LIMITS OF ENVIRONMENTAL SOLIDARITY AND THE DEFINITION OF CRITERIA FOR INDIRECT LIABILITY OF INDIRECT POLLUTER

Limites da Solidariedade Ambiental e a Definição de Critérios para Responsabilização Civil do Poluidor Indireto

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ABSTRACT

Joint and several liability has long been applied in cases of environmental damages in Brazil. From a generic matrix, it is only said that the institute should be applied to cases of environmental damage from multi-causal causes. However, there is a visible lack of legal reflection on the criteria justifying its incidence and, above all, defining the limits of this institute. Sometimes an unrestricted expansion, unrelated to the technical and factual complexities of a given environmental damage, can result in asymmetries, inequalities and overdeterrence. On the other hand, a clear definition and the reasoning for applying joint and several liability under the rule of law and the institute's boundaries tend to strengthen environmental protection on the one hand and the desirable stability of socioeconomic relations on the other. On the contrary, unrestricted application may, on the contrary, imply real injustices and imbalances in specific cases. The object of the present article also aims to shed light on a still stormy theme in the theory and practice of Environmental Law, that is, the criteria defining the limits of joint and several liability, as well as the definition of the so-called indirect polluter, as a third party. To this end, the article methodologically uses systemic reflections, with special attention to the legal and economic systems. In addition, the research has a strong emphasis on comparative law from experiences adopted in industrialized countries that have already faced environmental contamination issues. The criteria for the definition of these institutes as well as for their application become of fundamental importance for the attainment of an efficient environmental protection and its exercise in balance with the economic, environmental and social sustainability.
Keywords: Environmental liability; joint and several liability; indirect polluter; environmental safety duties.

RESUMO

O instituto da solidariedade civil vem sendo, de longa data, aplicado nos casos de responsabilidade civil ambiental, tendo sua incidência se consolidado doutrinariamente e jurisprudencialmente em nosso país. A partir de uma matriz genérica, diz-se apenas que o instituto deve ser aplicado a casos de danos ambientais de causas pluricausais. No entanto, há uma visível carência de reflexão jurídica acerca dos critérios justificadores para sua incidência e, sobretudo, definidores dos limites deste instituto. Por vezes, uma ampliação irrestrita e alheia às complexidades técnicas e fáticas de um determinado dano ambiental, pode redundar em assimetrias, desequilíbrios e perda do caráter dissuasório (por excesso). De outro lado, a aplicação consolidada e bem definida dos casos sujeitos e

os limites do instituto tendem a fortalecer a proteção ambiental, de um lado, e a desejável estabilidade das relações socioeconômicas, por outro. Já uma aplicação irrestrita pode, ao contrário, implicar em verdadeiras injustiças e desequilíbrios em casos concretos. O objeto do presente artigo visa lançar luzes também sobre tema ainda tormentoso na teoria e prática do Direito Ambiental, isto é, os critérios definidores dos limites da incidência do instituto da solidariedade, assim como da definição do chamado poluidor indireto. Para tanto, o artigo lança mão, metodologicamente, de reflexões sistêmicas, com especial atenção para os sistemas jurídico e econômico. Além disso, a pesquisa documental tem grande ênfase no direito comparado a partir das experiências tidas em países industrializados que já enfrentam os problemas de contaminação ambiental industrial de longa data, e que tenham compatibilidade com o sistema e a tradição jurídica pátria. Os critérios para uma definição destes institutos assim como para a sua aplicação passam a ser de fundamental importância para a obtenção de uma proteção ambiental eficiente e exercida em equilíbrio com a sustentabilidade econômica, ambiental e social.

Palavras-chave: Responsabilidade civil ambiental; solidariedade; poluidor indireto; deveres de segurança ambiental

INTRODUCTION

The frequent existence of consolidated environmental liabilities in large urban centers around the world is not new. To respond to this global problem, a detailed analysis of the legal choices and criteria adopted by each system, both in the identification of responsible activities and in the scope of their imputation, is a fundamental premise. The legal choices have repercussions in the greater emphasis placed on efficiency or equity of a given legal system of environmental civil liability, in a pendulum between the need to remediate environmental damage and the fair criteria for civil liability. And in this tenuous legal balance, the remediation processes of urban areas in Brazilian cities can be more efficient and fairer.

Environmental Law in Brazil has long applied the principle of solidarity to the obligation to pay compensation for environmental damage. At first, this understanding was strongly established in doctrine and jurisprudence, and its incidence was justified in specific legislation (item IV of article 3 of Law 6,938/1981). The defense of an unrestricted application of solidarity was exactly in opposition to the legal tradition, which did not have environmental protection at its core, and also to economic practices, which were beginning to present serious environmental effects that were deleterious to the

economic development of the country. Also, the youthfulness of Environmental Law led to a general application of the institute without further analysis, starting only from a broad notion of solidarity.

After the enactment of the Civil Code (Law 10,406/2002), article 942 consolidated the understanding about the applicability of the institute, whenever a damage finds in its cause a plurality of authors. However, over the last decades, the complexity of economic activities has also imposed on Environmental Law the need to deal with increasingly complex and diffuse causal chains. In this evolutionary process, in addition to the causes and concauses that would give rise to certain environmental damages (direct polluter), we began to analyze cases in which certain actors would or would not have the duty to intervene and prevent environmental damage resulting from these activities. Here, in the figure of the so-called indirect polluter.

Despite a significant and consensual consolidation of the principle of solidarity in environmental matters, a more detailed analysis still seems pertinent in order to unveil the criteria that justify and, consequently, limit its application. In fact, if there is some consensus about solidarity, the matter pertaining to the indirect polluter and the interpretative legal criteria for its incidence are a torment to both doctrine and jurisprudence. It is on this object that the present study launches its pretension to reflect deeply on the criteria for the incidence of solidarity for all those who contribute to environmental damage and, in light of these criteria, the delimitation of the limits of the institute. One cannot forget that the strength of a legal institute derives from a precise delimitation and the constitution of an identity. The same should be analyzed in relation to the so-called indirect polluter. Accordingly, it is also fundamental that in both cases the inductive character of the Law is not undermined. It so happens that the preventive character and deterrence of civil liability can be negatively relativized if the notion of solidarity and indirect liability is too broad. In these cases, there may be a discouragement to responsible risk management by those who are actually able to participate in the process, either by the expectation of the possibility of liability of third parties or by the channeling of this responsibility only to those who simply have greater financial means, without greater attention to their condition of participation in the production of risk. On the other hand, a narrow interpretation of the institute will lead to an unacceptable stimulus to the degradation of environmental assets and, consequently, to the irresponsibility of its agents.

Thus, it is in the balance provided by legal criteria and environmental efficiency that both an exaggerated expansion and an excessive restriction of interpretation of the principles of solidarity and the indirect polluter must be avoided. For this reason, the careful delimitation of the criteria that define these institutes aims at the inducing character of Law and civil liability, in order to stimulate the guarantee of the fundamental right of all to an ecologically balanced environment based on the

structures of the *Rule of Law* (in its multiple constitutional functions, among which there is the environmental one) and its fundamental duties.

Currently, we can identify a maturing of the legal meaning of indirect polluter and the limits of solidarity, resulting from the temporal maturation of this debate. The delimitation of these concepts is fundamental for efficient environmental protection itself, in order to stimulate a legal balance for the duties of sustainability. In this interim, the present article faces the problem of the formation and definition of the legal criteria for the interpretative delimitation of solidarity and indirectness. To this end, it makes use of methodological research based on the analysis of the structures of Brazilian law, as well as on the experiences of comparative law, when compatible with our legal system. The justification for the analysis of comparative law is precisely due to the fact that industrialized countries have already exposed and faced in their courts and doctrine several of the problems discussed here, which are still effervescent in our national legal scenario. The orientation for such reflections should always be permeated towards the search for solutions that obtain greater equity and efficiency in ensuring an environmental balance with human activities.

Therefore, it was necessary to analyze the prevailing civil liability systems worldwide for cases of multiple agents, such as shared liability, on the one hand, and joint liability, on the other. Afterwards, civil solidarity is faced and its application to the specific nuances of conflicts of an environmental nature. The procedural ramifications of the current concept of solidarity lead to an analysis of joinder in environmental matters. Next, guided by the search for efficiency, we analyze the limits necessarily attributable to solidarity in environmental matters, with the aim of this institute serving a coherent constitutional order of objective preventive measures, for the rational and proportional deterrence of environmental risks.

Finally, the notion of the figure of the indirect party is faced conceptually, as the agent that, despite not being directly linked to the activity that caused the damage, would have the duty to intervene and supervise the activity to prevent the materialization of environmental damage. By failing to do so, he/she becomes co-responsible for the damage. Therefore, the present text seeks to reveal the criteria that delimit these concepts in order to provide stable and secure legal relations, while serving for an ambitious and efficient environmental protection.

1. CIVIL LIABILITY SYSTEMS FOR CASES OF MULTIPLICITY OF LIABLE AGENTS

Environmental damage, especially in its collective dimension, presents theoretical and practical obstacles to the identification of the agent civilly responsible as well as the subjects and interests that are being protected. Not rarely, the situations in which environmental damage occurs are marked by anonymity and trans-individuality, whether of the causative agents or the victims (BENJAMIN, 1998, p. 37). These difficulties arise from the frequent realization that environmental damage stems from a multiplicity of causes that are complex and diffuse.

Due to the fact that environmental damages are largely anonymous, with multiple agents, and have collective repercussions, two possible alternatives are envisaged for the application of *civil liability for the same harmful event or for several combined harmful events* (synergistic, historical or cumulative). In accordance with the teachings of Catalá (1998), one of them would be the adoption of the principle of *shared responsibility* (also called collective or joint). According to this, the agent causing the damage is only responsible for the part of the damage that can actually be attributed to its activity in a concrete way. In Brazil, an example of this model is shared responsibility expressly provided for in the National Solid Waste Policy (Política Nacional de Resíduos Sólidos, Law 12,305/2010).[1]

On the other hand, there is the legal technique brought by *the principle of joint and several liability*, which consists of a mandatory mechanism for the treatment of civil liability in cases where there are difficulties in demonstrating the exact participation of each of the various agents that caused the damage. According to solidarity, any of the co-responsible parties should respond for the totality of the repair, without, however, prejudice to their right of recourse in relation to the percentage of participation attributed to each of the identified responsible parties (CATALÁ, 1998, p. 189). However, this will be an evaluation that will be confined to a second moment.

Compared to joint and several liability, shared civil liability is simpler. In this model, each of the defendants is responsible for the percentage of their contribution to the damage, even if among the other co-responsible parties there is one or more insolvent parties. As can be immediately observed, this liability matrix presupposes the possibility of delimiting the respective portion attributable to each of the co-responsible parties.

In analysis of its pure conceptual forms, it is commonly referred to in international doctrine that *shared responsibility* burdens the victim or the collectivity more, since the "orphan shares" will fall on them, either in their direct costs of degradation (loss of value, for example) or in the remediation

[1]According to art. 3, XVII, and arts. 30 to 36, all of Law 12,305/2010.

costs of the "orphan area". (FAURE, 2017). In the case of *joint and several liability*, these orphan areas will be absorbed by the party jointly liable, even if certain percentages were not caused by its activity.

The evidentiary difficulties inherent to *shared responsibility*, which fall on the victim, with regard to the identification of all participants in the chain of environmental degradation of a given environmental asset, as well as the attribution of the share in which each agent contributed to the damage, have stimulated the adoption of solidarity to the detriment of shared responsibility in most national and international legal systems. (CATALÁ, 1998, p. 190).

Among such options presented, the Brazilian legal system has shown a strong attachment to joint and several liability, as a general rule for cases of causal multiplicity. Thus, the adoption of solidarity in the imputation of civil liability in a generalized manner for cases of multiplicity of agents that caused the same environmental damage has become consolidated in the interpretative practice, especially in environmental matters. Such incidence has been verified even for cases in which the law expressly foresees the application of shared responsibility. This is the case of the matter concerning civil liability for damages arising from the irregular disposal of solid waste, which, despite the express reference of the National Solid Waste Policy Law[2] to shared responsibility, one notes the repeated jurisprudential application of the system of joint and several liability even for these cases, based on the use of the theory of *post-consumption liability* (LEMOS, 2014; MOREIRA, 2015; STEIGLEDER, 2017). The fact that shared responsibility has a more preventive orientation, from the delimitations arising from reverse logistics, this orientation (of delimitation and sharing of responsibilities) should not be ruled out for cases of environmental damage susceptible to fragmentation and sharing of liability of the generating sources. The adoption of the principle of joint and several liability by the Brazilian legal system for cases of environmental damage in general, arising from multiple agents, is largely due to the general principles of our legal system[3], as well as the majority interpretation of the specific environmental legislation in our country. This is also the conclusion of Oliveira (2007), with respect to Portuguese law. However, attention is drawn to the significant differences between the two systems and to the fact that there is still confusion between these systems and their application in our Law. As a general rule, a microsystem subject to one of these liability matrices necessarily excludes the other.

[2] E.g.: STJ, Appeal in REsp nº 1.262.880-PR (2018/0059392-8), Minister Rapporteur Assusete Magalhães, j. March 21, 2018; TJRS, Appeal 70075782466, 22. Câmara Cível, Rapporteur Des. Marilene Bonzanini, j. in March 22, 2018.
[3] In Brazilian civil law, the general rule of civil liability has been adopted for cases of multiple agents, as provided for in art. 942 of the Civil Code.

2. GENERAL RULES OF JOINT LIABILITY

Solidarity consists of a modality of obligation provided for in the civil law of the country, according to which there is a multiplicity of subjects, either through the competition of several creditors, each with the right to the entirety of the debt (active solidarity), or even through the plurality of debtors, each one obliged for its totality (passive solidarity). Thus, "there is solidarity, when more than one creditor, or more than one debtor, competes in the same obligation, each with the right, or obligation, to the entire debt" (Free translation).[4] As an example, if A is the creditor of joint and several debtors B, C and D, he (A) can collect the entire debt from any of the debtors (B, C and D). In turn, the person who pays the entirety of the obligation may exercise his right of recourse in the predetermined quotas, contractually or legally or, failing that, in equal parts.[5] It should be noted that liability is not presumed, but must arise from the law or the will of the parties.[6]

In the context of damage repair, there is a "phenomenon of expansion of passive solidarity in the repair of unfair damages" for cases of "common causality", in which two or more people effectively compete for the production of a damage (Free translation. CAVALIERI FILHO, 2012, p. 64; FARIAS; ROSENVALD; 2012, p. 321). In this sense, the Civil Code provided that, in the event of more than one subject causing the damage, all are responsible for reparation, as established in art. 942 of the Civil Code, which reads as follows:

> Art. 942. Os bens do responsável pela ofensa ou violação do direito de outrem ficam sujeitos à reparação do dano causado; *e, se a ofensa tiver mais de um autor, todos responderão solidariamente pela reparação*.
>
> Parágrafo único. São solidariamente responsáveis com os autores os co-autores e as pessoas designadas no art. 932. (Emphasis added)[7].

There is in solidarity, on the one hand, a *subjective plurality*, whether of creditors or debtors, and on the other hand, an *objective unity* that provides, under the terms of art. 264 of the Civil Code, that "there is solidarity, when more than one creditor, or more than one debtor, each with the right,

[4]See art. 264 of the Civil Code.
[5]Art. 283 of the Civil Code: "The debtor who has fully satisfied the debt has the right to demand from each of the co-debtors their share, dividing the debt of the insolvent, if any, equally, in the debt, the parts of all co-debtors" (Free translation).
[6]Art. 265 of the Civil Code: "Solidarity is not presumed; results from the law or the will of the parties."
[7]Article 942. The assets of the person responsible for the offense or violation of the rights of others are subject to compensation for the damage caused; and*, if the offense has more than one author, all will be jointly and severally liable for the reparation*. Single paragraph. Co-authors and the persons designated in art. 932 are jointly and severally liable with the authors. (Free translation)

or obligation, to the entire debt competes in the same obligation". (Free translation. FARIAS; ROSENVALD; 2012, p. 297).

3. SOLIDARITY IN ENVIRONMENTAL MATTERS

Solidarity, undeniably, is related to the study of the causal nexus, being frequently described from the existence of damages resulting from a common causality, complex causality or even a causal dispersion. (BENJAMIN, 1998; CAVALIERI FILHO, 2012, p. 64; LEMOS, 2008, p. 145). In terms of environmental responsibility, the Principle of Accountability is applied within the limits and semantic predictions inserted in §3 of art. 225 of the Federal Constitution of 1988.[8] In this matter, civil liability applies in the objective modality, provided for in §1 of art. 14, of Law No. 6,938/1981.[9] It should be noted that both the constitutional text (§3 of article 225) and the infra-constitutional legislation (§1 of article 14, of Law 6,938/1981) refer to the general rule of the indispensability of demonstrating the causal link, from the expressions "conducts and activities considered harmful", in the first case, and "affected by their activity", in the second. Obviously, without such causal demonstrations, there is no need to talk about environmental civil liability, whatever the modality of risk theory adopted. In this sense, the understanding of Afonso da Silva is emphasized, when he foresees the civil liability of those who contributed to a certain damage: "The rules of solidarity between those responsible apply, and reparation may be demanded from all and any of those responsible." (Free translation. 1994, p. 217).

The generalized incidence of solidarity in environmental matters has resulted both from the general rule provided for in art. 942 of the Civil Code, as by virtue of a reference, in specific environmental legislation, to the figure of the *polluter, in its direct and indirect facets*. This is the case of items III[10]and IV[11] of art. 3, of Law 6,938/1981.

[8]Article 225, § 3, of the Federal Constitution of 1988 (Free translation): "Conducts and activities considered harmful to the environment will subject violators, individuals or legal entities, to criminal and administrative sanctions, regardless of the obligation to repair the caused damage."
[9]Article 14, § 1, of Law No. 6,938/1981 (Free translation): "Without preventing the application of the penalties provided for in this article, the polluter is obliged, regardless of the existence of fault, to indemnify or repair the damage caused to the environment and to third parties, affected by their activity."
[10]Art. 3, III, of Law 6,938/1981: "pollution, the degradation of environmental quality resulting from activity that directly or *indirectly* (...)" (Free translation. Emphasis added).
[11]Art. 3, IV, of Law 6,938/1981: "pollutant, an individual or legal entity, under public or private law, responsible, directly or *indirectly*, for an activity that causes degradation of environmental quality." (Free translation. Emphasis ours).

There are also specific laws that, unlike general environmental legislation, make express reference to joint and several liability.[12] In environmental matters, solidarity is justified to solve cases in which multiple actors and activities contribute to the occurrence of environmental damage, relieving the plaintiff from having to demonstrate the exact contribution of each of the participants, being able to demand the full costs of repair from any of the co-responsible parties.

In view of the literal text presented in the concept of polluter of item IV of art. 3 of Law 6,938/1981, there is no doubt that all those who contribute (action or omission) directly or indirectly to the occurrence of environmental damage are jointly and severally liable. Civil liability for environmental damage is extremely broad, and individuals, public or private legal entities and depersonalized entities may be held responsible for environmental damage. (BENJAMIN, 1998, p. 39). In other words, all those who contribute in any way to the occurrence of environmental damage must be liable for the entirety of the damage, with the damages being internally distributed among those causing the damage, through the exercise of the right of recourse by the person who indemnified or repaired the damages in excess of their percentage of participation in the environmental damage. However, the general rule is that, if there is no demonstration of contribution, there is no civil liability in environmental matters.

In addition, and aware that a large part of environmental damage has at its source the plurality of agents and a multiplicity of sources, the doctrine and jurisprudence[13], have, in a consolidated manner, decided that the attribution of civil liability must fall in a joint and integral way on any of those who have, in some way, contributed to the occurrence of the environmental damage. (BENJAMIN, 1998; CRUZ, 1997; LEITE; AYALA, 2010; LUCARELLI, 1994; PERALES, 1993; STEIGLEDER, 2017).

Solidarity presents normative support, as faced above, and justification for a policy of environmental protection in a Rule of Law, from the need to stimulate and encourage mutual monitoring of potential polluters. (FAURE, 2009, p. 259). In most cases, solidarity presents a better solution, if compared to *shared responsibility*, to the evidentiary problem inherent to cumulative, continuous and progressive damages. For this reason, it is not surprising that most national,

[12]This is the case, e.g., of Law 8,078/1980 (Consumer Defense Code, arts. 12, 13, 14, 17, 18, 19 and 20), Law 9,966/2000 (which provides for the prevention, control and inspection of pollution caused by the release of oil and other harmful or dangerous substances in waters under national jurisdiction, art. 25), Law 7,802/1989 (Agrochemicals, art. 14), Law 11,105/2005 (Biosafety, art. 20), according to the lesson of Paulo de Bessa Antunes. (ANTUNES, 2014, p. 233-234).

[13]Just to cite some precedents of the Superior Court of Justice: REsp nº 1071.741/SP, 2. Turma, Rep. Min. Herman Benjamin, j. March 24, 2009; REsp nº 467.212/RJ, 1. Class, Rapporteur Min. Luiz Fux, j. October 28, 2003; REsp No. 604.725/PR, 2. Class, DJU August 22, 2008; REsp No. 1079.713, 2. Class, Rapporteur Min. Herman Benjamin, DJE August 31, 2009; REsp No. 647.493/SC, 2. Class, Relega Min. João Otávio Noronha, May 22, 2007.

communitary and international systems adopt joint and several liability for environmental damage. However, "if this is not applied within just limits, it can lead to truly unjust situations." (Free translation. CATALÁ, 1998, p. 190). On a general level, with the help of Kenneth S. Abraham's lessons, solidarity applies for three main cases. The first, for cases where there is a joint action of agents that caused the damage (*joint tortfeasors*). In addition, joint and several liability also applies to cases where the agents are independent, but responsible for one and the same indivisible damage. The third example is a deviation from the latter. As the author explains, such indivisibility of the damage may be theoretical, when the nature of the damage makes its divisibility impossible (second example), or pragmatic, when despite the damage being divisible, this proof was not possible or was not carried out by the defendant (third example). (ABRAHAM, 2012, p. 128-130).

3.1 Solidarity and optional passive joinder

Another aspect constantly used for the application of the solidarity of those co-responsible for environmental damage is the constitutional configuration of the environment as a good for common use by the people (*res omnium*) which, in this condition, is correctly understood as an "unfragmentable unit". (BENJAMIN, 1998, p. 38). However, there is a constant attribution that, by virtue of this condition of good in common use, injuries to these goods would always be indivisible. For this understanding, considering the environment as a unitary object (good for common use by the people), it would be concluded, consequently, indivisible collective environmental damage, justifying the imputation of civil liability *in solidum* to all those who, directly or indirectly (article 3, item IV, of Law 6,938/81), contributed to the occurrence of environmental damage. It does not seem, however, correct to assume that any and all environmental damage is always indivisible, despite the environmental good conceptually being it. *Accordingly, despite the environment being an unfragmentable unit, there are environmental degradations whose contribution by different authors may be subject to fragmentation (divisible) or not*.

As a result of the frequent understanding that environmental damage would always be marked by an indivisibility[14] in its multiple constitutive elements and the frequent impossibility of its fragmentation in its causal chains, joint and several liability has been applied in the Brazilian legal system, without further evaluations about the possibility of fragmentation in parts of a given environmental damage. Thus, facing the relations of exploitation and intervention on environmental

[14]See below for a reflection on divisible, indivisible and solidary obligations.

goods, and in the face of the plurality of agents or the multiplicity of sources in the occurrence of environmental damage, the courts have imposed, in a generalized way, the passive solidarity to all those that have contributed directly or indirectly to the environmental damage. This has occurred without further reflection on the legal and interpretive criteria that involve the specifics of environmental damage in specific cases. Further study seems necessary in this regard, in order to avoid the unfair and disproportionate allocation of costs to third parties for the environmental remediation of degraded areas.

In order to support the understanding of the majority, in the sense that environmental damage always has an impact on solidarity due to the indivisibility of the environmental good, the normative concept of polluter itself is used, enshrined in item IV, of art. 3, of Law 6,938/1981.[15] Based on this provision, there is a consolidated understanding that "the action for damage caused to the environment can be brought against the person directly or indirectly responsible, or against both, in the face of joint liability for the environmental damage". (Free translation. STJ, Resp No. 771.619/RR [2005/0128457-7], 1. Class, Rapporteur Min. Denise Arruda, j. December 16, 2008, DJe February 11, 2009). Thus, in environmental matters, all those who have participated directly or even indirectly in the occurrence of some environmental degradation, may be held responsible. In other words, both the directly and indirectly responsible parties can be held liable for environmental damages arising from their activities, whether they act or fail to act.

For a long time, the Superior Court of Justice (STJ) has been applying joint and several liability[16] among all the causes and agents that contributed to the occurrence of an environmental damage. The most recent judgments have maintained the same understanding, as didactically mentioned in a judgment reported by Minister Herman Benjamin, in the following terms:

> No plano jurídico, o dano ambiental é marcado pela responsabilidade civil objetiva e solidária, que dá ensejo, no ambito processual, a litisconsórcio facultative entre os vários degradadores, diretos ou indiretos. Segundo a jurisprudência do STJ, no envilecimento do meio ambiente, a 'responsabilidade (objetiva) é solidária' (REsp 604.725/PR, Rel. Ministro Castro Meira, Segunda Turma, DJ 22.8.2005, p. 202), tratando-se de hipótese de 'litisconsórcio

[15]Art. 3, IV, of Law 6,938/1981: "The individual or legal entity, of public or private law, responsible, directly or indirectly, for an activity that causes environmental degradation".

[16]"Public civil action. Directly and indirectly responsible for the damage caused to the environment. Solidarity. Hypothesis in which there is an optional joinder of parties and not a necessary joinder of parties. I – Public civil action may be filed against the person directly responsible, against the person indirectly responsible or against both, for damages caused to the environment. This is a case of joint and several liability, giving rise to the optional joinder (CPC, Art. 46, I) and not the necessary joinder (CPC, art. 47). II – Law No. 6,898, of 8.31.91, arts. 3, IV, 14, § 1, and 18, sole paragraph. Civil Code, art. 896, 904 and 1518. Application. III – Special Appeal not known." (STJ, REsp No. 37354/SP, Rel. Min. Antônio de Pádua Ribeiro, 2nd Class, j. 08.30.1995, DJ 09.18.1995, p. 29954).

> facultativo' (REsp 884.150/MT, Rel. Ministro Luiz Fux, Primeira Turma, DJe 7.8.2008), pois, mesmo havendo 'múltiplos agentes poluidores, não existe obrigatorieade na formação do litisconsórcio", abrindo-se ao autor a possibilidade de 'demandar de qualquer um deles, isoladamente ou em conjunto, pelo todo' (REsp 880.160/RJ, Rel. Ministro Mauro Campbell Marques, Segunda Turma, DJe 27.5.2010). (STJ, REsp nº 843.978/SP, 2. Turma, Rel. Min. Herman Benjamin, j. 21.09.2010)[17]

It can be seen by the content of the judgment above, which well summarizes the current understanding, that the solidarity applied in environmental matters (substantive law) ends up leading to the application of the facultative co-partnership (procedural law) in cases of actions to repair environmental damage against multiple agents. This happens because it is the substantive law that determines the existence or not of a "community of rights or obligations" (I, art. 113, of the Code of Civil Procedure) which, in turn, will lead to the configuration of an optional co-partnership. Therefore, in cases of joint and several, there is always communion either between joint and several creditors or debtors. (ANDRADE NERY; NERY JUNIOR, 2014, p. 328). From a normative point of view, there is a relationship between the provisions of art. 113, I[18], and solidarity related to environmental damage (art. 3, item IV, of Law 6,938/1981, and art. 942 of the Civil Code). This has been the consolidated understanding of the Superior Court of Justice.

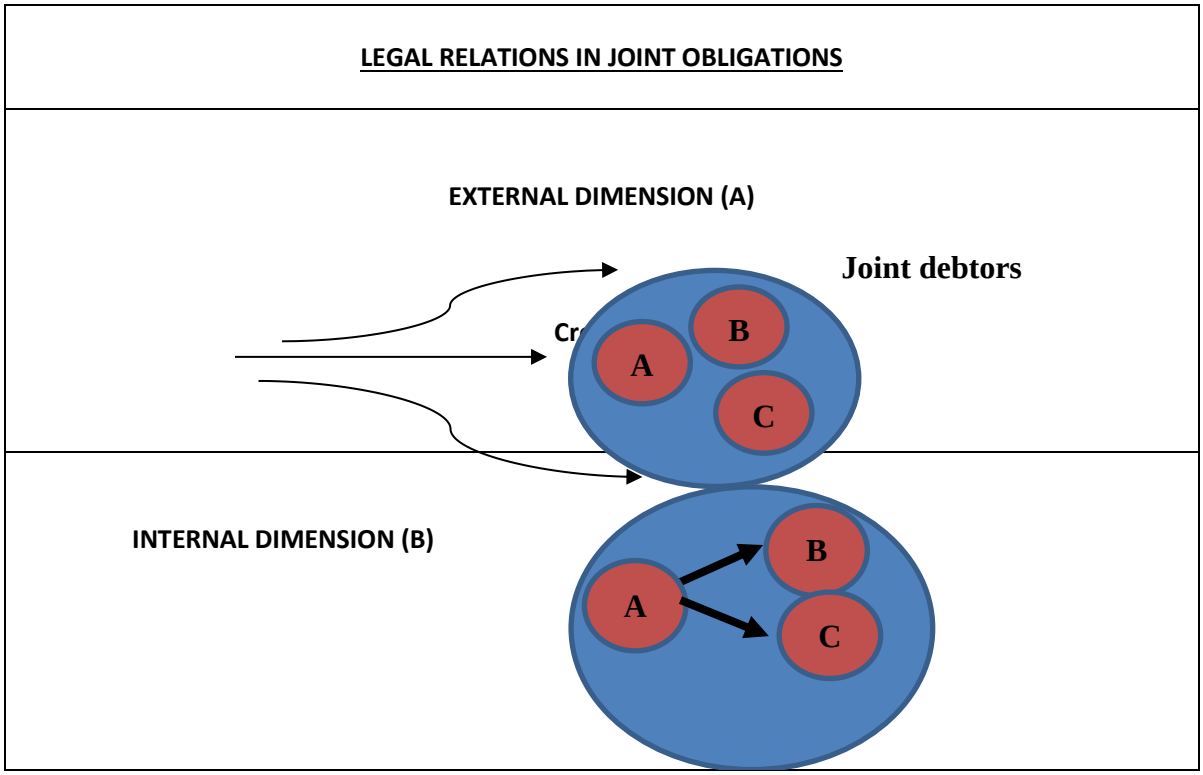
In order to understand this relationship between solidarity and optional joinder, it is essential to return to the content of the classic description of joint and several obligations. According to the classic doctrine of the Law of Obligations, these relationships present a double dimension of legal relationships, an *external one* (of the creditor with the co-obligors) and another *internal* (of the co-obligors among themselves). Therefore, in the case of passive solidarity, this "only manifests itself in *external relations*, that is, those between (...) the co-obligors and the creditor". (Free translation. GOMES, 1996, p. 61). *Externally*, "the creditor has the right to demand and receive from any of the debtors the common debt. (...) It is up to the creditor to choose". (Free translation. GOMES, 1996, p.

[17] At the legal level, environmental damage is marked by objective and solidary civil liability, which gives rise, in the procedural scope, to voluntary joinder between the various degraders, direct or indirect. According to the jurisprudence of the STJ, in the case of degrading the environment, the '(objective) responsibility is joint and several' (REsp 604.725/PR, Rep. Minister Castro Meira, Second Panel, DJ August 8, 2005, p. 202), in the case of 'optional joinder of parties' (REsp 884.150/MT, Reporting Justice Luiz Fux, First Panel, DJe August 8, 2008), because, even with 'multiple polluting agents, there is no obligation to form joinder", opening to the author the possibility of 'demanding any one of them, individually or jointly, as a whole' (REsp 880.160/RJ, Reporting Justice Mauro Campbell Marques, Second Panel, DJe May 27, 2010). (STJ, REsp nº 843.978/SP, 2. Class, Rapporteur Min. Herman Benjamin, j. September 21, 2010)

[18] The Civil Procedure Code provides: "Art. 13. Two or more persons may litigate, in the same process, jointly, actively or passively, when: I – between them there is communion of rights or obligations regarding the dispute."

66). In summary, the holder of the right has the prerogative to collect, at his choice, from any of the joint and several co-obligors, the full amount of the debt.

Figure 1. Graphic representation of the external (Image A) and internal (Image B) dimensions in legal relationships involving joint and several obligations.



Source: Own elaboration (2019).

Likewise, the solidarity existing in Environmental Law has been applied, markedly, due to these two factors: i) plurality of agents; and ii) indivisibility of damage (in the face of an understanding of the "indivisible" unit of the environmental good, as discussed above). The plurality of causes and agents, which involve a certain environmental damage, also present an external and an internal dimension. There is a link between the agents causing the injury and their responsibilities in the face of the environmental damage committed jointly, and one or more agents can be claimed, "at the choice of the creditor". In the case of collective environmental damages, it is not precisely a "creditor" *per se*, but a *legitimate procedural* (since it deals with protection of trans-individual interests, under the terms of article 5 of Law 7,347/1985). In other words, from the perspective of an external dimension (of the agents facing society), all those co-responsible can come to answer, individually, for the integrality of the environmental damage. Here, the formation of the "community of rights or obligations in relation to the dispute" provided for in I, of art. 113, of the Civil Procedure Code, is dictated by substantive law.

In the case of *joint and several obligations*, the creditor or the legal party has the possibility to *choose* to file the claim against one or more of the co-responsible. Therefore, the application of the optional joinder in matters of collective environmental damage stems from the general understanding of indivisibility of damage of this kind and, consequently, from the solidarity of the agents. It is worth remembering that the function of the optional joinder is its practical utility and facilitation of the plaintiff's position (creditor or procedural legitimate). Thus, while for the latter the judgment on the merits of the demand does not depend on its formation, for the necessary joinder of parties the subjective cumulation of the parties (active or passive) is a condition of admissibility to the judgment of the demand. That is, without it, the process must be extinguished without resolution of the merits (art. 485, VI, of the Code of Civil Procedure[19]).

In the *internal* dimension of solidarity, the person who pays the full amount corresponding to the recovery of the environmental damage has the right of recourse against the others, with a presumption of "equality of quotas" with regard to the obligation of the co-responsible. (GOMES, 1996, p. 66). However, in the *internal dimension of solidarity*, if the aforementioned environmental damage becomes liable to fractioning proportional to each of the conduct of those responsible, the one who honored the full reparation of the damage can be compensated, in an autonomous recourse action[20] against the others, in proportion to the participation of each one.

4 EXCEPTIONS TO SOLIDARITY AND FACULTATIVE CO-PARTICIPATION IN CASES OF MULTIPLE AGENTS

4.1 The divisibility of environmental damage

Preliminarily, it is important to briefly reflect on the distinctions between the concepts of divisible, indivisible and solidary obligations. (GOMES, 1996, p. 55-56). While the first two are classified

[19]Civil Procedure Code: "Art. 485. The judge will not decide on the merits when: (...) VI - there is a lack of legitimacy or procedural interest."

[20]"Civil procedure. Public civil action. Environmental damage. 1. The legal person or individual identified as having committed the environmental damage is a legitimate party to appear in the passive pole of the Public Civil Action. 2. The Public Civil Action must only discuss the legal relationship regarding the protection of the environment and its consequences for the violation committed to it. 3. Due to this statement, it is not possible to denounce the dispute. 4. Right of recourse, if arising from the phenomenon of violation of the environment, must be discussed in a separate action. 5. Issues of public order decided in the sanatorium are not affected by the estoppel. 6. Improved Special Appeal." (STJ, REsp No. 232.187/SP, 1. Class, Reporting Min. José Delgado, j. 03.23.2000, DJ May 08, 2000, p. 67).

as to the object of the provision[21], solidarity has its classification centered on the subjects[22]. (GOMES, 1996, p. 60-74). Divisible obligations consist of those installments that can be split, while indivisibility does not find this possibility.[23]

The indivisible obligations have only one similarity with solidarity, in both the creditor can demand from the debtors the integrality of the installment, but the affinities end there. (FARIAS; ROSENVALD; 2012, p. 305). On the other hand, although both concepts (indivisible and solidary) exclude the application of the principle of divisibility (general rule of obligations), in the case of indivisible obligations, it is the nature of the obligation that prevents the obligation to be divided into as many fractions as the number of subjects, while in solidarity it is the will of the parties or the provision of law that prevents the imposition of this division. (COELHO, 2012, p. 104). Solidarity is not presumed but must arise from the law or the will of the parties.[24]

Thus, despite the undeniable existence of common connections between invisibility and solidarity, these are not necessarily linked to one another. It can, however, be said that the indivisibility of the object of the benefit is not an immediate reason for the immediate imposition of solidarity, but, on the other hand, the verification of the divisibility of its object, necessarily, will evidently be a reason for the removal of solidarity. So much so, that divisibility is the general rule in civil obligation clauses[25], the indivisibility[26] and solidarity[27] being exceptions. (FARIAS; ROSENVALD; 2012, p. 285). Due to the conceptual proximity between indivisibility and solidarity, conceptually constituted in frontal opposition to divisibility, nothing prevents the qualities of indivisibility and solidarity from coming together in the same obligation. In this sense, Orlando Gomes goes so far as to say that "there is no difficulty in resolving situations arising from obligations with indivisible provision, as long as one recognizes the need to discipline them by the rules regarding *joint and several obligations*." (Free translation. GOMES, 1996, p. 74-75).

[21]According to Gomes, "the object of the provision can be an indivisible or divisible thing." (Free translation. 1996, p. 74).
[22]That is, "when more than one creditor, or more than one debtor, each with a right or obligation to the entire debt competes in the same obligation, there is solidarity". (Free translation. GOMES, 1996, p. 60).
[23]A classic example of an indivisible obligation is the delivery of a horse that, even if the debtors are several, the object cannot be fragmented.
[24]Art. 265 of the Civil Code: "Solidarity is not presumed; results from the law or the will of the parties."
[25]Article 257 of the Civil Code: "If there is more than one debtor or more than one creditor in a divisible obligation, it is presumed divided into as many obligations, equal and distinct, as there are creditors or debtors."
[26]Art. 259 of the Civil Code: "If, with two or more debtors, the provision is not divisible, each one will be liable for the entire debt".
[27]Art. 264, of the Civil Code: "There is solidarity when more than one creditor or more than one debtor competes in the same obligation, each one entitled, or obliged, to the entire debt".

As a partial conclusion of the aforementioned, it should be noted that both Brazilian doctrine and jurisprudence[28] have generally attributed *indivisibility* as an inherent characteristic of environmental damage. In such a way, the fact that some environmental damages are technically and scientifically divisible is forgotten. That is, they are subject to fragmentation in terms of the causal participation of the agents involved in determinable fractions.

Here, the case of an irregular disposal of industrial waste in a given area by various agents, contaminating it, is exemplified. Considering that the various sources that generate this damage can be identified by the existence of their products in the place, there is a possible determination of the percentages of participation of each of the sources or, at least, the attribution of their marketing segment. In the same sense, a case of irregular disposal of chemical products, by several companies, in a certain area, contaminating it. For both cases, if there is the scientific capacity to determine the participation of each company, either due to the divisibility of the area (sources identified in different areas) or the degradation factors (waste or agents subject to differentiation), there will be an emblematic case of *divisible environmental damage*. In summary, whenever it is technically possible to determine the damage fragmentation in the percentages of each of the generating sources and their consequent contamination, there will be a divisible damage. (CARLSON; FARBER, 2014, p. 809-810). As a legal consequence, when divisible, each of the responsible parties would be obliged to repair only their share of the contribution, in what is called shared or collective responsibility, as seen above. On the other hand, whenever there is indetermination, there will be solidarity.

It is important to note that the divisibility of environmental damage is nothing new in International Environmental Law. Accordingly, the *Convention on Civil Liability for Damage Resulting from Activities Dangerous to the Environment*, signed in Lugano in 1993, by the *Council of Europe* (CoE)[29] provides for the possibility for the exploiter to be released from joint and several liability if one is able to demonstrate that one's activity contributed only to a specific part of the damage one is responsible for. In these cases, the liable party would only be liable for the percentages or areas that concern him/her.

The divisibility is, therefore, a reason for the fragmentation of the damage between its respective responsible, allowing a greater justice and efficiency to the civil liability system. There is talk of justice because, otherwise, even those who have contributed in a well-defined percentage and

[28]As will be seen throughout this article.

[29]CoE, art. 6, item 3. "If an incident consists of a series of occurrences having the same origin, the operators at the time of any such occurrence shall be jointly and severally liable. However, the operator who proves that the occurrence at the time when he was exercising the control of the dangerous activity caused only a part of the damage shall be liable for that part of the damage only."

whose responsibility is partial for the damage, in the case of joint and several liability, they may be (unjustly) held responsible for the whole, stimulating irresponsible behavior by the other agents involved (usually small and medium size). Critical of this understanding of the Lugano Convention, Gilles Martin (1994, p. 121-136) understands that the reference to the divisibility of the damage would contribute to the constitution of what he calls a "false solidarity". However, it is undeniable that solidarity, if applied without the proper balance and well-defined limits, leads to true injustices, encouraging environmentally irresponsible behavior.

The direct procedural consequence of the adoption of this understanding, defended here, will consist in the alteration of the joinder regime applied to the case. In cases of possible fragmentation or divisibility of environmental damage, there would be the possibility of necessary joinder (arts. 114[30] and 115, single paragraph[31], of the Civil Procedure Code), and all known participants must be brought to the case file.

This position appears, in our view, to be fairer, as it aims to combat the moral hazard of encouraging irresponsible behavior by medium and small companies that, secure in the economic condition of the larger companies involved, are encouraged by solidarity to act irresponsibly, certain that the judicial focus will fall on those who often have greater economic power, despite participating in smaller percentages of the damage or having greater commitments to environmental safety. Not infrequently, in a joint liability system, companies that end up being effectively liable for environmental damage are those that have greater financial capacity, despite demonstrating greater rigor in complying with the environmental standard. (CATALÁ, 1998, p. 190).

It is in this sense that comparative law presents interesting solutions, in the search for greater balance and equity. In North American law, for example, section 107[32] of the *Comprehensive Environmental Response, Compensation, and Liability Act* (CERCLA), also known as the "*Superfund*", sets out a fairly large number of parties that can be held liable, from the owner to people who have in the past deposited garbage or hazardous substances on site. (FARBER; FINDLEY, 2010, p. 225-254). The

[30]Art. 114 of the Civil Procedure Code: "The joinder will be necessary by law or when, due to the nature of the disputed legal relationship, the effectiveness of the sentence depends on the summons of all who must be joinders."

[31]Art. 115, sole paragraph, of the Civil Procedure Code: "In cases of necessary passive joinder, the judge will order the plaintiff to request the summons of all who must be joinders, within the period signed, under penalty of termination of the process"

[32]For section 107 of CERCLA, it is foreseen that generators and transporters of hazardous substances, as well as owners and operators of activities for treatment, storage and final disposal, will be responsible for the costs of removal and remediation actions carried out by the federal or state government, as well as any other necessary response costs incurred by any other persons, and for damage to natural resources arising from the release of hazardous substances. (FARBER; FINDLEY, 2010, p. 227).

purpose of such legislation is to establish facilitation and criteria for civil liability for cleaning sites contaminated by toxic chemicals. From this legislation, the government can charge the costs of cleaning contaminated areas from these actors (CASTRO; REZENDE, 2015).

In general terms, the configuration of the divisibility or indivisibility of a given environmental damage is an international criterion to serve as a defining element of which the liability system will be applied. If the damage is indivisible, it will be a case of *joint and several liability*, but if the damage is subject to division, then there would be the incidence of *several liability*. The practical (and procedural) consequence of this is that, in this case, the plaintiff must necessarily sue all those involved, being able to charge only the percentages allocated to each of the portions of the divisible damage. In the case of indivisible damages, solidarity allows the author (government) to sue any of the co-responsible persons provided for in the legislation (CERCLA). The North American courts have argued that, in cases of environmental damage in which there is an "indivisible damage", there is solidarity (*joint and several liability*) between the responsible parties, with all responsible for the damage, individually or jointly. An exception to this solidarity rule is when one of those responsible is able to prove that the damage caused is divisible, in which case there is a need to include in the action all those responsible in their shares. In this direction, the precedents *United States v. Monsanto Co., 858 F.2d 160 (4th. Circ. 1988)* and *United States v. Chem-Dyne Corp., 572 F. Supp. 802 (SD Ohio)*. In the latter, the Court stated:

> If the damage is divisible and there is a reasonable basis for apportioning damages, each of the defendants is liable only for that portion of the damage caused by him (...). In this situation, the burden of proof as to apportionment rests with each defendant (...). On the other hand, if the defendants have caused entirely indivisible damage, each is liable for the entire damage."[33]

Obviously, the burden of proof about the "divisibility" of environmental damage from contamination falls on the accused to limit his/her liability. (FARBER; FINDLEY, 2010, p. 245). In such cases, the plaintiffs may only charge from those sued in the lawsuit, and to the extent of each one's participation. While the rule in terms of toxic contamination is that liability must be objective and joint, the exception for divisibility stems from the *common law* principle that each one must be held responsible for the percentage of their participation and culpability, in a representation of the *Polluter Pays* Principle. (GREENBERG, 2018, p. 1014). This divisibility is configured in cases where the contamination is geographically separated or the multiple operators acted in diverse and well-defined

[33] Free translation of the version presented in the original article. UNITED STATES. Supreme Court of the United States. United States v. Monsanto Co., 858 F.2d 160 (4th. Circ. 1988) and United States v. ChemDyne Corp., 572 F. Supp. 802 (SD Ohio).

time periods -combination of geographical, temporal, and volumetric/toxicity factors (GREENBERG, 2018, p. 1015).

Before saying that this would lead to the non-remediation of "orphan shares" (harming everyone's fundamental right to an ecologically sound environment), there are important examples of North American law, in our view, absolutely compatible with our system. First, if any of the polluters is identified only after the action is filed, it can either be included in the action or promote an individualized action in its contributory portion.

In addition, a complicating factor for obtaining the reparability of environmental damage may be the insolvency or unavailability of a potential responsible party. To this end, there is an important solution in North American law for the maintenance of "equitable factors" for the agents responsible for environmental damage, according to which, in the case of contamination that can be divided, the "orphan" percentages (resulting from insolvency or disappearance of one or more responsible) must be apportioned by the other responsible in their respective proportions. This is what the decision of the Ninth Circuit ruled, according to which "the costs of orphan shares are distributed equitably among all potential responsible parties, as is the case with the costs of cleaning up contaminated areas."[34](Free translation). This consists of a hybrid model, in which shared responsibility is justified by divisibility, but in the event of insolvency or dissipation of one of the parties, its percentage is proportionally redistributed among the others, maintaining justice and equity.

In American law, specifically CERCLA, if the damage is divisible, the government or a jointly liable party (on a right of recourse basis) must sue all other responsible parties. In such cases, each party may be held liable only for its portion. This is an exception to the general rule that applies *joint and several liability*, in which case *several liability* applies.

On the other hand, in Brazilian Environmental Law, the rule of solidarity has been applied to all those who, in some way, collaborated for the occurrence of environmental damage, without any evaluation of the divisibility or not of the environmental damage *in casu*. Considering that it is the substantive law that determines the existence of *a communion of rights or obligations* and that, in these cases, the creditor or the procedurally legitimate party may collect the full amount from one or more defendants, at his or her choice, there is the incidence of facultative co-participation in the matter in question. In a prognostic level, with the expansion of scientific knowledge and the consequent traceability of contaminating products, there is a future tendency for debates to arise

[34]UNITED STATES. Supreme Court of the United States. Pinal Creek Group v. Newmont Mining Corp., 118 F. 3d 1298 (9th Cir. 1997).

about the inadequacy of environmental solidarity for cases of *divisible damages*, in which it is possible to determine the percentage contribution of each of the agents to the environmental damage.

Currently, the matter has been dismissing the analysis of these elements, applying in a consolidated manner the solidarity for indivisible damage to all cases, even to those in which it is possible to demonstrate the divisibility of the damage. However, the technical capacity to describe and know in advance the percentages of participation of each of the agents in a given environmental damage, may reflect the need for a change in the currently consolidated understanding of the application of the facultative co-partnership to all cases of environmental damage. This change points in the direction of the need for the plaintiff to list all the known and identified participants, whenever the damage is divisible or fragmentable (necessary joint liability). This understanding emphasizes efficiency and equity, because it favors the listing of the largest number of those responsible in the judicial act, reducing the risks of default and ineffectiveness of the judicial measure. Otherwise, the generalized and unrestricted application of joint and several liability ends up causing a secondary burden on the judiciary[35], at the level of recourse rights, with more time for dissipation of assets and insolvencies of the other co-responsible (not immediately sued). Thus, in cases of proven divisibility of environmental damage, the burden of proving this (damage divisibility) is, of course, on the defendant(s), and all agents must be included. Remember that if an agent that contributes to a divisible damage, after being included, has problems honoring its percentage, this "orphan" percentage will be proportionally redistributed among the others, in a hybrid format of shared responsibility.

4.2 Application of the necessary joinder in cases where the fulfillment of obligations depends on or will necessarily affect the activities or assets of third parties

Notwithstanding the general rule that those responsible for environmental degradation are jointly and severally liable, with the formation of an optional co-partnership, there are exceptions. In accordance with the content demonstrated above, cases that may involve divisibility of environmental damage demand shared responsibility and, consequently, the necessary co-partnership. In this case, as seen above, it would be an exception to the optional character of the co-partnership. Another example of exception to the facultative co-partnership in matters of environmental damage consists

[35]The Green Paper on Remedying Environmental Damage, cit., p. 8, warns about joint and several liability: "This can cause several problems, including congestion in the courts. Inequity results if the injured party sues the party with the most financial assets first, instead of the party who caused the most damage. This is known as the " deep pocket" effect." (COMMISSION OF EUROPEAN COMMUNITIES, 1999).

in cases in which a certain environmental civil liability decision will necessarily affect the "legal and patrimonial sphere of third parties, when, then, the formation of a necessary co-partnership is required." (Free translation. MILARÉ, 2015, p. 441).

These are cases in which “the decision imposes an obligation on a third party who is not the defendant in the action”, and “the necessary passive joinder rule is applicable, so that the adversarial system and the full defense are not violated.” (Free translation. CARDOSO; FREITAS, 2017, p. 182). This understanding of the application of the necessary co-party to occasional cases in which the *effectiveness of the judicial decision necessarily depends on third parties*, finds jurisdictional precedents, as shown by a solid current in the Superior Court of Justice.[36]

Accordingly, there is a case of action against the subdivision owners in the case of clandestine subdivision in which the purchasers are, by their own hand, altering the physical situation of the property, promoting environmental degradation. The judgment defines that, despite the general rule of solidarity and facultative co-partnership in cases of environmental damage, "as the only way to guarantee full utility to the jurisdictional provision, the necessary co-partnership between the subdivider and the purchaser is imposed if the purchaser, by his own hand, alters the physical situation or performs works on the lot that, in the end, will need to be demolished or removed." (Free translation. STJ, REsp No. 843.978/SP, 2nd Class, Rapporteur Min. Herman Benjamin, j. September 21, 2010).

In summary, in these cases there is an imposition of litigation because the measures required in the lawsuit will necessarily affect and depend on third parties not included in the lawsuit. Thus, these third parties must necessarily be included in the demand under penalty of violation of the fundamental right to due process of law, pursuant to art. 5, LIV, of the 1988 Federal Constitution. (CARDOSO; FREITAS, 2017, p. 181). The urgency of intervention in the material and legal assets of third parties also entails a shift from the incidence of the solidarity matrix to shared responsibility, with each of the participants being responsible for their sphere of participation in the necessary conduct. It is important to safeguard the necessary inclusion of third parties in the passive pole of the case, since otherwise the constitutional principles of due process of law, of adversary proceedings and of ample defense would be at risk[37]. (DANTAS, 2010, p. 582).

[36]See e.g.: STJ, REsp nº 1.383.707/SC, 1. Class, Rel. Min. Sérgio Kukina, j. April 08, 2014, DJe June 05, 2014; STJ REsp nº 901.422/SP, 2. Class, Rapporteur Min. Eliana Calmon, j. December 01, 2009, DJe December 19,2009.

[37]In this sense, the example provided by Marcelo Buzaglo Dantas is interesting: "In case this does not occur and the sentence eventually grants the request, the license granted by the environmental agency will be affected by the jurisdictional act without it having the opportunity to come to court to defend the legitimacy of its act. In this case there would be, at once, offense to the constitutional principles of due process of law and the adversary and full defense (CF/1988, art. 5, LIV and LV), as well as the provisions of art. 472, 1st part, of the CPC [1973,

This is also the case where a demolition order is directed to any entity other than the current owners or bona fide third parties. As an example, there is the case of filing a public civil action with a request for demolition against the construction company, ignoring the existence of owners of the residences and the constitution of a condominium. In this case, there is a need to form the necessary joinder with all those whose assets are affected by the possible court decision, under penalty of invalidity of the procedural acts due to violation of the constitutional guarantees of full defense, contradictory (article 5, LV, of the 1988 Federal Constitution) and due process of law (article 5, LIV, of the 1988 Federal Constitution).

4.3 Insignificant contributions

Another possible reason for the removal of joint and several liability and, more than that, the absence of civil liability of a party occurs when it is proven that such party has made insignificant contributions to the harmful result. Obviously, the great practical difficulty is to define criteria to determine that the contribution would really be insignificant and insufficient to cause the damage configured and subject to judicial analysis. In these cases, "it is likely that the 'portion of the damage' that corresponds to it does not even reach the degree necessary to be considered reparable". (Free translation. CATALÁ, 1998, p. 192).

It should be clarified that the reflection on insignificant contributions is covered by the matter inherent to cumulative causality, under the specific name of "minimal causality" - *minimale Kausalität* (GONZÁLES, 2005, p. 399). This concept is configured when a given damage arises from the sum of an uncountable number of causal contributions. However, if considered individually, these activities are not only allowed (lawful), but their contribution, considered alone, is so small that it becomes irrelevant for the occurrence of the harmful phenomenon. An example of such cases would be automobile emissions derived from burning fossil fuels.

The matter is a tempestuous one for doctrine in comparative law and very little, if any, debated at the national level. Two solutions appear. On the one hand, admit that there is accountability, even if it is difficult to establish its causality due to the excessive number of contaminating agents and individual contributions, which are too small. For this understanding, joint liability or shared liability for equal shares would apply in case of doubt (GONZÁLES, 2005, p. 399). On the other hand, for those who understand that there should not be accountability in cases of insignificant contributions, it is

author's note], according to which "the sentence is final and binding on the parties between whom it is given, and does not benefit or harm third parties". (Free translation. 2010, p. 582).

argued that the economic cost to carry out this accountability (transaction costs) is too high, since in order to determine the authors and their shares, there would be a need for control mechanisms that are too expensive and, for this reason, disproportionate in relation to the benefits arising from the litigation. (GONZÁLES, 2005, p. 399).

Thus, the joint and several liability of parties who contributed insignificantly to the global damage seems evidently unfair. Likewise, inefficient and disproportionate accountability for insignificant contributions, for individual shares. So much so that, to date, there are no actions that try to make car owners jointly responsible in the world. But on the other hand, it also seems inappropriate to completely exonerate groups that have contributed to such diffuse harm. In this sense, by way of example, there are demands in terms of climate litigation against automakers due to damages resulting from their products.[38]A more promising alternative is to internalize diffuse damages through anticipated (*ex ante*) or *ex post* obligations consistent with contributing to financial funds.[39] These contribution obligations would arise from the fact that they belong to certain groups or categories, for example, owners of motor vehicles, and the contribution measure could, for example, depend on the annual quota traveled in mileage in a year (GONZÁLES, 2005, p. 400). For such cases (atmospheric pollution and contribution to global warming), the most promising would be to compose such funds with values from companies in the market segment which contributed to climate change, to the detriment of individual subjects. The definition of the percentages of each company would be given in proportion to the market share it occupies (Market Share Liability).

5 THE INDIRECT POLLUTER PROBLEM

The general rule in terms of civil liability is “that each one is responsible for his/her own acts”, in what is called *direct* or *own liability* (Free translation. CAVALIERI FILHO, 2012, p. 204). Exceptionally, however, civil law provides for the possibility of a person being liable for the fact of another person, called indirect liability or for the fact of another person. These cases, however, cannot be "arbitrary

[38]About Climate Litigation, in particular the California v. General Motors Corp., see: CARVALHO, Délton Winter de. *Desastres Ambientais e sua Regulação Jurídica.* São Paulo: Revista dos Tribuanis/Thomson Reuters, 2015; SMITH, Joseph; SHEARMAN, David. *Climate Change Litigation: analyzing the law, scientific evidence & impacts on the environment, health & property*. Adelaide: Presidian Legal Publications, 2006; United Nations Environment Programme. *The Status of Climate Change Litigation:* a Global Review. Nairobi: UNEP/Sabin Center, 2017.

[39]On compensation funds and their reflection for cases involving climate change, see: DAMACENA, Fernanda Dalla Libera. “Bases Estruturantes para a Compensação Climática no Brasil: Limites e Potencialidades. *Tese de Doutorado*. São Leopoldo: Universidade do Vale do Rio dos Sinos – UNISINOS, 2018. p. 263-297.

and indiscriminate", being limited to the cases foreseen in art. 932 of the Civil Code,[40] whose content provides for the exhaustive cases of people who, due to their duty of custody or surveillance, will be held responsible for someone else's act. Thus, in matters of general civil liability for the fact of another, when the configuration of any causal nexus is unrelated, private law resorted to the technique of "channeling", attributing responsibility to people who, despite not having contributed directly to the damage, are held liable by virtue of their duty of custody, surveillance or care. It should be noted again that such provisions, in private law, are exhaustively established in the list of art. 932 of the Civil Code.

In environmental matters, as already seen, the imposition of solidarity finds its foundation in a set of conducts that have given rise to environmental damage, either by a harmful action or by the violation of a duty of guard, vigilance or care, summarized, in the expression of *environmental safety duty*[41]. Therefore, in environmental matters, the criteria for defining solidarity and indirect civil liability are more affected by the interpretation arising from the joint analysis of art. 942 of the Civil Code with art. 3, item IV, of Law 6,938/1981.

As well noted by Antunes, "[t]he definition of indirect polluter is one of the most controversial topics in Brazilian Environmental Law and, surely, there is no doctrinal or jurisprudential consensus as to the extent of the concept" (Free translation. 2016, p. 562). In a study on the subject, Rômulo Sampaio notes that "when welcoming the figure of the indirect polluter, art. 3, item IV of Law 6,938/1981, did not define it. It is, therefore, an indeterminate legal concept" (Free translation. SAMPAIO, 2013, p. 147). The fulfillment of this concept must, therefore, pay attention to the contribution character of the agents involved. The immediate conclusion of this reasoning is that environmental solidarity, however, does not eliminate the necessary demonstration of a causal connection between the causes and co-causes for the occurrence of damage. In other words, in order

[40]Civil Code: "Art. 932. The following are also responsible for civil reparation: I - the parents, for the minor children who are under their authority and in their company; II - the tutor and the curator, for the pupils and curators, who are in the same conditions; III - the employer or chief, for their employees, servants and agents, in the exercise of the work that competes to them, or because of it; IV - the owners of hotels, inns, houses or establishments where they lodge for money, even for educational purposes, for their guests, residents and students; V - those who have freely participated in the proceeds of crime, up to the corresponding amount."

[41]Regarding the duty of security, Sérgio Cavalieri Filho teaches: "Here, too, it will be necessary to violate a legal duty (...), there is no liability without violating a pre-existing legal duty. What will be the legal duty violated in the case of strict liability? It will normally be the security duty that the law establishes, implicitly or explicitly, for those who create risk for others. (...) Strict liability arises when the dangerous activity causes damage to others, which shows that it was carried out in breach of the safety duty, which opposes the risk." (Free translation. 2012, p. 155.)

Regarding its application to environmental safety duties, see: ZAPATER, Tiago Cardoso. Responsabilidade Civil do Poluidor Indireto e do Cocausador do Dano Ambiental. *In*: ROSSI, Fernando F.; DELFINO, Lúcio; MOURÃO, Luiz Eduardo Ribeiro; GUETTA, Maurício. (coord.). *Aspectos Controvertidos do Direito Ambiental*: tutela material e tutela processual. Belo Horizonte: Editora Fórum, 2013.

to characterize solidarity, the "concurrent" (active or omissive) conduct must be demonstrated for the configuration of the damage or for its aggravation. This is *plural common causality*. The basis, therefore, of solidarity is due to the fact that the various conducts (active or omission) "give rise to the result". (CAVALIERI FILHO, 2012, p. 65).

Even in cases under the incidence of strict liability, there is the need to identify the causal link, as a relation of cause and consequence, at the evidential level. Just as the core of subjective liability is culpable conduct, in its objective matrix, the focus of legal analysis is always the causal link. Therefore, this continues to be required for cases of multiple agents.

One must keep in mind that environmental damage can have multiple sources and causes, and that these sources can be direct or indirect. As previously discussed, solidarity consists of a process of expanding the boundaries of those potentially responsible for environmental damage. In favor of its application, *when* and *if* done in a balanced manner, it "offers excellent *ex ante* incentives for mutual monitoring among potential polluters. (Free translation. FAURE, 2009, p. 259). All this even before any environmental degradation takes place. Depending on the limits and criteria used to support this expansion, there will be a response to the optimal level of internalization of externalities or, on the other hand, in case of an exaggerated expansion, there will be an unfair burden on economic activities, affecting the desirable balance in legal, ecological and economic relations. If, on the one hand, it is desirable to maximize the processes of remediation of environmental damage by law and its imputation to those who contributed to these harmful results, on the other hand, the delimitation of who is responsible must be fair and proportional. An overly broad system tends to transfer responsibility to third parties and may cause the undesirable side effect: the irresponsibility of direct polluters and the liability of third parties, even if they had no knowledge, express legal duties or conditions to prevent the occurrence of the given environmental damage.

This is why it is so important to adopt criteria for defining and limiting the boundaries of solidarity in its function of expanding civil liability, enabling that those who have contributed to it to also be held responsible for the damage perpetrated. If on the one hand solidarity is a solution found internationally and nationally for cases of causal plurality, it also presents serious risks of over deterrence. An overly extensive interpretation can generate secondary side effects (which can even be harmful to environmental protection itself).

Although little discussed in the national context, the possible negative consequences of solidarity have been and are constantly debated in comparative law. The adoption of joint and several liability in a legal system does not mean that one should not reflect intensely on its scope and limits, in order to avoid side effects, excessive deterrence and injustices.

First, solidarity, as Michael Faure rightly warns, can lead to the violation of the basic principle of fair and efficient compensation, which provides that an agent must be held responsible, in principle, to compensate only in the measure and proportion of its contribution to the losses. (BERGKAMP, 2001; FAURE, 2009, p. 259). Faure (2009) warns that the dimension of side effects depends on the chosen legal regime and on the solvency or not of the agents involved. Not infrequently, the activated co-responsible party, even if its portion of liability is determinable or minimal, is held responsible for the total cost of the damage due to the dissipation (insolvency) of the other co-responsible parties. Thus, it is held liable for portions and damages not caused by its activity. (FAURE, 2009, p. 258-259).

Furthermore, solidarity tends to stimulate the *deep pocket effect*, known as the risk of the victim or the defendants address the party that has more resources and financial capacity, to the detriment of the party that has made the greatest contribution to the occurrence of the damage. This can lead to unwanted distortion of the Polluter Pays Principle (greater application at the regulatory level) and the Liability Principle (application of civil, administrative and criminal liability in environmental matters). This focus on holding companies accountable for their economic size presents a paradox and moral hazard. By penalizing companies for their greater financial conditions, it may be punishing those that are also the most compliant with environmental regulations, "saving", in this way, those that are smaller, environmentally weak and with more scrapped technologies, and that, for this reason, offer less environmental security. (CATALÁ, 1998, p. 190-191).

An excessive amplitude and extension of the potentially responsible, in the condition of indirect, causes a disincentive to the offer of environmental insurance to these activities, due to the insecurity and unpredictability of the criteria that will allow the activation of these companies for damages caused by third parties. (CATALÁ, 1998, p. 191). For this reason, a careful, constitutional and technical definition is essential.

5.1 What is the degree of participation of a third party in its joint civil liability in environmental matters? Criteria for indirect liability

It is important to highlight the assumption that, even in a strict liability matrix, there is an essential need for configuration and evidentiary demonstration of the respective causal link between conduct (action or omission) and damage (CARLSON; FARBER, 2014, p. 110; AYALA; LEITE, 2010, p. 135-136). If we compare the subjective civil liability system to the objective matrix, there is a clear shift in the emphasis from conduct (act-based), in the case of subjective civil liability, to the level of activity (effect activity-based), in the case of the objective matrix (ABRAHAM, 2012, p. 188). In this sense, while

the first is more focused on the evidence of the subjective conduct of the author of the damage (in culpability), the second will be evaluated from the duties that can be imposed on an activity and that, if not fulfilled, put at risk third parties and goods of trans individual interest. With the occurrence of damages (or intolerable risks), in an objective matrix, there is the submission to a necessary test in order to assess who caused them *directly* and who had duties to avoid them (indirect). Obviously, such duties are linked to risk knowledge, normative attribution of care duties and material conditions (competence and power) to intervene and surveil. The liability of the indirect is linked to the non-fulfillment of these duties. Here, there is the notion of *safety or environmental care duties*, which are generically provided for in art. 225 of the 1988 Federal Constitution and specifically in several infra-constitutional laws.

Therefore, it must be clarified that the activity causing environmental damage can have one or several concurrent causes. This would be the notion of direct polluter provided for in Brazilian legislation. For didactic purposes, it can be said that the causers (those who by action or omission directly contributed to the damage) are bound to repair the damage by a *physical or natural causality*. The figure of the indirect party, however, has its civil liability arising from a process of normative attribution (*normative causality*), arising necessarily from the violation of environmental duties. In other words, although it was not the immediate degrading activity, there would be a duty to have intervened or supervised and that, by failing to do so, contributed decisively to the occurrence of the damage.

In the case of commissive acts, there must be a demonstrable contributory action (even if by probability[42]) for the occurrence of the harmful result. The cases of omission, evidently, give rise to an even greater need for criteria to define the elements that violate these *duties of care*, for which indirect responsibility is attributed. If there is no demonstration of an omission that violates duties of environmental care, there is no need to speak of indirect liability. In the terms of Minister Teori Zavascki about such criteria, solidarity depends on an examination of whether or not this "omission was 'decisive' (that is, sufficient or concurrent cause) for the 'concretion or aggravation of the damage.'" (Free translation. STJ, Agr. Reg. Resp No. 1.001.780/PR, 1. Turma, Reporting Minister Teori Albino Zavascki, j. September 27, 2011).

[42]On the theory of probabilities for attribution and configuration of causal nexus, see: LEITE, José Rubens Morato; CARVALHO, Délton Winter de. O nexo de causalidade na responsabilidade civil por danos ambientais. *Revista de Direito Ambiental*. v. 47, 2007. p. 77-95; CARVALHO, Délton Winter de. *Dano Ambiental Futuro*: a responsabilização civil pelo risco ambiental. 2. ed. Porto Alegre: Livraria do Advogado, 2013. p. 157-166; CARVALHO, Délton Winter de. *Gestão Jurídica Ambiental*. São Paulo: Revista dos Tribunais, 2017. p. 467-473.

There are at least two views that modulate the civil liability of the indirect in cases of environmental damage differently. On the one hand, the view more leaned to a greater breadth and scope of the meaning of indirect polluter, having, for this, the defense of the application of strict liability, modulated by the theory of integral risk, not only to the directly responsible, but also to the indirectly responsible (BENJAMIN, 1998; STEIGLEDER, 2017). On the other, there are understandings in the sense that the civil liability of the indirect should adopt a standard inherent to the theory of created risk (SAMPAIO, 2013; ZAPATER, 2013). For the first view, in addition to not talking about exclusionary liability and not requiring the analysis of the unlawfulness of the activity, the burden of proof falls predominantly on the defendant, in the sense that one must prove the absence of causation or breach of the duty of security. Herman Benjamin describes the indirect, exemplarily, in the following terms:

> (...) o vocábulo [poluidor] é amplo e inclui aqueles que diretamente causam o dano ambiental (o fazendeiro, o industrial, o madeireiro, o minerador, o especulador), bem como os que indiretamente com ele contribuem, facilitando ou viabilizando a ocorrência do prejuízo (o banco, o órgão público licenciador, o engenheiro, o arquiteto, o incorporador, o corretor, o transportador...)[43]. (BENJAMIN, 1998, p. 37).

Accordingly, solidarity has been applied in many cases in environmental matters submitted to the Superior Court of Justice[44]. However, attention is drawn to the fact that, even in the face of a broad conception of an indirect polluter, there must be a demonstration of causality. The court has already ruled that:

> (...) *no tocante à ausência de responsabilidade solidária pelos danos ambientais, é pacificada nesta Corte a orientação de que a responsabilidade ambiental é objetiva e solidária de todos os agentes que obtiveram proveito da atividade que resultou no dano ambiental não com fundamento no Código de Defesa do Consumidor, mas pela aplicação da teoria do risco integral ao poluidor/pagador prevista pela legislação ambiental* (art. 14, § 1º, da Lei n. 6.938/81), combinado com o art. 942 do Código Civil. Precedentes. (STJ, AgInt no AREsp 277.167/MG, 2. Turma, Rel. Min. Og Fernandes, j. 14.03.2017, DJe 20.03.2017)[45]. (Our emphasis)

[43] (...) the word [pollutant] is broad and includes those who directly cause environmental damage (the farmer, the industrialist, the logger, the miner, the speculator), as well as those who indirectly contribute to it, facilitating or enabling the occurrence of the loss (the bank, the public licensing agency, the engineer, the architect, the developer, the broker, the carrier...). (Free translation)

[44] As an example, see: STJ, REsp nº 604725/PR, 2. Turma, Rapporteur of the Min. Castro Meira, DJU August 22, 2005; STJ, REsp No. 467212/RJ, 1. Class, Rapporteur Min. Luiz Fux, DJU 12/15/2003.

[45] (...) regarding the absence of joint and several liability for environmental damage, this Court has adopted the orientation that environmental liability is objective and joint and several for all agents who benefited from the activity that resulted in environmental damage, not based on the Consumer Defense Code, but by the application of the theory of integral risk to the polluter/payer provided by environmental legislation (art. 14, § 1, of Law n. 6,938/81), combined with art. 942 of the Civil Code. precedents. (STJ, AgInt no AREsp 277.167/MG, 2nd Class, Rel. Min. Og Fernandes, j. March 14, 2017, DJe 03.20.2017). (Free translation. Our emphasis)

In other cases, although this is not expressed, the decision does not seem to make great difference regarding the responsibility of the direct agent from the so-called indirect agent[46]. In defense of a maximalist interpretation of joint and several civil liability, the Superior Court of Justice has presented decisions that understand not only that solidarity leads to optional joinder[47], as well as the impossibility of denouncing the dispute.[48]A synthesis of this maximalist perspective, is given by the vote of Min. Herman Benjamin, when he states that "for the purpose of ascertaining the causal link in the urban-environmental damage and any passive solidarity, those who do, who doesn't do it when they should do it, who doesn't mind what they do, who shuts up when it's up to them to denounce, who finances them to do it and who benefits when others do it." (Free translation. STJ, REsp No. 1071741/SP, 2nd Turma, Rapporteur Min. Herman Benjamin, j. March 24, 2008, Dje 12.16.2010).

On the other hand, the application of the theory of risk created for the accountability of the indirect has repercussions on analyzing the possibility of exclusions of responsibility (force majeure and fortuitous event). Yet, instead of the risk being fully internalized (as in the theory of integral risk), in the theory of created risk it gives rise to liability only to that risk capable and able to cause a given damage.

Regardless of the theory to be adopted, it seems to us that civil liability for environmental damage requires, on the one hand, demonstration of concauses for the occurrence of the damage and, in the case of indirect damage, demonstration of a breach of a duty of care or safety. Such duties are legally imposed. The violation of these duties is directly related to the (private) attributions or (public) competencies of the entities involved. In this sense, these activities must have the knowledge of the risk that is involved and, furthermore, have the ability to intervene and supervise. It must, in this sense, be demonstrated that the indirect party has failed to comply with a normative duty of care, protection and environmental safety. In other words, the causer is necessarily linked to the damage, while the indirect party does it by omission or breach of a normative duty.

In this thread, José Rubens Morato Leite observes that the exoneration of civil liability based on the theory of risk occurs when the risk was not created, when the damage did not exist or when the damage does not have a causal relationship with the one who created the risk (AYALA; LEITE, 2010, p. 200). Otherwise, there would be an undeniable excess of protection, creating socially, legally and

[46]As an example, see: STJ, AgInt in AREsp nº 839.492/SP, 2. Turma, Rapporteur Min. Herman Benjamin, j. 12.15.2016, DJe March 06, 2017.
[47]As an example, see: STJ, Resp nº 771619/RR, 1. Turma, Rapporteur Min. Denise Arruda, j. 12.16.2008.
[48]As an example, see: STJ, Resp nº 1079713, 2. Turma, Rapporteur Min. Herman Benjamin, DJE 08.31.2008.

economically inadequate stimuli. This is because, in the case of holding responsible those who "could not even have collaborated to avoid the damage, reparation is prioritized, without any preventive aspect being observed". (Free translation. ZAPATER, 2013, p.346). In this sense, Zapater clarifies that:

> Contudo, em um sistema em que a conduta lícita e diligente é irrelevante no que se refere ao dever de indenizar, pois a responsabilidade é objetiva, quanto mais distante do dano estiver a atividade à qual se imputa a obrigação de indenizar, mais difícil será de verificar algum escopo preventivo[49]. (ZAPATER, 2013, p. 346-347).

Thus, the preventive and dissuasive character would be discouraged, according to Zapater (2017, p. 223), disarticulating the character and potential of civil liability as a legal element that induces risk management behaviors.[50] Therefore, the direct agent as well as the concauser agent (action or omission) are jointly and severally liable for the environmental damage resulting from their conduct that, actively or in an omissive way, generated the risks that, in a second moment, resulted in damage. The indirect person responsible (Public Administration, financing institution, partner or economic collaborator, among others) can be held responsible when it is demonstrated that he/she was aware of the risk situation of third parties and, having the conditions to intervene, did not act to contain it, omitting in the duty of care or environmental safety, which was required of him/her. In a recent judgment handed down by the Superior Court of Justice, it was found that:

> (...) não sendo as adquirentes da carga responsáveis diretas pelo acidente ocorrido, só haveria falar em sua responsabilização – na condição de poluidora indireta – acaso fosse demonstrado: (i) o comportamento omissivo de sua parte; (ii) que o risco da explosão na realização do transporte marítimo de produtos químicos adquiridos fosse ínsito às atividades por elas desempenhadas; ou (iii) que estava ao encargo delas, e não da empresa vendedora, a contratação do transporte da carga que lhes seria destinada[51]. (STJ, REsp 1602106-PR (2016/0137679), Min. Rapporteur Ricardo Villas Bôas Cueva, second section, j. 10.25.2017.)

On the other hand, one must pay attention to the temporal issue in the relationship of cause and consequence. In this sense, the failure in the duty to supervise the indirect (public or private), for

[49] However, in a system in which lawful and diligent conduct is irrelevant with regard to the duty to indemnify, since liability is objective, the further away from the damage the activity for which the obligation to indemnify arises, the more difficult it will be to verify any preventive scope. (Free translation)

[50] On environmental civil liability as a risk management instrument, see: CARVALHO, Délton Winter de. *Dano ambiental futuro:* a responsabilização civil pelo risco. 2. ed. Porto Alegre: Livraria do Advogado, 2013.

[51] (...) since the purchasers of the cargo were not directly responsible for the accident that occurred, there would only be talk of their responsibility – as an indirect polluter – if it were demonstrated: (i) the omissive behavior on their part; (ii) that the risk of explosion when carrying out the maritime transport of acquired chemical products was inherent to the activities performed by them; or (iii) that they, and not the selling company, were responsible for contracting the transport of the cargo that would be destined for them. (Free translation)

example, must precede the damage and not follow it (BIM; FARIAS, 2017, p. 134). An exception to this general logical rule is in the sense of the obligation called *propter rem*. These obligations accompany the immovable property, arising from it, even if the degrading activities have been practiced by third parties prior to the acquisition of property or possession by the indirect. However, attention should be paid to the fact that this provision has a legal basis for specific cases of forest protection (§2, art. 2, of Law 12.651/2012[52]). It is, therefore, a specific and exceptional provision of attribution of responsibility without the need to demonstrate a contribution or a duty of care (knowledge of the risk and ability to avoid damage).

FINAL CONSIDERATIONS

The search for conceptual and interpretative delimitations is a constant feature of the legal system in its internal demand for coherence and stability. Despite a long-standing doctrinaire and jurisprudential consensus on the application of the solidarity institute to the reparability of environmental damages, the matter concerning the limits of this application is quite tormented. After a first moment of rather broad consolidation of solidarity and civil imputation to the indirect, a critical reflection about the criteria for its imposition in our system still seems pertinent.

It is in this sense, of the temporal maturing of the solidarity institute, that the present article intends to shed light. First of all, we must describe the classic distinction between the system of shared responsibility and that of joint and several liability. These systems consist of the standards internationally applicable to cases of environmental damage caused by a plurality of agents. With different criteria, they place the burden of proof and of remediation of orphaned areas on different actors. The shared one favors greater attention to the responsibilities and participation of each of the parties that have caused a potential damage. On the other hand, it puts the burden of proof on the affected parties to demonstrate the participation of each of the actors (in determined shares) and their percentages. Still, in a pure model, if there is no such proof, the areas will be "orphaned", burdening preponderantly the owner or the party responsible for the remediation. Solidarity, on the other hand, places a heavy burden on those accused of participating in environmental degradation, and it is up to them to provide negative proof of participation in the damage. If they do not comply with this burden of proof, they may be held responsible for the whole, which includes the "orphan" areas. Solidarity,

[52]Provides for §2, of art. 2, of Law 12.651/2012: “The obligations provided for in this Law are of a real nature and are transmitted to the successor, of any nature, in the event of transfer of domain or possession of rural property.”

however, if applied too broadly, carries a moral risk of discouraging preventive behavior and risk management, given the expectation that a vast chain will be obliged to recover the damage if it occurs. Sometimes, activities unrelated to risk production are affected by solidarity in our system, leading to a side effect of legal uncertainty and weakening of the deterrent function of civil liability. Although there is a clear choice for the solidarity system in our law, this does not rule out the provision, in some cases, of shared responsibility, as is the emblematic case of the National Solid Waste Policy Law.

After addressing solidarity in its general matrix, there was a need to face the issue of the never-ending application of this institute to environmental matters and cases. It is at this point that the present text demonstrates the importance of a conceptual and structural delimitation of the solidarity institute. A sophisticated analysis of the institute has the function of allowing to delineate the borders of solidarity, demonstrating the cases in which this, exceptionally, is not applied. Among the cases presented in this article, capable of excluding the incidence of solidarity, there are events i) of divisible or fragmentable environmental damage, as well as those normatively submitted to the regime of shared responsibility, ii) in which the fulfillment of damage recovery obligations necessarily depends on the activities or assets of third parties, and (iii) of insignificant contributions.

Finally, the indirect polluter is analyzed, as a legal figure that can be held responsible for the environmental damage caused directly by other activities. These are cases, for example, of civil liability of the State for omission, of financial institutions for financing harmful activities, of clients of a waste center that irregularly terminate their operations, of buyers of products that generate some damage during transport, of disregard of legal personality, among other possible cases.

A detailed analysis of these definitions shows that those directly responsible are those who contribute, in their causes and concauses, to environmental damage, in the exercise of their activities and omissions that are immediately causally identifiable. On the other hand, the indirect, consists of actors who, despite not having direct participation in the activity that caused the environmental damage, end up contributing through the violation of some normative duty of environmental safety, and that can be attributed to them (normative causality).

The search for the conceptual delimitation of the indirect polluter is capable, after a critical analysis, of revealing the legal criteria for the delimitation of the scope of application of the civil liability of the indirect polluter. *Thus, it can be synthesized that the direct polluter consists of those activities that, by producing risk situations, directly contribute to environmental damage, by action or omission. The indirect polluter, on the other hand, is liable when, despite not directly producing the risks involved, it violates a normative duty of safety and environmental care. This violation of the duties of*

environmental safety arises from one's knowledge of the risks, one's ability and competence to avoid them and, finally, the configuration of an omission to intervene and supervise.

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