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**The Damage to the Environment:
A View from the Law**

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**Damage to the Environment:
A View from the Law**

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Abstract

Environmental damage is a pressing issue. We will study this problem from the legal point of view.

In order to understand what damage to the environment is, we must first determine what constitutes the environment; this is very difficult because it is a complex concept. There are extensive and restrictive criteria; we have adopted a broad notion in which the environment is a system that includes natural resources, social and cultural elements.

Humans are a component of the environment, thus the environmental damage may be classified in environmental damage indirect to humans, which we call *damage to the environment*, and environmental damage direct to humans for example damage to the health of a person.

This distinction must be considered by laws to regulate autonomously the damage to the environment, given that it has different characteristics and consequences that are not solely of private, but also of global interest.

The concept of damage to the environment is *sui generis* because it does not have the same characteristics than traditional damage.

This theme gives rise to many questions, for instance: Does the damage to the environment arises only with a legal breach? How can the judge quantify the damage? Who is the competent judge if this damage is not static? Does the directly affected have exclusive rights to file suit, or should any person interested be allowed to file suit? Which new forms has the Law to offer in order to face the serious problem concerned with the damage to the environment?

Keywords: Environment, environmental damage, Environmental Law.

Introduction

The topic of the environment has been of great concern to the international community.

In some countries the right to live in a suitable environment has been recognized in their Constitutions. Examples of this are: Argentina, Brazil, Bolivia, Colombia, Costa Rica, Cuba, Chile, Ecuador, El Salvador, Guatemala, Mexico, Nicaragua, Panama, Paraguay, Peru, Venezuela, Haiti, Honduras, Spain, Germany, Greece, Portugal.

In the Constitution of the United States of America there is no regulation that expressly recognizes the human right mentioned. However, as is indicated by Ogle,¹ this may be found in its preamble, which reads:

We the People of the United States, in Order to form a more perfect Union, establish Justice, insure domestic Tranquility, provide for the common defense, promote the general Welfare, and secure the Blessings of Liberty to ourselves and our Posterity, do ordain and establish this Constitution for the United States of America.

Kubasek & Silverman² have also determined that this right can be deduced from the IX Amendment of the Constitution of the United States, which establishes:

The enumeration of the Constitution, of certain rights, shall not be construed to deny or disparage others retained by the people.

Our study is done from the legal point of view and it will be limited to conflicts between private parties and does not include international treaties.

It is difficult to explain what makes up the environment due to the multiplicity of elements composing it.

Environmental damage can be classified into indirect damage to humans (*strictu sensu* environmental damage) and directly damage affecting humans. This distinction allows us to understand that damage to the environment has its own characteristics and individual effect.

Using the Cartesian method, we have divided this document into two parts. In the first part we refer to the environment and the classification of environmental damage. In the second part we concentrate on environmental damage.

¹Ogle, Ch. 1998. Preamble: relevance to Environmental Law. Does the United States Constitution provide environmental protection? *L.A.W. Public interest Law conference*. DOI=<http://www.conlaw.org/prearg2.htm>.

²Kubasek, N. and G. Silverman. 1997. *Environmental Law*. 2nd. ed., Upper Saddle River, Prentice Hall, USA, p. 29.

The Environment and Classification of Environmental Damage

In order to understand what environmental damage is, we must first determine what the environment is. Then we must study what environmental damage is and present a classification.

The Environment

Different criteria are used concerning what the environment is, which we classify as restrictive and extensive. Martín, with a restrictive point of view, considers that the environment deals exclusively with living beings;¹ in the most extensive stances we find that some include cultural goods (such as cultural patrimony), social elements (for example, social politics) and Lorenzetti even adds the quality of life.²

Lezama approaches the environment from the constructivist point of view and includes the classic work from the sixties done by Berger and Luckmann concerning the social construction of reality. He affirms that each society gives a meaning to its practices, according to its social order and its most important standards and values; the environment and human behavior in relation to this vary according to different social orders.³

For this reason the concept of environment is ductile and, as a consequence, there is no single definition. The tendency is to amplify the meaning of the environment, exactly as is found in that affirmed by Atilio who includes collective goods or values in the environment but does not limit this to natural resources but it also includes cultural and historical heritage.⁴

If we study the environment from a legal point of view, we find that there is no uniformity in the laws.

The Organic Law on the Environment of Costa Rica has a restricted position (2nd paragraph of the 1st article). Law 6938/81 of Brazil (article 3, section I) and the Canadian Environmental Protection Act of 1999 (article 3) maintain an intermediate perspective. Our Mexican General Law of Ecological Balance and Protection of the Environment (section I of the 3rd article), Law 19.300 on the General Basis of the Environment of Chile (section II, article 2) and the Environmental Law of El Salvador (article 5) include a wide concept concerning the environment.

Humans are one of many components in the environment, which bring together biotic and abiotic elements that are tangible and intangible; concrete and abstract; chemical, physical, biological and social.

¹Martín, R. 1991. *Tratado de Derecho Ambiental*. Trivium, Madrid.

²Lorenzetti, R. L. 2008. *Teoría del Derecho Ambiental*. Porrúa, México.

³Lezama, J. L. 2008. *La construcción social y política del medio ambiente*. El Colegio de México, México, p. 25. DOI=http://books.google.com.mx/books?id=J1o_jRh751EC&printsec=frontcover&hl=es&source=gbs_ge_summary_r&cad=0#v=onepage&q&f=false.

⁴Atilio, J. 2013. Retos y perspectivas para generar mayor efectividad en el Derecho y la gestión ambiental en los países de Iberoamérica. In *Primer Congreso Iberoamericano Derecho y Gestión Ambiental* (Lima, Perú, September 25-28, 2014).

The environment is the global legal good consisting of the system with natural and social elements that governs different manifestations of life.

The environment is a responsibility of humanity in general; it is not the legal property of a single individual, but it is a legal global good.

We stated that the environment is a system, and according to Bertalanffy, father of the general theory of systems, a system consists of a set of elements in interaction.¹

Examples of biotic elements are plants, microorganisms and animals, including humans; abiotic elements that are found in the air, water, soil and in the subsoil; and social elements are monuments, beautiful landscapes and urban planning.

The previous is only a proposal for the notion of the environment; it is a very complicated and interdisciplinary question to exactly determine the elements that compose the environment.

I wish to clarify that the environment is not a synonym of ecology, which is a scientific discipline. The term ecology was coined by Erns Haeckel in 1866 for the discipline that deals with the study of the relationship between human and the environment.²

Classification of Environmental Damage

As we stated, the environment is a system made up of diverse elements, one of which is humans, resulting in the fact that *lato sensu* environmental damage is of two types: indirect damage to humans and direct damage to humans.

The type of damage that interests this investigation is indirect damage to humans or that which originally damages any element in the environment that is not human; it deals with environmental damage *per se, strictu sensu* environmental damage or environmental damage produced by.

González calls it pure ecological damage³ and De la Puente Brunke calls it pure ecological damage or damage by the environment itself. We will call it *damage to the environment*.⁴

¹Bertalanffy, L. 1989. *Teoría general de los sistemas. Fundamentos, desarrollo, aplicaciones*. Fondo de Cultura Económica, México, p. 27. DOI= <http://archivosociologico.files.wordpress.com/2010/08/teoria-general-de-los-sistemas-ludwig-von-bertalanffy.pdf>.

²Simental, V. 2010. *Derecho ambiental*. Limusa, Mexico, p. 34. Brañes, R. 2012. *Manual de Derecho Ambiental mexicano*. Fondo de Cultura Económica, p. 23. Mosset, J., Hutchinson, T. and Donna, E. 1991. *Daño ambiental*. Vol. I, Rubinzal-Culzoni Editores, Buenos Aires, p. 15.

³González, J. 2003. *La responsabilidad por el daño ambiental en América Latina*. In Programa de las Naciones Unidas para el Medio Ambiente (Mexico), p. 26. DOI= <http://www.pnuma.org/deramb/pdf/La%20Responsabilidad%2012.pdf>.

⁴De la Puente, L. 2012. Adecuación del Derecho peruano a las particularidades del daño ambiental: los residuos sólidos peligrosos., *Revista Latinoamericana de Derecho y Políticas Ambientales*. 2, p. 139. DOI= https://ficheros-2013.s3.amazonaws.com/04/11/Im_1_3_431024042_in1_21_42.pdf?AWSAccessKeyId=1V02D0W3KSR4KHZ90B82&Expires=1388300999&Signature=aT0DTF1YZZ5jzF1c5uT13MoHB8E%3D.

Now, the other type of damage mentioned, direct damage to humans, is that which is derived from damage to the environment and which affects peoples' patrimony or health.

Both types of environmental damage hurt humans as members of a holistic system. The bifurcation into two types does not mean that one can be separated from the other.

Different authors make a distinction between both types of environmental damage, such as Ismael who identifies environmental damage itself, which would be burning a pasture and he separates it from another type of damage such as respiratory tract illnesses of the neighbors around that pasture.¹

But, is this distinction really transcendental? Yes, since it is evident that it deals with different questions although there is a close relationship.

De la Puente informs us that damage to the environment, independent of the damage to people and property, is a very singular damage and it is generally uncertain in its nature. It is a continuous, mutant, disseminated event that can be permanent and progressive.²

The precise lack of differentiation caused has given rise to the fact that damage to the environment is not always regulated in an autonomous manner and an attempt has been made to obtain the repair this type of damage through civil means.

González affirms that in the majority of Latin American legal systems environmental damage and damage to elements forming the environment are the same, which has the inappropriate consequence of the application of Civil Law.³

Damage to the environment is not civil damage, and for that reason it must be autonomously regulated, and another additional topic is that of direct environmental damage to humans.

In Mexico, there has been progress. The new Federal Law for Environmental Responsibility now autonomously regulates environmental responsibility; in other words, that which is produced for having caused damage to the environment in and of itself (3rd paragraph of the 1st article).

Damage to the Environment

This section will clarify the notion and elements of damage to the environment.

¹Ismael, J. 2009. *De la acción de amparo por responsabilidad ambiental y sus presupuestos de admisibilidad*. Equipo Federal del Trabajo, Argentina. DOI= http://www.newsmatic.e-pol.com.ar/index.php?pub_id=99&sid=1174&aid=43407&eid=49&NombreSeccion=Notas%20de%20c%E1tedra%20universitaria&Accion=VerArticulo.

²De la Puente, L., *Op. Cit.*, p. 139.

³González, J., *Op. Cit.*, pp. 27-28.

The Notion of Damage to the Environment

Even if the Romans did not specify the concept of damage, they were able to achieve the principle of *alterum non laedere* (no damage to others).¹

Civil damage (traditional) is typically damage to property although it can also be moral damage (articles 2108 and 1916 of the Mexican Federal Civil Code), but neither of these include environmental damage.

Damage to the environment does not represent a loss or harm to property but this does not mean that a monetary value cannot be placed on it, although it is something that is extremely difficult to quantify and appraise since the environment is not an economic value in and of itself: How much is the environment worth?

It is difficult to quantify damage to the environment for different reasons: the complexity of determining the damage caused or the evolutionary damage, the inexistence of a market value of any of the elements that make up the environment, damage is in progress and it is no longer static but it advances in time and space and it is sometimes rapid and not appreciated in the beginning. It is complicated to determine when and where environmental effects end, which has important implications in procedural questions such as the statute of limitations and jurisdiction according to the judge's territory.

Some of the elements that make up the environment can be cataloged as *res communes omnium*, which are things that belong to humanity and that are not susceptible to appropriation:

*"Thing of the (entire) community." (1) The common heritage of all humankind, not subject to the appropriation by or sovereignty (...).*²

The concept of damage to the environment will depend on what we understand as the environment. As a consequence, we once again encounter a lack of congruence in that respect.

In Mexico the Federal Law of Environmental Responsibility defines environmental damage as: 2.- Environmental damage: Loss, change, deterioration, harm, adverse or measurable affectation or modification of the habitat, of ecosystems, of natural elements or resources, of its chemical, physical or biological conditions, of the relationships of interaction between them, as well as of the environmental services provided.

Measurable is something that can be measured.³ For that reason the concept of this law does not avoid the complexity of quantification and appraisal of damage to the environment.

¹Barros, E. 2010. *Tratado de responsabilidad extracontractual*. Jurídica de Chile, Chile, p. 220. DOI= <http://ezproxy.udem.edu.mx:2063/source/tratado-responsabilidad-extracontractual-5748>.

²Fellmeth, A. and Horwitz, M. *Guide to Latin in International Law*. Oxford University Press, USA. DOI=2011. <http://www.oxfordreference.com/view/10.1093/acref/9780195369380.001.0001/acref-9780195369380-e-1816>.

³Spanish Royal Academy. 2001. *Diccionario de la lengua española*. 22nd. Ed., Espasa Calpe, Madrid. DOI= //buscon.rae.es.

It is correct that the concept of environmental damage in the Federal Law of Environmental Responsibility refers to habitats since, as has been stated previously, we have an extensive concept concerning the environment.

Habitat is a place with appropriate conditions to support the life of an organism, species or animal or vegetable community.¹

Our environmental legislation does not specify if this includes inevitable future damage.

What happens with future damage to the environment? If the damage is certain it will have legal relevance. Urquieta explains that this damage will have legal relevance when it is carried out for a prolongation or continuation of the present state of things or because it is unavoidable.²

Barros notes that it is more complex to prove future damage than present damage, due to the fact that it involves a certain eventuality in spite of the fact that in Chilean Law the requirement of proof is understood as having been satisfied if there is sufficient probability that the damage will be caused.³

Now, in Comparative Law we find some of the following concepts of damage to the environment:

In Chile in the Law 19.300 on the General Basis of the Environment (article 2, e) the environmental damage is defined: all significant inferred loss, decrease, detriment or harm to the environment or to one or more of its components.

Article 5 of the General Law of the Environment and Natural Resources of Nicaragua specifies that environmental damage is all loss, decrease, deterioration or harm of the environment or of one or more of its components.

Article 27 of Law 25.675 of the General Law of the Environment of Argentina deems environmental damage as all relevant alteration that negatively modifies the environment, its resources, the equilibrium of the systems, or collective goods or values.

In Cuba, article 8 of Environmental Law number 81, defines environmental damage as all loss, decrease, deterioration or significant harm, inferred of the environment or to one or more of its components, which are produced by breaking a legal standard or regulation.

The concepts of Chilean and Nicaraguan legislations refer to damage produced in the environment and its components without including great details. In Argentina the Law is more specific and it is interesting to find that it alludes to values while in Brazil environmental legislation is even more detailed.

In the concepts of these countries, no requirement of legal regulation that has been violated is found, while in Cuba it is clear that it is included as a requirement in the corresponding definition.

¹*Ídem.*

²Urquieta, M. 2010. *El daño ambiental: los alcances de la voz significativo en su configuración*. Universidad Austral de Chile. Chile, p. 19. DOI= <http://cybertesis.uach.cl/tesis/uach/2010/fju.79d/doc/fju.79d.pdf>.

³Barros, E., *Op. Cit.*, pp. 237-238.

In the legislation cited, there is no distinction between damage to the environment and direct environmental damage to human.

For us, damage to the environment is the adverse modification of one of the elements of the environmental system, or the relationship between them, which does not affect directly humans.

The environment should be observed holistically as a system in which damage to any of its elements will have a “domino effect” on its other components or on the relationships between them.

Elements of Damage to the Environment

We will divide elements of damage to the environment into objectives and subjectives.

We will begin by studying objective elements, among which will necessarily exist a causal connection and they are the following:

- Cause: environmental impact.
- Effect: adverse modification of elements of the environment or of the relationship between them, indirectly affecting humans.

The Federal Law for Environmental Responsibility of Mexico decrees that there is no environmental damage when there is no adverse environmental impact (article 6); this is when there is no violation of legal regulations (general or individual).

In Mexico there can be responsibility for the violation of a legal regulation or for the use of dangerous objects.

It will be complicated to prove each of the objective elements: many times, pollution is diffuse, slow, imprecise and it demands complicated and costly scientific opinions to prove it.¹

In addition one must prove the causal link, which consists of a relationship between the incident causing damage to the environment with an adverse modification produced in the environmental system (article 36 of the Mexican Federal Law of Responsibility).

The link can be so indirect that it may be impossible to irrefutably establish it, which prevents attainment of the repairs demanded, which results in an injustice.²

In Chile the responsibility of the perpetrator of environmental damage is legally presumed if there is a violation of the respective regulations, but indemnity will only be paid if the cause and effect relationship is proven between the infraction and the damage (article 52 of Law 19.300 on the General Basis of the Environment).

In Argentina judges may use indirect evidence of precise and concordant presumptions, but this may result in arbitrary judgments.³

The presumption of causality is foreseen in the German Law of *Unwelthg*.¹

¹Gherzi. 1998. *Derecho y reparación de daños*. Vol. 3, Universidad, Buenos Aires, p. 57.

²*Ibidem*, pp. 56-57.

³*Ibidem*, p. 57.

Patti proposes to reverse the burden of proof in order for the defendant to be obligated to prove that he has not produced environmental damage.² Atilio states that the reversal of the burden of proof is common in Argentine Environmental Law.³

A more conservative posture consists of only a partial reversal of the evidential burden in which it is obligatory to prove the damage suffered and the behavior of the defendant but not the causal link between these, which can be presumed.⁴

Garzón presents an example of that previously mentioned: a factory that releases benzene into the atmosphere, which results in serious damage to the environment since it pollutes the air with suspended particles, as well as the ground and the water when those particles fall to earth. The defendants prove that the factory uses benzene, makes periodic emissions and that the particles in question fall to earth and they stay in the water and on the soil; but the causal link does not have to be proven.⁵

The subjective elements are the causing as well as the damaged party. Both can be individuals or legal entities.

To specify the subjective elements is not an easy task. How can we prove who causes global warming or who is affected by acid rain?

It is necessary to find the link between the damage to the environment and the individual/legal entity causing it because, on the contrary, the damage caused by another person or by another person's property would be attributed to the wrong person.⁶

Cordobera states that damage can exist in which there is a group of which the responsible party is a member but the responsibility is not individualized. Collective activities cause damages that can be even more serious, since groups of people multiply power, efficiency and dangerousness; in addition to the fact that groups can protect anonymity.⁷

Castañón states that there are systems that have a mechanism for channeling responsibility in which there is one person previously determined as the party responsible for damage; for example, the nuclear energy contracts of Paris in 1960 and of Vienna in 1963 in which the responsible party is the operator, the Brussels Agreement on Hydrocarbon of 1969 in which the responsible party is the owner of the ship and the Geneva Agreement on the Transportation of Dangerous Merchandise of 1989 in which the person

¹Mosset, J., Hutchinson, T. and Donna, E. 1991. *Daño ambiental*. Vol. I, Rubinzal-Culzoni Editores, Buenos Aires, p. 58.

²Castañón, M. 2006. *Valoración del daño ambiental*. In *Programa de las Naciones Unidas para el Medio Ambiente* (México), p. 41. DOI= http://www.pnuma.org/deramb/documentos/Valoracion_Dano_Ambiental.pdf.

³Atilio, J., *Op. Cit.*

⁴Garzón, Ú. 2012. Algunas cuestiones sobre las acciones colectivas en materia ambiental. In Revuelta, B. y N. López. *Acciones colectivas. Un paso hacia la justicia ambiental*. Porrúa, Mexico, pp. 150-151.

⁵*Ibidem*, p. 151.

⁶Gherzi, *Op. Cit.*, p. 56.

⁷Cordobera, L. 1993. *Los daños colectivos y la reparación*. Universidad, Buenos Aires, p. 64.

responsible is the transporter (during loading and unloading), the dispatcher of merchandise and the recipient of merchandise.¹

Damage to the environment can be classified as global and it is possible for it to affect individuals who are not yet conceived (future generations).

Barros explains that although those affected are determined and even though each one has suffered significant damage, there are usually no incentives for them to defend their rights individually or separately due to the personal and economic costs of filing lawsuits.²

The Law has counteracted the problem mentioned. Barros informs us of two manners in which the Law has responded:

- In France a legal individual represents the interest that his associates share as a corporation when intervening legally, such as: a professional bar or association.
- American class actions or collective actions in which procedural media is facilitated so that many individuals may exercise an action that is common to all.³

After having proposed a notion of damage to the environment and having analyzed its elements, it is confirmed that this type of damage has its own characteristics.

In Environmental Law it is difficult to fall back on traditional classifications of damage: patrimonial or extrapatrimonial, certain or uncertain, present or future, personal or someone else's.⁴

Gherzi points out some characteristics of damage under study: it is usually revealed slowly; it can be very big and the restoration of things to their previous state is frequently difficult, not economically practicable or impossible.⁵

In conclusion, some of the main characteristics of damage to the environment are: this damage is generally extrapatrimonial, not always certain, progressive in time and in space frequently slow but with serious effects, it is habitually diffuse, it is difficult or impossible to restore and very difficult to prove.

Results & Conclusions

There is no unanimous opinion on what the environment is and, for that reason, what damage to the environment is.

In Law we do not always find a distinction between damage to the environment and direct damage to human beings through the environment. It is

¹Castañón, M., *Op. Cit.*, p. 39.

²Barros, E., *Op. Cit.*, p. 243.

³Barros, E., *Op. Cit.*, pp. 243-244.

⁴Mosset, J., Hutchinson, T. and Donna, E., *Op. Cit.*, p. 71.

⁵Gherzi, *Op. Cit.*, p. 38.

of great importance to differentiate between the first and second since damage to the environment has a *sui generis* nature.

Damage to the environment is not of the patrimonial type and its quantification as well as its monetary value is complex.

It is not possible for all damage to the environment to cause responsibility, since humankind pollutes simply by existing. Environmental responsibility can be derived from the violation of a legal regulation or by the use of dangerous objects.

There is great difficulty in proving the cause and effect of environmental damage in trials and the relationship between these objective elements. To determine who the affected party is and who causes the damage is not easy either.

The Law must abandon old schemes and respond to current needs present in environmental problems today. More flexible mechanisms are required in which it is possible for individuals to have access to justice and to achieve repair of damage to the environment that cannot continue to wait.

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