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SUMÁRIO

APRESENTAÇÃO	9
DOCTRINA	
Third World approaches to the international law: warnings and the urgency to face the plastic soup ADRIANO SANT'ANA PEDRA, LUISA CORTAT SIMONETTI GONÇALVES	11
O “esverdeamento” da Corte Interamericana de Direitos Humanos: consequências e perspectivas CHARLES ALEXANDRE SOUZA ARMADA, MARIA JÚLIA MINELLA ANTUNES	39
Minería y paisaje EVA GAMERO RUIZ	69
Educação ambiental na sociedade de risco: o papel das iniciativas ambientais do setor empresarial na promoção de uma nova consciência ambiental EWERTON RICARDO MESSIAS, GEILSON NUNES, VINÍCIUS ROCHA PINHEIRO MACHADO	89
O Brasil e as Metas de Aichi: uma análise sobre o cumprimento da Meta 11 FRANCLIN FERREIRA WENCESLAU, JÚLIA ELISABETE BARDEN, LUCIANA TURATTI	113
Avaliação de Impacto Ambiental: origem, normatização e a (in)efetividade no âmbito dos processos de licenciamento ambiental brasileiro JOSÉ CLAUDIO JUNQUEIRA RIBEIRO, JAYRO BOY DE VASCONCELLOS JÚNIOR	133
Ecopolítica e a função promocional do direito ambiental: a experiência do Programa Bolsa Floresta no Amazonas LAÍS BATISTA GUERRA, RAYANNY SILVA SIQUEIRA MONTEIRO	155
Da aplicabilidade do Código Florestal em imóveis rurais LUCAS DE SOUZA LEHFELD, DANILO HENRIQUE NUNES, VIVIANE BATITUCCI MIRANDA NAHAS	173

THIRD WORLD APPROACHES TO THE INTERNATIONAL LAW: WARNINGS AND THE URGENCY TO FACE THE PLASTIC SOUP¹

ADRIANO SANT'ANA PEDRA²

LUIA CORTAT SIMONETTI GONÇALVES³

SUMMARY: Introduction - 1. An overview of the plastic soup and its main sources: 1.1. A north-south tension?; 1.2. Companies and plastic - 2. Lessons learned from a third world approach to the international law: 2.1. Considerations on the north-south dynamics to face the plastic soup - Summary and main findings - References.

ABSTRACT: The problem of the plastic pollution in the oceans, also known as the plastic soup, is becoming more and more evident. Although there is still much to learn about the plastic pollution sources, destinations and consequences to nature and human life, recent studies demonstrated that the developing world may be responsible for transporting up to 95% of the global load of plastic coming from rivers into the sea. One of those studies indicates that of the 10 rivers that most contribute, 8 are located in Asia and 2 in Africa. This paper defends that such data should come as an alert to the upcoming decisions that will hopefully come in the near future to face the plastic soup. In what concerns international problems, the challenges are always huge, mainly when related to the global commons. Among those challenges, the North-South dynamics

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is a certainty. A previous work from Gonçalves and Faure already demonstrated some possible paths towards international law solutions. This paper shows that regardless of the path chosen, it should consider some aspects of the North-South dynamics from start. The aim is to enumerate considerations that could prevent tensions in such a dynamics. In order to do so, the paper begins with a description of the plastic soup problem, mainly source-related, and follows with a third world approach to international law (TWAİL), to conclude with the aimed considerations.

KEYWORDS: plastic soup; north-south; international law.

INTRODUCTION

There are no doubts about the fact that the plastic pollution is a massive environmental and social problem and that it is caused by human activity on Earth. One of its consequences is on international waters, where it spreads through the oceans, causing what is now called the *plastic soup*. Therefore, public international law comes as a natural path towards a solution. Previous research⁴ showed, however, that both soft and hard international law are far away from capable to respond to the challenge.⁵

The basic premise to this paper is that focusing on the sources to such a pollution could be an effective way to begin standing up to the *ex ante*⁶ side of the problem. This would mean dealing with the whole plastic chain - for example, design, production, distribution, consumption, reutilization, recycling, and discard. One paper is not able, however to address all of those aspects, reason why the cut is made to the naturally transnational actors: States and multinational corporations. In other words, the focus here will be on the production and on the post-consumer stages, not meaning a disregard to the equally relevant consumer stage.

⁴ Luisa Cortat Simonetti Gonçalves; Michael G Faure. 'International Law Instruments to Address the Plastic Soup' (2019) *William & Mary Environmental Law and Policy Review*. 43, 3 (2018-2019). 871.

⁵ It is even unable to deal with the interaction between the legal sub-fields of international water law and marine environmental law. In that sense, see, e.g.: Linda Finska; Julie Gjortz Howden. 'Troubled waters-Where is the bridge? Confronting marineplastic pollution from international watercourses' (2019) *Review of European, Comparative & International Environmental Law*. 27(3), 245.

And the current efforts seem to be far below the necessary effort. See, e.g.: Giulia Carlini; Konstantin Kleine. 'Advancing the international regulation of plastic pollution beyond the United Nations Environment Assembly resolution on marine litter and microplastics' (2019) *Review of European, Comparative & International Environmental Law*. 27(3), 234.

Karen Raubenheimer; Alistair McIlgorm; Nilufer Oral. 'Towards an improved international framework to govern the life cycle of plastics' (2019) *Review of European, Comparative & International Environmental Law*. 27(3), 210.

⁶ Expression we use to refer to the input of plastic pollution to the oceans, as a contrast to the *ex post* side, which is recovering the pollution that is already there.

The numbers and information concerning those aspects will be further explained in topic 1, but for now it is important to have in mind the estimate that around 80% of the plastic that ends up in the oceans comes from land-based sources.⁷ This means, mainly, debris carried by rivers until their mouths.

Recent studies calculate that 67 to 95% of the top plastic polluting rivers are located in the developing world - mostly Asia.⁸ From an international perspective, this raises the concern addressed in this study: a potential North-South global tension, if the numbers lead to directing all responsibility to those countries. Therefore, the paper analyzes the importance of considering the problem in its entirety and of mainstreaming the dynamics between developed and developing worlds, no matter which solution is adopted. The paper deals, then, with the *problématique* of how may international law goes beyond the tensions in such a dynamics. The purpose is to enable a more efficient start to the international solutions, which are, so far, virtually inexistent though still urgent. In other words, the paper aims at answering the following question: how may a third world approach to international law (TWAIL) contribute to a quicker and more efficient start of international law to face the plastic pollution in international waters?

A TWAIL enables all the steps of the paper. Topic 1 gives an overview of the plastic soup, focusing on the description of the main sources of such a pollution - water flow and plastic production -, since it is the critical aspect to the discussion. It highlights the aspects related to the main sources of the plastics that end up in the oceans, through a literature review on the available academic data. Topic 2 describes briefly the TWAIL theory and presents its proposition of three steps to prevent the common pitfalls related to an international law perspective centered in the global North. Those steps allow the application of the theory to the available data, in order to construct the aimed considerations.

1. AN OVERVIEW OF THE PLASTIC SOUP AND ITS MAIN SOURCES

Plastic soup is the expression by which the plastic pollution in the oceans became known. It comprises the bigger, visible, parts, as well as the smaller ones, as the microplastics.⁹ The winds and the rotation of the Earth form enormous vortexes with

⁷ SB Sheavly. 'Marine debris - an overview of a critical issue for our oceans' (Sixth Meeting of the UN Open-ended Informal Consultative Processes on Oceans & the Law of the Sea, New York, June 2005). Available at: http://www.un.org/Depts/los/consultative_process/consultative_process.htm. Accessed 28 August 2017.

⁸ Christian Schmidt; Tobias Krauth; and Stephan Wagner. 'Export of plastic debris by rivers into the sea' (2017) 51 *Environ. Sci. Technol.*, 12246.

⁹ Microplastics are pieces of plastics smaller than 5 mm.

the material: the gyres. The most commonly referred to is the North Pacific Gyre, but there are four other vortexes where plastic concentrates because of circulating ocean currents: the South Pacific, the Indian Ocean, the North Atlantic, and the South Atlantic Gyres.¹⁰ They are in sub-tropical areas, above and below the equator, and all of them have higher concentrations of plastic rubbish compared to other parts of the oceans.¹¹ All this plastic pollution, spread in the oceans and in the water columns, is what I refer to when speaking about the plastic soup.

In an optimistic evaluation, each year, at least 8 million tons of plastics leak into the ocean. If no action is taken, this is expected to double by 2030 and to quadruple by 2050. With that, until 2050 there will be more plastic than fish in the oceans, in weight. Besides, plastics production increased worldwide from 15 million tons in 1964 to 311 million tons in 2014, and continues to grow exponentially.¹² As mentioned, the visible objects are just the sign of a much bigger problem. Several natural interactions such as sunlight, wave action and mechanical abrasion make those larger pieces slowly break up into smaller ones. Since the decomposition time of plastics can go up to almost 500 years or even more, virtually every piece of plastic ever produced is still around.¹³

Approximately 50 percent of plastics are used for single-use disposable applications, such as packaging, agricultural films and disposable consumer items. Only between 20 and 25% are applicable in long-term infrastructure such as pipes, cable coatings and structural materials, and the remainder for durable consumer applications with intermediate lifespan, such as in electronic goods, furniture, vehicles, etc.¹⁴

There is no doubt that the plastic soup is a major environmental and social problem and that humankind causes it. Therefore, there is also no doubt regarding the urgency to face it. Considering the complexity of the problem, several aspects have to be taken into account. In this topic, the focus is on the sources of such a pollution, since it is the main cause of the concern under analysis in the study.

¹⁰ Peter Haffner. 'An Intimation of the Apocalypse' (2009) 07 NZZ Folio. Available at: <http://www.plastic-garbageproject.org/en/plastic-garbage/problems/plastic-garbage-gyre/peter-haffner-an-intimation-of-the-apokalypse/>. Accessed 19 August 2017.

¹¹ Plastic Soup Foundation. 'What is plastic soup? Gyres and hotspots'. Available at: <https://www.plastic-soupfoundation.org/en/files/what-is-plastic-soup/>. Accessed 19 August 2017.

¹² World Economic Forum, Ellen MacArthur Foundation and McKinsey & Company. 'The new plastics economy - rethinking the future of plastics' (2016). Available at: <http://www.ellenmacarthurfoundation.org/publications>. Accessed 17 August 2017. 17.

¹³ Greenpeace. 'The trash vortex'. Available at: <http://www.greenpeace.org/international/en/campaigns/oceans/fit-for-the-future/pollution/trash-vortex/>. Accessed 18 August 2017.

¹⁴ J Hopewell; R Dvorak; E Kosior. 'Plastics recycling: challenges and opportunities' (2009) 364 *Philosophical Transactions of the Royal Society of London, Series B, Biological sciences* 2115, 2115.

According to the United Nations Joint Group of Experts on the Scientific Aspects of Marine Pollution (GESAMP), about 80% of the plastic pollution in the oceans comes from land.¹⁵ The remainder comes from ships and the fishing industry. For instance, cargo ships are increasingly carrying packing cases using small plastic pellets as stuffing, which disperse across the oceans when drum-loads or even container loads are lost at sea.¹⁶⁻¹⁷ However, as indicated, most of the plastic waste in the regional seas and oceans come from land-based sources. "Plastic is blown off the streets and garbage dumps, from garbage trucks and freight trains, to end up in streams, rivers, gullies, and, ultimately, in the sea. The tides draw it out to sea, where the currents catch it and transport it to the vortex and there it rotates like in a toilet that is never flushed".¹⁸

Regarding the geographical sources, the numbers vary from region to region and studies get outdated fast due to the continuous increase of plastic production and pollution. In addition, there is still a gap in academic research. Even so, it is possible to obtain an idea of the whole picture.

An estimation from 2010 clearly shows the difference in contributions to plastic pollution in the oceans from different countries.¹⁹ The table below summarizes it.

Rank	Country	Econ. classif.	Coastal pop. [millions]	Waste gen. rate [kg/ppd]	% plastic waste	% mismanaged waste	Mismanaged plastic waste [MMT/year]	% of total mismanaged plastic waste	Plastic marine debris [MMT/year]
1	China	UMI	262.9	1.10	11	76	8.82	277	1.32–3.53
2	Indonesia	LMI	187.2	0.52	11	83	3.22	10.1	0.48–1.29
3	Philippines	LMI	83.4	0.5	15	83	1.88	5.9	0.28–0.75
4	Vietnam	LMI	55.9	0.79	13	88	1.83	5.8	0.28–0.73
5	Sri Lanka	LMI	14.6	5.1	7	84	1.59	5.0	0.24–0.64
6	Thailand	UMI	26.0	1.2	12	75	1.03	3.2	0.15–0.41
7	Egypt	LMI	21.8	1.37	13	69	0.97	3.0	0.15–0.39
8	Malaysia	UMI	22.9	1.52	13	57	0.94	2.9	0.14–0.37
9	Nigeria	LMI	27.5	0.79	13	83	0.85	2.7	0.13–0.34
10	Bangladesh	LI	70.9	0.43	8	89	0.79	2.5	0.12–0.31
11	South Africa	UMI	12.9	2.0	12	56	0.63	2.0	0.09–0.25
12	India	LMI	187.5	0.34	3	87	0.60	1.9	0.09–0.24
13	Algeria	UMI	16.6	1.2	12	60	0.52	1.6	0.08–0.21
14	Turkey	UMI	34.0	1.77	12	18	0.49	1.5	0.07–0.19
15	Pakistan	LMI	14.6	0.79	13	88	0.48	1.5	0.07–0.19
16	Brazil	UMI	74.7	1.03	16	11	0.47	1.5	0.07–0.19
17	Burma	LI	19.0	0.44	17	89	0.46	1.4	0.07–0.18
18*	Morocco	LMI	17.3	1.46	5	68	0.31	1.0	0.05–0.12
19	North Korea	LI	17.3	0.6	9	90	0.30	1.0	0.05–0.12
20	United States	HIC	112.9	2.58	13	2	0.28	0.9	0.04–0.11

*If considered collectively, coastal European Union countries (23 total) would rank eighteenth on the list

¹⁵ B. Sheavly. 'Marine debris - an overview of a critical issue for our oceans' (Sixth Meeting of the UN Open-ended Informal Consultative Processes on Oceans & the Law of the Sea, New York, June 2005). Available at: http://www.un.org/Depts/los/consultative_process/consultative_process.htm. Accessed 28 August 2017.

¹⁶ Greenpeace. 'The trash vortex'. Available at: <http://www.greenpeace.org/international/en/campaigns/oceans/fit-for-the-future/pollution/trash-vortex/>. Accessed 18 August 2017.

¹⁷ Peter Haffner. 'An intimation of the apocalypse' (2009) 07 NZZ Folio. Available at: <http://www.plastic-garbageproject.org/en/plastic-garbage/problems/plastic-garbage-gyre/peter-haffner-an-intimation-of-the-apocalypse/>. Accessed 19 August 2017.

¹⁸ Idem.

¹⁹ JR Jambeck and others. 'Plastic waste inputs from land into the ocean' (2015) 347 *Science* 768.

Table 1 - Waste estimates for 2010 for the top 20 countries ranked by mass of mismanaged plastic waste (in units of millions of metric tons per year). Econ. Classif. = economic classification: HIC, high income; UMI, upper middle income; LMI, lower middle income; LI, low income (World Bank definitions based on 2010 Gross National Income). The mismanaged waste is the sum of inadequately managed waste plus 2% littering. Total mismanaged plastic waste is calculated for populations within 50 km of the coast in the 192 countries considered. pop. = population, gen. = generation, ppd. = person per day, MMT = million metric tons.²⁰

Plastic production also helps on the perspectives of the sources of pollution. In 2012, European countries produced 45.9 Megatons of polymer, from which 40% packaging, 22% appliances, furniture, sport, health etc., 20% building and construction, 8% automobile, 5% electrical and electronic equipment.²¹ Use of plastics materials in Western Europe reached about 100 kg per capita per year in 2005. North America reached the same amount, whereas in Asian countries it was 20 kg per capita per year.²²

Despite the alarming numbers of plastic use in the developed world, there seems to be a predominance of the developing world as sources of the plastic pollution, as discussed in the following subtopic.

1.1. A North-South tension?

Estimates are placing developing countries as the main land-based sources of the plastic that ends up polluting the oceans. The core information for this paper is a very recent study,²³ since it reinforces an important aspect to the international debates: a potential North-South tension. It argued that ten rivers are responsible for 89 to 95% of the plastic going into the oceans. Out of those ten, eight are in Asia and two in Africa. That research aimed at building a more comprehensive understanding of the contribution of rivers to plastic debris in the oceans. The provided estimate derived from data already available in the academic literature about plastic concentration in rivers and the amount of mismanaged plastic waste in the country.²⁴

²⁰ Table reproduced from JR Jambeck and others. 'Plastic waste inputs from land into the ocean' (2015) 347 *Science* 768, 769.

²¹ Athanasios Valavanidis and Thomais Vlachogianni. 'Microplastics in the marine environment: ubiquitous and persistent pollution problem in the world's oceans threatening marine biota' 30 June 2014 *Researchgate*. Available at: www.researchgate.net/publication/263477975. Accessed 9 August 2017.

²² PCH Hollman; H Bouwmeester; and RJB Peeters. 'Microplastics in the aquatic food chain: sources, measurement, occurrence and potential health risks' (2013) *Wageningen, RIKILT Wageningen UR (University & Research Centre)*, RIKILT report 2013.003. 8.

²³ Christian Schmidt; Tobias Krauth; and Stephan Wagner. 'Export of plastic debris by rivers into the sea' (2017) 51 *Environ. Sci. Technol.*, 12246.

²⁴ Christian Schmidt; Tobias Krauth; and Stephan Wagner. 'Export of plastic debris by rivers into the sea' (2017) 51 *Environ. Sci. Technol.*, 12246, 12246-12247.

It was not the first study with the approach. Lebreton and others²⁵ estimated, earlier in the same year, “that between 1.15 and 2.41 million tons of plastic waste currently enters the ocean every year from rivers, with over 74% of emissions occurring between May and October. The top 20 polluting rivers, mostly located in Asia, account for 67% of the global total”. The latter was a research that expanded the analysis of Jambeck et al. from 2015.

Schmidt, Krauth, and Wagner’s work innovates by including inner land data, instead of only considering coastal contributions, with the assumption that “the entire river catchment is connected to the coastal sea via the river network”.²⁶ It meant the inclusion of 41 countries to the consideration.

In a way, the geographical heterogeneity comes as no surprise, since “urban land use and population density have been shown to be positively related to plastic concentrations”.²⁷ However, it has to be analyzed very cautiously. First, because they are estimates based on studies with different approaches and methodologies. Although those factors have been accounted for, even the researchers alert on the uncertainty of the estimated values and discrepancies depending on the model adopted.²⁸ Second, because of the consequences that misinterpretation and misuse of information may cause, which we will further discuss on the topic 3 of this paper. Third, because those consider only the immediate causes, when there are also the mediate causes, one of which is discussed in subtopic 1.2.

1.2. Companies and plastic

There is a general assumption that companies, especially large multinationals, play a major role in the described scenario. This assumption has grounds, since companies at least determine which products and materials enter the market. However, there is a lack of data to prove it, which is commonly attributed to the fact that collecting and sharing those numbers depend on companies themselves.²⁹

²⁵ LCM Lebreton and others. ‘River plastic emissions to the world’s oceans’ (2017) 8 *Nat. Commun.*, 15611.

²⁶ Christian Schmidt; Tobias Krauth; and Stephan Wagner. ‘Export of plastic debris by rivers into the sea’ (2017) 51 *Environ. Sci. Technol.*, 12246, 12246.

²⁷ AK Baldwin; SR Corsi; SA Mason. ‘Plastic debris in 29 great lakes tributaries: relations to watershed attributes and hydrology’ (2016) 50(19) *Environ. Sci. Technol.*, 10377.

²⁸ Christian Schmidt; Tobias Krauth; and Stephan Wagner. ‘Export of plastic debris by rivers into the sea’ (2017) 51 *Environ. Sci. Technol.*, 12246, 12251.

²⁹ Yrd. Doc Muzaffer Eroglu, *How to achieve sustainable companies: Soft Law (Corporate Social Responsibility and Sustainable Investment) or Hard Law (Company Law)* (Kadin Has Universitesi, Hukuk Fakultesi Dergisi, Haziran 2014), 87-108.

One of the cases where some data is available is the one of PET bottles. This example is important mainly because those bottles are the most commonly used for soft drinks, and because PET is the second largest category of plastic packaging used globally.³⁰ Also, from it, we have a sample on how much big world companies really contribute to plastic pollution.

In 2014 alone, 530 billion PET bottles were produced across the world and their production is predicted to grow by 4.7% a year.³¹ Greenpeace surveyed³² six global soft drinks brands. PepsiCo, Suntory, Danone, Dr. Pepper Snapple and Nestlé combined a total of over 2 million tons of plastic bottles each year. When joined with their other plastic packaging, this rises to a total of 3.6 million tons. Those numbers do not even include sales from Coca-Cola, which refused to disclose its data on plastic. As the world's largest soft drinks company, this giant alone sells more than 1.9 billion drinks per day. An estimative from Coca-Cola's sales accounts the company to be responsible for 18% to 22% of the world production of plastic bottles. More than that, over 60% of Coca-Cola's global packaging is single-use plastic bottles.³³ It probably produces over 100 billion throwaway plastic bottles every year - an average of 3,400 a second.³⁴

Despite of the lack of specific information, some numbers can be reinterpreted from other companies' reports. The companies here analyzed are the ones that agreed in Davos,³⁵ in the beginning of 2017, "to come up with cleaner ways to make and consume

³⁰ World Economic Forum, Ellen MacArthur Foundation and McKinsey & Company. 'The new plastics economy - rethinking the future of plastics' (2016) Available at: <http://www.ellenmacarthurfoundation.org/publications>. Accessed 17 August 2017, 27.

³¹ Greenpeace. 'Bottling it: the failure of major soft drink companies to address ocean plastic pollution'. Available at: https://storage.googleapis.com/gpuk-static/legacy/Bottling-It_FINAL.pdf. Accessed 20 August 2017, 3.

³² Greenpeace. 'Bottling it: the failure of major soft drink companies to address ocean plastic pollution'. Available at: https://storage.googleapis.com/gpuk-static/legacy/Bottling-It_FINAL.pdf. Accessed 20 August 2017, 4.

³³ Data recovered from Greenpeace. 'The case against Coca-Cola: how the world's biggest soft drink company is failing to address ocean plastic pollution'. Available at: <https://storage.googleapis.com/gpuk-static/legacy/the-case-against-coca-cola.pdf>. Accessed 20 August 2017, 2-4.

³⁴ Kathryn Snowdon. 'Coca-Cola producing more than 100 billion throwaway plastic bottles every year, says Greenpeace'. Available at: http://www.huffingtonpost.co.uk/entry/coca-cola-producing-more-than-100-billion-throwaway-plastic-bottles-greenpeace_uk_58eb557ce4b00de1410490ba. Accessed 20 August 2017.

³⁵ Ellen MacArthur Foundation. 'New plastics economy initiative brings together 40 leading companies and cities'. Available at: <https://www.ellenmacarthurfoundation.org/news/new-plastics-economy-initiative-brings-together-40-leading-companies-and-cities>. Accessed 21 September 2017.

plastic”.³⁶ So, from their sustainability reports, it is possible to reinterpret the available numbers. Almost all of the analyzed reports contain goals regarding plastics, but none of them is clear on the companies’ current and past contribution to the plastic pollution. Another interesting aspect is that The Coca-Cola Company is among those corporations.

In its 2015 Sustainability Report, Procter&Gamble (P&G) presents a result of “nearly 10% less plastic, which saved 900 tons of plastic”.³⁷ Saying in other words, P&G still puts in the market 8100 tons of plastic, presumably in a year period. Moreover, this is only regarding Pampers, one of the companies’ branches, and in only some Western Europe countries.

Also in P&G Report, it is possible to find the information of an increase of 12% or 29,200 tons of post-consumer resin (PCR) in plastic packaging.³⁸ Although it does not allow any conclusion on the total amount of plastic produced by the company, it means that, only in PCR, the annual production is more than 272,530 tons. Another good news about P&G is preventing 640,000 metric tons of plastic waste of going to landfills.³⁹ However, this means that only two plants of the company - the ones in Mandideep and Baddi, India - produces at least this amount of plastic every year.

Moving on to Unilever, I could only find numbers about one of its branches: Domestos. The Report⁴⁰ informs an intention to reduce in 15% the amount of plastic in the bottles of the product, adding that it would mean a reduction of 1,000 tons of plastic per year. Reinterpreting, this is the same as saying that in bottles of Domestos alone, Unilever places in the market almost 6,700 tons of plastic each year.

Despite the several references and commitments to plastic reduction, I could find no numbers that could be used to the intended conclusions regarding Dow Chemical’s,⁴¹

³⁶ The Local. ‘Davos: plastic companies devise plan to reduce pollution’. Available at: <https://www.thelocal.ch/20170117/davos-plastic-companies-devise-plan-to-reduce-pollution>. Accessed 10 September 2017.
DW. ‘Big business vow to tackle plastic problem’. Available at: <http://www.dw.com/en/big-businesses-vow-to-tackle-plastics-problem/a-37157762>. Accessed 14 September 2017.

³⁷ P&G. ‘2015 sustainability report’. Available at: http://us.pg.com/-/media/PGCOMUS/Documents/PDF/Sustainability_PDF/sustainability_reports/PG2015SustainabilityReport.pdf?la=en-US. Accessed 14 September 2017, 7.

³⁸ *Idem*, 11 and 33.

³⁹ *Idem*, 11 and 46.

⁴⁰ UNILEVER. ‘Mobilising collective action - unilever sustainable living plan: summary of progress 2015’. Available at: https://www.unilever.com/Images/uslp-mobilising-collective-action-summary-of-progress-2015_tcm244-424809_en.pdf. Accessed 21 September 2017.

⁴¹ DOW. ‘Redefining the role of business in society: 2016 sustainability report’. Available at: http://www.dow.com/-/media/dow/business-units/dow-us/pdf/science-and-sustainability/dow_2016_sustainability_reportold.ashx?la=en-us. Accessed 21 September 2017.

Amco,⁴² Suez⁴³ and Veolia⁴⁴ contributions to plastic pollution. The same happens with Indorama Ventures,⁴⁵ whose report also includes an approach on circular economy, and with Marks and Spencer (M&S),⁴⁶ although it has a focus of reducing the pressure of plastic pollution in the oceans.⁴⁷ It is again observed in the report of Sealed Air, even with a whole section dedicated to explaining its commitment with the New Plastics Economy initiative.

Mars,⁴⁸ by its turn, only have one reference to plastic reduction in one specific packaging in China,⁴⁹ but no specific numbers. Whilst Dupont⁵⁰ and L'Oreal⁵¹ have no references to plastics issues in their sustainability reports, respectively from 2016 and 2015.

Natureworks⁵² presented a different challenge, since its production is of sustainable plastic. In other words, at this initial moment, its numbers do not directly affect the analysis. The same thing happens with Novamont,⁵³ which alleges that the differential in its policy is the base on "growing integration of the production chain, and [in 2015] aimed at increasing the content of renewable material in bioplastics and improving our environmental profile".⁵⁴

⁴² AMCOR. 'Creating a new world of packaging: sustainability review 2016'. Available at: https://d2491pxl-8gaali.cloudfront.net/CorporateSite/media/Sustain-Reports/2016_Sustainability_Review.pdf. Accessed 21 September 2017.

⁴³ SUEZ. 'Protect the oceans'. Available at: <https://www.suez.com/en/Who-we-are/A-commited-group/Protect-the-oceans>. Accessed 28 September 2017.

⁴⁴ VEOLIA. 'Resourcing the world: annual and sustainability report 2016'. Available at: <https://www.veolia.com/sites/g/files/dvc181ff/assets/documents/2017/04/veolia-annual-sustainability-report-2016.pdf?>. Accessed 27 September 2017.

⁴⁵ INDORAMA VENTURES. 'Indorama Ventures sustainability report 2016'. Available at: www.indoramaventures.com/EN/CSRresponsibility/pdf/sustainability_report_2016.pdf. Accessed 26 September 2017.

⁴⁶ M&S. 'Plan A 2025: Plan A 2025 commitments'. Available at: <https://corporate.marksandspencer.com/documents/plan-a/plan-a-2025-commitments.pdf>. Accessed 26 September 2017.

⁴⁷ Idem.

⁴⁸ MARS. 'Our approach to sustainability'. Available at: <http://www.mars.com/global/sustainable-in-a-generation/our-approach-to-sustainability>. Accessed 22 September 2017.

⁴⁹ MARS, 'Sustainability at mars, incorporated'. Available at: https://www.pseg.com/family/holdings/global/solar_source/pdf/Sustainability%20Fact%20Sheet.pdf. Accessed 22 September 2017.

⁵⁰ Dupont divides its reports. I checked all available at the website: DUPONT, 'Dupont sustainability reporting'. Available at: <http://www.dupont.com/corporate-functions/sustainability/sustainability-commitments/performance-reporting/sustainability-reports.html>. Accessed 21 September 2017.

⁵¹ L'OREAL. '2015 annual report'. Available at: <http://loreal-dam-front-resources-corp-en-cdn.brainsonic.com/ressources/afile/138434-b5625-resource-annual-report-2015.pdf>. Accessed 21 September 2017.

⁵² NATUREWORKS. 'About nature works'. Available at: <http://www.natureworksilc.com/About-NatureWorks>. Accessed 26 September 2017.

⁵³ NOVAMONT. 'Sustainability report 2015: the results of a constant commitment'. Available at: http://www.novamont.com/public/RdS/RdS_Volumel_ENGLISH.pdf. Accessed 27 September 2017.

⁵⁴ Idem, 2.

The analysis of the Greenpeace report on PET bottles already addressed other companies included in that group of 40 actors joining the New Plastic Economy initiative. However, specifically regarding Nestle, other interpreted numbers are also interesting, although those numbers do not come directly from the company. In the Michigan operation alone, which “is only one small part of Nestlé”, the ten lines of production pump 500 to 1,200 per minute. Even if we take the lowest estimative, it still means 7,200,000 bottles a day only in Michigan.⁵⁵

The numbers displayed in this section are only estimates, and sometimes they are contradictory if confronted with others, but they are also only a small part of the contribution of companies to the plastic pollution. This is even more concerning if we remember that those are companies usually adhering to sustainability initiatives, so they are aligned, at least in speech, with a more sustainable development. Therefore, the original assumption that multinationals are great contributors to the plastic pollution problem is proven right. Important to highlight that all of the analyzed companies are from developed countries nationalities.

2. LESSONS LEARNED FROM A THIRD WORLD APPROACH TO THE INTERNATIONAL LAW

Following the overview of the challenges in the international scenario to face the plastic soup, this topic brings a more specific theory description which will enable an approach to one of the main challenges: the North-South global dynamics and its role in the implementation of the directives of international law. Therefore, comprehending the studies on the Third World Approaches to International Law (TWAIL) is fundamental to address issues that highlight global heterogeneity, because “the Earth is one, but the world is not”.⁵⁶

From the 2000's and on, concerns about underdeveloped and/or developing countries have favored the emergence of the academic segment called TWAIL. The approaches, although often criticized by the use of the expression “Third World”,⁵⁷ are considered emancipatory energies with the objective of contemplating, in international

⁵⁵ Caroline Winter. 'Nestle makes billions bottling water it pays nearly nothing for'. Available at: <https://www.bloomberg.com/news/features/2017-09-21/nestl-makes-billions-bottling-water-it-pays-nearly-nothing-for>. Accessed 28 September 2017.

⁵⁶ Report of the World Commission on Environment and Development, Our Common Future (UN Doc. A/42/427, 4 August 1987), Annex.

⁵⁷ BS Chimni. 'Third world approaches to international law: a manifesto' (2006) 8(1) *International Community Law Review*, 1, 4.

Robert JC Young. *Postcolonialism: an historical introduction* (London, Blackwell 2001), 5.

legal discussions, the interests, the priorities, and the needs of countries marked by colonial backgrounds.⁵⁸ Important to note that, when referring to third world, the theory is referring to least developed countries, so the tag chosen to identify should not be central, at least not to the purposes of this paper. Similarly, when referring to north and south, the theory is actually referring to countries in different stages of development, so, although in general it coincides with geographical location, it is not always the case.

The TWAIL concerns are particularly important in what relates to the Right to the Environment,⁵⁹ not only because of the universalism and the influence of the colonial historical position, but also because social and financial deficiencies usually lead to poorer environmental protection. Furthermore, an historical approach to the International Environmental Law from the global South perspective highlights the colonial background of the discipline. It started with conventions drafted and pushed forward by the historical *metropolis* but directed to the historical *colonies*, mainly to the African territory.⁶⁰ Those are the same discrepancies identified in the plastic soup problem, and the reason why TWAIL is tailored for a study dealing with an international environmental problem such as this.

Scientific production also plays an important role on the aforementioned universalism and global influence, because “the world’s scientific community is heavily dominated by developed countries, whether one looks at resources, the number of researchers, or scientific production”.⁶¹ Hence, an additional concern is that the scientific production that is taken into account for the definition of global issues and proposed solutions is mostly written by OECD countries, often leaving the worries, priorities, and needs of the global South off the agenda.

The TWAIL emerge in the described context, then, as a tool for effecting the rights and interests of underdeveloped and/or developing countries as international actors, by contributing to withdraw them from the blind spot zone. In this sense, it is worth investigating the influence of the approach in the implementation of the international instruments, especially those that seek to establish protective norms of Environmental

⁵⁸ Obiora Okafor. ‘Newness, imperialism, and international legal reform in our time: A Twail perspective’ (2005) 43(1-2) *Osgoode Hall Law Journal*, 171, 176.

⁵⁹ Opeoluwa Adetoro Badaru. ‘Examining the utility of Third World Approaches to International Law for International Human Rights Law’ (2008) 10(4) *International Community Law Review*, 379, 382.

⁶⁰ Karin Mickelson. ‘South, North, International Environmental Law, and International Environmental Lawyers. Yearbook of International Environmental Law’ (2000) *Yearbook of International Environmental Law* 11, 52.

⁶¹ Sylvia Karlsson. ‘The North-South knowledge divide: consequences for global environmental governance’. In: Daniel C. Esty and Maria H. Ivanova (ed.). *Global environmental governance* (Yale Center for Environmental Law and Policy 2002), 2.

Law. From there, a “new generation of International environmental agreements” - treaties concluded between the UN on the Human Environment 1972 and the World Summit on Sustainable Development 2002 Conference - arose.⁶²

To evolve even more, it is essential to keep in mind that most of the environmental concerns are global, but countries set different priorities, and those differences must be considered. Those distinctions are particularly perceptible between the Global North and the Global South priorities and concerns on environmental issues.⁶³ While the North focuses on global issues such as ozone layer, climate change, and protection of endangered species, the South focuses on problems that have immediate impact on vulnerable populations, such as reliable food, access to water, and atmospheric pollution.

Those are the main reasons why overcoming or at least adapting the North-South relationship is certainly one of the challenges to international environmental law. But of course, although differentiation is described in international instruments and widely studied by academia as an instrument to pursue balance among States, it is not necessarily the solution of all questions, especially because its application may become excessive and/or inadequate. Other than that, its practical application is more complex than identifying its need in a theoretical situation.

Under those premises comes the legacy of TWAIL to the implementation of international instruments and goals. There is an inevitable connection between third world studies and the scope of environmental solutions. Therefore, differentiation “must be understood as a pre-condition for any successful international environmental regime rather than as a potential obstacle”.⁶⁴

In summary, TWAIL show that, of course, differentiations cannot be applied unrestrictedly, but rather with limits and considering the criticisms involved. We do recognize, for instance, that there have been significant changes to the international setting and to the challenges that it is supposed to face. Still,

It is all too easy to dismiss the idea of the ‘global South’ as opportunistic posturing or naive pleading. At worst, it appears to be an artificial coalition in which the larger developing countries hide behind the smaller, and differences are denied or swept under the carpet. At best, it could be seen as a quaint invocation of platitudes about solidarity and shared aspirations.

⁶² Lavanya Rajamani. *Differential Treatment in International Environmental Law* (Oxford monographs in International Law, New York, Oxford University Press 2006), 9.

⁶³ Carmen G. Gonzalez. ‘Environmental justice, human rights, and the global south’ (2015) 13(1) *Santa Clara Journal of International Law*, 151, 160.

⁶⁴ Philippe Cullet, ‘Differential treatment in environmental law: addressing critiques and conceptualizing the next steps’ (2016) 5(2) *Transnational Environmental Law*, 305, 327.

Yet these types of criticisms have been raised against any and every attempts by developing countries to capitalise on the strength in numbers that has tended to be a poor substitute for real economic clout and political leverage. For, in the end, what may be most remarkable about the idea of the South is its staying power. The idea that developing countries are united by more than what divides them has a resonance that somehow transcends the passage of time as well as changes in circumstance and nomenclature.⁶⁵

The perspective of TWAIL that we adopt here is “pleading in favour of an ‘integrationist’ approach - one that brings the concerns of the South into the mainstream of the discipline”.⁶⁶ Still, studying international law from a perspective of the least favored countries allows a more detailed understanding of the global dynamics, in order to face complex challenges, such as the plastic pollution in the oceans. In that specific case, a study from this perspective also helps preventing premature, incomplete, and prejudiced judgments. The application of the theory here intends to guide international environmental law to a different path, preventing it to again fail to respond to Third World concerns in a meaningful way.⁶⁷

In order to achieve the goals mentioned in this section, we adopt the three progressive aspects indicated by Mutua.⁶⁸ The first is to understand, uncover and deconstruct impaired development conditions. The second is to build and present an alternative. And the third is to eradicate the condition of inequality, giving effect to the right to development. Once it is identified a situation involving discrepancies between developed and developing worlds, it is important to segment the analysis of the issue and to apply the three steps. Those are the steps that will be followed to the analysis of the present paper.

2.1. Considerations on the north-south dynamics to face the plastic soup

The description of the main sources of the plastic soup demonstrated that it is not only a complex global environmental challenge, but also a challenge that makes

⁶⁵ Karin Mickelson. ‘Beyond a politics of the possible: south-north relations and climate justice’ (2009) 10 *Melbourne Journal of International Law* 411, 422.

⁶⁶ Karin Mickelson. ‘South, North, International Environmental Law, and International Environmental Lawyers. Yearbook of International Environmental Law’ (2000) *Yearbook of International Environmental Law* 11, 52, 54.

⁶⁷ Idem, 52.

⁶⁸ Makau Mutua, ‘What is Twail?’ (2000) 94 *American Society of International Law Proceedings*, 31, 31-32.

explicit several of the differences between the Global North and the Global South. This naturally asks for an international attempt, which usually comes through international instruments, such as conventions and protocols. Previous study⁶⁹ showed, however, that the current international law efforts are not compatible with the current harms and threats of the plastic pollution in the oceans. The contribution of the present paper is, then, to design preliminary suggestions to prevent the pitfalls of the North-South dilemma and potentialize future attempts.

As seen, TWAIL already give the steps to such a purpose. The first one is to understand, uncover, and deconstruct impaired development conditions. The second is to build and present an alternative. The third and final is to eradicate the condition of inequality, giving effect to the right to development.

Starting with step one, first comes the stage of understanding the impaired development conditions. Regarding the central problem of this paper, the plastic pollution that ends up in the oceans, it comes as no surprise that Asian and African countries are major land-based sources. Places that have bigger social problems and lower development rates often also struggle with environmental issues as waste and sewer management. That is the most evident and immediate cause of plastic leaking to the environment. The second stage of the first step, nonetheless, helps going beyond such an appreciation.

In other words, to uncover the impaired development conditions it is necessary to be more critical than looking at the final edge of the pollution sources, which is only one side of the coin. For instance, industrial production without the corresponding prevention and solutions must not be left aside. Therefore, essential to keep in mind that the companies responsible for a great part of the plastic production are based in Europe or in North America. This means that, although developed countries seem not to figure as main immediate cause to the plastic soup, they contribute greatly as mediate cause.

The global sales for plastic items exports by country totaled US \$79 billion in 2018, out of which 15 countries are accountable for 78%.⁷⁰ Eleven of those countries are members of the Organization for Economic Cooperation and Development (OECD)⁷¹ and are responsible for 37.2 billion in exports that same year - or over 47% of the values in plastic exports. The whole list is reproduced here:

⁶⁹ Luisa Cortat Simonetti Gonçalves; Michael G Faure. 'International Law instruments to address the plastic soup' (2019) *William & Mary Environmental Law and Policy Review*. 43, 3 (2018-2019). 871.

⁷⁰ WORLD'S TOP EXPORTS. 'Plastic item exports by country'. Available at: <http://www.worldstopexports.com/plastic-item-exports-country>. Accessed 24 August 2019.

⁷¹ OECD. 'Where: global reach'. Available at: <https://www.oecd.org/about/members-and-partners/>. Accessed 24 August 2019.

1. China: US\$ 19.5 billion (24.7% of exported plastic items)
2. Germany: \$ 9.9 billion (12.5%)
3. United States: \$ 7.2 billion (9.2%)
4. Italy: \$ 3.3 billion (4.2%)
5. France: \$ 3 billion (3.8%)
6. Poland: \$ 2.3 billion (2.9%)
7. Netherlands: \$2.2 billion (2.8%)
8. Japan: \$ 2.2 billion (2.7%)
9. Czech Republic: \$2 billion (2.5%)
10. Mexico: \$ 2 billion (2.5%)
11. Taiwan: \$ 1.8 billion (2.2%)
12. Hong Kong: \$ 1.7 billion (2.1%)
13. South Korea: \$ 1.6 billion (2.1%)
14. United Kingdom: \$ 1.6 billion (2%)
15. Belgium: \$ 1.5 billion (1.8%).⁷²

Moreover, the exports of plastic waste indicate a similar reality. 73.9% are made from 15 countries, eleven of which are OECD countries and responsible for 55.3% of the scrap plastic exported in the world in 2017. The compiled list is:

1. United States (12%)
2. Japan (11%)
3. Hong Kong (9.3%)
4. Germany (8.1%)
5. Belgium-Luxembourg (4.3%)
6. Thailand (4%)
7. United Kingdom (3.8%)
8. Netherlands (3.6%)
9. France (3.3%)
10. Philippines (3.1%)
11. Mexico (3%)
12. Australia (2.2%)
13. Indonesia (2.2%)
14. Spain (2.1%)
15. Canada (1.9%)⁷³

Complementing the scenario comes the data about the global imports of scrap plastic by country. Although amongst the top 15 importers the majority - nine - is again of OECD members, the six non-OECD countries account for 66.5% of the global imports of plastic waste. China alone imported 47% in 2017:

⁷² WORLD'S TOP EXPORTS. 'Plastic item exports by country' 22 August 2019. Available at: <http://www.worldstopexports.com/plastic-item-exports-country/>. Accessed 24 August 2019.

⁷³ Based on the data available at: OEC, 'Which countries export Scrap Plastic? (2017)' https://oec.world/en/visualize/tree_map/hs92/export/show/all/3915/2017/. Accessed 24 August 2019.

1. China (47%)
2. Hong Kong (11%)
3. United States (4.2%)
4. Vietnam (3.4%)
5. Netherlands (3.2%)
6. Germany (2.9%)
7. Malaysia (2.3%)
8. Belgium-Luxembourg (2.1%)
9. Italy (2%)
10. India (1.7%)
11. Turkey (1.3%)
12. Canada (1.3%)
13. Ireland (1.2%)
14. United Kingdom (1.2%)
15. Other Asian Countries (1.1%).⁷⁴

Important to remember that even though the international trade of plastic waste is meant for recycling, in China - the, by far, most common destination - there are “signs of [imported] plastic dumped in ravines and waterways. For the plastic that did reach a recycling factory, there were reports of poor working conditions and contaminated water being discharged into local creeks from such facilities”.⁷⁵ In the low-income countries, over 90% of waste is “often disposed in unregulated dumps or openly burned... [creating] serious health, safety and environmental consequences”.⁷⁶

This last list also explains the reactions from other countries to China’s ban on plastic waste imports. The legislation restricting this kind of importation came as a result of worse waste separation in Europe and United States.⁷⁷ The impact of such a Chinese legislation is easily perceived from the reactions, mainly of countries that were halting their recycling programs because of cost,⁷⁸ and because “95 percent of the plastics collected for recycling in the European Union and 70 percent in the U.S. were sold

⁷⁴ Based on the data available at: OEC, Which countries import Scrap Plastic? (2017) https://oec.world/en/visualize/tree_map/hs92/import/show/all/3915/2017/. Accessed 24 August 2019.

⁷⁵ Ivan Watson *et al.* ‘China’s recycling ban has sent America’s plastic to Malaysia. Now they don’t want it so what next?’ 27 April 2019. Available at: <https://edition.cnn.com/2019/04/26/asia/malaysia-plastic-recycle-intl/index.html>. Accessed 24 August 2019.

⁷⁶ Silpa Kaza *et al.* ‘What a waste 2.0: A global snapshot of solid waste management to 2050’ (2018) Urban Development Series. Washington, DC: World Bank DOI:10.1596/978-1-4648-1329-0, xii.

⁷⁷ Cheryl Katz. ‘Piling up: how China’s ban on importing waste has stalled global recycling’ 7 March 2019. Available at: <https://e360.yale.edu/features/piling-up-how-chinas-ban-on-importing-waste-has-stalled-global-recycling>. Accessed 24 August 2019.

⁷⁸ Sean Mcnaughton; Kelsey Nowakowski. ‘How China’s plastic waste ban forced a global recycling reckoning’ June 2019. Available at: <https://www.nationalgeographic.com/magazine/2019/06/china-plastic-waste-ban-impacting-countries-worldwide/#close>. Accessed 24 August 2019.

and shipped to Chinese processors”.⁷⁹ For example, the global trade of plastic waste was, in general, shifted to Southeast Asia, to countries as Malaysia, Thailand, Vietnam, Indonesia, and India.⁸⁰ The United States shifted its plastic waste export to be sent to Malaysia, which, by its turn, also banned - though temporarily - those kind of imports, from October, 2018.⁸¹⁻⁸² Many North-American and European recycling programs were ceased or diminished, incineration has increased, among other consequences.⁸³

Those numbers also finalize stage three of the first step: deconstructing impaired development conditions. Countries from the global North may not have the rivers that most contribute to the plastic pollution in the oceans, but they do have: (i) the companies that most produce plastics (see topic 1.2); (ii) the highest productions plastic and respective profits rates; (iii) the most expressive contributions of scrap plastics, which, by its turn, is mostly imported by countries from the global South.

The second step proposed by TWAIL is to build and present an alternative. In the case of the plastic soup problem, the North-South heterogeneity and contradictions end up also leading to an alternative. It should focus on balancing those two edges of the plastic pollution chain. On the one hand, international solutions could concentrate on searching for alternative materials and products, and to make producers liable for the pollution caused by their products. On the other hand, international solutions could concentrate on helping enhancing recycling and management solutions to the

⁷⁹ Cheryl Katz. ‘Piling up: how China’s ban on importing waste has stalled global recycling’ 7 March 2019. Available at: <https://e360.yale.edu/features/piling-up-how-chinas-ban-on-importing-waste-has-stalled-global-recycling>. Accessed 24 August 2019.

⁸⁰ DW. ‘After China’s import ban, where to with the world’s waste?’ 5 April 2019. Available at: <https://www.dw.com/en/after-chinas-import-ban-where-to-with-the-worlds-waste/a-48213871>. Accessed 24 August 2019.

⁸¹ Ivan Watson *et al.* ‘China’s recycling ban has sent America’s plastic to Malaysia. Now they don’t want it - so what next?’ 27 April 2019. Available at: <https://edition.cnn.com/2019/04/26/asia/malaysia-plastic-recycle-intl/index.html>. Accessed 24 August 2019.

Yen Nee Lee. ‘Malaysia, following in China’s footsteps, bans imports of plastic waste’ 25 January 2019. Available at: <https://www.cnbc.com/2019/01/25/climate-change-malaysia-following-china-bans-plastic-waste-imports.html>. Accessed 24 August 2019.

⁸² Countries such as Thailand, Vietnam and Indonesia have also decided to restrict plastic waste import. GREENPEACE. ‘The recycling myth: Malaysia and the broken global recycling system’ November 2018. Available at: <https://storage.googleapis.com/planet4-malaysia-stateless/2019/04/2fe6f833-the-recycling-myth-malaysia-and-the-broken-global-recycling-system.pdf>. Accessed 24 August 2019, 9.

⁸³ Cheryl Katz. ‘Piling up: how China’s ban on importing waste has stalled global recycling’ 7 March 2019. Available at: <https://e360.yale.edu/features/piling-up-how-chinas-ban-on-importing-waste-has-stalled-global-recycling>. Accessed 24 August 2019.

DW. ‘After China’s import ban, where to with the world’s waste?’ 5 April 2019. Available at: <https://www.dw.com/en/after-chinas-import-ban-where-to-with-the-worlds-waste/a-48213871>. Accessed 24 August 2019.

post-consumer edge. Both of those perspectives would make the global North advance in the fight against the plastic pollution in the oceans. The global South would gain especially from the second perspective.

More than that, the two edges mentioned match. Several options that focus on the producers secondarily influence solutions to the post-consumer edge. For instance, the imposition of a tax to stimulate reducing plastic or recycling, or an extended producer responsibility,⁸⁴ or reversal logistics,⁸⁵ in any case imposed upon the producers of plastic. Although those instruments primarily aim at prevention (reducing emissions of plastics into the ocean) they could potentially also generate finances for cleaning up the current plastic soup problem. In the same way, although those instruments aim at the producer, they generate ways and revenue to actions focused at post-consumer actions. Nonetheless, they would have to be implemented at the domestic (or regional) level, since international actors and organizations do not have the competency to regulate the subjects.

This leads to the third and last step proposed by the TWAIL: to eradicate the condition of inequality, giving effect to the right to development. An important aspect to that is to produce more qualified and embracing data on the plastic pollution. This means stimulating scientific production that goes beyond the works written in OECD countries and/or by OECD researchers. This is a relevant path - reminded by TWAIL - to guarantee more comprehensive and impartial studies. The majority of the research about plastics is done, financed, or housed by developed countries. That is an aspect that, unlikely other suggestions made in this paper, can be easier addressed by public international law.

Another aspect that may be addressed directly by public international law is international trade. Even if mainly undertaken by private actors, trade depends upon several tools and instruments, most of which regulated, controlled, or influenced by States. States, by their turn, are subjects to international law. This means that actions could be taken in the sense of imposing conditions or restrictions when concerning the trade of plastic products and, mainly, of plastic waste.

Also, a compensation fund could potentially solve many of the problems. To the extent that the states finance the fund, it could be created through international law. Since contributions by the states to the fund could be differentiated, for example taking into account GDP, the creation of a fund could equally align with the principle

⁸⁴ "a policy approach under which producers are given a significant responsibility - financial and/or physical - for the treatment or disposal of post-consumer products".

OECD. 'Extended producer responsibility'. Available at: <http://www.oecd.org/env/toolsevaluation/extendedproducerresponsibility.htm>. Accessed 16 October 2018.

⁸⁵ Freely translated from the expression *logística reversa*, adopted by the Brazilian legislation. It explicitly considers those who insert the product in the market responsible for collecting it.

7 of the Rio Declaration.⁸⁶ Examples are the Multilateral Fund for the implementation of the Montreal Protocol,⁸⁷ the Green Climate Fund,⁸⁸ the Climate Investment Funds,⁸⁹ and the Global Environmental Facility.⁹⁰ Regarding the first one, many analyses are cautiously optimistic,⁹¹ but with the caveat that the case of “the stock of ozone-depleting chemicals was technically discoverable and calculable, and substitutes were for the most part already present or on offer”,⁹² which is not the case with the plastic pollution.⁹³⁻⁹⁴

⁸⁶ “States shall co-operate in a spirit of global partnership to conserve, protect and restore the health and integrity of the Earth’s ecosystem. In view of the different contributions to global environmental degradation, States have common but differentiated responsibilities. The developed countries acknowledge the responsibility that they bear in the international pursuit of sustainable development in view of the pressures their societies place on the global environment and of the technologies and financial resources they command”. (United Nations. ‘The Rio Declaration on Environment and Development’ (1992), Principle 7).

⁸⁷ Established in 1991 after a decision of the Second Meeting of the Parties to the Montreal Protocol. It is dedicated to reversing the deterioration of the Earth’s ozone layer. See more: <http://www.multilateralfund.org/default.aspx>.

⁸⁸ Established in 2010 by the 194 countries parties to the United Nations Framework Convention on Climate Change (UNFCCC) as a financial mechanism to help developing countries to limit or reduce carbon emissions. See more: <https://www.greenclimate.fund/who-we-are/about-the-fund>.

⁸⁹ Comprised of four programs, was established in 2008 and focus on efforts to empower transformations in the energy, climate resilience, transport and forestry sectors. Only 14 countries are listed as donors. See more: <https://www.climateinvestmentfunds.org/about>.

⁹⁰ Established in 1992, in the eve of the Rio Earth Summit. Counts with 39 donors countries and is provided to government agencies, civil society organizations, private sector companies, research institutions, among the broad diversity of potential partners, to implement projects and programs in developing countries. See more: <https://www.thegef.org/about/funding>.

⁹¹ See, e.g.: Andrew Jordan and Tim O’Riorda. ‘The multilateral ozone fund of the Montreal Protocol: institutions for global environmental change’ (1998) 8(2) *Global Environmental Change*, 171.

Karen Raubenheimer and Alistair McIlgorm. ‘Is the Montreal Protocol a model that can help solve the global marine plastic debris problem?’ (2017) 81 *Marine Policy*, 322.

Frank Biermann and Udo E. Simonis. ‘The multilateral ozone fund: a case study on institutional learning’ (1999) 26(1/2/3) *International Journal of Social Economics*, 239.

Ralph Luken and Tamas Grof. ‘The Montreal Protocol’s multilateral fund and sustainable development’ (2006) 56 *Ecological Economics*, 241.

JM Garcia. *Climate and environmental protection: international funding* (New York, Nova Science Publishers, Inc 2014).

⁹² Andrew Jordan and Tim O’Riordan. ‘The multilateral ozone fund of the Montreal Protocol: Institutions for global environmental change’ (1998) 8(2) *Global Environmental Change*, 171.

⁹³ Karen Raubenheimer and Alistair McIlgorm. ‘Is the Montreal Protocol a model that can help solve the global marine plastic debris problem?’ (2017) 81 *Marine Policy*, 322.

The authors had suggested a model based on the Montreal Protocol to address the marine plastic debris problem. However, the conditions that explain the success of the Montreal Protocol (that technical solutions were available as well as substitutes for the ozone depleting substances) unfortunately do not apply to the problem of the plastic soup.

⁹⁴ Luisa Cortat Simonetti Gonçalves and Michael G Faure. ‘International Law instruments to address the plastic soup’ (2019) *William & Mary Environmental Law and Policy Review*. 43, 3 (2018-2019). 871.

Undoubtedly, the transfer of financial and technological assets to developing countries is no news to the international law discussions, in the entire range of its potentialities and obstacles. Specifically to that purpose, what still needs a lot of maturation is politics, since the legal possibilities are already gaining shape. More than that, we need to be cautious not to propose too many funds, what would create an unsustainable situation.

Those and other suggestions to be implemented through public international law are treated in more detail by Gonçalves and Faure.⁹⁵ Beyond that, the role that private actors may play will be discussed in a future work.⁹⁶ The scope to this paper is analyzing the potential North-South tension and helping to prevent its harmful effects. Therefore, the core message here is that regardless of the path chosen, global heterogeneity between North and South should always be considered, and that such a concern aligns with the wanted solutions.

SUMMARY AND MAIN FINDINGS

The challenges posed by the plastic pollution in the oceans are huge and, to a certain extent, still unknown. Since 80% of its sources are land-based,⁹⁷ the main cause is located in countries and regions. Nonetheless, oceans are basically international waters, turning such a pollution into an international problem.

A previous study⁹⁸ showed that the current international instruments are not able to face the plastic soup, neither from an *ex ante* nor from an *ex post* perspective. Such a study dealt with the analysis of the current international instruments and focused on discussing the possible paths to be taken through Public International Law so those actions come before it is too late. The present study complements those contributions concentrating on the international dynamics that may influence future action for *ex ante* actions.

The concern here is to prevent the common pitfalls derived from the distinctions between developed and developing countries. This is always a valid preoccupation in

⁹⁵ *Idem*.

⁹⁶ By Luisa Cortat Simonetti Gonçalves. Work in progress, near completion, discussing the state-of-the-art of private approaches to the plastic pollution and how they may contribute to the whole picture, mainly to Public International Law.

⁹⁷ SB Sheavly, 'Marine debris - an overview of a critical issue for our oceans' (Sixth Meeting of the UN Open-ended Informal Consultative Processes on Oceans & the Law of the Sea, New York, June 2005). Available at: http://www.un.org/Depts/los/consultative_process/consultative_process.htm. Accessed 28 August 2017.

⁹⁸ Luisa Cortat Simonetti Gonçalves and Michael G Faure. 'International Law instruments to address the plastic soup' (2019) *William & Mary Environmental Law and Policy Review*. 43, 3 (2018-2019). 871.

the international scenario, even more when it concerns international environmental law. To the case of the plastic soup, it is particularly relevant, since chemistry researches are placing a vast majority of land-based plastic pollution sources in least developed countries from Asia and Africa.

For a hasty observer, those recent researches would demonstrate that the developing world is to blame - and, maybe, therefore to find a solution - for the plastic soup. Immediate sources are not, however, the only causes to the problem. It comes without saying that the paper does not disregard the importance to find solutions to those contributions from the global South. The paper does, however, highlight the relevance to see the problem in its entirety. It describes, for instance, the large contribution of multinational companies, which put on the market the plastic products. Those companies are generally from the developed world.

More than that, the leakage of plastic into the oceans from the so-called third world countries should not be considered a deliberate action, but a consequence of social and economic deficiencies, which necessarily reflect on environmental protection. The deficiencies, by their turn, are also a reflection of global discrepancies. Furthermore, although the developed world seems to have a more adequate collection of recyclable waste, most of it is exported to the developing world, uncovering a second and significant contribution of those countries to the plastic pollution that ends up in the oceans. On top of that, the recent decision of China and other Asian countries to restrict or ban the plastic waste imports unveiled that the quality of the waste separation has greatly decreased, making recycling financially unattractive.

The concerns with global heterogeneity are also the core of Third World Approaches to International Law (TWAAIL), reason why it was used to analyze the plastic soup case. From the theory, it was possible to derive the practical aspects to be considered, and, consequently, to conclude that there are legal solutions that combine remedies to the producer edge with remedies to the post-consumer edge. Those are the solutions indicated as priorities to the upcoming decisions that will hopefully come in the near future to face the plastic pollution in the oceans through the public international law. Public international law may also contribute with that by nudging a more responsible international trade of plastics products or plastic waste, or by helping technological and financial transfer, for example.

Finally, we urge for more technical research written by non-OECD countries and researchers, so they have a voice in the definition and shapes of the problems and solutions. This aims at including the concerns and needs of the global South in the international agenda.

Public international law must act fast against the plastic soup, but making sure to have a solution that is, indeed, international.

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