedstock in the manufacture of other chemicals.” Consumption is designated as “production plus imports minus exports of controlled substances.” (Article I)

⁵⁰ Within the developing countries and in cases of industries reorganization, the level of production was 10 % and subsequently 15 % higher. Halons were allowed 10 % increase with regard to national needs of developing countries.

ANDERSEN, Stephen O. and K. Madhava SARMA, *Protecting the ozone layer*, p. 84-85.

⁵¹ Article 2, *The Montreal Protocol on Substances that Deplete the Ozone Layer* (1987).

⁵² *Ibid.*, Article 3.

⁵³ *Ibid.*, Article 4.

⁵⁴ CAIRNCROSS, Frances. What Makes Environmental Treaties Work?. *Conservation in Practice* [online]. 2004, 5(2) [cit. 2019-03-18], p. 14-15. Available at: <https://onlinelibrary.wiley.com/doi/abs/10.1111/j.1526-4629.2004.tb00087.x>

Moving to the monitoring and adherence features, the Protocol addresses this area in several parts. First, Article VI manages assessment and review system of control measures as its task is to evaluate introduced control measures, doing it so since the beginning of the 1990. Subsequently, the Protocol implements reporting mechanism obliging the states to submit to the secretariat *statistical data on its production, imports and exports of each of the controlled substances*, as well as to provide mandatory annual data report.⁵⁵ Finally, as for the procedures and mechanisms in case of non-compliance, it states that the adoption of such measures will be the subject of the first meeting of the Parties.⁵⁶ Within the overall perspective, it might be asserted that Montreal Protocol possesses almost every major principle of strictly binding and regulatory nature. The only exception is the absence of non-compliance mechanism, which was, however, already introduced in 1992.⁵⁷

Finally, the form of the contract favourably balances its setting as, on the one hand, introduces concrete and binding targets with deadlines, on the other hand offers countries the leeway when it comes to banned substances.⁵⁸ One has to especially take into consideration this balance which plays a key role. If the contract would be structured too strict, negative aspects would emerge and also disrupt the overall effort of the Protocol. States would be, for example, reluctant to accept such conditions and accede (costs outweigh benefits) or experience difficulties to meet the rules.

1.1.3. From the Montreal Protocol to present

The post-Protocol development was marked with dynamic changes. Probably the most vital one occurred among the states themselves as they found a broader consensus and were able to almost unanimously agree on the more intense control measures. It might be also asserted that the overall political spectrum sensed the need of step-by-step process leading to the complete CFCs phase-out. Similarly, scientific community and its knowledge undergone appreciable changes too. Whereas the scientific data prior to 1985 was merely built on theoretical considerations and modelling, shortly after the Vienna Convention the scientific field started to acquire and publish empirical data concerning various discoveries,

⁵⁵ Article 7, *The Montreal Protocol on Substances that Deplete the Ozone Layer* (1987).

⁵⁶ *Ibid.*, Article 8.

⁵⁷ ANDERSEN, Stephen O. and K. Madhava SARMA, *Protecting the ozone layer*, p. 138-139.

⁵⁸ As summarized by Andersen (p. 84), the leeway consists in allowing, “each Party to decide for itself its strategy of choosing the ODSs to reduce consumption, depending on the situation and subject to the control measure on the basket” (group of substances). Country thus might still use the certain CFCs, looking for the alternatives, while reducing the consumption of the other.

and thus moving hand in hand with the political will.⁵⁹ After the series of working group sessions, scientific reviews and workshops, the focus was directed to the First Conference of the Parties to the Vienna Convention (1989) and then First Meeting of the Parties to the Montreal Protocol (1989). Within the former case, the negotiation mainly revolved around administrative and organizational matters, whereas within the latter the review of control measures and commitment of Parties to phase-out CFCs were main items on the agenda.⁶⁰

Crucially for the upcoming development and the entire regime, the Second Meeting of the Parties to the Protocol was held in London in 1990. It preoccupied with several adjustments in areas like definitions, control measures or control trade. Most importantly, countries imposed the target to phase-out the ODSs (Annex A) by 2000, following the freeze, then 50 % reduction by 1995, and 85 % by 1997. Similarly, halons were planned to be phased out by 2000 after the freeze and then 50 % reduction by 1995. Other CFCs (Annex B), were similarly scheduled to be phased-out by 2000, after 20 % reduction by 1993 and 85 % by 1997. Remaining substances, carbon tetra chloride and methyl chloroform, were set to be phased-out by 2000 and 2005.⁶¹

Furthermore, developing countries constituted another topic as concessions were provided to them (e.g. delayed time-schedule) in relation to their conditions and abilities. Correspondingly, financial mechanism in order to support the very developing countries was set up, amounting to \$160 million, or \$240 million provided that other Parties would access. The Multilateral Fund was charged with the administration, distributing contributions from developed countries under United Nations' scale. Finally, among other adjustments, the transfer of technology from the developed countries was approved.⁶²

In the course of time, the international community has gradually come up with several other amendments reinforcing the entire regime. Within the enumeration, it is vital to state the fourth Meeting of the Parties to the Montreal Protocol that took place in 1992 in Copenhagen. As a first noteworthy item was the implementation of non-compliance procedure that helped tighten the institutional arrangement. Secondly, countries agreed to accelerate its phase-out of CFCs by setting deadline for 1996 and introducing the time-

⁵⁹ GEHRING, Thomas, *Dynamic International Regimes*, p. 259-261.

⁶⁰ *Ibid.*, p. 265-268.

⁶¹ ANDERSEN, Stephen O. and K. Madhava SARMA, *Protecting the ozone layer*, p. 124.

⁶² *Ibid.*, p. 125.

framework of HCFCs reduction, with a phase-out deadline in 2030. Finally, the function of Multilateral Fund was established permanently.⁶³

Ozone regime was further strengthened in its control measures by, among others, several meetings starting with Vienna in 1995 (e.g. tightened controls in terms of percentage ceiling reduction for CFCs and HCFC), Montreal 1997 (e.g. trade restrictions for methyl bromide with phase-out by 2005), Beijing 1999 (e.g. HCFC production freeze or setting new depleting substances to controlled list)⁶⁴ or 2007 meeting of Montreal Protocol Parties that agreed to accelerate the phase-out of HCFC. Finally, there have been in recent years two milestones confirming the success of the international community. In 2009, Montreal Protocol achieved universal ratification⁶⁵ (197 parties) and in 2010 the global production of CFCs and halons was terminated.⁶⁶ With these concluding events, the regime on the protection of the ozone layer within its initial objective came to an end. Yet, it has to be noted that cooperation, although under different circumstances, carries on uninterrupted. As an example may serve the regular meeting of Montreal Protocol Parties which will take place in November 2019 as 31st.⁶⁷

1.1.4. Evaluation of the cooperation

The ozone depletion is a global matter that easily crosses the states' boundaries and its impact can be modified only through the coherent and firm international cooperation. For that reason, it was essential to put this subject permanently on the international agenda. In this respect, more than 40 years of development has been formed by series of determinants legitimizing to evaluate the regime as a landmark within the environmental protection.

From the very beginning, the knowledge worked on the findings from scientific circles that prompted actors from various fields take the discoveries much more into consideration. As it has been shown in the years to come too, the scientific knowledge has represented one of the elements of the achievements and without overlooking several discrepancies in the

⁶³ ANDERSEN, Stephen O. and K. Madhava SARMA, *Protecting the ozone layer*, p. 138-140.

⁶⁴ *Ibid.*, p. 159, 169, 176.

⁶⁵ Universal ratification means that the treaty, in this case Montreal Protocol, has been ratified by all United Nations member states.

⁶⁶ HEGGLIN, Michaela I (et. al.), *Twenty Questions and Answers About the Ozone Layer*, p. 7, 57.

⁶⁷ Meetings. *Ozone Secretariat Conference Portal* [online]. [cit. 2019-03-18]. Available at: <http://conf.montreal-protocol.org/Lists/Meetings/DispForm.aspx?ID=60&ContentTypeId=0x01020089681365DAAB4140ABCA76AD12BC04AA>

course of time (e.g. opinion disagreements over the form of the intended measures), international community commenced the action in a swift manner.

Finally, in 1985 the states' representatives adopted a breakthrough Vienna Convention, constituting a common ground for the upcoming tightening steps. And although it put forward rather general provisions, it formed the framework and the norm of the ozone protection. The very form of the agreement represented another important factor of the overall success as its balanced structure led to the accession of major industrialized countries. To the present day, it has been ratified by 197 states, making it one of the most successful international agreements of all time. Correspondingly, the fact that ODSs concentrated within industrial actors that composed a relatively limited number of producers and also endeavoured to find a solution, constituted another vital determinant.

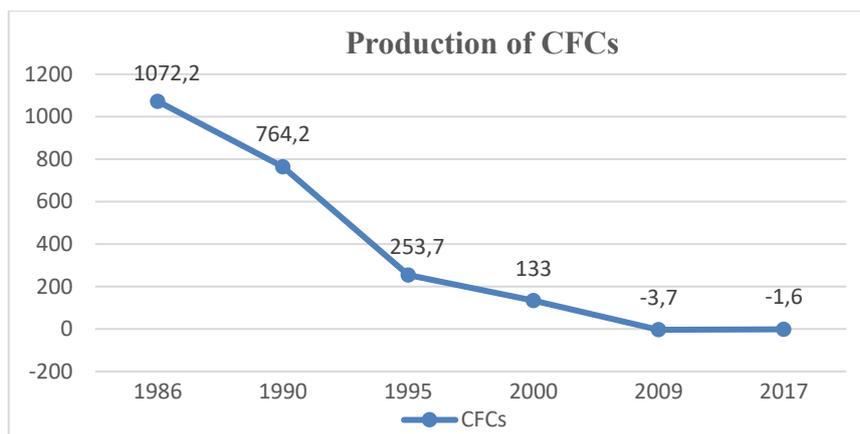
As the awareness and evidence-based knowledge about the harmful effects of ODSs were growing, the increasing consensus facilitated the adoption of the Montreal Protocol in 1987. Bearing in mind that such measures were in their interest, the countries imposed reducing and eventually phasing-out rules for the use of CFCs alongside other ODSs. Commitments that were laid down thus reflected the extent of attained compromise among countries. Under the Protocol, emphasis must be put on some additional determinants. Firstly, it was once again the form of the Protocol which alongside the other mentioned features provided certain impetus for countries to take part in. Correspondingly, its overall form was flexible with a reasonable amount of leeway. Secondly, the developing countries were offered incentives to accede, let it be technological or financial aid, favourable trade benefits or adjusted time-frame. From a broader perspective, these provisions are linked with the fact that the non-participation and the corresponding costs would most likely outweigh the benefits, as, for example, the trade restrictions on non-Parties prove.

Nevertheless, the international effort to push the boundaries further within the protection did not cease. The scope of the issue put onus on actors to continue in negotiations, thus the amendments within the series of meetings (London, Copenhagen, Vienna or Beijing) were implemented. As an admirable remains the fact that thanks to the international cooperation the level of ODSs was halted and also sharply declined (see the graphs below). Furthermore, it is predicted that the ozone layer will attain its normal level around the middle of the 21st century, as experts concur.⁶⁸

⁶⁸ SIVASAKTHIVEL, T. and SIVA KUMAR REDDY, K.K., *Ozone Layer Depletion and Its Effects: A Review*, p. 3.

Finally, the three following graphs depict and sum up the success of the presented regime and focus on the ODSs and their development of production over the years. The single graph that would comprise all three development lines is not presented due to different scales that overlook nuances in development and distort the results.

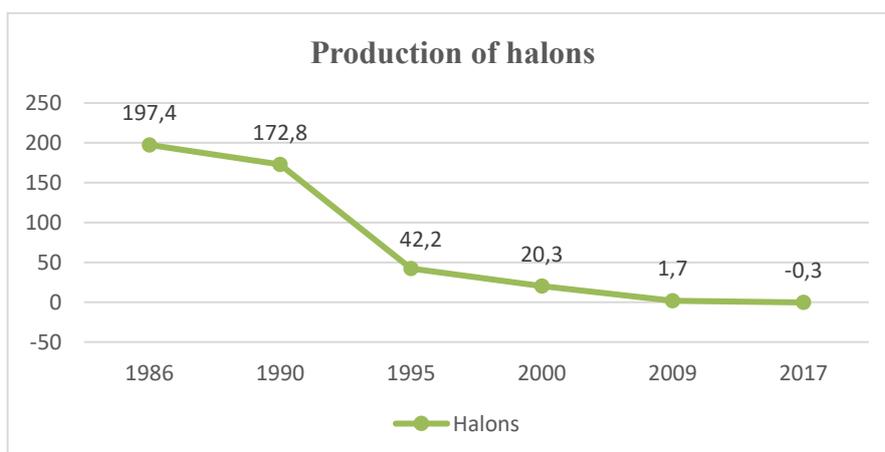
Graph 1: Development of production of CFCs between 1986-2017 (in thousand tons)



Source: Processed based on data available from Ozone Secretariat – UNEP; note: for the explanation of negative values see the footnote (*Production*, p. 26)

The Graph 1 demonstrates the steep decline in CFCs production since the mid-1980s, as their harmful effect on ozone layer was discovered in 1970s. In 2009, when the Montreal Protocol reached twenty years since its entry into force, production already attained the negative values.

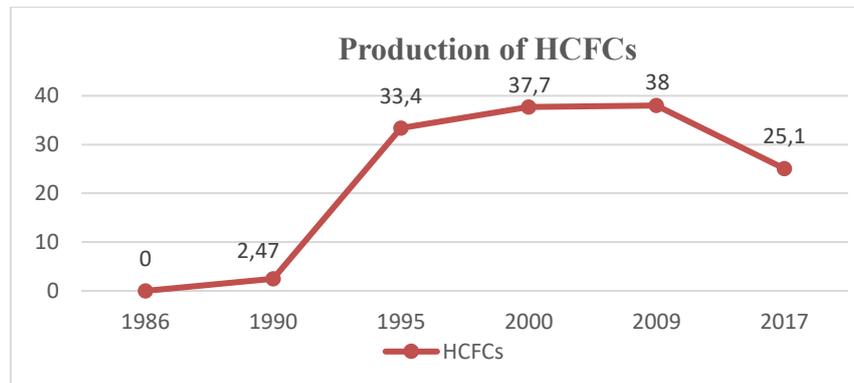
Graph 2: Development of production of halons between 1986-2017 (in thousand tons)



Source: Processed based on data available from Ozone Secretariat - UNEP

As in the case of CFCs, the halons and their inclusion in Montreal Protocol have experienced an explicit drop of its production since mid-1980s and as demonstrated in Graph 2, its production has been successfully terminated.

Graph 3: Development of production of HCFCs between 1986-2017 (in thousand tons)



Source: Processed based on data available from Ozone Secretariat - UNEP

With regard to the international community, HCFCs did not get to the centre of attention until 1992, when the control measures were introduced. Subsequently, in 2007 it was decided to accelerate the phase-out process. For this reason, Graph 3 still observes certain increase in 1995, but already slowing down, with subsequent turn and quick slump as measures started to have the effect.

1.2. International cooperation in the field of plastic pollution in the sea

The protection of the sea against the plastic pollution has become one of the most widespread topics in the area of environmental protection in recent years. There has been a global increase of the interest ranging from the general public, academia, environmentalists or marine experts to highest levels of international politics as global efforts have started to emerge. Aware of the problem's severity, worldwide stakeholders designated the issue of plastic pollution as the one on a global scale and pressing threat requiring swift and effective solution. For this reason, as in the case of the ozone regime, the chapter preoccupies with the regime of plastic pollution in the sea, puts forward its development with regard to contractual criterion and conducts an analysis in line with the defined procedure.

At the same time, it is necessary to note that the thesis defines three major international agreements as its subject of analysis. For one thing, these agreements are across the relevant

literature⁶⁹ noted as principal with relation to the plastic pollution in the sea as well as they are given the broadest scope and attention, and for another, they constitute the main pillars within the protection of the marine environment. Although later contracts, which are put forward in this chapter as well, are more focused on the plastic pollution in the sea, their significance or relevance, however, is not so pronounced and distinguished, the literature does not pay much attention to them and finally, it is also not in the thesis' abilities to subject further contracts and strategies under scrutiny.

For all these reasons, the interest is directed towards the main pillars of protection that, albeit not primarily, are dedicated to plastic pollution in the sea. Taking this fact into consideration, the findings must be also perceived in this respect. Concurrently, the thesis is aware and takes account of the difference from the ozone regime, which includes agreements directly and entirely focused on the matter in question. However, it is crucial to add that no contract exclusively devoted to plastic pollution in the sea with strict and clear regulatory measures has been adopted up to now. Finally, the thesis thus both deals with the overall framework of the given contracts and the parts devoted to plastic pollution.

Furthermore, it is crucial to note that the course of the protection is, primarily in early days and contrary to ozone regime, limited in its scope. The thesis is aware of international steps within the overall sea protection and takes the knowledge into account. However, given to its focus and range, the course of events is mainly related to plastic pollution of the sea that emerged as a centrepiece only recently. Hence, the more emphasis is put on the negative effects of the issue.

Plastics in its material form has been in existence for more than a hundred years and ever since its production has experienced rapid increase. In 1950s, when the mass production started, annual production amounted approximately 1.5 million tons. In 2010, the production volume reached 265 million tons⁷⁰ and in 2015 it was already around 322 million tons.⁷¹

⁶⁹ JOYNER, Christopher C. and Scot FREW. Plastic pollution in the marine environment. *Ocean Development & International Law* [online]. 1991, 22(1) [cit. 2019-03-18], p. 33. Available at: <https://www.tandfonline.com/doi/abs/10.1080/00908329109545949> or

VILLARRUBIA-GÓMEZ, Patricia, Sarah E. CORNELL and Joan FABRES. Marine plastic pollution as a planetary boundary threat – The drifting piece in the sustainability puzzle. *Marine Policy* [online]. 2018, 96 [cit. 2019-03-18], p. 214. Available at: <https://linkinghub.elsevier.com/retrieve/pii/S0308597X17305456> or Plastic Debris in the Ocean. In: *UNEP Year Book 2011* [online]. 2011 [cit. 2019-03-18], p. 29. Available at: <https://wedocs.unep.org/handle/20.500.11822/18759>

⁷⁰ VEGTER, Amanda C (et. al.). Global research priorities to mitigate plastic pollution impacts on marine wildlife. *Endangered Species Research* [online]. 2014, 25 [cit. 2019-03-18], p. 225. ISSN 1613-4796. Available at: https://www.int-res.com/articles/esr_oa/n025p225.pdf

⁷¹ BECKMAN, Eric. The world's plastic problem in numbers. *World Economic Forum* [online]. 2018 [cit. 2019-03-18]. Available at: <https://www.weforum.org/agenda/2018/08/the-world-of-plastics-in-numbers>

The steep growth of production is easily explicable as it represents generally-usable and versatile material. Its structural characteristics, such as lightweight, flexibility, low production costs or durability aptly meet the requirements of the global production, thus the application became an integral, often nearly the irreplaceable part of everyday products. However, such aspects are in its essence double-edged when it comes to potential presence in the sea. And this is the very realm, in which the plastics constitute the core of the entire issue. As scientifically proved, the plastic pollution entails vast scope of adverse implications.

First and foremost, the marine species and entire wildlife are exposed to entanglement in plastic debris that often makes out of it an inevitable death trap. Correspondingly, sea animals very often digest plastics of varying size as a confusion for natural nourishment. Not only this has implications in the form of health difficulties (e.g. gut wounds, toxicity, etc.) or even death of animals, but within the broader process the microplastic particles become the part of the food chain, e.g. through the commercial fishing.⁷²

Needless to say that such intake of plastics containing chemicals both from its structure and the outer sources (plastics absorb the external pollutants too)⁷³ tend to health complications. This fact is to unimaginable extent associated with potential consequences (ongoing scientific research) when the attention is paid to size of the population dependent on fishery either as a source of nourishment and/or livelihood. It is estimated that around one billion people are dependent on fish as a primary source of protein⁷⁴ and for approximately 10-12 % of world population it constitutes a source of livelihood.⁷⁵ It is further alarming that due to the steep demographic growth the pressure on fishing (which in its growth of worldwide supply surpassed the population growth) is about to increase.⁷⁶

⁷² VEGTER, Amanda C (et. al.), *Global research priorities to mitigate plastic pollution impacts on marine wildlife*, p. 225-226.

⁷³ KATSNELSON, Alla. News Feature: Microplastics present pollution puzzle. *Proceedings of the National Academy of Sciences (PNAS)* [online]. 2015, 112(24) [cit. 2019-03-18], p. 5547. Available at: <https://www.pnas.org/content/112/18/5547>

⁷⁴ Availability and consumption of fish. *World Health Organization* [online]. [cit. 2019-03-18]. Available at: https://www.who.int/nutrition/topics/3_foodconsumption/en/index5.html

⁷⁵ Report highlights growing role of fish in feeding the world. *Food and Agriculture Organization of the United Nations* [online]. 2014 [cit. 2019-03-18]. Available at: <http://www.fao.org/news/story/en/item/231522/icode/>

⁷⁶ The State of the World Fisheries and Aquaculture. *Food and Agriculture Organization of the United Nations* [online]. 2018 [cit. 2019-03-18]. Available at: <http://www.fao.org/state-of-fisheries-aquaculture>

As for the other environment-related impacts, plastic pollution also poses a threat to habitats and the entire ecosystems that suffer under this burden. Therefore, it is not an exception that habitats undergo structure modifications such as the reduction of the occurrence of species that vitally rely upon these areas.⁷⁷ To provide further examples, plastic pollution reaches enormous proportions as the most remote and uninhabited areas of the world are exposed to its impact as well (e.g. Antarctica or Arctic). Roots of this phenomenon relate to activity of ocean currents (gyres) that through its movement disperse the plastics all around the world.⁷⁸ One of the consequences is also the existence of giant garbage islands, such as *Great Pacific garbage patch*, which due to the effects of ocean currents accumulate plastic debris into a single floating formation.⁷⁹ Finally, as a very telling message, it is estimated that by 2050 there will be more plastic (by weight) than fish in the oceans (in case of a constant course).⁸⁰ With regard to all these difficulties and their overlaps, it is evident that the issue the world faces has by far exceeded all boundaries of national states and truly represents a global matter to its utmost form. And similarly as in the case of ODSs, the human activity is the initial factor.

1.2.1. Initial steps to contracts

The matter of global governance in the area of oceans and seas is known for a considerably long time. However, very little was devoted to environmental issues at the beginning of the 20th century, let alone with regard to water pollution. For that reason, utterly unexpected exception remains the agreement from 1909 between the United States and the United Kingdom stipulating that water on either side should not be polluted so as not to cause damage to health or property.⁸¹

⁷⁷ WOOD, Stephanie F. Move Over Diamonds -- Plastics are Forever: How the Rise of Plastic Pollution in Water Can be Regulated. *Villanova Environmental Law Journal* [online]. 2018, 29(1) [cit. 2019-03-18], p. 157. Available at: <https://digitalcommons.law.villanova.edu/cgi/viewcontent.cgi?article=1407&context=elj>

⁷⁸ Plastic Debris in the Ocean. In: *UNEP Year Book 2011*, p. 21.

⁷⁹ LEBRETON, Laurent (et. al.). Evidence that the Great Pacific Garbage Patch is rapidly accumulating plastic. *Scientific Reports* [online]. 2018, 8 [cit. 2019-03-18], p. 1. Available at: <https://www.researchgate.net/publication/323943462>

⁸⁰ LANDON-LANE, Micah. Corporate social responsibility in marine plastic debris governance. *Marine Pollution Bulletin* [online]. 2018, 127 [cit. 2019-03-18], p. 310. Available at: <https://linkinghub.elsevier.com/retrieve/pii/S0025326X17310111>

⁸¹ WEISS, Edith Brown. The Evolution of International Environmental Law. *Georgetown Law Faculty Publications and Other Works* [online]. 2011, 54 [cit. 2019-03-18], p. 2. Available at: <https://scholarship.law.georgetown.edu/facpub/1669/>

Several decades later, with the end of the World War II, the form of international governance was mainly built by the United Nations (UN) as a part of the international order establishment.⁸² Nevertheless, the following period was relatively unfruitful with regard to plastic pollution.⁸³ On the other hand, to be accurate, the certain indications of plastic-sea relationship already emerged in 1960s as there were published papers concerning the plastics in the sea. Followingly, the connections were observed between the marine environment and plastic litter based on the records of ingestion of plastic particles by water birds and entanglement within it on locations around the world. Later on, the international community, especially in 1970s and 1980s, started to gradually experience increasing awareness of the plastic debris in the sea.⁸⁴

The pollution of the oceans and seas has received substantial attention around the 1970s and it was once again the UN as a main determinant of any perceptible action.⁸⁵ To outline the background, notion of the oceans and seas as a dumping area for waste from human activities has been rooted within the society for several centuries. The giant expanse of marine environment very well served the purpose to get rid of the litter from the land as at that time it was legal to act so. Nevertheless, over time there has been growing interest to control such a conduct.

Through the UN resolutions regarding the accelerated disruption of the human environment, it was decided to convene United Nations Conference. For that reason, in 1971 the Intergovernmental Working Group on Marine Pollution was established, which through its sessions (London, Ottawa, Reykjavik) resulted in the gathering.⁸⁶ As the conference in Stockholm in 1972 took place, it preceded the first contractual actions within the regime. It might be also asserted that to a certain extent the protection ground was set up at this moment. It addressed the issue as the human activities and their impact were acknowledged

⁸² CAMPBELL, Lisa M (et. al.). Global Oceans Governance: New and Emerging Issues. *Annual Review of Environment and Resources* [online]. 2016, 41(1) [cit. 2019-03-18], p. 519. Available at: <https://sites.nicholas.duke.edu/xavierbasurto/files/2011/11/oceans-governance.pdf>

⁸³ WEISS, Edith Brown, *The Evolution of International Environmental Law*, p. 3.

⁸⁴ BERGMANN, Melanie, Lars GUTOW and Michael KLAGES. *Marine Anthropogenic Litter* [online]. Berlin: Springer International Publishing, 2015, p. 3-7 [cit. 2019-03-18]. ISBN 978-3-319-16510-3. Available at: <https://link.springer.com/content/pdf/10.1007%2F978-3-319-16510-3.pdf>

⁸⁵ CAMPBELL, Lisa M (et. al.), *Global Oceans Governance*, p. 519, 533-534.

⁸⁶ HARVEY, Marianne. Origins of the London Convention. *International Maritime Organization* [online]. 2012 [cit. 2019-03-18], p. 1-3. Available at: http://www.imo.org/fr/KnowledgeCentre/ReferencesAndArchives/IMO_Conferences_and_Meetings/London_Convention/VariousArticlesAndDocumentsAboutTheLondonConvention/Documents/Origins%20of%20the%20London%20Convention%20-%20Historic%20events%20and%20documents%20%20M.%20Harvey%20September%202012.pdf

in relation with, “*dangerous levels of pollution in water.*”⁸⁷ Retrospectively, further steps and international agreements in the field of plastic pollution are perceived as the ones that undoubtedly fall under the framework of the marine environment that was partially formed in Stockholm.⁸⁸

1.2.2. London Convention (1972)

The Convention from 1972 (entered into force 1975), officially *Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter*, was the first major international agreement relating to some extent to the protection of sea against plastic pollution. Based on the Conference held during October and November, its foremost aim was to prevent and control the dumping of wastes into the sea and oversee the marine environment against potential land-made pollution.⁸⁹ To date (January 2019), there are 87 Parties to this agreement that with its associated Protocol (agreed in 1996) come under the International Maritime Organization (IMO)⁹⁰, designated a competent body in charge of the secretariat responsibilities.⁹¹

1) Ambition and concreteness of the treaty's objectives

With regard to ambition of the Convention's objectives, its content aims to within the given framework act globally. Furthermore, its territorial effectiveness is defined through the definition of the “Sea” that comprises, “*all marine waters other than the internal waters.*”⁹² As for the specific subjects being the core of the interest, Annex I and II individually list all the prohibited parts, ranging from the chemicals, persistent plastics and similar durable materials to industrial waste. Plastics at least partially appear on the agenda, yet at this point the Convention no more puts the emphasis on the concreteness and ambition.

⁸⁷ Chapter I. *The Declaration of the United Nations Conference on the Human Environment* [online]. 1972 [cit. 2019-03-18]. Available at: <http://www.un-documents.net/aconf48-14r1.pdf>

⁸⁸ JOYNER, Christopher C. and Scot FREW, *Plastic pollution in the marine environment*, p. 37.

⁸⁹ Plastic Debris in the Ocean. In: *UNEP Year Book 2011*, p. 29.

⁹⁰ Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter. *International Maritime Organization* [online]. [cit. 2019-03-18]. Available at: <http://www.imo.org/en/OurWork/Environment/LCLP/Pages/default.aspx>

⁹¹ Within finalized text of a Convention, the Government of the United Kingdom of Great Britain and Northern Ireland was appointed as a depository.

⁹² Article III. *Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter*. [online]. 1972 [cit. 2019-03-18]. Available at: <http://www.imo.org/en/OurWork/Environment/LCLP/Documents/LC1972.pdf>

Convention thus on the one hand provides a framework within which states operate, defines definite subjects falling into it and overall comes under the overarching aim to prevent marine pollution, but on the other, does not put forward any procedural steps, instructions or specific and tangible provisions how to achieve it within the protection process. Finally, in its nature it rather devolves responsibility to individual states.⁹³

2) Ambition and concreteness of individual state's commitments

Lack of the political will of states is worth mentioning aspect as the interest in participation cannot be compared with the situation of the ozone depletion. To some extent, this fact is probably linked with the alertness of this topic as scientific circles did not exert that much pressure affecting the international community. On the other hand, it is necessary to take into account the time period of the Convention (the beginning of environmental issues within international agenda). In addition, the Convention does not actively focuses on the state, so neither the incentives nor the certain leverage for non-Parties is involved. Finally, states relatively in a concrete form determined its commitments, but their implementation is out of the Convention's responsibilities.

3) Level of participation

As already noted, there are 87 Parties to the Convention. As many as it may seem, the composition lacks several vital actors. As a huge deficiency of the treaty, and therefore the entire regime, is the non-participation some of the major maritime states which are nowadays considered major plastic polluters of the sea. The group of ten biggest world marine plastic polluters represent China, Indonesia, Philippines, Vietnam, Sri Lanka, Egypt, Thailand, Malaysia, Nigeria and Bangladesh,⁹⁴ where the group of first five states (Sri Lanka is replaced by Thailand) is thought to be responsible for the 60 % of world marine plastic pollution.⁹⁵ In this respect, concerned countries such as Indonesia, Vietnam, Sri Lanka, Thailand, Malaysia and Bangladesh are not Parties to the treaty.

⁹³ JOYNER, Christopher C. and Scot FREW, *Plastic pollution in the marine environment*, p. 37.

⁹⁴ JAMBECK, Jenna R (et. al.). Plastic waste inputs from land into the ocean. *Science* [online]. 2015, 347(6223) [cit. 2019-03-18], p. 769. Available at: https://www.iswa.org/fileadmin/user_upload/Calendar_2011_03_AMERICANA/Science-2015-Jambeck-768-71__2_.pdf

⁹⁵ TANAKASEMPIPAT, Patpicha and Juarawee KITTISILPA. Southeast Asia's plastic 'addiction' blights world's oceans. *Reuters* [online]. 2018 [cit. 2019-04-05]. Available at: <https://www.reuters.com/article/us-environment-day-plastic/southeast-asias-plastic-addiction-blights-worlds-oceans-idUSKCN1J10LM>

Although plastics represent only one part of the Convention, the idea is about the overall attitude of (mainly) maritime nations towards the environment. Otherwise, such non-participation steps provide other countries a distinct signal in sense why to spend considerable costs and bear the burden of the provisions in case the agreement is not reciprocated, particularly by the biggest polluters. Moreover, it is more than crucial to act coherently when dealing with global issues.

4) Centralization

Using the last indicator, structured or centralized form of cooperation is not extensively created. The Convention lacks mechanism providing the accomplishment of the given goals and when taking a look at the individual features, the Articles do not impose any global coordination and actions are exclusively within the plan of states themselves. The only body, assigned with coordinating tasks and which does not possess any management responsibilities, is the subsequently designated Organization with its secretariat duties. Such functions were later assigned to IMO (in 1975 with entry into force) that administrates the Convention and is entrusted with a minor centralizing role. Organization's responsibilities (defined in the Protocol) are to receive information from Parties regarding legislation and mechanisms that relate to implementation or compliance, provide advisory assistance or convene meetings of the Parties to the treaty.⁹⁶ Furthermore, as already noted, the agreement is neither self-regulating nor self-implementing, thus the additional steps by individual states are required within the fulfilment.

This is clearly reflected in the wording of the Convention stating that, “*Contracting Parties shall, as provided for in the following articles, take effective measures individually (...).*”⁹⁷ Correspondingly, the Convention does not establish strong regulatory and control rules throughout the articles as there are no obligatory targets or provisions, mechanisms for its enforceability, non-compliance procedure or dispute-settlement procedure (Article XI considers the implementation). And although the Convention sets a list of banned wastes and other matters, it does not enforce its compliance whatsoever. Based on the particular formulations, review and report features more fall under the meetings (alternatively reports to Organization to be designated) of the contracting Parties and its agenda than principles laid down in agreement.

⁹⁶ Article VII, XIV, XIX, *Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter* (1972).

⁹⁷ *Ibid.*, Article II.

More than 20 years later since the Convention entered into force, in 1996 the London Protocol was signed with its objective to strengthen and upgrade the London Convention. The most significant changes include the precautionary approach, which introduces that states should take preventive steps in case, “*there is reason to believe that wastes or other matter introduced into the marine environment are likely to cause harm (...)*.”⁹⁸

Secondly, the Protocol imposes the prohibition upon all dumping, except for the cases that are specifically permitted (e.g. fish wastes or dredged material).⁹⁹ In addition, the compliance mechanism implements the two-year period (alternative transitional period of five years) since the Protocol's entry into force (2006), within which the states, “*shall establish those procedures and mechanisms necessary to assess and promote compliance with this Protocol*.”¹⁰⁰ Finally, under the Article XIII the Protocol creates the technical cooperation and assistance, promoting further cooperation among countries, lays down the mechanism for settlement of disputes in Article XVI or pursues the approach that, “*polluter should, in principle, bear the cost of pollution (...)*.”¹⁰¹ So far, 51 countries have acceded to the Protocol and the situation regarding the above-defined polluters remains unchanged.¹⁰²

1.2.3. International Convention for the Prevention of Pollution from Ships (1973)

Already in November 1973, another international treaty covering the protection of the sea was stipulated. The predominant aim of the Convention is to prevent pollution from ships, with certain regard to oil, as it represents an addition and kind of replacement of 1954 Treaty.¹⁰³ In particular, it reacted to fact that a large proportion of ship-source pollution is caused by operational discharges, however, Convention focuses on the accidental cases as well.¹⁰⁴ For the purpose of completeness, it takes into account that, “*deliberate, negligent or accidental release of oil and other harmful substances from ships constitutes a serious source of pollution*.”¹⁰⁵

⁹⁸ Article 3. *1996 Protocol to the Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter* [online]. 1996 [cit. 2019-03-18]. Available at:

<https://www.epa.gov/sites/production/files/2015-10/documents/lpamended2006.pdf>

⁹⁹ *Ibid.*, Annex I.

¹⁰⁰ *Ibid.*, Article 11.

¹⁰¹ *Ibid.*, Article 3.

¹⁰² Convention on the Prevention of Marine Pollution by Dumping of Wastes and Other Matter. *International Maritime Organization* [online].

¹⁰³ International Convention for the Prevention of Pollution of the Sea by Oil (OILPOL)

¹⁰⁴ CARPENTER, Angela. International Protection of the Marine Environment. In: NEMETH, Adam D. *The Marine Environment: Ecology, Management and Conservation* [online]. Nova Science Publishers, 2011 [cit. 2019-03-18], p. 72-74. Available at: <https://www.researchgate.net/publication/258241972>

¹⁰⁵ Preamble. *International Convention for the Prevention of Pollution from Ships* [online]. 1973 [cit. 2019-03-18]. Available at: <http://library.arcticportal.org/1699/1/marpol.pdf>

Despite the fact that Convention puts the emphasis rather on the oil pollution, the later implemented Annexes specifically cover other substances too. Finally, it is the IMO that bears the management responsibility for the Convention.¹⁰⁶ It was modified in 1978 by the Protocol (MARPOL Protocol) and nowadays the Convention is perceived as a combination of these two contractual parts (often designated as MARPOL 73/78, entry into force in 1983). In view of this fact, as well as that six Annexes were attached to it in the course of time, the following analysis overall summarizes the MARPOL 73/78. As for the focus of the thesis, plastics became the steady part of the Convention in 1988, when Annex V came into force.¹⁰⁷

1) Ambition and concreteness of the treaty's objectives

With regard to ambition of the Treaty, its dimension is of global scope as it endeavours to include coastal states, port states and shipping states and applies its provision to, “*ships entitled to fly the flag of a Party to the Convention*” and, “*ships not entitled to fly the flag of a Party but which operate under the authority of a Party.*”¹⁰⁸ Similarly, there is a significant overlap as MARPOL covers all the ships that are within the Exclusive Economic Zone (EEZ)¹⁰⁹ of the state that is Party to the agreement.¹¹⁰

Nevertheless, the Convention encounters with ambiguity as well. Under the Article IV, defining violation procedure, the Treaty defines that a misconduct falls under the law of individual countries and only calls for “*adequate*” penalties. The possibility of inconsistent or, on the other hand, the disproportionate punishment thus arises. Furthermore, the Convention states that Parties should adopt “*appropriate measures*” that secure uninterrupted operations among “*warship, naval auxiliary or other ship owned or operated by a State (...)*” upon which the contract does not apply.¹¹¹ However, as Joyner and Frew aptly note, the Convention does not specify what those appropriate measures should be.¹¹²

¹⁰⁶ JOYNER, Christopher C. and Scot FREW, *Plastic pollution in the marine environment*, p. 40-41.

¹⁰⁷ CARPENTER, Angela, *International Protection of the Marine Environment*, p. 56, 75.

¹⁰⁸ Article 3, *International Convention for the Prevention of Pollution from Ships* (1973).

¹⁰⁹ Defined by United Nations, it is a sea area „*beyond and adjacent to the territorial sea*“ that „*shall not extend beyond 200 nautical miles from the baselines from which the breadth of the territorial sea is measured.*“

Part V - Exclusive Economic Zone. *Oceans and Law of the Sea - the United Nations* [online]. [cit. 2019-03-18]. Available at: https://www.un.org/Depts/los/convention_agreements/texts/unclos/part5.htm

¹¹⁰ JOYNER, Christopher C. and Scot FREW, *Plastic pollution in the marine environment*, p. 42-43.

¹¹¹ Article 3, *International Convention for the Prevention of Pollution from Ships* (1973).

¹¹² JOYNER, Christopher C. and Scot FREW, *Plastic pollution in the marine environment*, p. 43.

Paying a closer attention to Annex V, in which plastics are included, it specifically defines the individual sea areas by delineating the coordinates. Moreover, it presents the concrete types of plastics that fall under prohibition alongside the provision of “*including but not limited to*”,¹¹³ creating a space to cover further debris.

2) Ambition and concreteness of individual state's commitments

When taking a look at the MARPOL 73/78 and all corresponding Annexes, the content of the contractual instruments represents the comprehensive framework within the regime. However, it has to be noted that the form of the contract prompts the countries to set up corresponding legislation based on the provisions, thus intentions as well as compliance may diverge from the planned course of the Treaty. In addition, the Annex V was also adopted by the biggest plastic sea polluters in the world. And this especially leads to the one of the most important facts. That is, not only the countries might not comply with the Treaty as elaborated later, but most importantly, the majority of the plastic litter comes from the land, not vessels.¹¹⁴

3) Level of participation

Without a doubt, there is a clear interest of countries in this issue as of January 2019, 153 states are Parties to the Annex V, representing 98,73 % of world tonnage.¹¹⁵ This figure, as well as the obligations with which countries agree, evince both a success and commitment of particular countries. And contrary to London Convention, Thailand is the only state out of the above-listed ten biggest plastic polluters that is not Party to the agreement.¹¹⁶ On the other hand, such extensive participation does not naturally and directly determine the success of the given regime. There are Parties to the treaty that at the same time constitute by far the biggest plastic polluters of the marine environment without any considerable change in the foreseeable future. This is further related to fact that although the majority of the international community have decided to accede to the treaty, its setting and structure may evince significant shortcomings, such as in terms of compliance or enforcement, as following indicator emphasizes.

¹¹³ Annex V (Regulation 5), *International Convention for the Prevention of Pollution from Ships* (1973).

¹¹⁴ BERGMANN, Melanie, Lars GUTOW and Michael KLAGES, *Marine Anthropogenic Litter*, p. 18.

¹¹⁵ Status of Treaties. *International Maritime Organization* [online]. 2019 [cit. 2019-03-18]. Available at: <http://www.imo.org/en/About/Conventions/StatusOfConventions/Documents/StatusOfTreaties.pdf>

¹¹⁶ Ratifications by Country. *International Maritime Organization* [online]. 2019 [cit. 2019-03-18]. Available at: <http://www.imo.org/en/About/Conventions/StatusOfConventions/Documents/status-x.xlsx>

4) Centralization

The structure of the Convention predominantly constitutes a decentralized cooperation framework among states. There are only certain boundaries set on the basis of provisions and rules ensuring that states to some extent jointly pursue the common goal. As in the case of London Convention, the IMO plays a role of administrative entity and serves as a certain centralizing point for the Parties. Organization obtains information from the Parties whether it regards the incidents, procedures consistent with implementation of the Treaty or engages in the promotion of technical cooperation.¹¹⁷ Nevertheless, there is no strong centralized entity governing or considerably directing countries in fulfilling the contract. For this reason, Parties predominantly operate on their own while the cooperation remains only on the lower levels (e.g. cooperation in the area of detection of violations).

Moving to individual centralizing features of the treaty, the MARPOL 73/78 presents the regulatory nature for the Parties as they undertake to follow the particular obligations. Furthermore, the Convention implements the tool that allows to conduct an inspection on the given vessel so as to check, “*whether the ship has discharged any harmful substances in violation of the provisions of the regulations.*”¹¹⁸ In this case, such instruments are supposed to strengthen the compliance of imposed standards. In case of any disagreement, the Protocol II lays down a dispute settlement mechanism that involves the arbitration tribunal. As for the data exchange and information instrument, Article XI introduces several provisions that oblige Parties to, for example, provide official reports to Organization regarding what particular results they have achieved so far under the Convention. However, the regime suffers from the absence of compliance and enforcement features of the Convention. The MARPOL possesses only limited leverage on how to prevent disposal of waste at sea, going hand in hand with the limited powers of IMO in this area as, for instance, the compliance of the Annex V is dependent on individual countries and their following of the obligations.¹¹⁹

So, with regard to the structure of the agreements, firm commitments and rules or certain forms of verification, such as the mentioned reports or the inspections, are introduced. Yet, the overall structure of the agreement cannot be characterized as strict that would lead countries to inevitable compliance. Similar perspectives are then shared across the literature as relevant authors identically point to the gaps in rules, one of the reasons

¹¹⁷ Article 8, 12, 17, *International Convention for the Prevention of Pollution from Ships* (1973).

¹¹⁸ *Ibid.*, Article 6.

¹¹⁹ JOYNER, Christopher C. and Scot FREW, *Plastic pollution in the marine environment*, p. 44-45.

being the economic aspect. Ship-source waste is supposed to be processed under certain procedure, but such steps require, for example, financial resources.¹²⁰ Finally, there is also varying legislation progress, on which the compliance is based.¹²¹

1.2.4. United Nations Convention on the Law of the Sea (1982)

The subsequent process and development culminating in the agreement in 1982 was considerably long. In this case, the initial point represented UN Conference on the Law of the Sea, which was held in 1957 for the first time (designated as UNCLOS I). It came up with an Optional Protocol and four conventions, which separately entered into force in the 1960s. The focus of these treaties range from the area of high seas to fishing and conservation of living resources.¹²² In 1960, the second conference (UNCLOS II) took place in Geneva, however, in the end no agreement was reached. Then, it was not until 1973 the third conference (UNCLOS III) was convened and it lasted for nine years as in 1982 the Convention was approved.¹²³ The agreement, widely referred as UNCLOS, was approved in December 1982 and entered into force nearly twelve years later, in November 1994.

The core of the Convention is to delimit particular maritime zones with regard to national jurisdiction of states (e.g. EEZ) and areas beyond (e.g. high seas) with the purpose to lay down integrated procedures and settings in the several fields ranging from the pollution of the environment, fishing to piracy. This content is then placed under the overarching interest of the protection and preservation of the marine environment.¹²⁴ Given to the vast scope of this comprehensive agreement, the following analysis mainly deals with the area of plastic pollution, but which is wrapped into the overall structure of the contract so as to obtain its form and characteristics that influence the very components, such as the plastics.

¹²⁰ DERRAIK, José G. B. The pollution of the marine environment by plastic debris: a review. *Marine Pollution Bulletin* [online]. 2002, 44(9) [cit. 2019-03-18], p. 848. Available at: <https://linkinghub.elsevier.com/retrieve/pii/S0025326X02002205>

¹²¹ VINCE, Joanna Zofia and Britta Denise HARDESTY. Plastic pollution challenges in marine and coastal environments: From local to global governance. *Restoration Ecology* [online]. 2016, 25(1) [cit. 2019-03-18], p. 2. Available at: <https://onlinelibrary.wiley.com/doi/epdf/10.1111/rec.12388>

¹²² Those four conventions were Convention on Territorial Sea and The Contiguous Zone, Convention on the High Seas, Convention on Fishing and Conservation of Living Resources of the High Seas and Convention of the Continental Shelf.

¹²³ CARPENTER, Angela, *International Protection of the Marine Environment*, p. 55-57.

¹²⁴ ADDIS, Daniela. The protection and preservation of the marine environment. *Flanders Marine Institute* [online]. [cit. 2019-03-18], p. 6. Available at: www.vliz.be/imisdocs/publications/288227.pdf

1) Ambition and concreteness of the treaty's objectives

Without a doubt, UNCLOS successfully built up the structured framework and overall regime through its individual aspects that manage maritime zones when it comes to law of the sea. And its global scope is nowadays perceived as one of the most crucial examples of protection of the marine environment.¹²⁵ As for the plastic litter, the UNCLOS determines in the Article 1 the issue of the marine environment pollution and in the following articles preoccupies itself, for example, with the measures to “*prevent, reduce and control*” marine pollution.¹²⁶ At this point, although it refers to “*harmful or noxious substances, especially those which are persistent*”,¹²⁷ in which might be involved the plastics, it does not distinctly mention the plastic debris whatsoever. Within the ambition, it is further concerned with various areas as it lays down the guidelines for pollution from the land-based sources, vessels or by dumping, as well as focuses on their other aspects such as enforcement.¹²⁸

Overall, it is the extensive document that touches upon scores of areas within the marine protection. However, because of this form, the UNCLOS is incapable to deal with the given topic more thoroughly, thus then potentially reflected in the real protection. As an example may serve the pollution from dumping, which is covered by its very own contract as analysed above, yet representing only a small part of the UNCLOS.

2) Ambition and concreteness of individual state's commitments

Concerning the ambition and concreteness with regard to plastics, the states themselves are stipulated to take appropriate steps. On the one hand, Parties committed themselves to broad group of obligations, on the other hand, the enforceability is mainly up to them as Convention notes that, “*States shall take, individually or jointly as appropriate, all measures consistent with this Convention (...)*.”¹²⁹ This fact is further linked with the individual provisions (overlap to first indicator) as terms such as use of the “*best practicable means*” or that states “*shall endeavour*” put the ambition into blurry environment that is hard to enforce.¹³⁰ The entire issue is more complex also due to the legal interpretation of the different maritime zones and the rights and obligations within them.

¹²⁵ BERGMANN, Melanie, Lars GUTOW and Michael KLAGES, *Marine Anthropogenic Litter*, p. 399.

¹²⁶ *United Nations Convention on the Law of the Sea*. [online]. 1982 [cit. 2019-03-18]. Available at: http://www.un.org/Depts/los/convention_agreements/texts/unclos/unclos_e.pdf

¹²⁷ *Ibid.*, Article 194.

¹²⁸ *Ibid.*, Part XII.

¹²⁹ *Ibid.*, Article 194.

¹³⁰ BERGMANN, Melanie, Lars GUTOW and Michael KLAGES, *Marine Anthropogenic Litter*, p. 417.

3) Level of participation

As for the participation of states, a large part of the international community has decided to adopt the agreement. On December 10, 1982, over 115 countries signed the treaty¹³¹ and up to date, there are 168 Parties to the Convention.¹³² An important aspect worth mentioning is undoubtedly the non-participation of the United States which neither have ratified nor signed the agreement. Interestingly, the United States constituted one of the main actors both during the negotiations and the drafting of the agreement. However, in contrast to the London Convention and MARPOL 73/78, this world power that also represents relatively large polluter (listed in the top twenty countries),¹³³ decided to stay of the agreement. The official reason of this decision was discontent with the Part XI, that predominantly deals with the deep seabed area.¹³⁴ Nevertheless, the responsibility onus is once again placed on the individual countries and the participation itself does not necessarily constitute the prerequisite for the potential success.

4) Centralization

The UNCLOS possesses certain cooperation structures both on the global and regional level (scientific information, research, data exchange, notifications, international programmes, etc.) and puts forward some convergence framework and interconnection among states. Nevertheless, the UNCLOS overall follows a decentralized system by assigning competences to individual countries and deviate from centralized form of cooperation. Varying national steps thus determine this form. Unlike the last two analysed treaties, the secretariat responsibilities are held by the *Division for Ocean Affairs and the Law of the Sea* that falls under the UN. On the other hand, although the contract does not explicitly point to the IMO, it notes the “*competent international organization*”, mainly

¹³¹ HUDZIK, Elizabeth M. A Treaty on Thin Ice: Debunking the Arguments Against U.S. Ratification of the U.N. Convention on the Law of the Sea in a Time of Global Climate Crisis. *Washington University Global Studies Law Review* [online]. 2010, 9(2) [cit. 2019-03-18], p. 353. Available at: https://openscholarship.wustl.edu/cgi/viewcontent.cgi?article=1049&context=law_globalstudies

¹³² United Nations Convention on the Law of the Sea. *United Nations Treaty Collection* [online]. [cit. 2019-03-18]. Available at: https://treaties.un.org/pages/ViewDetailsIII.aspx?src=TREATY&mtdsg_no=XXI-6&chapter=21&Temp=mtdsg3&clang=_en

¹³³ JAMBECK, Jenna R (et. al.), *Plastic waste inputs from land into the ocean*, p. 769.

¹³⁴ HUDZIK, Elizabeth M, *A Treaty on Thin Ice*, p. 353.

referring to International Maritime Organization. Hence, IMO as a global actor within the area holds the authorization to regulate maritime realm in relation to UNCLOS' principles.¹³⁵

With regard to its control and regulatory structure, it lays down obligatory provisions and principles, sets a monitoring and assessments framework in regard to scientific methods, monitoring of risks or effects of pollution, issuing the reports or comes up with the certain form of global cooperation whether it is based on the general arrangements or contingency plans. In addition, it also regulates the publication and dissemination of information and manages technological assistance or transfer of marine scientific knowledge among states. However, the structure suffers from the lack of enforcement and compliance mechanism.

It is feasible to determine that overall structure is built in a regulatory nature based on its rules and fulfilment conditions, however, the particular legal parameters have to be analysed within the implemented legislation of Parties. For this reason, mechanisms of penalties or sanctions, as noted, fall under states' responsibilities as well. This arises the question of the compliance and enforceability since the UNCLOS is with its powers allowed to reach only to the extent the legislation of particular Party allows it.¹³⁶ Finally, if all these facts are combined with the provision of the land-based source of pollution (Article 207), that assigned the sole responsibility to states and their legislation, the Convention is in this case partially missing the important point as it is acknowledged that land-based sources produce majority of the plastic debris in the sea.¹³⁷

1.2.5. Marine regime development to present

The framework of international cooperation is broad and complex environment where over the years many treaties, strategies or programmes have been introduced to follow the footsteps of the main goal. For several reasons explained above, this chapter has focused on the three most pivotal international treaties within the regime. To complement the overall view and knowledge in this field, subsequent section presents the chronological list of some other key tools to present.

¹³⁵ The United Nations Convention on the Law of the Sea (UNCLOS) and the International Maritime Organization. *International Maritime Organization* [online]. [cit. 2019-03-18]. Available at: <http://www.imo.org/en/mediacentre/secretarygeneral/speechesbythesecretarygeneral/pages/itlos.aspx>

¹³⁶ LANDON-LANE, Micah, *Corporate social responsibility in marine plastic debris governance*, p. 312.

¹³⁷ BERGMANN, Melanie, Lars GUTOW and Michael KLAGES, *Marine Anthropogenic Litter*, p. 378.

Already in 1969, the *Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection* (GESAMP) was set up so as to provide advisory assistance to the UN, based on the scientific knowledge with regard to protection of the marine environment. Nowadays, GESAMP works under the sponsorship of ten UN organizations and contributes with reports, analyses or marine environmental assessment.¹³⁸

Several years later, in 1974, the *Regional Seas Programme* was launched supporting dozens of countries all around the world within the protection of the marine resources and the overall environment. As part of its focus, it primarily pays attention to sustainable development and brings together 143 countries to joint action through its coordination and management activities in areas such as land-based and sea-based sources of plastic pollution or oceans biodiversity. In total, there are 13 Regional Seas Programmes covering zones all over the world and its work falls under the auspices of UNEP.¹³⁹

Moving to 1990s, it was once again the UNEP that established the *Global Programme of Action (GPA) for the Protection of the Marine Environment from Land-Based Activities* in 1995. It represents a programme that deals with the land-based sources and activities that affect the marine and coastal environment as well as the human welfare. Its overall goal is to forestall the deterioration of conditions within the marine environment through the assistance to states. Under the GPA, the marine litter represents one of the nine groups.¹⁴⁰

As an example from the new millennium may serve the *Honolulu Strategy* adopted in 2011. The Strategy emerged from the joint conference of National Oceanic and Atmospheric Administration (NOAA) and UNEP and represents a global framework of various steps how to tackle the marine debris and its various implications. Overall, it comprises three main goals focusing on the land-based and sea-based sources of marine litter as well as the concentration of marine debris in certain areas.¹⁴¹ As for the last years, in 2012 the then UN Secretary-General Ban Ki-moon announced the *Oceans Compact*, an initiative to enhance the UN system and its cohesion and fulfil its oceans goals and obligations.¹⁴²

¹³⁸ About: History. *Joint Group of Experts on the Scientific Aspects of Marine Environmental Protection* [online]. [cit. 2019-03-18]. Available at: <http://www.gesamp.org/about/history>

¹³⁹ Regional Seas Programme. *Sustainable Development Knowledge Platform - the United Nations* [online]. [cit. 2019-03-18]. Available at: <https://sustainabledevelopment.un.org/partnership/?p=7399>

¹⁴⁰ JEFTIC, Ljubomir, Seba SHEAVLY and Ellik ADLER. Marine Litter: A Global Challenge. *UN Environment Document Repository* [online]. 2009 [cit. 2019-03-18], p. 18. Available at: <http://wedocs.unep.org/handle/20.500.11822/7787>

¹⁴¹ The Honolulu Strategy. *NOAA - Marine Debris Program* [online]. [cit. 2019-03-19]. Available at: <https://marinedebris.noaa.gov/solutions/honolulu-strategy>

¹⁴² Oceans Compact. *Oceans and Law of the Sea - the United Nations* [online]. 2013 [cit. 2019-03-19]. Available at: http://www.un.org/Depts/los/ocean_compact/oceans_compact.htm

Moreover, although it constitutes only a small part, one of the outcomes of the Rio+20 conference¹⁴³ in 2012 was the document *Future We Want*, in which the countries take the severity of the plastic debris into account and set the 2025 as a year by which the level of marine debris will be substantially decreased.¹⁴⁴ In 2012, the *Global Partnership on Marine Litter* was launched under the UNEP that among goals such as the promotion of resource efficiency or raising an awareness within the marine litter also builds on the Honolulu Strategy.¹⁴⁵ Finally, in 2017 the *Clean Seas* campaign was commenced under the UN Environment. It represents a global strategy with an effort to link and involve the actors throughout the society such as governments, general public and private sector into the combat against the marine plastic debris and tackle the single-use plastics within five-year period.¹⁴⁶

When taking a look at all these actions, it cannot be determined that the international arena would suffer from the lack of agreements, initiatives, programs, etc. They all more or less find each other in the intersection within the common goal, i.e. the prevention and protection of the marine environment against plastic pollution. So the entire matter is not revolved around the lack of the contractual actions, especially when we take the ozone regime into consideration with its two fundamental agreements. However, the issue of plastic pollution does seem to be reversed any time soon as the scientific results indicate.

1.2.6. Evaluation of the cooperation

As in the case of ozone regime and ODSs, there are several commonalities within the plastic pollution in the sea. Firstly, the issue is primarily caused by the consequences of the human activity. Furthermore, plastics are the matter of daily use as they occur in majority of products. They are also utilized for its versatile properties that are instrumental in their widespread use. In both cases the timeline also dates back to 1970s (although the awareness within the plastic pollution is primarily matter of today). What remains to be different, however, the international cooperation in the marine environment does not attain such achievements.

¹⁴³ United Nations Conference on Sustainable Development (2012)

¹⁴⁴ Point 163. *The Future We Want*. [online]. 2012 [cit. 2019-03-19]. Available at: <https://sustainabledevelopment.un.org/content/documents/733FutureWeWant.pdf>

¹⁴⁵ Global Partnership on Marine Litter. *Sustainable Development Knowledge Platform - the United Nations* [online]. [cit. 2019-03-19]. Available at: <https://sustainabledevelopment.un.org/partnership/?p=7471>

¹⁴⁶ About. *Clean Seas* [online]. [cit. 2019-03-19]. Available at: <https://www.cleansseas.org/about>

First of all, it cannot be asserted that international cooperation would suffer from the lack of effort whether it is in the form of agreements, programmes or global campaigns. All three sectors of society join the global combat against plastic pollution – international (which the thesis focuses on), regional and national (alternatively local). And all of them exert considerable influence (particularly through contracts)¹⁴⁷ that creates a complex and vast system of intertwined activities.

At this point, it once again has to be put forward that the international treaties under scrutiny constitute main instruments of the international cooperation in the regime, but they do not explicitly and solely address the plastic pollution as they pay attention to other sources of pollution as well. As a result, the global system is thus kind of reflection of both the international treaties and those on the regional or national level. International agreements establish certain framework and rules for the global governance, yet the entire regime is a complex entity supplemented by other legislative acts. This structure is different from the ozone regime that is managed by two cornerstone treaties with the following amendments. And owing to many factors, such a contractual arrangement has been, contrary to plastic regime where the cooperation is ongoing, successful. So despite its broad structure, the prospects for future are alarming. Plastic production steadily increases as well as the burden on the countries.

There are several overlapping shortcomings the international community encounters with. Firstly, the scientific circles have been playing a little different role than in the case of ozone depletion. In the course of development, there were tangible findings and data from the scientific community, yet the pressure itself was not sufficient to force the international actors to urgently impose resolute measures from the very beginning. Secondly, international cooperation has partly passed the source of the problem, mainly by regulating the pollution that takes place at sea. In fact, roughly 80 % of plastic debris is from the land.¹⁴⁸ Furthermore, while the international community is already paying attention to this area, there is no treaty that would directly and exclusively target the land-based sources of pollution and that would be structured in a strict regulatory nature. In addition, it is also the very form of the treaty. As presented in the analysis, the position of the plastic debris is limited under the agreements as the plastic litter is mainly covered by all-inclusive contract omitting thorough attitude.

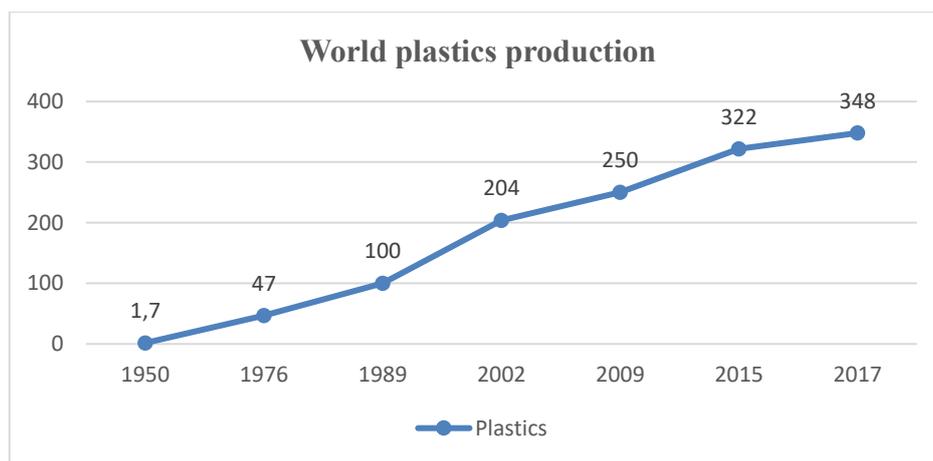
¹⁴⁷ BERGMANN, Melanie, Lars GUTOW and Michael KLAGES, *Marine Anthropogenic Litter*, p. 414.

¹⁴⁸ *Ibid.*, p. 378.

However, this insufficient scope is not the only shortage. As proved, the agreements across the regime do not possess effective enforcement mechanism how to make the individual countries comply with the provisions. It is entirely up to states to address the particular issues through their national instruments. The system of delegated responsibility and individual fulfilment of measures without any enforcement component then clearly fails. So although there is an existing framework for dumping at sea, land-based sources, etc. under law, inadequate regulation, implementation and enforcement undermine the whole regime. Finally, the agreements are also very poor within the cooperation among states. So no wonder there are calls for the new, strictly marine litter oriented agreement.¹⁴⁹

Correspondingly, the entire regime becomes more complex as the law steps forward. Different rules and obligations apply to individual marine areas and, as experts note,¹⁵⁰ it is more demanding to control land-based sources within the national borders. Nevertheless, the contracts also do not present any balanced form as, on the one hand, they would undertake states to comply, enforce the measures, but on the other hand, they would provide certain incentives and benefits for countries. The marine regime thus distinctly demonstrates its complexity and the shortcomings in the international cooperation, which, compared to the ozone regime, fails.

Graph 4: World plastics production between 1950-2017 (in million tons)



Source: Processed based on data from PlasticsEurope Facts (2013, 2016, 2018)

¹⁴⁹ HUGO, Torbjørn Graf. The case for a treaty on marine plastic pollution. *Norwegian Academy of International Law* [online]. 2018 [cit. 2019-04-14], p. 5. Available at: <http://intl.wn/wp-content/uploads/2018/11/The-case-for-a-TMPP-Nov-2018-WEB.pdf>

¹⁵⁰ BERGMANN, Melanie, Lars GUTOW and Michael KLAGES, *Marine Anthropogenic Litter*, p. 18.

The Graph 4 demonstrates threatening phenomenon of today, global plastics production since the 1950s that is heavily growing without any break. To certain extent, the production of plastics goes undoubtedly hand in hand with the plastic pollution in the sea, thus increasing production will be reflected in the marine litter as well. The precise relationship is hard to determine but in any case this graph represents valid indicator that points to the increasing burden as the production forces the countries to handle and process the litter in a certain way.

Furthermore, it is worrying that China's production of plastics is considerably growing and at the same time it represents the biggest plastic polluter in the world as well. The data points to the skyrocketing tendency in production as in 2009 China constituted 15 % and in 2017 already 29,4 % of the global production.¹⁵¹ It is estimated that together with other world's biggest plastic polluters in the marine environment, Indonesia, Philippines, Vietnam and Sri Lanka they jointly mismanaged 17,3 million tons of plastic waste in 2010, which then corresponded in circa 2,6-6,9 million tons of debris.¹⁵²

¹⁵¹ The Facts 2010, 2018. European Plastics Industry Market Data. *PlasticsEurope* [online]. [cit. 2019-03-19]. Available at: <https://www.plasticseurope.org/en/resources/market-data>

¹⁵² As authors define, the mismanaged waste is the, “*material that is either littered or inadequately disposed. Inadequately disposed waste is not formally managed and includes disposal in dumps or open, uncontrolled landfills, where it is not fully contained. Mismanaged waste could eventually enter the ocean*“.
JAMBECK, Jenna R (et. al.), *Plastic waste inputs from land into the ocean*, p. 769.

Table 1: The strength of cooperation within the regimes based on the indicators' results

	Ozone regime		Regime of the plastic pollution in the sea		
	Vienna Convention	Montreal Protocol	London Convention	MARPOL 73/78	UNCLOS
Ambition and concreteness of the treaty's objectives	<ul style="list-style-type: none"> • Rather only general clauses and provisions • Balanced wording and formulation of vital framework • List of chemicals (Annex 1) 	<ul style="list-style-type: none"> • Clear, definite provisions • Quantification of obligations • Determination of substances • Definite, global ambition 	<ul style="list-style-type: none"> • Vast framework setting • List of prohibited parts • Global scope • All-encompassing yet unspecified procedure • Limited inclusion of plastics 	<ul style="list-style-type: none"> • Global and thorough scope • Concrete types of plastics • Ambiguous terms 	<ul style="list-style-type: none"> • Vast framework setting • Global scope • Missing plastics determination • All-encompassing yet superficial coverage
Ambition and concreteness of individual state's commitments	<ul style="list-style-type: none"> • Shared concurrence to address the issue • Eventually consistent attitude of countries • Commitment to continue in regime's strengthening 	<ul style="list-style-type: none"> • Persisting determination to combat the issue • Willingness to adopt stronger commitments (scientific discoveries) • Shift forward within agreed measures 	<ul style="list-style-type: none"> • Minor political will • Limited emphasis on the issue • Influencing aspects with regard to plastics (time, scientific knowledge) 	<ul style="list-style-type: none"> • Agreement over comprehensive tools • Clear delimitation and interest in single areas (Annexes) • Ambition colliding with implementation 	<ul style="list-style-type: none"> • Broad scope of agreed commitments • Ambiguous terms, plain coverage (extent of agreement) • Ambition within the boundaries of the particular state
Level of participation	<ul style="list-style-type: none"> • Strong aspect of success • Initial signatory impetus by major CFC's emitters and industrialized countries • Universal ratification • Coherent and genuine effort to meet provisions 	<ul style="list-style-type: none"> • Strong aspects of success • Continuing initial endeavour of major powers and emitters • Strong engagement of Southern (developing) countries • Universal ratification • Coherent effort 	<ul style="list-style-type: none"> • Limited participation both in number (87) and the particular actors (many of the major plastic polluters of the sea) • Disruption of the global initiative and effort • Disunity 	<ul style="list-style-type: none"> • Broad participation (Annex V) • Majority of biggest plastic polluters participate • Participation as a weakened and secondary aspect due to enforcement/compliance shortcomings 	<ul style="list-style-type: none"> • Broad participation • Non-participation of the major power (United States) • Participation as a weakened and secondary aspect due to enforcement and compliance shortcomings
Centralization	<ul style="list-style-type: none"> • Loose structure, weak centralization • Delegation of tasks to national level • Coordination activities of secretariat 	<ul style="list-style-type: none"> • Bigger centralization • Elaborated control, regulatory and monitoring measures • Cooperation mechanism • Secretarial functions • Missing non-compliance mechanism 	<ul style="list-style-type: none"> • Loose structure, weak centralization • Implementation upon individual Parties • Administration by IMO • Missing regulatory, compliance and enforcement measures 	<ul style="list-style-type: none"> • Regulatory measures • Verification, dispute settlement and data exchange mechanism • Administration by IMO • Limited results due to enforcement/compliance shortcomings 	<ul style="list-style-type: none"> • Responsibilities upon single Parties • Cooperation tools • Regulatory tools • Monitoring, data and assessment tools • No enforcement, compliance measures

The Table 1 represents the final and overall comparison of the fields with respect to the applied indicators and summarizes the group of fundamental aspects that make the ozone regime stronger and more successful than the plastic pollution regime.

The scientific community and its findings on which the entire regime was later built is the first aspect. Within the ozone regime, it seems to have constituted a much more active actor than within the plastic pollution regime as the overall pressure was not so vigorous to compel the international actors swiftly act and impose effective regulations. Correspondingly, a considerable degree of international political will was mainly recorded under the ozone regime as there was a clear effort to constantly push the boundaries of protection forward, at the same time being aware that such a combat against global issue is in the interest of all. Contrary to this stance, an endeavour to such an extent is not the example of the plastic pollution regime. Moreover, in terms of the plastic pollution regime, the cooperation between countries is limited and lags behind the form of the ozone regime. This fact is further connected with the settings of the treaties, which through its provisions do not create a breeding ground for deeper and more coherent progress among actors.

Moving to the individual contracts, the ozone regime has directly and in a concrete way focused on the main source of the issue (ODSs). Based on the two main treaties, it initially established the regime framework, the issue was defined and grasped, followed by definite procedure that addressed the individual substances. On the contrary, in case of the plastic regime, there are no such agreements that would purely focus on the plastic pollution in the sea and impose definite and strict regulatory measures.

As far as the structure of the contracts is concerned, the first indicator concludes that whereas the ozone regime is constituted by two agreements that complement each other and include all the vital aspects (concrete terms and provisions, quantification of obligations, etc.), in case of the plastic regime, the limited, ambiguous and inadequate terms (not only with respect to plastics) are put forward as well as the superficial coverage or broad, but thus a general attitude towards the issue. Similarly, procedural steps so as to achieve the goals are often unclear.

Furthermore, the second indicator notes that the success within the ozone regime has been further determined by the joint commitment and truly coherent stance of the countries towards the issue as well as the overall willingness to adopt clear regulations. On the other hand, the plastic pollution regime is to a certain extent weakened by the limited interest of the countries and also the indistinctive emphasis on the problem reflected both in the contracts and the practice. In addition, whereas the contracts within the ozone regime are well balanced and their provisions lead countries to participation, the plastic pollution regime does not engage in incentives and benefits for less advanced states or does not address the countries that would prefer not to accede to the treaty. Contracts thus remain to be very inflexible and partially discourage states from cooperation.

Moreover, the third indicator concludes that despite certain disagreements, all states within the ozone regime were aware of the problem they were facing and both the biggest emitters and major developed countries acceded to the treaties, embodying an impetus for the rest of the international community. However, this is not the case of plastic pollution regime since it is not an exception that major plastic polluters or even the major powers abstain from the participation, therefore strongly disrupt the potential achievements of the regime. On top of that, even the strong participation level is not a guarantee of success as the regime alternatively suffers from the enforcement/compliance shortcomings.

Finally, this is further associated with the very settings of the treaties within the plastic pollution regime. The provisions delegate powers to individual states that subsequently address particular matters individually and often without much of a success. And as analysed under the fourth indicator, further shortcomings emerge from the weak centralization structure, inadequate regulation or limited or none enforcement and compliance mechanisms. On the contrary, ozone regime managed to successfully structure individual features in this respect and with other factors constitute a well-functioning and balanced system.

2. Theoretical and methodological framework

Using the analytic-descriptive approach, the first chapter demonstrated what are the main differences of the international community towards the given fields. At the same time, it concludes that international cooperation in the field of plastic pollution is weak and relatively failing. Therefore, the thesis continues in its research and proceeds towards the theoretical and methodological framework.

The aim of this chapter is to outline and determine the approach addressing the second research question that regards why international cooperation is different within the two presented fields, specifically *Why is international cooperation in the field of plastic pollution in the sea relatively weak, compared to the international cooperation in the field of ozone depletion?* For this purpose, the thesis defines a concrete factor (interest and support of the industry and public) that exerts influence on states and their ability to come to an agreement within strong and ambitious cooperation. Subsequently, such a determination allows to link the given factor with the particular variables and hypotheses that put forward the answers to the research question. Finally, in order to attain necessary findings, the overall research is placed under the theoretical framework of the Putnam's *two-level game theory* that adequately corresponds to actors in question, explains the relations among them and analyses the processes and other relevant entities both at the national and international level.

2.1. Two-level game theory

With regard to the theoretical framework, the thesis works with the two-level game theory stipulated by Robert Putnam in 1988. Putnam argues that domestic politics and international relations are often entangled and using the historical examples points to the fact that both national and international affairs find links between each other. In this sense, it is asserted that politics might be seen within the many negotiations both at the international and national level as a two-level game.¹⁵³

Within the first, national level, the individual domestic groups strive to achieve certain demands and press their governments to implement convenient measures. Contrarily, at the international level the governments are trying to meet the requirements of domestic level and concurrently to prevent potential negative results from the foreign situation.

¹⁵³ PUTNAM, Robert D. Diplomacy and Domestic Politics: The Logic of Two-Level Games. *International Organization* [online]. 1988, 42(3) [cit. 2019-03-19], p. 434. Available at: <https://www.law.upenn.edu/live/files/5154-putnamdiplomacy-and-domestic-politicspdf>

Single leaders are thus under the influence of two levels as they are pressed to take the interests of the domestic level and situation and development of the international level into account (e.g. when negotiating international contracts). To apply this on theoretical situation, as stated by Putnam, there is an international level comprised of the chief negotiator sitting beside the diplomats and other advisors, while facing its counterparts. At the national level, the political leader is surrounded by both the party and parliamentary representatives, spokespersons from the national agencies, delegates of main interest groups and advisors to leader. Hence, the crucial task of the leaders is balance between the levels and find the acceptable consensus.¹⁵⁴

This determination further falls under Putnam's two-stage model. It is commenced by the negotiations that take place at the international level (Level I). At this stage the concrete agreement is arranged. Subsequently, the process continues to second phase, national level (Level II), where debates are held whether to ratify the given agreement. However, as Putnam notes, such a determination rather serves as an example as in fact the relation between the levels is more extensive and interwoven.¹⁵⁵ The difficulty of this setting lies in the fact that the matter perceived at one table as a rational, might be inconvenient and inappropriate at the other. Nevertheless, as Putnam also adds, “*clever players will spot a move on one board that will trigger realignments on other boards, enabling them to achieve otherwise unattainable objective.*”¹⁵⁶

When political actors are negotiating international agreements, their goal is to attain so-called win-sets. Putnam defines these win-sets as a group of all possible Level I contracts that are able to receive sufficient support, “win”, at Level II from its actors. In other words, it is a set of all contracts that possess the ability to pass through the two-stage process. At this point, Putnam further presents two relevant principles.

Firstly, “*larger win-sets make Level I agreement more likely.*” To elaborate on this rule, if the Level II win-set is large enough, it is likely that agreed contract at Level I will overlap-coincide with that. The substance is that the broader the Level II win-set is defined, the higher chance there is that negotiated contract at Level I will pass at the Level II. On the contrary, a narrow and limited scope of the win-set at the Level II heightens the risk that the Level I contract will not be approved.¹⁵⁷

¹⁵⁴ PUTNAM, Robert D, *Diplomacy and Domestic Politics*, p. 434.

¹⁵⁵ *Ibid.*, p. 436.

¹⁵⁶ *Ibid.*, p. 434.

¹⁵⁷ *Ibid.*, p. 437-438.

Secondly, *the relative size of the respective Level II win-sets will affect the distribution of the joint gains from the international bargain.*¹⁵⁸ This principle relates to the size of the space in which the negotiator can manoeuvre. The larger the win-set at the domestic level is, the more the negotiator is prone to be ordered and pushed around. Contrarily, if the bargaining position is limited, the domestic win-set is small, it might be considered a negotiating advantage.

In case of failed ratification, Putnam further pays attention to this issue and distinguishes between *voluntary* and *involuntary defection*. Involuntary occurs in case the actor strives to enforce the promise, but is unable due to failed ratification. On the contrary, voluntary denotes failed ratification due to the egoist conduct of the actor.¹⁵⁹

To complete the model, Putnam also establishes three determinants that affect the size of the win-set. Firstly, those are Level II preferences and coalitions. This determinant stands on the basis that varying representatives at domestic level might hold different opinion, be at odds against each other with preferences, etc. In view of this fact, such relations might then affect the final output. Secondly, those are Level II institutions. Political institutions are composed of different ratification procedures which through its setting influence the size of the win-set. In its essence, it relates to different voting thresholds that influence whether the contract is ratified or not (two-thirds vote, simple majority, etc.).¹⁶⁰ The last determinant represent the Level I negotiator's strategies. This determinant partially summarizes the above given position of the negotiator as Putnam notes that, "*The larger his win-set, the more easily he can conclude an agreement, but also the weaker his bargaining position vis-a-vis the other negotiator.*"¹⁶¹

¹⁵⁸ PUTNAM, Robert D, *Diplomacy and Domestic Politics*, p. 440.

¹⁵⁹ *Ibid.*, p. 438.

¹⁶⁰ *Ibid.*, p. 441-442, 448.

¹⁶¹ *Ibid.*, p. 450.

2.1.1. Application of the theory

The employment and relevance of the Putnam's two-level game lies in its setting as the theory preoccupies with the overall formation process of international contracts from the initial negotiations to the point where approval decisions are made. In other words, the theory allows to analyse and demonstrate the process of creation of the international regulatory measures that eventually determine the protection of the field and reflect the degree of the international cooperation. As in the ideal model, also within the application on the real case the theory conveniently serves at comprehending the creation process of the international agreements from the initial phase and explains the particular influences and relations both in the ozone regime and the plastic pollution regime. In this process, attention is primarily paid to *industry* and *public* actors who are linked to the factor (analysing their interests and support) that influences the ability to reach an international cooperation. For this reason, the factor allows under the theory to determine individual variables and hypotheses and provide answers to the second research question. Finally, in line with the theory, the thesis introduces other relevant actors within the process and analyses their attitudes and interests for their significant influence on the output.

2.1.2. National and international actors in ozone regime

As Putnam sets-out, the two-level game is composed of two interconnected levels within and among which the individual interests and relations emerge. The main representatives of the process are individual actors who hold a diverse attitudes and to various extent determine the final outcome of the negotiation. Therefore, this part presents the very actors at both levels and explains their motives within the logic of negotiation based on the real nature in this regime. The above-explained theory serves as the ground that is put in line with this real arrangement. Finally, the specification of actors enables they can be directly embedded into the process in the empirical part.

Starting at the international level (Level I), the only position at this stage holds the *chief negotiator*. With regard to the focus of the thesis, the international contracts and cooperation, it is appropriate to determine for such position, as Putnam himself notes as one of the options,¹⁶² a head of the government or other competent representative (e.g. president, minister of foreign affairs) under whose mandate and authorities this area of legislation falls

¹⁶² PUTNAM, Robert D, *Diplomacy and Domestic Politics*, p. 435.

and who represents the particular state. Therefore, the main actors are the individual countries and their political leaders who negotiate and act in the interest of the given state and on the basis of its instructions. Such a position reflects the output from the domestic field transferred to them by national government that had taken into account all influences and actors' preferences at the national level. Thus, the negotiator appears at the centre of a pressure of both levels, trying to find a consensus among the counterparts for the contract at the Level I that would be the approved at Level II.

As for the national level (Level II), the *industry* constitutes one of the most influential actors. In terms of the individual entities, the core of attention represent the sectoral companies focused on chemical manufacturing, being the sources of production of the ODSs, as well as the other related companies that use such chemicals. Regarding the negotiation process, an opposing stance towards the regulations is expected based on the conformity with the general economic culture of the companies. Therefore, the contradictory activity is predominantly reckoned towards the national governments that formulate the national policy for the following negotiation.

Industry lobby groups embody another entity at the national level, closely associated with the industry actor. The interests and attitudes are basically in accordance with the industrial motives, hence the actor supports the efforts to prevent potential regulatory measures throughout a variety of instruments. Distinctive pressure stemming from its nature is thus undoubtedly expected towards the national governments. Finally, their position is taken into account, however, due to their deep interconnection with the industry in literature, their form is integrated into the industry, especially in the form of various alliances, etc.

The further crucial actor within the regime is the *general public*. In relation to the above-presented conclusions, demonstrating the extent of the issue, as well as the general intention of the population to promote environmental agreements for its own benefits, expressed support for the protection instrument is expected. In this context, the thesis anticipates the coercive behaviour of the general public towards the national governments so as to direct the formulated policy in desired way. Moreover, certain signs of pressure could be noticed in relation to industry companies, pushed to impose amendments in its activity. The more thorough character of the actor is the subject of the following chapter.

Moving to the *activists groups*, the actor universally advocates and promotes the various activities leading to the environmental protection. As this general principle is followed, activists are perceived as the additional, yet significant agent of the pressure. Particular steps are expected both towards the national governments and industry, in order to adjust its activity. As within other actors, the thesis does not put forward any concrete examples as it rather conceives the overall approach of these groups and identifies their impact on the output.

Scientific community and *academia* are the further representative at the national level. As already proved, the significance of this actor is truly immense as it was the very determinant that not only acquainted the overall population with the issue, but also caused the following turn of events. Given to its knowledge and corresponding implications, the position is clearly reflected in relation to the national governments as it finds itself in the forefront of the efforts to introduce regulatory measures. For this reason, colliding relation with industry emerges in this case as well.

The *national governments* are the last actor that falls under the analysis. As part of the negotiation process, they transfer its stance to chief negotiator covering the nature and factors from the national level. Moreover, it finally decides over the negotiated legislation stemming from the Level I. The national governments are thus exposed to a group of various interests and diversely powerful pressures, which constitute the main concerns of the following chapter. Regarding the stance of the national governments, this part works with the basis of the first chapter, pointing to the occasionally variable yet clear interest to formulate instructions within the effort to adopt a protective international treaty.

To complete the overall framework, the thesis takes into account the *external actors* who hold the additional influence within the negotiation process. With regard to these actors, the effects and pressure might be termed as a three-way. Firstly, it is the power of the individual states. In this respect, the thesis deals with the term we comprehend and designate as the international community. Hence, it covers the unified group of states and their global stance towards the matter in question. Subsequently, it includes the subset of international institutions, specifically international organizations addressing to some extent this issue. For the purpose of accuracy, the level is composed of both the international governmental organizations – IGOs, and international non-governmental organizations - INGOs, which are non-profit ones.

2.1.3. National and international actors in plastic pollution regime

As in the case of the ozone regime, this subchapter deals with the individual actors within the plastic pollution regime and presents their actual nature based on the main characteristics and attitudes.

In accordance with the two-level game, *the chief negotiator* is once again the only actor with regard to the international level (Level I) within the plastic pollution regime. Similarly, the task is mainly revolved around the instructions from the Level II since the negotiator seeks to promote their form against the other counterparts at the negotiation table. The result of this international bargaining and the consensus on the unified form of the contract then leads to the following level.

Moving to the national level (Level II), the *industry* represents the first actor. In this case, the very entities are predominantly large, often multinational corporations operating in plastic-related branches such as oil, food, chemical, packaging and others. Based on this connection to the plastic utilization and the development tendencies of this part of economy, financially motivated and driven attitudes are expected from industry since it is a case of majority of the economic-minded companies. However, this attitude is inconsistent with the international regulatory measures that require implementation costs. The attitudes and interests of this actor are expected to follow the efforts opposed to these measures and rather pursue profit inducements as its foremost motive. For this reason, the main relation link is supposed to take place between industry and national governments, which formulate the negotiators' basis with respect to regulatory contract.

The second vital actor at the national level are the *industry lobby groups*, which share the same position with the industry. Given to the global conception of the issue and its analysis, the thesis does not present specific entities. Nevertheless, they might be primarily designated as groups that promote the interests of the industry in line with the effort to avoid costly regulatory contracts and push and influence the rest of actors, especially the national governments.

The national level is further constituted by the *general public* that embodies the second primary actor under the scrutiny. At this point the further position of the public is not at disposal as it represents the subject of the research in the following chapter. Nevertheless, as noted above, general public thrives on the benefits from improved environment. Hence, it is expected that general public forms its domestic stances towards the efforts to impose regulatory measures and affect the national governments for the upcoming negotiation.

Activists groups are further relevant actor at the national level as they are often seen as the driving change in policy with their proactive approach towards change. Throughout its activities, these groups seek to implement environmental protection measures and overall advocate any form of initiative that follows their environmentally oriented position. An opposing stance towards the industry and lobby groups thus might be expected.

In a similar way, *scientific community and academia* constitute another actor at the national level. It represents vital entity for formulating the basis on which the remaining actors are based, take actions either together or against each other and from which findings the particular measures are formed. As for the position, it is indisputably in opposition to the interest of the industrial sector as their data and attitude follow the aim to protect the environment and enforce binding regulations.

The *national governments* are identified as a final actor within the national level. The governments are exposed to various forms of pressure and interests from the other representatives (industry, lobby groups, general public, activists, scientific community and external actors) that would eventually combine with the prevailing attitude of the government and the output is subsequently made. With respect to the various eventualities emerging from the complexity of this regime, there are many potential outcomes in this process with which the following chapter deals. However, at this point the thesis is built on a premise (given to the literature and above-analysed contracts) that governments seek to adopt contract to protect marine environment against plastic pollution. The intention is just to note that such a stance is not always followed in the end.

Finally, the thesis similarly takes into consideration the influence of *external actors*, specifically the international community, IGOs and INGOs, perceived as the complementary entities of the entire framework.

2.2. Methodology

The thesis employs the qualitative research using a comparative case study. The method testing the selected hypotheses is chosen with respect to its ability to examine two or more cases of the given phenomenon and conduct the comparing analysis of them.¹⁶³ Hence, the method appropriately corresponds to the thesis that preoccupies with two concrete cases. Furthermore, the method is selected with regard to the requirement to perform an in-depth analysis in a given regime, simultaneously examine more features associated with one common element, define main causal mechanisms, and finally compare the stemming findings between the two presented cases.

Thus, the study is consistent and based on the definition stating that, “*comparative case study examines in rich detail the context and features of two or more instances of specific phenomena*”, and that, “*the goal of comparative case studies is to discover contrasts, similarities, or patterns across the cases.*”¹⁶⁴ In other words, the thesis is devoted to the profound analysis of two selected cases based on the large amount of data where findings are finally assessed under the given regime and subsequently compared with findings of the second regime. The conclusion of the study will represent the comprehensive output covering the global setting of the main actors in the formation process of the international treaties.

As for the specific method under comparative case study, the thesis employs the J. S. Mill's *method of difference*. The author himself defined it as follows, “*If an instance in which the phenomenon under investigation occurs, and an instance in which it does not occur, have every circumstance in common save one, that occurring only in the former, the circumstance in which alone the two instances differ, is the effect, or the cause, or a necessary part of the cause of the phenomenon.*”¹⁶⁵

¹⁶³ GEORGE, Alexander L. and Andrew BENNETT. *Case Studies and Theory Development in the Social Sciences* [online]. Cambridge: MIT Press, 2005 [cit. 2019-03-19], p. 18. ISBN 0-262-07257-2. Available at: <https://pdfs.semanticscholar.org/94e9/eec015c650880356853533c4dc9b2dac42bb.pdf>

¹⁶⁴ MILLS, Albert J., Gabrielle DUREPOS and Elden WIEBE. *Encyclopedia of Case Study Research* [online]. SAGE Publications, 2010 [cit. 2019-03-19], p. 174. ISBN 978-1-4129-5670-3. Available at: <https://archive.org/details/2.encyclopediaOfCaseStudyResearch/page/n203>

¹⁶⁵ MILL, John Stuart. *A System of Logic: Ratiocinative and Inductive* [online]. Harper & Brothers, 1882 [cit. 2019-03-19]. Available at: https://ebooks.adelaide.edu.au/m/mill/john_stuart/system_of_logic/chapter23.html

In other words, this method detects factors with coincident values and subsequently excludes them on the basis they cannot be considered a causes within the given case. So if there exist two cases and in one of which the phenomenon occurred, contrary to the other, and except for the one factor their other aspects coincide, we might consider this factor as the cause of the phenomenon.¹⁶⁶ In this manner, the method comes to such independent variables that hold differing values and might be designated as the cause of the phenomenon. Hence, the method is devoted under the analysis to concrete factors/variables and its occurrence in both regimes (with positive or negative nature). Beginning within the ozone regime (positive nature is expected), the thesis subsequently proceeds to the plastic regime and determines the nature/value of the given factor in this field. Following this method, it will be determined whether specific factors cause a difference in cooperation.

2.3. Conceptualization, operationalization, data

As noted above, the thesis determines the factor in the form of the interest and support by both the industry and public within the field of ozone depletion and plastic pollution in the sea. In general, whereas specific environmental arrangements constitute costs for the industry, the society enjoys the benefits in the form of improved environment. At the same time, the political actors pursue to find a common ground and balance between these two groups as they are aware that representation of both is in their interest. In this respect, the hypotheses are built on the basis that environmental protection demands expenses from the industry and at the same time the public draws on the results stemming from the favourable environmental conditions.

The factor is further grounded in the presumption that highest chance and feasibility to reach a cooperation is in case that, on the one hand, the industry is burdened with relatively small costs relative to the implemented measures and obligations. And on the other hand, the environmental issue substantially influences the general public in which perspective it is seen as a significant matter to address. Therefore, this factor represents the aspect of change within the process of contract formation, possesses the ability to affect it both positively and negatively, and embodies the source of determination for concrete independent and dependent variables.

¹⁶⁶ HEUVELN, Bram Van. A Preferred Treatment of Mill's Methods: Some Misinterpretations by Modern Textbooks. *Informal Logic* [online]. 2000, 20(1) [cit. 2019-03-19], p. 24. Available at: https://ojs.uwindsor.ca/index.php/informal_logic/article/view/2252

As stated above, the actors of the negotiation process, public and industry, and their nature of interests, motives and attitudes determine the output of these negotiations, the formulation of the treaties and the ultimate strength of the international environmental cooperation. Simultaneously, the functioning logic in the fields was presented in relation to the actors. Thus, the determination of this valid relation provides that:

Independent variable 1: Industry's costs and economic interests

Independent variable 2: Public's interests, support and perception

Independent variable 3: Overlap of the national win-sets

Dependent variable: Strength of the international environmental cooperation

Following the definition of particular variables, three hypotheses in relation to them are established as follows:

Hypothesis 1: The relatively small and acceptable industry costs as well as certain interest and support in relation to the adopted regulatory measures on the protection of the regime result in a strong international environmental cooperation. Contrarily, if the industry activities are linked with large costs and the opposition to the regulatory measures, international environmental cooperation would be weak.

The hypothesis states that industry as one of the main actors at the national level (Level II) should be within the formation process of the international agreements and in conformity with the results of the first research question exposed to relatively small and acceptable costs alongside certain interest and support in line with the international agreements within the ozone regime, while burdened with high and unacceptable costs alongside its limited interest and support with relation to international agreements within the plastic pollution regime. The application of the hypothesis in the following chapter will either lead to its confirmation or disproof.

Hypothesis 2: Distinct effects and significant, global impact of the issue on public alongside societal perception of this matter as a severe leads to a strong international environmental cooperation. Contrarily, if the public is exposed to limited, non-global affects of the issue alongside the perception of the matter as insignificant, international environmental cooperation would be weak.

The hypothesis states that public as other vital actor at the national level (Level II) should be within the formation process of the international agreements and in conformity with the results of the first research question exposed to significant influence from the ozone depletion in its global scale and subjected to a crucial impact to the extent it perceives the issue as serious and necessary to inevitably address. On the contrary, in the context of the plastic pollution regime, the public is not exposed to the plastic pollution in its global scale to the extent it perceives as severe in all its terms with the necessity to inevitably address it. Similarly, the application of the hypothesis in the following chapter will either lead to its confirmation or disproof.

Hypothesis 3: When national win-sets are closely and clearly defined, simultaneously largely overlap and actors share the agreement on a strong collaboration, negotiations will lead to a strong international environmental cooperation. Contrarily, if national win-sets among actors are ambiguous and diverge, simultaneously do not considerably overlap and the agreement of a strong collaboration is not shared among actors, it will result in a weak international environmental cooperation.

The hypothesis states that the national win-sets should be within the ozone regime and in conformity with the results of the first research question largely overlapped as actors' preferences within the framework of a strong cooperation are unequivocally defined and converging. On the contrary, in the context of the plastic pollution regime, the win-sets are differently and vaguely defined and coincidence is disrupted due to divergent preferences of the actors that do not uniformly hold the agreement of the strong cooperation. As within other hypotheses, the application in the following chapter will either lead to its confirmation or disproof.

In other words, the strength of the international cooperation is in this case constructed as dependent on the interest and support of the industry and public as well the related overlap of the national win-sets. With regard to the concluded findings (e.g. positive in the ozone regime, negative in the plastic pollution) and following comparison, hypotheses might represent the valid explanation.

Finally, the public is in this context defined in a sense of global population, which is affected by the impact and consequences of the given issue. It covers the overall population regardless of the particular area as the thesis respects the global conception of the problem and its relation to individuals all over the world who are directly concerned.

The second actor, industry, is defined as a complex and unified entity without further specification since it demonstrates its overall position, motives and interests in the fields. Such an approach allows to comprehend the global process that subsequently forms the overall industry's attitude and its output. Furthermore, also with regard to individual sources (especially in case of the plastic pollution), the focus cannot be purely directed towards a particular region. Nevertheless, the overall approach is still preferred as it exposes the real nature of the actor in all its terms and measures that form the regime.

The thesis follows the theoretical framework on the basis of Putnam's two-level game, respects the gradual development and conducts the analysis of the overall process of the contract formation in relation to individual actors. The analysis is commenced at the national level where individual actors advocate various motives and interests and whose overlapping influences are reflected at this stage. In line with the theoretical basis, the thesis in both regimes analyses the overlaps of preferences and the win-sets since their size and degree of concurrence correspond to the possibility of the contract approval. At the same time, the actors affect and influence through these positions the domestic (i.e. government) preferences, which are subsequently reflected within the governments' output and transferred to international level to be pushed forward by chief negotiator. Exposed to the pressure and requirements from both directions, the chief negotiator advocates the contract that subsequently returns to the national level so as to attain its approval. This very pattern of the process thus becomes the centre of analysis where many bargaining pressures and various interests make it considerably complex. With regard to the hypotheses, the foremost attention, as already noted, is paid to the position of industry and public.

The final output will provide understanding of the overall process under the formation of the international agreements covering individual actors and their various positions, motives and interests. Simultaneously, the thesis will demonstrate the two-level game arrangement for both regimes. These findings will be then assessed and either confirm or disprove the hypotheses within the given regime. Afterwards, the results will become the subject of the comparison between the ozone and plastic pollution regime. Such a method will subsequently demonstrate whether the established factor-based variables are indeed an

explanation and a differential aspect of the cooperation and represent the valid explanation to the second research question.

The method of data collection represents the analysis of multiple sources of information such as academic papers, issue-oriented publications, alternatively relevant newspaper reports and websites that enable to form the overall perspective and the real nature of individual actors within the negotiation process. In this respect, the thesis is considerably based on the specific examples from around the world as they compose the overall context. All sources are selected with an emphasis on verification and relevance so as to ensure the accuracy and academic appropriateness of the research.

Finally, at this point it is crucial to outline and explain the form of the analysis. The thesis performs a global analysis focused on the overall, complex development in both regimes, providing comprehensive and global perspective. Vital to note, the work carefully takes into account the other side of both levels (Level I and II) with the individual countries and their particular influence on the international negotiation process. Likewise, it is aware of the varying degree of influence and motives that oscillate from state to state in accordance with many factors. Nevertheless, due to the constraints within the sources and the lack of sufficient data, especially within the plastic pollution regime and its relevant actors within the negotiation process, the thesis is not able to perform a closer geographical orientation, for example with regard to the main concerned regions, or alternatively major powers. For this reason, the thesis does not analyse the position of the particular countries at the following levels and seeks to provide underlying patterns and attributes within each regime, leading to the findings that are globally valid. Such an approach is applied to both regimes so as to put forward the final output and make a comparison within the same setting and as close to each other as possible. With respect to this delimitation, the thesis endeavours to provide the most accurate global arrangement and nature that countries all around the world comprise, and throughout which form the strength of the international cooperation.

3. Explaining cooperation in the field of ozone depletion

This chapter preoccupies with the analysis of the negotiation process that takes places within the field of the ozone depletion. Although the Putnam's model sets the beginning of the negotiation at the international level, the thesis commences its analysis already at the national level where the positions of the individual actors are formed. This phase is particularly crucial for the whole process since the actors diversely influence the national governments and their outputs which are then transferred in the form of instructions to the chief negotiator at the Level I. Putnam himself notes this eventuality stating that, “*There are likely to be prior consultations and bargaining at Level II to hammer out an initial position for the Level I negotiation.*”¹⁶⁷ Subsequently, the analysis proceeds to Level I, paying attention to the position of the governments within the negotiation. Finally, the thesis completes the process at the national level as the particular international treaty is subject of its approval. This three-stage format thus follows the main development parts and simultaneously devotes its attention to fundamental patterns of actors.

3.1. Analysis of the negotiation process

Various chemicals herein referred as ODSs were represented in a number of products all over the world. Yet, the overall control and the elimination from daily use was basically achieved in a matter of years and the international community has achieved a considerable success, being presented as an example of the regime protection. The following analysis of the negotiation process thus presents the influence of the particular actors on the ability to attain strong international cooperation and ascertains main drivers of the achievement.

1. National level (Level II) – prior bargaining

The status and position of Level II actors played a vital role, being the cornerstones of the future protection. The thesis commences its analysis with the first and probably the most complex actor of the group. To provide a comprehensive form of the industry, it is necessary to look at the initial position from which the actor arose. From the outset, the interests of industry were revolved around major economic indicators such as profit and costs. At that time, the industry with regard to production and use of the CFCs amounted to the billions of dollars within the global economy.¹⁶⁸

¹⁶⁷ PUTNAM, Robert D, *Diplomacy and Domestic Politics*, p. 436.

¹⁶⁸ GEHRING, Thomas, *Dynamic International Regimes*, p. 196-197.

Since the beginning of the 1970s, when potential negative impact of CFCs on atmosphere began to be discussed, the industry started to form an opposing stance and came up with the defence of the CFCs. The overall economy aspects started to play a vital role and the industry was pointing to hundreds of thousands of jobs and billions of dollars that relied on CFCs. Correspondingly, the industry rejected potential measures as the scientists possessed only hypotheses and unconfirmed computer models at that time. Any kind of regulation was thus rejected with the condition that the scientific community would have to prove the ozone depletion theory.¹⁶⁹ Hence, the initial position of industry could be characterized as nothing but strongly against regulations. On the other hand, it could not stand against the ongoing scientific research too harshly as the industry itself had to find out whether its activity does not pose a danger.¹⁷⁰

Over time, as scientific research as well as the global awareness intensified, the industry began to realize the inevitability of the gradual elimination of substances. Nevertheless, some crucially dependent sectors (e.g. solvents) strove to withstand the newly emerged turn of events and emphasized the costs and issues related with phase-out and endeavoured to put the regulatory initiatives off. In this respect, it was the very matter of costs that constituted one of the main sources of intransigence. The regulatory intentions related to overwhelming group of companies that would be pushed to redesign their equipment and come up with technologies to create the substitutes.¹⁷¹

As for the relation with individual actors, initial activity corresponded to the formulated attitudes and interests. Hence, the scientific community faced the efforts to question their findings as the industry applied its denial and contradictory strategy.¹⁷² Accordingly, the general public was exposed to pressure within the aim to reverse the scientific basis of the CFCs' impact as the industry carried out its own research or used public relations' tools.¹⁷³

¹⁶⁹ ANDERSEN, Stephen O. and K. Madhava SARMA, *Protecting the ozone layer*, p. 74, 197-198.

¹⁷⁰ BENEDICK, Richard Elliot, *Ozone Diplomacy*, p. 4, 46.

¹⁷¹ *Ibid.*, p. 134.

¹⁷² FALKNER, Robert. The Business of Ozone Layer Protection: Corporate Power in Regime Evolution. In: LEVY, David L a Peter NEWELL. *The Business of Global Environmental Governance* [online]. Cambridge, MA: MIT Press, 2005 [cit. 2019-04-01], p. 108. ISBN 0262621886. Available at: https://static1.squarespace.com/static/538a0f32e4b0e9ab915750a1/t/538db61ee4b0f4bbdccb70fb/1401796126905/Falkner_2005_Business_Ozone_Layer_Protection.pdf

¹⁷³ BENEDICK, Richard Elliot, *Ozone Diplomacy*, p. 12.

Similarly, the effort to prevent governments from regulations was distinct. For instance, although the United States was relatively progressive in actions, the industry managed to prevent Environmental Protection Agency (EPA) to impose certain regulatory initiatives regarding the CFCs.¹⁷⁴ Moreover, European companies pressed the individual governments and tried to convince them over the impracticability of CFCs substitution in products.¹⁷⁵

However, in the course of time, the initial resistance started gradually change and the first signs of turnabout emerged in mid-1980s. As for the particular reasons, one of them was the ever-powerful knowledge of the scientific community, presenting the evidence-based data of the ozone depletion (e.g. ozone hole over Antarctica).¹⁷⁶ This factor was closely related to the emphasis put on the issue so the ozone depletion began to be perceived as truly serious. Over time, even the prominent anti-regulatory alliances and companies voluntarily embarked on amendments in its activity and pledged a limitation of substances' production. This step was seen as particularly significant as it constituted a leading entities.¹⁷⁷

Of course, the shift of the industry was gradual and certainly not registered simultaneously all around the world. A considerable difference took place between the United States and Europe, as the latter was far less willing to accept the modifying nature of their area of interest.¹⁷⁸ Nevertheless, nothing changed the fact that the industry started to become more and more relevant actor within the protection of the regime.

The other factor was the reaction to planned regulations that indicated irreversible developments in the field. In this sense, the companies approached the new direction and tried to adapt in advance to conditions. In addition, there were also companies that at the very beginning had decided to voluntarily abandon CFCs.¹⁷⁹ From the other perspective, such a turning point was eventually driven by the financial motives as well. With the outlook for the end of the ODSs, a new struggle among companies began so as to be the first one to come up with substitutes.

¹⁷⁴ MORRISETTE, Peter M. The Evolution of Policy Responses to Stratospheric Ozone Depletion. *Natural Resources Journal* [online]. 1989, 29 [cit. 2019-04-01], p. 815. Available at: <https://biotech.law.lsu.edu/blog/The-Evolution-of-Policy-Responses-to-Stratospheric-Ozone-Depletio.pdf>

¹⁷⁵ BENEDICK, Richard Elliot, *Ozone Diplomacy*, p. 31.

¹⁷⁶ FALKNER, Robert, *The Business of Ozone Layer Protection*, p. 108.

¹⁷⁷ ANDERSEN, Stephen O. and K. Madhava SARMA, *Protecting the ozone layer*, p. 74, 202.

¹⁷⁸ BENEDICK, Richard Elliot, *Ozone Diplomacy*, p. 30-31.

¹⁷⁹ ANDERSEN, Stephen O. and K. Madhava SARMA, *Protecting the ozone layer*, p. 198, 361-362.

Companies thus invested considerable financial resources that simultaneously went hand in hand with the accelerated effort to find a solution for the ozone depletion.¹⁸⁰ In other words, although companies expected high costs, they were aware they would find a new place within the market again. And as later turned out, despite the higher costs of the substitutes, it often proved to be more effective in many aspects.¹⁸¹

Finally, both the change in attitude and the overall protection of the regime was facilitated by the fact that industry eventually anticipated the accessibility of new substances in a short period of time.¹⁸² Lastly, among other factors were also already imposed measures, active assistance of governments to find an alternatives or reputation or social motives of the industry. Therefore, in the course of only a few years, the industry radically turned its stance and support for the regulatory measures. Moreover, perhaps even startlingly, it eventually emerged in the forefront of the leadership, defined by a strong motivation and effort to accelerate the protection of the ozone layer.¹⁸³

At this point, it is especially important to take a look at the area of costs with relation to regulatory measures as its setting intensely influences the form of the international cooperation. Moreover, it is already possible to note that the one of the very aspects of the later success was formulated. Already in 1988, there was a general consensus that the elimination of approximately half of the CFCs and halons could be managed relatively swiftly and without too much cost. Contrary to previous stance, even the industry itself shared the consent that much of the CFCs can be substituted at little cost.¹⁸⁴

Furthermore, if the substitutes required higher costs, this necessity was fairly accepted since, as already noted, the characteristics of the new substitutes exceeded the original ones. In the end, the new technologies resulted not only to products improvement but also the cost reduction. And as Andersen adds, *“Today, industry, government, and non-government organizations all agree that the costs of eliminating ozone-depleting substances are far less than the consequences of ozone depletion.”*¹⁸⁵

¹⁸⁰ FALKNER, Robert, *The Business of Ozone Layer Protection*, p. 110.

¹⁸¹ ANDERSEN, Stephen O. and K. Madhava SARMA, *Protecting the ozone layer*, p. 232-233, 361-362.

¹⁸² MORRISETTE, Peter M, *The Evolution of Policy Responses to Stratospheric Ozone Depletion*, p. 819.

¹⁸³ ANDERSEN, Stephen O. and K. Madhava SARMA, *Protecting the ozone layer*, p. 201, 205, 231.

¹⁸⁴ BENEDICK, Richard Elliot, *Ozone Diplomacy*, p. 118, 119, 135.

¹⁸⁵ ANDERSEN, Stephen O. and K. Madhava SARMA, *Protecting the ozone layer*, p. 229, 232, 362.

Finally, the scope of utilization was another important aspect. Although the ODSs replacement was within the global measures related to substantial amount of financial resources as well as the volume of goods, it cannot be characterized by its all-encompassing connection with majority of daily use products. Hence, the substitution was rather concerned with the sector-oriented part of the global economy, albeit its size was definitely large.

The outcome of this development was the formulation of position supporting the introduction of the regulatory measures, shared with national governments. Hence, one cannot observe aggressive pressure towards the governments when it comes to promoting its interest. It was rather the mutual cooperation of the two vital entities. And as for the relation with other actors, it might be characterized similarly. Therefore, the later adopted regulations were marked with the unprecedented industry-government cooperation,¹⁸⁶ that led to the “win-win” situation – the ozone layer gained protection and the ODSs were effectively and at reasonable cost substituted.¹⁸⁷

Following part is formed by the certain interconnection of actors, their mutual overlaps of preferences and relations with governments. The reason works on the simple fact that with ongoing development, all actors pursued the same goal – find a solution to global issue. As for the other actor, the general public, its attitude was distinct. From the very beginning of the scientific discoveries, the position was strongly oriented towards the necessity to act. Overall, there were several reasons for a strong interest in the regulatory measures.

First of all, it was the scientific knowledge, indicating the size and severity of the issue. In this respect, particular shock was caused in 1985 by the discovery of the ozone hole, which hit the certain part of the population to that extent it perceived the matter as a direct threat to its existence. Similarly, the confirmation of the direct link between the CFCs and the ozone depletion intensively affected the public perception.¹⁸⁸ Naturally, it increased the interest and awareness within the population,¹⁸⁹ which since then continued basically uninterrupted.

¹⁸⁶ BENEDICK, Richard Elliot, *Ozone Diplomacy*, p. 200.

¹⁸⁷ ANDERSEN, Stephen O. and K. Madhava SARMA, *Protecting the ozone layer*, p. 341.

¹⁸⁸ LANG, Winfried. Is the Ozone Depletion Regime a Model for an Emerging Regime on Global Warming?. *UCLA Journal of Environmental Law and Policy* [online]. 1991, 9(2) [cit. 2019-04-02], p. 166-167. ISSN 1942-8553. Available at: <https://escholarship.org/uc/item/06q8v225>

¹⁸⁹ GEHRING, Thomas, *Dynamic International Regimes*, p. 235.

The second reason was represented by the broad media coverage. The ozone depletion received a truly massive space within the media, whether in the form of the newspaper articles, professional sources, magazines or broadcasts. As for quantified data, individual analyses demonstrate truly skyrocketing interest in coverage of the ozone depletion during the 1980s and 1990s. The vivid depiction of media covering the ozone depletion and its perilous effects easily presented the power of the issue. Hence, the media constituted a very successful mobilizing element within the population, which also in a very simple way transferred the scientific knowledge to people all around the world.¹⁹⁰

Finally, and most importantly, there is an unquestionable evidence that the ozone depletion has a direct impact on the population to that extent it threatens the health. Based on the scientific research, it was found out that exposure to the UV radiation, against which the unimpaired ozone layer should shield, results in a severe health implications. In this context, data comprising increased risk, particularly of the skin cancer or eye cataract, was presented.¹⁹¹ In addition to the direct and truly serious health effects, the second adverse fact is that the loss of ozone protection is the burden that affects the entire population without exception. Therefore, the general public swiftly identified itself with the stance that the risk associated with the using of ODSs is unacceptable and needs to be addressed. This conviction was also further reflected in the political interest of other actors.¹⁹²

On the whole, the general public was undoubtedly one of the leading actors within the establishment of the ozone regime.¹⁹³ As the scientific community published its groundbreaking findings, the general public began to hold tangible facts about its very own impact on the atmosphere, which was considered unacceptable.¹⁹⁴ The global issue that covered every human being and affected everyone to the most vulnerable point, human health, was a combination that resulted in a strong pressure on the national governments. Within the formulation of stance, the general public thus strongly compelled the particular national representatives to swiftly act.¹⁹⁵

¹⁹⁰ ANDERSEN, Stephen O. and K. Madhava SARMA, *Protecting the ozone layer*, p. 290-292, 352.

¹⁹¹ AGGARWAL, Anjali et al, *Depletion of the Ozone Layer and Its Consequences*, p. 1990-1991.

¹⁹² MORRISETTE, Peter M, *The Evolution of Policy Responses to Stratospheric Ozone Depletion*, p. 804, 807, 814.

¹⁹³ LANG, Winfried, *Is the Ozone Depletion Regime a Model for an Emerging Regime on Global Warming?*, p. 167, 171.

¹⁹⁴ CARON, David D. Protection of the Stratospheric Ozone Layer and the Structure of International Environmental Lawmaking. *Hastings Int'l & Comp. L. Rev.* [online]. 1990, 14 [cit. 2019-04-02], p. 760. Available at: <https://scholarship.law.berkeley.edu/facpubs/169/>

¹⁹⁵ ANDERSEN, Stephen O. and K. Madhava SARMA, *Protecting the ozone layer*, p. 352.

As stated, the thesis puts forward the global analysis of the regimes. In the end of the development, the states advocated the generally valid attitude, but for the sake of completeness, it should be pointed out that some differentiation in the interest and support of the industry took place. In addition to certain inconsistencies that are mentioned above, it was mainly the initial mismatch between the developed and developing states. From the perspective of developing countries, the reason for the weakened support for regulation was mainly the uneven responsibility for the ozone depletion. Developing countries very little contributed to CFCs' production and consumption and did not want to bear the burden of elimination of the substances.¹⁹⁶

Certain differences might be also observed when it comes to specific regions. The role of industry was mainly prominent in the major industrialized countries of Europe and North America (alternatively also in Japan and Soviet Union), which contributed most to the CFCs' consumption and production. A more limited role and interest of the industry thus might be expected especially in regions such as Latin America or Africa, as they very little contributed to the overall amount. However, exact distribution cannot be determined since even industrialized countries stood against each other (especially the EC with Japan and Soviet Union against Toronto Group) and even some less industrialized regions like Latin America and Africa comprised countries with ODSs production (e.g. Brazil or South Africa).¹⁹⁷ Similarly, certain differences would be probably found within the general public too, given to the varying media coverage in certain regions or the participation within NGOs. With regard to their approach, NGOs in Africa and Latin America rather cooperated with the governments, compared to the Europe and North America, where the governments were under pressure from environmental organizations.¹⁹⁸

Scientific community and academia as an other actor played an irreplaceable role within the ozone regime. As demonstrated, it was the unforeseen discoveries, published reports as well as the unrelenting effort to push the knowledge forward, which compelled the society to pay attention to the issue. Initially, the scientific community only relied on hypotheses and unconfirmed assumptions, hampering due to this uncertainty more strenuous requirements for protection.

¹⁹⁶ EPSTEIN, Graham. Governing the invisible commons: Ozone regulation and the Montreal Protocol. *International Journal of the Commons* [online]. 2014, 8(2) [cit. 2019-04-03], p. 351, 352. ISSN 1875-0281. Available at: <https://www.thecommonsjournal.org/articles/10.18352/ijc.407/>

¹⁹⁷ GEHRING, Thomas, *Dynamic International Regimes*, p. 339.

¹⁹⁸ ANDERSEN, Stephen O. and K. Madhava SARMA, *Protecting the ozone layer*, p. 332.

However, over the years the more steadfast evidence of the link between CFCs and ozone depletion was presented. Such findings undoubtedly promoted the understanding of the vital relation and alerted actors about its validity.¹⁹⁹ In essence, the scientists formed themselves into a first group of advocates of the regulatory actions as they comprehended the severity and scope of the issue. Subsequently, possession of such weighty arguments was sufficiently meaningful to prompt the national governments to act.²⁰⁰ At the very beginning, national-governments thus emerged at the centre of pressure of the scientific knowledge. Nevertheless, over time their efforts started to overlap and formed a crucial interaction from which (among other factors) the regulatory instruments were created.²⁰¹

With regard to the following actor, the thesis analyses the role of the activists, environmental NGOs and other corresponding entities. The unification of the actors in this part is based on the fact they acted almost as a single organism. As for the particular motives and interests, environmentalists from the very beginning evinced the signs of the proactive approach in accordance with the protection steps. Their far-reaching activities ranged from raising the public awareness, political action to even technology promotion and cooperation activities with industry and governments.²⁰² Overall, these tasks and goals were shared by many organizations²⁰³ all around the world, however, the tools and strategies could slightly differ in diverse locations (economic reasons, etc.).²⁰⁴

In total, the scope of employed tools was considerably vast and included the boycotts of ODSs, public awareness campaigns, advocacy of policy measures, creation of the media coverage, protest actions at chemical facilities or coercion upon the industry and government to implement protection actions. At the same time, it cannot be argued that its green policy was unsubstantiated and solely coercive. On the contrary, their attitude was built on the scientific basis and up-to-date technological developments.²⁰⁵

¹⁹⁹ FALKNER, Robert, *The Business of Ozone Layer Protection*, p. 108, 131.

²⁰⁰ EPSTEIN, Graham, *Governing the invisible commons*, 339, 352.

²⁰¹ BENEDICK, Richard Elliot, *Ozone Diplomacy*, p. 5, 314.

²⁰² ANDERSEN, Stephen O. and K. Madhava SARMA, *Protecting the ozone layer*, p. 268, 323.

²⁰³ Among the most influential were, for example, the Friends of the Earth or Greenpeace.

²⁰⁴ *Ibid.*, p. 326, 332.

²⁰⁵ *Ibid.*, p. 326-327, 334, 336, 341.

As for the relation to the other actors at the level, besides the focus on the general public, the most important link was towards the national governments and industry. As already noted, the task was twofold. Firstly, environmentalist exerted intense pressure on both actors so as to prompt them to address the issue, through the effective, preferably the phase-out measures. Contrarily, the mutual collaboration among the actors was gradually established so to as accelerate the research and find a solution.²⁰⁶ Similarly as the above-analysed actors, the role of activists and NGOs is highly emphasized within the regime, constituting one of the determinants of the later success.

Within the group of main entities, the role of the external actors should not be omitted as well, especially with regard to the UNEP. It acted as a vital proactive coordinator of international actions, in whose framework the global progress of actors took place.²⁰⁷ It undoubtedly contributed to the later achievements of the regime.

The national governments constitute the last actor at the Level II. As demonstrated throughout the analysis, owing to the pressure from other entities, as well as its own conviction to address the issue, the national governments actively sought to introduce the regulatory measures. Moreover, it might be determined that the co-operation among the industry, governments, NGOs and scientific community was truly unprecedented.²⁰⁸ Subsequently, this setting in the form of output was transferred to the international level.

2. International level (Level I) – international negotiation

The negotiation process through the formulation of national government policy with the influences of domestic actors proceeds to the second phase. At this point, it is important to focus on the typical national win-set that leaves the Level II as the basis for the negotiator at Level I. As for the overlap, the actors to a large extent find a broad consensus among themselves within the interests and motives, resulting in the considerable overlap area. Without distinct exception, they unanimously share the fundamental goals and assign to the negotiation a greater chance for a success. The role of the negotiator is thus facilitated since advocates a unified position without the need to balance between contradictory interests.

²⁰⁶ ANDERSEN, Stephen O. and K. Madhava SARMA, *Protecting the ozone layer*, p. 325-326, 333.

²⁰⁷ MORRISETTE, Peter M, *The Evolution of Policy Responses to Stratospheric Ozone Depletion*, p. 807-808.

²⁰⁸ CANAN, Penelope et al. Introduction to the special issue on ozone layer protection and climate change: the extraordinary experience of building the Montreal Protocol, lessons learned, and hopes for future climate change efforts. *Journal of Environmental Studies and Sciences* [online]. 2015, 5(2) [cit. 2019-04-07], p. 113. Available at: <https://link.springer.com/article/10.1007/s13412-015-0224-1>

As for the other aspects of win-sets, one might observe further beneficial base for the negotiation. All actors were relatively distinctively able to define and express their preferential stance, without any ambiguity within the expected behaviour. Their attitudes were transparent and helped to negotiations in the form of the clearly demanded direction of the development.

With regard to the general nature of the negotiations, the overlapped win-sets, despite often demanding bargaining, helped the entire course. Overall, the negotiations were linked with the constant endeavour of the pragmatic consensus at all phases so as to direct the vast majority of the countries towards the commitment to address the global issue. This effort was also reflected in the actual wording of the legislation so as not to leave the countries out of the protection framework (i.e. sometimes at the cost of the weaker regulations).²⁰⁹

As for the concrete form of the negotiations, the thesis proceeds to main actors who shaped the nature of the international level. As presented in the first chapter, the negotiations initially revolved around the contract in the form of convention. The main reason for this form was disagreement between the above-defined Toronto Group and the EEC. Although the former pursued a strong control framework, the EEC was more reluctant to this intention. The stances primarily differed over the limitation of the production capacity of the ODSs and the extent of the percentage reduction. Toronto Group, including United States, sought their counterpart to take more stringent measures (e.g. in the area of aerosol use) that they already implemented. Nevertheless, the ongoing discrepancies only hindered the negotiations.²¹⁰ With regard to the opposing and cautious stance of the EEC, the underlying principle among the states (especially the United Kingdom and France) was that they were not entirely convinced of the existence of the problem and required distinct evidence of the link between the ODSs and the ozone depletion.²¹¹ In this way, these two most prominent groups were formed at the very beginning, one actively promoting the negotiations under the effort to introduce strong regulations, the other holding a cautious and rather reluctant stance within these steps.²¹² Furthermore, it is also vital to note that the Soviet Union and

²⁰⁹ ANDERSEN, Stephen O. and K. Madhava SARMA, *Protecting the ozone layer*, p. 355, 357.

²¹⁰ MORRISETTE, Peter M, *The Evolution of Policy Responses to Stratospheric Ozone Depletion*, p. 809.

²¹¹ *Ibid.*, p. 800, 806.

²¹² CARON, David D, *Protection of the Stratospheric Ozone Layer and the Structure of International Environmental Lawmaking*, p. 758.

Japan stood alongside the EEC,²¹³ uniformly opposing the regulatory framework. Being among the main producers of the CFCs,²¹⁴ they constituted important actors at this level.

Initially, the negotiations were thus marked by various proposals from both sides that, however, hardly found the understanding within the second group.²¹⁵ Nevertheless, as the negotiations unfolded, the countries were eventually able to come to the agreement and approved the Convention, since the opposing stances gradually began to converge. Subsequently, this continuous shift not only led to the crucial approval of the Protocol, but the regime was within the following years further strengthened by the continuing negotiations. In total, several factors contributed to this turning point. It was primarily the changing intransigent position of the EC under the pressure from the general public and lobby of the environmental organizations.²¹⁶ Furthermore, scientific community gradually more and more confirmed the adverse impact of the ODSs on the ozone layer. Moreover, if there would not be an agreement, the EC was concerned over the potential trade sanctions in case of the unilateral steps of the United States.²¹⁷ In addition, protracted negotiations eventually reached a flexible form of the contract, comprising the consensual position of the actors. Finally, it was the very actors within the EC (especially Germany), who significantly changed the position and prompted the Communities to take a more active role.²¹⁸

As far as the other important actors are concerned, the developing countries, certain position is already demonstrated within the first stage. Nevertheless, it is appropriate to present the influence in relation to the international negotiations as well. Looking at the initial position, countries spoke out against intentions to introduce regulatory measures. As part of the negotiations, they held a stance that such a burden would be unfair since they marginally contribute to the production and consumption of the ODSs, hence also little to the implications of the ozone depletion.²¹⁹

²¹³ BENEDICK, Richard Elliot, *Ozone Diplomacy*, p. 42.

²¹⁴ GEHRING, Thomas, *Dynamic International Regimes*, p. 339.

²¹⁵ BENEDICK, Richard Elliot, *Ozone Diplomacy*, p. 42-43.

²¹⁶ LANG, Winfried, *Is the Ozone Depletion Regime a Model for an Emerging Regime on Global Warming?*, p. 167.

²¹⁷ MORRISETTE, Peter M, *The Evolution of Policy Responses to Stratospheric Ozone Depletion*, p. 811.

²¹⁸ FALKNER, Robert, *The Business of Ozone Layer Protection*, p. 123.

²¹⁹ SCOTT, Gary L., Geoffrey M. REYNOLDS and Anthony D. LOTT. Success and Failure Components of Global Environmental Cooperation: The Making of International Environmental Law. *ILSA Journal of International & Comparative Law* [online]. 1995, 2(1) [cit. 2019-04-22], p. 57. Available at: <https://nsuworks.nova.edu/cgi/viewcontent.cgi?article=1012&context=ilsajournal>

Moreover, developing countries did not agree with the denial of benefits stemming from the use of the ODSs that were already utilized by developed countries and to which the developing countries (e.g. India) were only lately getting through the technological development. In this context, powers such as China or India were among the representatives of this developing group.²²⁰ Nevertheless, as in the first case, their position started to gradually change, particularly on the basis of the incentives for the developing countries within negotiated contracts,²²¹ as well as the attainability of the alternatives.²²² Developing countries were thus gradually more and more willing to follow the accession, also given to the provisions regarding the non-participation. Afterwards, such a course of the negotiation was reflected in the concluded contracts, continuing to the last stage of the process.

3. National level (Level II) – ratification of the contract

At this point, the process reaches its final stage as the contract becomes the subject of the individual governments' approval. Initially, the thesis presents the position of the actors and subsequently shifts towards the analysis of the contract. With regard to the individual actors, the process at the domestic level took place within the similar boundaries of the aforementioned interests and followed the previous developments. If the process encountered with some discrepancies, these disagreements were partially transferred to this stage as well. However, nothing changed the fact that the development and the constantly valid overarching consensus gradually led to a broader agreement among the actors. The efforts continued to revolve around the necessity to curb and reverse the ongoing effects of the global issue. As a result of partially embedded coherence, the process gradually reached its goal and the legislative instruments were ratified. In view of the approved treaties within the regime, as well as the need to take a closer look at the structure of the contract, the thesis proceeds to the overall analysis. In accordance with the required conclusions, the structure of the win-set is particularly crucial at this point.

²²⁰ SCOTT, Gary L., Geoffrey M. REYNOLDS and Anthony D. LOTT, *Success and Failure Components of Global Environmental Cooperation*, p. 54.

²²¹ CARON, David D, *Protection of the Stratospheric Ozone Layer and the Structure of International Environmental Lawmaking*, p. 770, 775.

²²² SCOTT, Gary L. et al., *Success and Failure Components of Global Environmental Cooperation*, p. 54.

As for the first Putnam's principle, dealing with the size of the win-set, ozone regime could be characterized by a sufficiently broad delimitation. As concluded, the first beneficial aspect was the visible agreement among actors to adopt the regulatory measures and the considerable overlap of national win-sets. Hence, at the very beginning, this consensus set a clearly defined and vast area on which the actors subsequently further acted and which was not subjected to modifications. And although individual adjustments in accordance with the interests of the actors were accepted, the underlying principle was not changed throughout the development. Likewise, the main actors, public and industry, not only complied with this setting, but in the course of time also collectively pushed the initiatives forward.

With regard to the second principle, a wider win-sets tend to complicate negotiator's position. However, the efforts to push around the negotiator were not observed as the very underlying principle bound actors to maintain a similar direction of the process. Hence, the negotiators did face the requirements for concessions, but the core of the negotiation remained to be superior to these practices and ensured the steady and relatively well-balanced position. Overall, these attributes jointly established the form of the ozone regime, whose main patterns are reflected in the following result:

- 1) The contract is ratified – international cooperation is characterized by a strong framework that draws on the role of the industry, which expresses support and interest and actively promotes the regulatory measures that are acceptable with regard to the cost of their implementation; strong international cooperation further stands on the globally distinct support and interest of the general public, which perceives the issue as a strongly adverse in relation to its vital overlaps (especially health risks) that have the impact on the overall population; finally, the international cooperation is under the agreement of the strong collaboration supported by the considerable overlap of the national win-sets, which contribute both to facilitation of the negotiations and the strengthened efficiency of the regime through the joint and proactive participation of all relevant actors

3.2. Evaluation of the regime

The chapter has preoccupied with the negotiation process within the ozone regime, applying a three-stage model based on the Putnam's two-level game theory. In essence, the process embodies the general model that comprises all relevant actors both at the national and international level, seeking to put forward the overall context of the negotiation

procedure. The aim was to analyse and subsequently present a comprehensive logic that occurs within the regime and concurrently devote a primary attention towards the two main Level II actors and their influence on the international cooperation.

As for the negotiation process, the analysis was commenced at the Level II where it addressed the particular actors and their motives and interests, corresponding attitudes towards the regulatory measures, as well as the influence on the national governments and the relations among each other. Afterwards, the process carried on to the second phase at the international level. At this point, the analysis of the typical national win-set was put forward and with regard to main actors, the thesis also defined the actual arrangement of the negotiation. The concluded form of the contract was subsequently transferred to the final phase at the national level. At this point, the attention was devoted both to the actors and the analysis of the ratified contract.

With regard to the independent variable 1, the thesis concludes that industry supports the introduction of the regulatory measures, as well as expresses a clear interest in the protection approach. Throughout its development, the industry became one of the leading entities actively striving to accelerate the entire process and constituted key determinant of regime's success. In the context of its position, it perceived the costs of substitutes as acceptable and the adequate amount was also subsequently reflected within the development efforts. In addition, the prospect of a relatively swift technological attainability of substitutions was also crucial at this point. Therefore, the total costs and form of the financial resources corresponded to abilities of the industry to support regulatory steps, representing significant determinant for the strong international cooperation. In accordance with these results, the hypothesis 1 is confirmed.

As for the independent variable 2, the thesis concludes that from the very beginning of awareness, the general public evidenced the signs of the strong support and interest in the topic. With the assistance from the media coverage, the all-encompassing concern was globally expanded and general public demonstrated distinct endeavour to act so as to halt the ozone depletion. The substantial effort was primarily based on the global scope of the effects alongside the intense impact on the population, reaching the most vulnerable and serious areas such as the human health. In the face of the persistent implications, the societal conviction about its unacceptability was thus formed. In line with this position, the general public not only enhanced the response within the regime, but also led to a strong international cooperation. Based on these finding, the hypothesis 2 is confirmed.

Within the independent variable 3, the thesis comes to the conclusion that based on the converging and coincident interests and preferences of the actors, the national win-sets are largely overlapped. All relevant entities were consistent and often intersecting within the strong cooperation attitude and the absence of the contradictory stances ensured their broad consensus, resulting in the facilitated negotiations. Similarly, the very definition of the win-sets was built on the strong and clear determination that enabled the negotiators to work with the transparent basis. The connection of these major aspects then constituted an important determinant of the strong international cooperation, confirming the hypothesis 3.

Finally, the values of the independent variables exert a positive nature alongside the findings that the strong international cooperation is within the ozone depletion achieved. The following analysis in the plastic pollution regime will similarly conclude the value of variables in relation to the occurrence of the given phenomenon and enable the final assessment. For the purpose of summary, the Table 2 provides the setting and state of the applied variables within the ozone regime.

Table 2: The state of the individual variables within the ozone depletion regime

Ozone depletion regime		
Industry's costs and economic interests <i>(Independent variable 1)</i>	Public's interests, support and perception <i>(Independent variable 2)</i>	Overlap of the national win-sets <i>(Independent variable 3)</i>
<ul style="list-style-type: none"> • Acceptable and relatively small costs of the regulatory measures • Expressed support and interest in the field (active cooperation with other actors) • Factor of expansion and availability of substitutes (their economic efficiency) • Own investments (economic interest) 	<ul style="list-style-type: none"> • Substantial interest and support within the regime • Distinct perception of the issue as serious • Global impact on the overall population • Strong affects and implications (health risks) 	<ul style="list-style-type: none"> • Accordance of the interests and preferences under the shared agreement of the strong collaboration • Large overlap of the win-sets and unified structure • Clear and strong definition of win-sets • Facilitated negotiation position and basis for strong cooperation
Strength of the international environmental cooperation <i>(Dependent variable)</i>		
<ul style="list-style-type: none"> • Strong international cooperation within the ozone regime as a result of the positive values of the main independent variables, determining the occurrence and nature of the given phenomenon 		

4. Explaining cooperation in the field of plastic pollution in the sea

This chapter presents the second analysis of the negotiation process which through its occurring factors forms the final nature of the international cooperation. As in the case of the ozone regime, the thesis applies the Putnam's two-level game theory, which follows the logic and development of international negotiation in relation to particular actors both at the national and international level. The analysis starts again with the setting at the national level, then proceeds to the international level and eventually returns to the national level.

4.1. Analysis of the negotiation process

Contemporary, plastics in the form of material occur in almost every field of society and their use is tremendous. Such a worldwide utilization is predominantly determined by the favourable properties such as durability, formability, strength or low cost. At the same time, it serves as a convenient substitute for almost every material and its attributes are irreplaceable by any property known up to now. This leads to the fact that plastics and all other relevant industry entities are experiencing a massive boom driven by the ever-increasing demand for the production that aptly falls into their interest. However, there is a broad consensus that the solution of the plastic pollution in the sea requires involvement of every area of society.²²³ Without this unified and coherent approach there will be constantly missing some of the principal components. Bearing this necessity in one's mind, the thesis proceeds to a three-stage analysis.

1. National level (Level II) – prior bargaining

As stated, national governments are exposed to pressure and influence of several domestic actors. One of those is the industry, which is primarily preoccupied with financial motives when it comes to its conduct. However, it is first necessary to understand the setting of this entity. For one reason, like majority of other subjects in the field, economic-minded companies put the profits to the forefront of their interests and oversee the aspects of its business activity. For another, available data demonstrate that annual revenue of the plastic industry in Europe amounted staggering \$350 billion in 2016²²⁴ and it is expected that in

²²³ BERGMANN, Melanie, Lars GUTOW and Michael KLAGES, *Marine Anthropogenic Litter*, p. XIII.

²²⁴ DANGLADE, Raphaël and Adrián TÓTH. Oceans Governance and Plastics: A Review of the Marine Plastic Landscape. *Friends of Europe* [online]. 2018 [cit. 2019-03-23], p. 7. Available at: https://friendsofeurope.org/sites/default/files/2018-03/Oceans%20Factsheet_05032018_update.pdf

2020 the global plastics market will reach approximately \$654 billion.²²⁵ So with regard to the tendency of market growth and its revenues, it is not surprising that industry is above all concerned about the costs and prices as they represent the main determinants of preferences.²²⁶ Nevertheless, such interests and motives substantially collide with the fundamental features of the strong international cooperation. International regulations require certain costs and given to the nature of the plastics, its worldwide utilization and extension, considerable divergence with relation to industry emerges. This relation is further demonstrated when taking a look at the industry's stance towards the regulations.

Already in 1970s, the minor regulatory initiatives in the form of the request to enhance and conduct the emission controls in manufacturing plants emerged as it was intended to reduce the amount of plastics (especially pellets) that would eventually enter the marine areas. Nevertheless, the particular efforts were delegated to industry, which subsequently turned out to be ineffective decision. Nowadays, similar result are spotted within the controls of inventories (use and emission of plastics in products), since occasionally the industry is reluctant to provide an information and disrupts the regime at the very beginning.²²⁷

Such an industrial resistance is contemporary settled among reasons of malfunctioning of the current governance framework as it prevents countries to impose the required regulations. Moreover, a resistance is gradually gaining the strength in line with the growing economic-political power of the industry. The ever-powerful industry is simply driven by the success of plastic growth consumption and as Dauvergne aptly summarizes, “(...) *industry is fighting any efforts to strengthen or consolidate regulations – a resistance that intensifies as the threat to their profits increases.*”²²⁸ In this context, it is appropriate to note that industry is enormously large entity and its individual actors are jointly exercising immense power. There are many relevant stakeholders that thrive on the current development and uniformly possess huge influence. In this regard, profits flow to corresponding chemical, oil, food processing or other plastics-manufacturing companies.²²⁹

²²⁵ Plastics Market Worth \$654.38 Billion By 2020: Grand View Research, Inc. *PR Newswire* [online]. 2015 [cit. 2019-03-23]. Available at: <https://www.prnewswire.com/news-releases/plastics-market-worth-65438-billion-by-2020-grand-view-research-inc-511720541.html>

²²⁶ BERGMANN, Melanie, Lars GUTOW and Michael KLAGES, *Marine Anthropogenic Litter*, p. VII.

²²⁷ *Ibid.*, p. 15, 239.

²²⁸ DAUVERGNE, Peter. Why is the global governance of plastic failing the oceans?. *Global Environmental Change* [online]. 2018, 51 [cit. 2019-03-18], p. 23, 29. Available at: <https://linkinghub.elsevier.com/retrieve/pii/S0959378017314140>

²²⁹ *Ibid.*, p. 22, 29.

Industry sector thus within the very phase of prior formulation of attitudes holds a distinct role towards the regulatory measures as with its financially determined steps distinctively reject any limitation of its financially driven behaviour. Such a conduct might be simply defined as resistant. In the same way, it acts towards the national governments so as to conveniently direct their upcoming formulation of instructions for Level I. This approach is promoted together with another associated actor at the national level – the industry lobby groups.

Moving to the specific examples, United Kingdom might be the first one as it witnessed the lobby pressure to that extent that national recycling targets were reduced. Eventually, it turned out that reason of this step was one of the major plastic industry associations in the country.²³⁰ The fact that the pressure reached the highest levels in the country, the Government itself, is the very indicator how much power the lobby groups possess. As another example may serve the experience from the USA where it was adopted in several states that introducing ban on the plastic bags is “illegal”. Later it was ascertained the powerful lobby groups and plastic bag manufactures pushed this measure forward.²³¹

Moreover, the American city of Philadelphia planned to implement ban on plastic bags in 2009, after a pressure from the plastic bag alliance and retailers it withdrew from this intention.²³² To present one more example, lobby groups were actively engaged during the drafting of the European Union (EU) plastic strategy,²³³ trying to bypass binding measures.²³⁴ Moreover, this is not the exception in the EU where corporate lobbies target representatives of states so as to tailor convenient measures for them.²³⁵

²³⁰ RODIONOVA, Zlata. Government cut recycling targets after lobbying from plastics industry. *Independent* [online]. 2017 [cit. 2019-03-23]. Available at:

<https://www.independent.co.uk/news/business/news/government-recycling-targets-cut-pressure-plastics-lobbying-industry-a7585501.html>

²³¹ SEYDEL, Laura Turner. Powerful Lobbying Groups Want to Make Sure You Keep Using Plastic Bags. *The Huffington Post* [online]. 2017 [cit. 2019-03-23]. Available at: https://www.huffingtonpost.com/laura-turner-seydel/powerful-lobbying-groups-want-to-make-sure-you-keep-using-plastic-bags_b_8307416.html?guccounter=1

²³² CLAPP, Jennifer. The rising tide against plastic waste: Unpacking industry attempts to influence the debate. In: FOOTE, Stephanie and Elizabeth MAZZOLINI. *Histories of the Dustheap: Waste, Material Cultures, Social Justice* [online]. Cambridge, MA: MIT Press, 2012, p. 211 [cit. 2019-03-23]. ISBN 9780262017992. Available at: <https://www.researchgate.net/publication/287301482>

²³³ European Strategy for Plastic in a Circular Economy

²³⁴ CANN, Vicky. Plastic Promises: Industry seeking to avoid binding regulations. *Green European Journal* [online]. 2018 [cit. 2019-03-23]. Available at: <https://www.greeneuropeanjournal.eu/plastic-promises-industry-seeking-to-avoid-binding-regulations/>

²³⁵ CANN, Vicky and Belén BALANYÁ. Captured states: when EU governments are a channel for corporate interests. *Corporate Europe Observatory* [online]. 2019 [cit. 2019-03-23], p. 7-8. Available at: https://corporateeurope.org/sites/default/files/ceo-captured-states-final_0.pdf

However, this formation of the definite and resistant opinion is not only the case in relation to the national governments that embody the most essential actor for the industry within the negotiation process. Through its powers, it also seeks to influence the remaining actors of the level in order to weaken their opposing stance and promote its own interests. In order to attain its deep-rooted motives, industry and lobby groups often in a fierce way pursue its aim using all means at their disposal to prevent regulatory measures. Scope of instruments is ranging from the formation of critical attitude, undermining the norms that prove the negative impact of plastics on the environment (contrarily, they point to environmental virtues), emphasizing the individual customers' choice rights, views of the recycling as a core solution to litigations.²³⁶

The analysis of the industry and associated lobby groups therefore demonstrates the very setting of these actors whose profit-oriented conduct most importantly leads to the efforts to influence the national governments in their policy-making for the next phase of the process. In this respect, the industry and lobby groups are openly and resolutely at odds with any regulatory initiatives. From their point of view, it would lead to unacceptable implementation costs and reduction in plastic production from which the actor significantly profits. Moreover, implementation costs are for industry also linked to the massive plastics expansion since at least partially effective regulations in a global scale would require tremendous amount of resources.

The general public is the second main entity under this chapter's analysis. The experts across the literature concur²³⁷ that public awareness and concern have rapidly increased in the last years. And although the signs of public interest in environmental issues date back to the very beginning of the environmental regimes, 1970s, it was not until recent years the topic of plastic pollution in the sea attracted the global attention. When taking a look at the motives and interests, it might be undoubtedly designated as an environmentally driven actor whose aim is to promote protection measures and benefit from its results. Hence, the national governments once again embody the core of the attention as general public pushes its formulated interests forward in the more or less one-way oriented form - adoption of the stringent anti-plastic legislation.²³⁸

²³⁶ CLAPP, Jennifer, *The rising tide against plastic waste*, p. 207-209.

²³⁷ JOYNER, Christopher C. and Scot FREW, *Plastic pollution in the marine environment*, p. 33.
or VILLARRUBIA-GÓMEZ, Patricia, Sarah E. CORNELL and Joan FABRES, *Marine plastic pollution as a planetary boundary threat*, p. 217.

²³⁸ DERRAIK, José G. B, *The pollution of the marine environment by plastic debris*, p. 848.

From time to time, specific cases and truly considerable signs of broad public pressure on governments are published, like the one from the United Kingdom. In 2018, dozens of thousands of people engaged in government consultation within the effort to combat the plastic pollution and take a stringent actions.²³⁹ In a similar vein, general public is further active in relation to other actors, especially the contradictory industrial companies. The occurring relation suggests itself as the general public forces industry to adjust its activity. As an example may serve the case from 2015 when public pressure made the chemical company to terminate the use of plastic scrubbers²⁴⁰ or public indignation that led several worldwide manufactures to take action with the aim to phase-out microbeads.²⁴¹

In this part, the general public's main interests and attitudes are presented, as well as the formulation of the pressures and relations with regard to other actors at the national level. However, at this point it is vital to provide more thorough analysis of this actor. The thing is that the perception and interests constitute the very important part, yet the scope of seriousness of the problem towards the general public that influences the final international cooperation, represents the other side of the matter. For that reason, the following part in a more detail analyses the elements of support, interests and motives, as well as puts forward the nature of the problem and its scope when it comes to its global impact on the population.

The overall nature of the general public is composed of several different, often interlinked, factors. The particular incidents and tangible cases are the first of these factors that shape the current position of the global public towards the issue. One of such significant examples is from 1999 when documentation of the Great Pacific garbage patch swiftly increased the concern of the public. The discovery got an attention and sparked a considerable public rage towards the amount of plastic in the sea.²⁴² In the course of following years, the gravity of the issue gained strength as the plastic pollution was gradually getting closer to the public. Similarly, after the discovery of microbeads in Great Lakes, there was recorded a significant increase in the concern of the general public.²⁴³

²³⁹ ELGOT, Jessica. UK public backs tough action on plastic waste in record numbers. *Guardian* [online]. 2018 [cit. 2019-03-24]. Available at: <https://www.theguardian.com/environment/2018/aug/18/uk-public-backs-tough-action-on-plastic-waste-record-numbers-consultation-latte-levy-tax>

²⁴⁰ BERGMANN, Melanie, Lars GUTOW and Michael KLAGES, *Marine Anthropogenic Litter*, p. 17.

²⁴¹ DAUVERGNE, Peter, *Why is the global governance of plastic failing the oceans?*, p. 26.

²⁴² VEGTER, Amanda C (et. al.), *Global research priorities to mitigate plastic pollution impacts on marine wildlife*, p. 236.

²⁴³ DAUVERGNE, Peter, *Why is the global governance of plastic failing the oceans?*, p. 26.

Another example might be the number of both coastal and island countries infested by plastic pollution. Among the most infamous places may be noted the Indonesian island Bali,²⁴⁴ Manila Bay, Philippines,²⁴⁵ or even startling locations such as the mentioned Antarctica. These increasingly frequent cases accumulate within the population and shape the general public opinion.

Overall, the general public attitude is necessary to understand as a certain case-by-case process that is through the particular events and factors (which are listed here) forming the final output. And these are the very incidents (as one of the factors) that have the impact, resonate in society, and then determine the interest of the society. At this point, however, it must be noted that such cases of massive plastic pollution are mainly issues of certain areas since they are recorded especially in the most affected places (e.g. Southeast Asia). In this case, there is thus no overarching global impact on the general public.

Media coverage as the second factor is undoubtedly linked with the first one since the global image and awareness of society are shaped through various forms.²⁴⁶ Number of documentary movies, news reports, web articles or various types of printed materials such as newspapers, books or magazines serve as an example. Similarly, scientific community is another factor which influences the environmentally oriented attitude of the general public. Every year dozens of new articles raising the awareness of the society are published and its amount is truly mounting. For instance, authors utilize the *Web of Science*,²⁴⁷ that allows to enter any keyword and observe the development. As for the *marine plastic pollution*, ever-growing tendency in publications per year might be detected. In 2015, there were 107 publications, in 2016 - 138, in 2017 – 210 and in 2018 already 358 (as of April 4, 2019). For comparison, in 2010 only 19 publications. The publicity of this scope clearly points to the increasing interest and concern.

²⁴⁴ OLIPHANT, Roland. Bali declares rubbish emergency as rising tide of plastic buries beaches. *The Telegraph* [online]. 2017 [cit. 2019-03-24]. Available at: <https://www.telegraph.co.uk/news/2017/12/28/bali-declares-rubbish-emergency-rising-tide-plastic-buries-beaches/>

²⁴⁵ The Plastics Pollution of Manila Bay. *Greenpeace* [online]. [cit. 2019-03-24]. Available at: <https://www.greenpeace.org/seasia/ph/Global/seasia/report/2006/8/the-plastics-pollution-of-mani.pdf>

²⁴⁶ Plastic Debris in the Ocean. In: *UNEP Year Book 2011*, p. 21.

²⁴⁷ Scientific service performing citation or keyword search, including a great scope of scientific publications based on the access to databases.

VEGTER, Amanda C (et. al.), *Global research priorities to mitigate plastic pollution impacts on marine wildlife*, p. 227.

The last factor represents the impact on the individual spheres of society. As the examples may serve the adverse pollution's conditions with regard to tourism (on which many economies vitally rely) or the area of fishing, which as a consequence of plastic debris might be seriously disrupted (see subchapter 1.2.). Therefore, the public awareness and concern are increasing in line with the tangible consequences. However, the direct effects “only” relate to the locals as the rest of the world is mainly exposed to media coverage.

Further analysis exposes that interests and perception are considerably affected by the plastic pollution in the sea, as well as there is considerable impact on many levels. Nevertheless, it is important to extract the vital fact that these consequences do not target the overall global population to the extent it would affect its daily life. Findings are rather related to the concrete locations that suffer from the direct consequences. These conclusions might be then also applied to one of the most important aspects of the general public, the human health, since it vitally determines the degree of severity.

The plastic pollution in the sea demonstrated its concrete effects on the marine environment and the life in it. Recently, similar questions have been raised in association with the risks to human health. In this context, the centre of attention are primarily the microplastics - plastic particles smaller than 5 mm.²⁴⁸ However, given to the relatively new impetus in recent years, scientific research with regard to the impact of the microplastics on human health is still ongoing and it will take some time to obtain accurate data.²⁴⁹ And even though there is an extensive debate over the human risks and consequences, no evidence-based data is available up to now. The public debate is thus conducted rather in a general way as the warnings predominantly appear in the form of potential effects through, e.g. already mentioned fish contamination. However, further scientific basis is not provided and the understanding to what extent, and if at all the human beings are exposed to risks, remains to be unknown.²⁵⁰

²⁴⁸ AVIO, Carlo Giacomo, Stefania GORBI and Francesco REGOLI. Plastics and microplastics in the oceans: From emerging pollutants to emerged threat. *Marine Environmental Research* [online], p. 3. 2017, 128 [cit. 2019-03-24]. Available at: <https://linkinghub.elsevier.com/retrieve/pii/S0141113616300733>

²⁴⁹ SHUKMAN, David. Indonesian study into health risks of microplastics. *BBC* [online]. 2018 [cit. 2019-03-24]. Available at: <https://www.bbc.com/news/science-environment-43913597>

²⁵⁰ ROYTE, Elizabeth. We Know Plastic Is Harming Marine Life. What About Us?. *National Geographic* [online]. 2018 [cit. 2019-03-24]. Available at: <https://www.nationalgeographic.com/magazine/2018/06/plastic-planet-health-pollution-waste-microplastics/>

At this point, it is crucial to comprehend the overall output. On the one hand, there is a considerable concern, interest and regional impact on the population. On the other hand, it is necessary to state that the real form of interest corresponds to the degree to which this issue really affects the individuals. Moreover, as it was demonstrated, the tangible problems that burden the inhabitants are primarily local or regionally oriented, often with regard to major plastic polluters (e.g. Indonesia). So, there is no doubt that general public is interested in the plastic pollution in the sea. Nevertheless, the direct and overarching impact on every human being is far from the real nature of the issue if we compare, for example, the areas in Southeast Asia and European countries. Hence, there is no comprehensive inclusion, something that is “hanging above” the world population as in the case of ozone depletion. Lastly, this conclusion does not diminish the seriousness of the plastic pollution, however, the direct and daily exposure of the world population to the adverse form, with clear health consequences, is not visible in this case.

Finally, as explained, the thesis performs a global analysis of the regime. Nevertheless, it is appropriate to note that certain patterns of conduct might vary both within the industry and public. Differences in interests might be associated with the factors such as the share and scope of the plastic-related industry within a country, determining production and consumption, etc. Similar findings might be expected within the general public, where the determining factor could be the scope of media coverage affecting the public awareness or degree of NGOs' influence in the country. Certain differences are also likely to be observed, for example, between regions or developed and developing countries, where some signs are already visible.²⁵¹ As for the specific geographic differences, the literature is limited within its focus on the regional interests of the industry and public, as it rather takes a look at the specific national examples or general attitude. With regard to the industry, it is at least partially able to derive the stance based on the volume of production in the region, and alternatively also the implemented regulatory measures.

²⁵¹ KNOBLAUCH, Doris, Linda MEDERAKE and Ulf STEIN. Developing Countries in the Lead—What Drives the Diffusion of Plastic Bag Policies?. *Sustainability* [online]. 2018, 10(6), 1994, [cit. 2019-04-07], p. 15. Available at: <https://www.researchgate.net/publication/325756340>

For example, Africa is relatively at the forefront of the protectionist activities (e.g. bag ban),²⁵² indicating the link with the region's production. Africa (together with Middle East) accounts for only 7 % of the world plastic production, thus the industrial interests are likely not to be so vigorous and powerful, as well as in the Latin America (4 %),²⁵³ contrary to industry's position in Europe, Asia or North America. With regard to this production, the interest of the public in the regions is most likely equally different, also taking the factor of the most polluted areas into account. Differences are likely to be seen in Africa and Latin America, where, unlike Asia (most polluted areas and considerable production) or Europe and North America (large production and strong media coverage), the interest of the public would be lowered.

At this point, the thesis proceeds towards the remaining actors as they possess the additional influence within this stage. Starting with the activists groups, the actor joins the advocates of the marine environment and pushes forward every proposal on agenda regarding its protection. The exerted pressure is predominantly reflected in two directions. Firstly, like the other actors, it is involved in a tangle of pressures so as to influence the only decision-making entity, national governments. Despite its limited abilities, from time to time, concrete achievements might be noticed. For instance, in 2014 the activists managed in state of Illinois, USA, to ban certain microbeads products, being the first jurisdiction in the world.²⁵⁴ Secondly, activists function as an unrelenting source of anti-plastic pressure towards manufactures and various segments of industry. Further example thus might be several large cleaning products companies that acceded to substitution of microplastics for non-plastic components.²⁵⁵ Nevertheless, it is necessary to note that this actor attains rather partial and predominantly local-oriented achievements as it cannot directly compete with large corporations and their power. Hence, the activists groups often hit the resistance of companies (e.g. demand to remove microplastics from cosmetics).²⁵⁶ In essence, it is as uneven combat that, however, does not downplay the importance of this actor.

²⁵² XANTHOS, Dirk and Tony Robert WALKER. International policies to reduce plastic marine pollution from single-use plastics (plastic bags and microbeads): A review. *Marine Pollution Bulletin* [online]. 2017, 118(1-2) [cit. 2019-04-20], p. 3-5. Available at: <https://www.researchgate.net/publication/313795795> and Africa is on the right path to eradicate plastics. *UN Environment* [online]. 2018 [cit. 2019-04-20]. Available at: <https://www.unenvironment.org/news-and-stories/story/africa-right-path-eradicate-plastics>

²⁵³ *Plastics - the Facts 2018*, PlasticsEurope [online].

²⁵⁴ HILDEBRANDT, Amber. Push to ban plastic microbeads from facial scrubs gains momentum. *CBC Canada* [online]. 2014 [cit. 2019-04-05]. Available at: <https://www.cbc.ca/news/technology/push-to-ban-plastic-microbeads-from-facial-scrubs-gains-momentum-1.2670960>

²⁵⁵ BERGMANN, Melanie, Lars GUTOW and Michael KLAGES, *Marine Anthropogenic Litter*, p. 239.

²⁵⁶ DAUVERGNE, Peter, *Why is the global governance of plastic failing the oceans?*, p. 26.

Moving to the scientific community and academia, actor's position revolves around its findings that fall into the efforts to introduce regulatory measures on the marine protection. Such a position then leads to relations with other actors at the national level, industry being the first one. As it was already noted, scientific circles become the recipients of the pressure especially from the industry for the sake of its own benefits. One of the methods is questioning the scientific knowledge through the crooked perception of plastics.

As for the second direction, it is the actor itself that aims both the national governments as well as the general public. The aim is to raise an awareness of the impact of the plastic pollution and to make an appeal to governments to address this state of affairs. For this purpose, it employs a broad scope of activities ranging from the presentation of findings, educational activities, calls for action and raising the alarm on the issue in question, providing advisory activities, potential solutions, etc. Obviously, the tools of coercion at disposal are limited, however, certain valuable and not necessarily negligible part the scientific field certainly plays. And those very findings and knowledge are among the main determinants that push countries in direction of negotiating binding agreements on the protection of the marine environment.²⁵⁷

Within the effort to present the comprehensive arrangement, the negotiation process is to some extent penetrated by the external actors as well. Firstly, it is the international community that has an impact on the individual states. In other words, states, as the main units, basically press themselves as they collectively commit to accept certain protection measures in the eye of the global attention. Secondly, individual IGOs alongside its own initiatives²⁵⁸ are spurring states to take action against the plastic pollution. Finally, many INGOs amplify the severity of the issue, promote the international cooperation, exert pressure on decision-makers and put the regulatory measures to the forefront.

The very national governments are the last actor at the national level. As noted, the thesis within the analysis of the negotiation process works with the genuine interest of the governments to promote international regulatory measures. Not only it corresponds to the accepted international treaties that are analysed above, but also to the position of the international community and even the individual national steps (e.g. plastic bag ban or regulations) all around the world.

²⁵⁷ DAUVERGNE, Peter, *Why is the global governance of plastic failing the oceans?*, p. 23.

²⁵⁸ *European Strategy for Plastic in a Circular Economy* adopted by the European Union in 2018 or *Global Plastics Platform* by the United Nations from 2018.

Overall, it is possible to assert that governments' activities have been for decades pursuing the reduction of the marine plastic litter.²⁵⁹ At the same time, national governments are also the very last segment of this phase under the negotiation process. The output of this prior stage, which is already modified by the above-analysed interests and motives, is the matter of the following stage.

2. International level (Level I) – international negotiation

The second phase proceeds to the negotiation at the international level, participated by the representatives acting on behalf of the individual states. Being under the pressure and efforts from other Level II entities, the national government altogether with its formulated policy transferred the output to this very phase. As the analysis within the Level I concluded, the output formulated by the national government leaves the national level relatively influenced and modified. Therefore, the instructions for the chief negotiator take precisely this form due to the prior-bargaining influences.

At this point, it is appropriate to take a look at the general win-set of the national governments. As for the overlaps of the win-sets, there is a considerable disruption as the actors' preferences break apart and diverge as a whole. Firstly, the individual preference bases due to the contradictory stance of the industry (as the fundamental actor) and lobby groups considerably differ, disrupting the overall concordance. Therefore, the extent of the overlap among win-sets is particularly little and corresponds to a decreased ability to achieve the success within the negotiation and the subsequent approval of the contract. Hence, the situation becomes more demanding for the negotiators since it is in their interest to take the all domestic actors' preferences into account. Correspondingly, the prospect for the strong international cooperation is diminished.

Further attribute is the strength and the clarity of the win-sets definition. Within the regime, the strength of the definition among win-sets vary, making it a problem especially when the actors' preferences differ. In case of the concurrent interests, the win-sets would be largely overlapped and their varying definition strength would not constitute such a significant factor. In case of the plastic pollution regime, especially the industry distinctively and strongly defines its position and openly presents its preference basis, establishing the expected behaviour for remaining actors.

²⁵⁹ XANTHOS, Dirk and Tony Robert WALKER, *International policies to reduce plastic marine pollution from single-use plastics (plastic bags and microbeads)*, p. 2-4.

Contrarily, the general public holding an opposing stance occurs in a partially blurry definition of its activity (different position in given areas, varying perception and support, etc.), thus the nature of the win-set not necessarily always presents a clear and well-defined framework. Finally, it follows that the position of the negotiator is not only difficult due to the opposing attitudes of the actors, but also because the particular win-sets become less transparent and predictable.

As for the negotiations, the thesis is not able to provide further form with regard to the major actors. The underlying reason is the lack of literature focusing on the individual entities and their position and influence within the negotiations at this level. The authors rather deal with the content of the contracts, their impact on the protection or marginal references to the negotiation, which are insufficient for presentation of the overall attitude of the main actors. Moreover, the contracts are, with regard to their focus, somewhat distinct (contrary to ozone regime and its relatively coherent framework and development line) and it would require a large amount of data from each contract's negotiation process to provide a comprehensive conclusion. Nevertheless, in general, the more complicated negotiation based on the divergent win-sets might be expected. The course of the negotiations is difficult since the contradictory interests are reflected at this stage. In this context, the process would be especially hindered due to the strong coercion from the participating industry groups.

As for the specific nature within the negotiation, there is a problem with regard to the very plastic material when negotiating the scope of the regulations. Plastics cover a wide range of types and they simply cannot be regulated or phased-out all at once due to their current use (in case it is a strictly plastics-oriented contract). Given to this fact, Level I scope of protection decreases in line with the regulated area (regulation of certain type of plastic). Nevertheless, if a concrete part of the plastics is regulated, the industry often substitutes it for another and the issue remains basically intact.²⁶⁰

As in the first case, the negotiation phase is subsequently followed by the adoption stage, shifting the contract to the last part of the process.

²⁶⁰ DAUVERGNE, Peter, *Why is the global governance of plastic failing the oceans?*, p. 24, 29.

3. National level (Level II) – ratification of the contract

The thesis reaches its final stage to which from the Level I enters the internationally negotiated contract that alongside its newly established form also reflects the prior attitudes of Level II. Therefore, at this point the contract finds itself within the procedure of approval by individual governments. The following part analyses the continuing role of the main actors, puts forward the impact of their position on the results stemming from the treaty as well the eventual impact on the international cooperation. Finally, the thesis supplements the overall context and defines other relevant outputs of this stage that go beyond the role of the public and industry. In this respect, the chapter seeks to provide a comprehensive perspective and thus also presents the other possibilities that may occur in the given regime and that influence the strength of the international cooperation.

Once again moving to the actors at the Level II, the formulated attitudes from the first phase remain to be consistent and follow its prior form. At this stage, the influence of the actors on the national governments is with relation to the given treaty limited to either its approval (ratification) or rejection. As shown in the first phase, the industry and lobby groups are characterized by the resistant approach.

However, with regard to national governments, it is possible to determine further employed approach in the form of pledges. Several examples have demonstrated that in case of the specific restrictions, both the industry and lobby groups managed to postpone, avoid or completely reverse such steps. As an example may be the microbeads and the global effort to limit or even completely phase-out their occurrence in certain products. Despite the already existing process of phasing-out, companies do not meet deadlines, take advantage of the loopholes in legislation and make an empty promises.²⁶¹ At the first sight, the publicly declared pledges might seem like a crucial step to make the society less plastic. However, as the practice is revealed, it is rather a gesture rooted in public relations' methods. Actions like the re-branding and sustainability usually just aim to attain positive perception of the public.²⁶² At this stage, the industry introduces such an approach both before and after the eventual approval of the contract. As for the other actors, additional steps in relation to

²⁶¹ DAUVERGNE, Peter, *Why is the global governance of plastic failing the oceans?*, p. 26.

²⁶² SCHRÖDER, Patrick. Under the surface – the global politics of ocean plastic pollution. *Institute of Development Studies* (Sussex University) [online]. 2018 [cit. 2019-03-25]. Available at: <https://www.ids.ac.uk/opinions/under-the-surface-the-global-politics-of-ocean-plastic-pollution/>

national governments do not occur too much as they continue in endeavour to promote its position. Therefore, the same principles are valid for the public as well.

The thesis works with the conception that a potential international treaty that has undergone the negotiation process is eventually approved by the national government. It corresponds to the first chapter analysing the approved treaties and only then it can be subjected to a following determination of patterns in relation to the industry and public. Moving to the analysis of the approved contract, in relation to the above-presented examples and conclusions, the size of the win-set becomes the centre of interest. The first Putnam's principle states that the broader the Level II win-set is, the greater chance that the negotiated Level I contract will pass. At this point, several determining issues arise.

Firstly, the Level II win-set is in practice defined as small and narrow. Based on the concluded setting, the industry is willing to accept rather no regulations at all. Thus, the incorporation of strict obligations on the agenda is to some extent limited. Obviously, it is the national government as the final entity that makes the decision. Nevertheless, as demonstrated, the power of the industry is extensive to that extent it rarely allows such form. Moreover, the state embroiled in a struggle with powerful domestic actor might experience counter-measures as well as it is in the interest of the governments to take the requirements of all actors into account. The further evidence is also the non-existence of hard-hitting treaty. So although the treaty eventually passes the ratification process, its form deviates from an effective protection tool.

The general public similarly contributes to the weakened international cooperation as its interests and support are limited in several above-presented aspects. At the same time, the impact on the population does not correspond to the global extension with profound effects covering every human being and its position is further diminished by the industry that suppress its demands. Although it might be asserted the actor exerts a certain degree of interest and pressure in its activity, it does not reach the level it would compel national governments to push forward more stringent legislation. The overall process thus encounters with the disrupted overlaps of the win-sets among the actors (first Putnam's determinant), making the enforcement of the functional contract more demanding.

With regard to the size of the win-set at Level II, the fragmentation of the bottom-up governance is another vital factor. Not only the actors hold the contradictory attitudes, but also the uneven position of industry (alongside lobby groups), with its influence to highest levels of politics, determines the final output of the level as some entities, such as activists groups, cannot compare to their status. The Level II win-set is thus considerably limited as the industry partially determines the scope of acceptable contracts.

In relation to the second win-set principle, the negotiator's position appears to be disadvantageous in both cases. In case the win-set is limited, it is perceived as an advantage of the negotiator. In this respect, the principle remains valid. Nevertheless, the output with which the chief negotiator operates within the negotiation is rather adversely modified in relation to the protection of the marine environment. The role of the negotiator is thus facilitated, but given to the incorporated influences from Level II, its manoeuvring is limited to boundaries, which are to some extent predetermined to weaken the cooperation.

Secondly, if the win-set at Level II is broadly defined, negotiator's position would be weakened. Actually, the Level II win-set is in fact rather limited in its scope, however, modified within its disrupted form. Interacting together, all these aspects are subsequently reflected in the regime and such an arrangement leads to the weakened international cooperation. Complex group of these patterns then constitute the following results:

- 1) The contract is ratified – international cooperation is weakened due to the industry (and lobby groups) that within the negotiation process undermine the form of the regulatory measures in accordance with its contradictory interests and motives;²⁶³ international cooperation also suffers from the limited support and interests of the general public, which is simultaneously not exposed to extensive and pervasive social or health affects in its fulness in terms of the global population; finally, the limited overlap of the national win-sets, which alongside their partially loose definitions and under the unshared strong collaboration among the actors lead to the weak international cooperation

²⁶³ The adjusted part of the contract by the Level II actors may vary (insufficient enforcement and compliance mechanism; general inclusion of plastics; only certain type of plastics, etc.) and the content of the analysis would require specific contracts so as to determine the exact impact of the industry in relation to the involved amendments.

- 2) The contract is ratified – agreement is bypassed by the industry (avoiding responsibility, empty pledges, loopholes in legislation, etc.); the damaged international cooperation is the consequence of the regulatory loopholes that allowed the companies to bypass the accountability and the ecological costs arising from their activity²⁶⁴

In order to complete the framework of the outputs, thesis proceeds to other existing results that exceed the position of the industry and public:

- 3) The contract is ratified – output is weakened by national governments that, contrary to the proclaimed determination to tackle plastic pollution, are not willing or do not possess capabilities to fulfil the provisions (e.g. high implementation costs)
- 4) The contract is ratified – strict regulatory measures directly aimed at the plastic pollution are implemented (non-existence; alternatively rather on the lower such as regional or national levels, e.g. *European Strategy for Plastic in a Circular Economy*²⁶⁵)
- 5) The contract is not ratified – different stances within national government; decisions are distributed among various ministers and their individual interests²⁶⁶ (alternatively a weak and limited influence of industry is involved)

4.2. Evaluation of the regime

The chapter has focused on the analysis of the negotiation process within the plastic pollution regime, applying a theoretical framework of Putnam's two-level game. As within the first case, the thesis deals with a global analysis of the regime and puts forward its comprehensive setting and nature, covering all relevant actors both at the national and international level. To elaborate on this arrangement, a specific form of the process would be created in case of the analysis purely conducted with relation to the particular contract, alternatively a given state. For this purpose, the concluded findings cannot be comprehended as strictly determining with no overlaps.

²⁶⁴ DAUVERGNE, Peter, *Why is the global governance of plastic failing the oceans?*, p. 23.

²⁶⁵ It establishes that by 2030 all plastic packaging within the EU must be recyclable, reduces the consumption of single-use plastics and finally, the deliberate use of microplastics falls under restriction. Plastic Waste: a European strategy to protect the planet, defend our citizens and empower our industries. *European Commission* [online]. 2018 [cit. 2019-03-26]. Available at: http://europa.eu/rapid/press-release_IP-18-5_en.htm

²⁶⁶ BAN, Natalie C. Systematic Conservation Planning: A Better Recipe for Managing the High Seas for Biodiversity Conservation and Sustainable Use. *Conservation Letters* [online]. 2013, 7(1) [cit. 2019-03-26], p. 42. Available at: <https://onlinelibrary.wiley.com/doi/full/10.1111/conl.12010>

As in the ozone regime, the chapter has followed the above-presented procedure and conducted a three-stage analysis. With regard to the independent variables, the findings are as follows. As for the independent variable 1, the thesis concludes that industry based on its costs and profit oriented motives and interests vigorously stands in opposition to intended regulatory measures and does not express the support for these steps whatsoever. The industrial sector thrives on the unflagging consumption, low production costs and vigilantly observe the developments so as not to experience increased costs and changes in revenues. Grounded in its ever-powerful position, its form is mainly imprinted by the multinational companies across the several predominant sectors that hold the unified stance. Moreover, due to the worldwide extension and utilization of the plastics, which are unable to be substituted by any form of material known up to now, the potential costs for industry are enormous. These conditions thus determine the financial resources that are unacceptable for industry. Finally, in order to promote its interests, a variety of tools is employed both on the national governments and other actors with the assistance of powerful lobby groups. For all these reasons, it eventually weakens the international cooperation. Therefore, the hypothesis 1 is in accordance with these results confirmed.

Within the case of independent variable 2, the work concludes that general public exerts certain degree of interest and support, as well as distinct perception of the problem for its unfavourable effects. However, the extent of the impact does not equal to global standards, the direct and adverse implications are the matter of only certain, usually most infested areas, and finally, there are not pervasive effects on the global population in the form of the health implications. Hence, the phenomenon has only a partial impact on this actor given to its limited effects that are unevenly distributed and a considerable part of the public is only marginally affected without no direct consequences in a day-to-day business. Despite certain activity, the limited form of this actor results in the undermined, weak international cooperation. For this reason and in conformity with conclusions, the hypothesis 2 is confirmed.

As for the independent variable 3, thesis comes to the conclusion that the setting of the regime is stemming from the actors' win-sets overlap, which is disrupted and insufficient as preferences and motives under the unshared framework of a strong cooperation partially diverge. The actors hold a disunited interest basis as well the certain win-sets are ambiguously defined (e.g. within the general public and its overall position). The particular win-sets are thus little overlapped and owing to these facts it subsequently leads to the

deteriorated ability to approve the contract as well as to attain a strong international cooperation. For these reasons, the hypothesis 3 is within the regime confirmed.

At the same time, the final output and the value of independent variables determine, in contrast to the ozone regime, the negative nature within the plastic pollution regime alongside the finding that the strong international cooperation is not achieved in this case. Hence, according to the findings of the first regime, it can be asserted that the given factors/variables cause a corresponding nature of the phenomenon.

Finally, the thesis presents the summary of the setting of the applied variables within the regime, depicted in the Table 3.

Table 3: The state of the individual variables within the plastic pollution regime

Plastic pollution regime		
Industry's costs and economic interests <i>(Independent variable 1)</i>	Public's interests, support and perception <i>(Independent variable 2)</i>	Overlap of the national win-sets <i>(Independent variable 3)</i>
<ul style="list-style-type: none"> • Strongly profit-oriented entity (role of the current development) • High costs as a main determinant of resistance • Factor of the plastic expansion and non-existence of the substitute (unacceptable conditions) • No expressed support for regulatory measures 	<ul style="list-style-type: none"> • Some yet limited support and interest • Non-global impact of the issue • Uneven distribution of implications • Rather local/region-oriented effects • No pervasive aspects within global population (health implications, etc.) 	<ul style="list-style-type: none"> • Divergence of actors' preferences under the unshared agreement of the strong collaboration • Limited overlap of win-sets and disruption of unified structure • Partially unclear win-sets of some actors • Difficult position for subsequent negotiations and international cooperation
Strength of the international environmental cooperation <i>(Dependent variable)</i>		
<ul style="list-style-type: none"> • Disrupted and weakened strength of the international cooperation within the plastic pollution regime due to the negative values of the main independent variables, determining the occurrence and nature of the given phenomenon 		

5. Comparison

The previous empirical chapters focused on the second research question - *Why is international cooperation in the field of plastic pollution in the sea relatively weak, compared to the international cooperation in the field of ozone depletion?* For this purpose, the thesis conducted analysis in both regimes, applying the Putnam's two-level game. In the end, the thesis concluded the major findings with regard to the independent variables that become the subject of this comparison. Based on the obtained data, the aim of this section is to provide an explanation and answer to the second as well as the third research question.

The negotiation process has appropriately allowed to determine the individual interests and motives of the actors, as well as the major patterns and logic within the given regime, which jointly form the strength of the international cooperation. If we proceed to the values of the first independent variable (*industry's costs and economic interests*), the conclusions detect the significant differences between the ozone and plastic pollution regime.

Overall, whereas the ozone regime is built on the active interest and support of the industry with regard to the regulatory measures, the position within the plastic pollution regime stands in distinct opposition and performs the contradictory actions. The main dividing line is constituted by the economic aspect in the form of costs. As for the first regime, it corresponded to relatively reasonable and small financial requirements that were accepted across the industry. Contrarily, within the plastic pollution regime, the industry holds the resistant approach as it perceives the costs in relation to potential measures as unacceptable. The diversity of positions was thus primarily based on the degree of impact of the regulatory measures on the financial resources and the related support and interest of the industry, which influence the nature of the international environmental cooperation.

Correspondingly, while the industry constituted within the ozone regime an accelerator of the progress and a determinant of the relatively consensual negotiation, in the latter case, the industry to a great extent hampered the overall process and related possibility of a strong international environmental cooperation. In this context, the diversity of “background” aspects was vital for the nature. Whereas an attainable alternatives emerged within the ozone regime, it is not the case of the plastic pollution regime. Moreover, compared to the ozone regime, the extent of the utilization is substantially uneven since the plastics in the form of material occur in the vast majority of contemporary products. Therefore, the plastic pollution industry would encounter with a massive financial burden.

The final position of industry thus demonstrated the overall influence on the form of the international cooperation and confirmed the validity of the first independent variable. The positive values within the ozone regime, in accordance with the underlying concept of the established factor and the hypothesis, led to the strong international cooperation, whereas negative values within the plastic pollution resulted in the weakened cooperation framework.

With regard to the values of the second independent variable (*public's interests, support and perception*), the existing nature exerts the clear differences in both regimes. As for the ozone regime, the level of interest and support reached a global scale and basically corresponded to the seriousness of the issue. In contrast, plastic pollution rather evinces signs of the limited support without the patterns of the global framework. In the similar vein, the perception of the population within the ozone regime was comprised by the intense and severe form, whereas the plastic pollution suffers from the lowered degree. The fundamental aspect is the very scope of occurrence since every human being was exposed to the threats of the ozone depletion, whereas plastic pollution rather burdens a selected regions. This imbalance subsequently manifests itself within the overall position of the general public that influences the strength of the international cooperation. Moreover, the pervasive implications of the ozone regime with serious overlaps to vital aspects of the population, such as human health, noticeably exceeded the plastic pollution that revolves around the implications, which do not equal the standards that would pose a threat to such an extent.

To conclude, it is the different degree of interest and support of the general public alongside the uneven breadth of the impact as well as the gravity of the implications that result in the different form of the international cooperation. In connection with the given hypothesis and the concept of the core factor, the validity of the second independent variable is confirmed since the positive values within the ozone regime achieved a strong international cooperation, whereas the negative values within the plastic pollution led to the weakened international cooperation.

Moving to the third independent variable (*overlap of the national win-sets*), the analyses similarly concluded the different values in both regimes. Whereas the ozone regime is characterized by the unity among the actors, the plastic regime faces its disruption. The individual attitudes and preferences are largely identical within the first case, finding the convergence of the strong collaboration among themselves. Such coincidental attitudes of all relevant actors then embody the vital prerequisite for a strong international cooperation.

On the contrary, in the latter case, the regime is undermined by the diverging preferences of the actors and missing level-wide consensus within the framework of the strong cooperation. Such a variance of attributes subsequently establishes different overlaps. While the ozone regime thrives on the large area of overlap, the plastic regime holds only a limited part due to its contradictory stances.

This arrangement then reduces the ability of the successful negotiation and the corresponding international cooperation. Likewise, the very definition of win-sets evinces differences. The ozone regime stands on the clearly and strongly defined win-sets, facilitating the negotiator's position at the international level. Contrarily, some actors of the plastic pollution regime undermine the framework by vaguely defined win-sets, reflected within the negotiations. Hence, these very differing win-sets constitute the main determinant of the uneven international cooperation, which is under the positive values considerably strong in the ozone regime, whereas negative values within the plastic pollution regime lead to the weak international cooperation. The validity of the independent variables' effect on the international cooperation is thus confirmed.

Overall, all three independent variables demonstrated its validity as their different values proved to constitute the actual factor that influence the given phenomenon within each regime. The factor-based variables and their different values thus embody the determining aspect of the international environmental cooperation and provide the answer to the research question. In other words, international cooperation in the field of plastic pollution in the sea is relatively weak due to the form (negative values) of the three above-presented independent variables, which are the causal aspect of the international environmental cooperation in this regime. In contrast, their opposite form (positive values) leads to the strong international cooperation, as in the case of the ozone regime. At the same time, the nature of the independent variables within the plastic pollution regime provides the explanation for the central research question - *What constitute the main reasons for the failure of the international community in the field of the marine protection against plastic pollution?* (the thesis also provided reasons beyond the role of the industry and public).

Finally, it is necessary to note that the thesis deals with a specific approach and perspective as well as there are undoubtedly more approaches and independent variables that through its form influence the international cooperation and enable further research. This fact is also confirmed throughout the previous chapters, demonstrating the complex structure of the regimes.

Conclusion

The thesis has focused on the international cooperation within two environmental regimes, the ozone regime and regime of the plastic pollution in the sea. In this respect, the fundamental basis is the fragmented and inconsistent form of these regimes, reflected within the different global nature and results. In the course of several years, international community has within the ozone regime achieved a prominent protection framework and contemporary it serves as an example of the successful international environmental cooperation. Contrarily, the more and more substantive plastic pollution suffers from the inadequate, weak and overall ineffective framework that results in the inability to properly address this ever-fundamental issue of the present day. Hence, this imbalance of the international cooperation constitutes the core of the presented work.

With regard to the focus, the thesis aimed to provide the answers to three research questions. The first research question has preoccupied with the main differences that arise from the approach of the international community towards the two given regimes. For this purpose, the conceptual framework has initially established the fundamental concept of the paper in the form of strength (of the international environmental cooperation), which allows to further work up the analysed result. In order to evaluate this core principle, the thesis has further chosen the contractual cooperation as the main assessment criterion. The very criterion has been established with regard to its ability to determine the grounds of the international protection as well as to closely identify the main features and setting of individual contracts and hence the regimes as well. Overall, the thesis set out the four indicators on which the main contracts are analysed and that become the primary subjects of the first part. Using the analytic-descriptive approach, the thesis put forward the main differences within the indicators and demonstrated the strength of the given regime.

In this respect, the thesis concludes that plastic pollution regime lags behind not only within the additional areas such as the role of the scientific community, the extent of the political will and the overall balance of the treaty, but also within all the presented indicators. Differences are detected in terms of the ambition and concreteness of the treaty's objectives, where the plastic pollution regime works with the vague or inadequate terms, puts forward unclear procedural steps or applies too broad approach. Similarly, with regard to the ambition and concreteness of the individual state's commitments, the plastic pollution regime

evinces signs of the limited interest and emphasis within the issue alongside its incoherent approach to sufficiently act.

On the contrary, the ozone regime does not encounter with such shortcomings. Furthermore, the third indicator detects some differences too, since opposed to the universal participation in the ozone regime, the plastic pollution regime partially faces the lack of participation whether with regard to the biggest polluters or the major powers. The last indicator observes the disruptions also in the area of centralization, where the plastic regime is undermined by a weak centralization structure, delegation of powers to individual states or limited enforcement and compliance mechanism. With regard to the ozone regime, the indicators do not detect any distinct discrepancies that would affect the regime in this respect.

Under the research, the thesis subsequently proceeded to the second research question and sought to answer why the international cooperation within the plastic pollution regime is relatively weak, compared to the strong international cooperation within the ozone regime. In order to provide the answer, the thesis established a factor possessing the ability to influence the states within the negotiation process of the contract and their ability to attain a strong international cooperation. Based on this determination, the thesis has defined three independent variables (industry's costs and economic interests; public's interests, support and perception; overlap of the national win-sets) in relation to the strength of the international environmental cooperation, constituting the dependent variable, and three hypotheses. Finally, the entire research was placed under the theoretical framework of the Putnam's two-level game.

Afterwards, the empirical part was divided into two sections, in order to conduct an analysis of the negotiation process in both regimes within three successive steps according to the theoretical model. At this point, the work has come to the underlying patterns, the main interests and motives of the particular actors as well as it presented global arrangement and output of the given regime. Moreover, it put forward the important influence of the actors on the national governments that form the instructions for the international level, as well as the relations among the very actors. As for the setting within the ozone regime, the thesis concludes that costs in relation to regulatory measures are acceptable and relatively small to industry, which also expresses interest and support within the protection framework. In a similar way, the general public evinces strong support and interest in the issue since the pervasive and truly global implications reach the population to the threatening (health) extent and perceives that the issue needs to be addressed. Finally, based on the concurrent interests

and motives, the win-sets of national actors largely overlap, as well as their definition is distinct and clear and actors share the agreement on the strong cooperation. The positive values of all three independent variables in relation to the actual strong international cooperation in the ozone regime then confirmed the hypotheses.

In contrast, the thesis concluded that the plastic pollution regime is undermined by the industry's vigorous opposing stance towards the regulatory measures as well as the actor does not express any support in this area. Furthermore, the general public is not globally exposed to the issue and it does not encounter with the direct implications that would pose a threat to vulnerable areas such as the human health. Moreover, despite certain signs of the support, the perception is given to its region-oriented effects and uneven distribution limited in its scope. Finally, the win-sets of the national actors do not largely overlap as the actors hold a diverging preferences and do not share agreement on the strong cooperation, thus disrupting the overall unity. Moreover, the win-sets also suffer from the partially ambiguous form when it comes to their definition. Finally, with regard to the actual weak international cooperation that takes place within the plastic pollution regime, the negative values of all three independent variables then confirmed the hypotheses.

Once the thesis came to the main findings, it proceeded to the last part for their comparison. At this point, the particular independent variables were put against each other so as to eventually confirm their validity. It was demonstrated that the independent variables with respect to the hypotheses and the actual state of the regimes represent a factor that has a direct influence on the given phenomenon. The independent variables and their values thus constitute a real determining aspect that affects the different nature of the international cooperation within the ozone and plastic pollution regime. With these conclusions, the thesis provided answer to the second, as well as the third and central research question, seeking the main reasons for the failure of the international community in the field of the marine protection against plastic pollution.

Finally, the thesis has chosen for its empirical part an approach based on the interest and support of the industry and public. Nonetheless, the thesis notes and takes into account the other theories relating to international cooperation (e.g. constructivism, realism – interests and role of major powers, etc.), that would be relevant and appropriately correspond to the given topic. In this respect, the thesis has chosen one of the approaches so as to provide comprehensive insight and verify the given perspective.

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Univerzita Karlova
Fakulta sociálních věd
Institut politologických studií

Diploma thesis project

International environmental cooperation in the fields of ozone depletion and plastic pollution in the sea



Name: Michal Janečka

Academic advisor: doc. PhDr. Jan Karlas, M.A., Ph.D.

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Introduction to the topic

The thesis puts forward the research regarding environmental cooperation in the fields of ozone depletion and sea pollution. Generally speaking, environmental issues have been considered a matter of international community and placed on the international agenda since the 1970s as the rising importance and seriousness of environmental problems within the global scale prompted countries to international reaction. In the course of time, newly emerging and effecting environmental problems have become integral part of the global agenda as it was projected through various conferences, declarations or setting up international organizations and agencies in order to take problems into account for the upcoming years and launch decisive actions against them. However, global environmental cooperation is rather incoherent, fragmented and in the global scale limited. In this respect, different regimes within environmental cooperation considerably vary in their final actions, scope and effects.

A distinct example of this imbalance are the very fields of the cooperation in the ozone depletion and sea pollution, in this case more precisely the plastic pollution in the sea. The protection of the ozone layer and the ozone regime in general illustrate one of the most thriving and successful cooperation and unified approach towards the presented environmental problem. Since the 1970s the issue of ozone depletion has become part of discussions and over the following decades through conventions and protocols the perceptible and measurable results have been achieved. Contrary to the first case, the issue of plastic pollution in the sea has been a matter of global importance within environmental policy only in recent years, at least in terms of labeling the issue as an imminent threat, based on serious assessments and different stakeholders' statements, actions, etc. Although the problem of plastic pollution of the seas has reached a stage in which global leaders and prominent international organizations are aware of its gravity, international environmental cooperation is incomparably distant both in terms of its extent and degree of success to the field of ozone depletion. In other words, the individual steps of the international community are weak, non-uniform, inadequate and often merely local.

For that reason, the focus of the thesis is directed towards the different above-mentioned regimes with the aim to detect, introduce and explain reasons for their different international environmental cooperation and thus also their varying results.

The researched theme is highlighted as a contemporary, acute, vital based on its scope, existing implications or scientific promulgations, and relevant topic resonating within the international community and the public discourse as well. The issue of plastic pollution in oceans has become ingrained and steady part of today's environmental discourse and the increasing effect and importance is clearly visible in the international arena too. Demonstrably more and more attention is being paid to plastic pollution issue which has emerged as one of the main challenges that the contemporary population faces. Organizations, programmes, reports, speeches and statements, significant and long-lasting interest of scientific community, scientific discoveries or relevant media coverage are the irrefutable proof of that. The urgency and the essence of the issue are also recognized by number of states that strive to solve this problem in many ways both locally and internationally.

In addition, the thesis with its content and focus falls into the highest levels of the international politics and negotiations with its overlaps leading to consequences in the social (social behaviour of actors, norms, pull factors), economic (overall expenditures spent on combat with the issue, etc.), environmental (damage to ecosystems, threat to source of livelihood, health issues, impact on sea animals, etc.) or international law field (establishment of the norms, upgrade of the sea law, etc.).

As far as the scholarly relevance is concerned, the narrow definition of the plastic pollution in the sea, given to the mentioned fact of the topicality of the thesis, has not been given too much space so far. For that reason, thesis aim to contribute to existing knowledge and fill the gaps in the omitted areas within the international environmental cooperation.

Research target, research question

The paper points to the uneven approach of the international community in the field of the cooperation regarding certain environmental regimes. Varying approach, divergent counter-measures or level of cooperation, and finally also contrasting achievements in the realm of ozone depletion and plastic pollution constitute main content of the presented thesis.

In this case the research target is to find out by analyzing the fields of ozone depletion and plastic pollution in the sea whether the hypothesis, or eventually which respective ones explain the differences between the very fields. In addition, target of the thesis is also to ascertain what caused that the international cooperation in the field of ozone depletion is

considerably more active, unified, extensive and thus also more successful in comparison with the plastic pollution in the sea.

With regard to the presented thesis the research questions are as follows: *What are the main differences of the international community's approach towards ozone depletion and the current plastic pollution in the sea? Why is international cooperation in the field of plastic pollution in the sea relatively weak, compared to the international cooperation in the field of ozone depletion? What constitute the main reasons for the failure of the international community in the field of the marine protection against plastic pollution?*

Literature review

As far as the literature is concerned, the thesis uses several types of sources. Starting with the ozone depletion, it initially aims to descriptively present the achieved cooperation. For this purpose, secondary sources, more precisely articles published in academic journals and both scientific and specialized books, are used as they represent a suitable prerequisite for the balanced, unbiased, relevant and in its scope comprehensive research. In relation to the field of ozone depletion, the thesis initially works with the publications (Andersen et. al, 2002) that appropriately look on the overall development in the field. Not only they try to outline the historical development of the international community with regard to emerging environmental issues since the very beginning, but they also focus on the governmental attitudes, include the diplomatic field within the negotiations and present the breeding ground for the subsequent success. Finally, literature deals with the most significant agreements and protocols on the ozone layer protection and the attention is also directed to the compliance of obligations.

Similarly, various authors (Gehring, 1994) complement and extend the overall knowledge by adding additional information to the theoretical framework of the historical development, actions of the participating actors and by depicting the important role of the international cooperation and the international regime in the protection of the ozone layer. Specifically, literature in this respect seeks to detect individual components and does not even neglect its detailed internal processes, consensus or inconsistencies later leading to agreements.

Further part of the literature in this field is focused on the international cooperation itself and provides information enabling to find certain structures, patterns and links in many ways across the researched field (Hoffman, 2005).

Relevant literature (Caron, 1990) within the field also identifies individual features necessary to achieve positive results within the environmental regime and also specifies factors such as importance of unified approach, strong international coordination and significance of international agreements and processes in the field of lawmaking along the extended participation of actors. Therefore, it helps to highlight the successes and failures of the regime.

Finally, certain sources (Morrisette, 1989) are dedicated to different points of view as they refer to other aspects, but of the same success in the field of ozone depletion. It also puts forward a two-level perspective – ozone depletion as a national and international issue and at the same time it comes up with the several factors playing important role in forming an agreement. However, the available literature sometimes omits other relating factors.

In connection with the plastic pollution in the sea, used literature follows more or less a similar ways and areas within the field. Firstly, publications (Dauvergne, 2018) cover the theoretical framework as they pay attention to the informational foundation of the development in the course of several decades ranging from the plastic production since the very beginning to the efforts to curb its adverse impacts. Individual international agreements and programs are discussed alongside the analysis of individual factors that fail within the entire protection of the oceans against plastic pollution. Important aspects such as jurisdiction, influence of plastic industry, fragmentation of the governance, uneven regulations in the discussed field or weak international institutions are taken into account as well. Presented gaps in various areas thus suitably demonstrate the general form of the international cooperation.

Despite the topicality of the theme, the relative abundance of the literature in the area allows to more specifically deal with the shortcomings within the current ocean protection. Many sources aim to introduce individual problems with the feasible solutions and incentives for the change. In this regard, papers (Ban, 2013) extend the scope of emerging issues in the field of plastic pollution and embody the rich source of data to identify differences in individual areas.

Literature is further dedicated to the global cooperation in the field, cross-border collaboration, integrity of the international approach or complexity of the problem (Vince Zofia, 2016) and aims to capture the topic from a more distant perspective. The core is formed by the vital steps in order to create a solution for this transboundary issue and other shortages of this environmental regime are unveiled. Nevertheless, also the inclusion of the

less significant areas such as civil society, market-based strategies or scientific expertise are embraced. Hence, the literature is not limited by seeing the issues solemnly as a big picture but offers multilevel view as it goes into depth and examines the individual features as well.

The theme is also addressed in terms of sustainability (Löhr, 2017) as the literature implements the topic into this framework and observes its deviation from the intended global goals. Along with it, there are arguments about existing ineffective initiatives, management challenges or global efforts that are required to be taken on both local and global level. Finally, current literature (Borelle, 2017) also devotes its attention to the necessity to link individual stages ranging from NGOs to policy-makers in order to come up with decisive actions on the international level, particularly strike an international agreement.

Overall, presented areas of the literature in the field are in some way intertwined. The authors complement each other and the approaches towards the topic are relatively wide. However, at the same time it is vital to note that each source is chosen so as to deal with various aspects, factors and areas to present multiple points of view and perspectives. Therefore, scores of sources are ranging from the depiction of the current situation and the descriptive presentation of the regime, then exploring the topic from a wider perspective on the international level and its incompetence to effectively reach a tangible result, to researching individual factors that together make up the failure of the regime. It is thus based on this precondition of choice that literature generates a complex basis for the research in the field and delivers required data.

Finally, the thesis's literature is supplemented by primary sources such as official agreements, protocols, NGOs reports, quality newspapers, relevant fact sheets or booklets and eventually speeches and statements of political figures or general public.

Conceptual and theoretical framework, research hypotheses

Conceptual framework in the presented thesis is in detail formed by several successive steps. Initially, the *strength* of the international environmental cooperation in the given fields is defined as a central concept whose purpose is to elaborate the analyzed result. Such a designation of the concept allows to subsequently establish the assessment criterion, in this case the contractual cooperation in the given field.

Generally, it is assessed based on the individual agreements, conventions, their characteristics, nature, etc. For this purpose, several indicators are used. In other words, at this point the aim is to explore the framework of the specific agreements and to extract

required information based on the individual indicators.

A particular example may be the ambition and the concreteness of the objectives of the individual treaties as well as the ambition and the specificity of states' commitments. Further, area of jurisdiction is examined through the indicator of legal obligations of the agreements. Providing another perspective, attention is also given to the form of the agreements as the indicator assess whether the agreement is centralized (i.e. responsibility of the single entity), decentralized, etc. Once all factors are set up, thesis possesses the knowledge basis to answer what are the main differences of the international community's approach towards given fields.

Subsequently, as soon as it is proved that regimes really differ, thesis proceeds towards the next research question regarding why the international cooperation is different in these fields. At this point, thesis defines new factors, such that incorporate their influence on states and their ability to agree on strong cooperation. In line with the intended theoretical approach, each factor is then linked with the individual hypothesis that provide answer the given research question. Overall, thesis works with two factors – hypotheses.

The interest and support by both industry and public in the given field constitute a first of them. The hypothesis is based on the thought that environmental protection requires industry expenditures while the public thrives on the result from the favorable and better environmental status. Political actors strive to find a balance between these two areas as it is in their interest to represent both the industry and the general public. The form of the factor is further built on the assumption that the highest probability and chance to attain cooperation is when companies within industry spell relatively small costs in line with the imposed measures and simultaneously the environmental problem considerably affects the society, it has significant influence on it and it is perceived as crucial matter to society. To summarize it, first hypothesis applied on both fields is that convenient demands and relatively small industry costs together with significant impacts and influence on society lead to strong international environmental cooperation. Subsequent analysis then demonstrates the extent to which cooperation in the field requires expenditures from industry and to what extent the issue represents a major problem for society. Depending on result (e.g. positive in ozone depletion and negative in the plastic pollution, i.e. high costs and not perceived as significant issue), hypothesis might then constitute a relevant explanation. Within the theoretical framework, the hypothesis is elaborated by Putnam's two-level games theory. This model deals with the mutual link between the international and national level. Political actors, when

negotiating international agreements, take into account the situation and interests on the international level together with demands and interests on domestic level. As it is in their interest, the aim is to achieve or to get as close as possible to the so-called win-win situation securing that both sides benefit from the achieved result.

The second and the last factor of the thesis regarding this research question is built on the theory of hegemonic stability. This theory states that within the international system, respectively within the hegemonic structure of power, there is one leading actor, the most powerful state – hegemon. This actor possesses a supremacy of power resources regarding a specific issue-area and pursues its own interest. In addition, there are collective action problems and the overall setting of the hegemonic systems lead to inclination not to cooperate (Hasenclever, 1996; Olson, 1965). To apply this theory, the international environmental cooperation, and its success or failure, is thus conditioned by the interests and actions of the most powerful state, eventually other powerful actors. Using the strength as a condition in this case, hypothesis is that strong interest and active attitude of the most powerful state(s) lead to strong the international environmental cooperation. In this respect, attention is given to global actors, such as United States and others. After the application of hypothesis on both fields, as in the first case, when the lack of interest and missing active approach of the most powerful state(s) is confirmed (due to the specific reasons that theory works with, e.g. free-riders – when only some countries participate and spend resources on protection of the sea, while other are not willing to spend on it), hypothesis then might be considered as explanatory.

Empirical data and analytical technique

With regard to the assessment of the core concept of the thesis, individual agreements and conventions represent one of the main groups of resources. Based on the above-defined indicators, data are obtained from the individual corresponding areas. An example of such a data collection might be a specific factor regarding ambition and the concreteness of the objectives of the individual treaties. Each agreement is thus in detail analyzed according to its content, i.e. the wording of the individual goals, whether the agreement puts forward local, regional or international objectives, whether it specifically defines the individual steps that are taken in order to achieve a positive result, whether it does not limit itself to only general phrases, whether it sets a time-limit, etc. Subsequently, other factors are analyzed in the same way for data collection. As far as the hypotheses seek to answer the research

questions, data are collected from the various sources such as academic papers, issue-oriented publications, eventually relevant newspapers and statements, expressing the views of stakeholders.

An example may be the first hypothesis where sources collect information such as the extent to which political actors could find a balanced and beneficial position for the industry in the given regime, whether the benefits outweigh the costs or to what extent the public perceives the issue as a threat (statements, surveys, etc.). Afterwards, the paper similarly deals with the second hypothesis. As far as the time periods are concerned, collection of the data differs in both fields due to the different emergence of the issue in history. Whereas the sources in the field of ozone depletion mainly occur between the beginning of the 1970s and the turn of the century, eventually also nowadays, the field of plastic pollution in the sea is predominantly defined from the beginning of the millennium.

As far as the analytical framework, the thesis initially sets out a central concept which serves for elaborating of the analyzed result. This concept is then assessed on the basis of contractual cooperation and then further defined in this respect by several corresponding indicators. The definition of these indicators is conducted in order to represent a basis for research of the first question. Subsequently, the thesis proceeds to the establishment of two specific factors - influencing states and their ability to agree on cooperation – on the basis of which two hypotheses are then established as well. One of these hypotheses is built on the theory of hegemonic stability. In this case, it is assumed that there exist considerably strong cooperation problems alongside the assumption that the most influential state possesses little interest in cooperation in the field of plastic pollution in the sea. Subsequently, those findings are put into comparison with the field of the ozone layer, in which, on the contrary, it is assumed that cooperation problems in this case are not so extensive and the most powerful countries are keen on cooperating. If this hypothesis is confirmed, it subsequently represents an explanation and answer to the research question. The thesis then follows the very same procedure with the second hypothesis. At this case, Putnam's two-levels game theory is used. Methodologically speaking, the thesis represents a comparative case study as it simultaneously examines more features associated with one common element.

Planned thesis outline

- Introduction
- Literature review
- International cooperation in the fields of ozone depletion and plastic pollution in the sea
- Theoretical and methodological framework
- Explaining cooperation in the field of ozone depletion
- Explaining cooperation in the field of plastic pollution in the sea
- Conclusion
- References

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