



POLLUTING ACTIVITY: THE EVIL OF THE 21ST CENTURY

ATIVIDADE POLUIDORA: O MAL DO SÉCULO XXI

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ABSTRACT

This article analyzes the theme of pollution and its connection with the preservation of human life and the ideal of sustainable development. The choice of the theme is justified in view of the serious threat that polluting agents currently represent for humanity, flora, and fauna. The aim of this study is to highlight the role of the State, companies, and individuals in spreading the theme of sustainability and in the effectiveness of preserving the

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environment. Therefore, pollution as ecological damage is specifically studied. After that, the principles that guarantee the environment are highlighted. Then, the relationship between sustainability and environmental awareness is analyzed. Finally, the need for a solidary society to preserve the environment is emphasized. The research observes the bibliographic and documentary procedures. In the approach, the legal dialectical method is used. In conclusion, it is understood that there is a link between strengthening solidarity and controlling pollution.

Keywords: Pollution; Sustainability; Environmental awareness.

RESUMO

O presente trabalho analisa o tema da poluição e suas implicações com a preservação da vida humana e o ideal de desenvolvimento sustentável. A escolha do tema se justifica diante da grave ameaça que agentes poluentes representam atualmente para a humanidade, flora e fauna. Objetiva-se com o presente estudo destacar o papel do Estado, empresas e indivíduos na difusão do tema da sustentabilidade e na efetividade da preservação do meio ambiente. Para tanto, aborda-se, inicialmente, a poluição como dano ecológico. Após isso, destaca-se os princípios garantidores do meio ambiente. Na sequência, analisa-se a relação entre sustentabilidade e consciência ambiental. Por fim, ressalta-se a necessidade de uma sociedade solidária para preservação do meio ambiente. A pesquisa observa os procedimentos bibliográfico e documental. Na abordagem, utiliza-se o método dialético jurídico. Em conclusão, entende-se que há um vínculo entre o fortalecimento da solidariedade e o controle da poluição.

Palavras-chave: Poluição; Sustentabilidade; Consciência ambiental.

INTRODUCTION



The purpose of the present work is to analyze the theme of pollution, in its various types, and its connection with ecological issues, for the preservation of human life and the ideal of sustainable development, based on social solidarity.

The choice of the theme is justified in view of the serious threat that polluting agents currently represent to humanity, flora, and fauna. The various environmental disasters and crimes recently observed in Brazil and in the world put the balance and health of the current society at risk, as well as the interests of future generations, demanding prompt action from the State, the Market, and the civil society.

The objective of the present study is to highlight the role of the State, companies, and individuals in the dissemination of the theme of sustainability and in the effectiveness of preserving the environment, thus contributing to the construction of a more harmonious, healthy, and solidary society.

In this sense, pollution is initially approached as ecological damage. After that, the principles that guarantee the environment are highlighted. Then, the relationship between sustainability and environmental awareness is analyzed. Finally, the need for a solidary society to preserve the environment is highlighted.

In order to carry out the research, a bibliographic review, supported by foreign and national doctrine, as well as the analysis of documents, was done. In the approach, the legal dialectical method is used, starting from the analysis of different aspects on the theme of development and environment and their complementarity.

1. POLLUTION AS ECOLOGICAL DAMAGE

With technical and biotechnological progress came pollution, which reached unbearable levels, as the polluting discharges reach not only the well-being of human



beings through the waters, the sound, the atmosphere, and the soil, but also the fauna and flora.³

Pollution is the degradation of environmental quality resulting from activities that, directly or indirectly: a) harm the health, safety, and well-being of the population; b) create adverse conditions for socioeconomic activities; c) adversely affect the biota, the aesthetic or sanitary conditions of the environment; and d) launch materials or energy in disagreement with the established environmental standards (Law n. 6938/81, art. 3, III).

For Antônio Chaves⁴, pollution is “the degradation of air, water, soil, and the general environment, in conditions of harm to human health, safety, and well-being, or damage to flora and fauna”.⁵

Water pollution is resulting from the release of waste from: industrial activities (e.g. untreated industrial effluent); agricultural (e.g. release of pesticides); residential (e.g. sewage discharge); horizontal cemeteries (e.g. decomposition of a dead body, which produces viscous necrochorume liquid, which can reach not only the water table, as well as lakes, rivers, due to the use of urns containing plastic blankets), in lakes, rivers and seas, whose natural self-purification capacity has become insufficient, presenting, for example, aspects of: toxicity of numerous synthetic compounds which alter vital functions of aquatic organisms; radioactivity, that can cause genetic alterations in the aquatic fauna and in the human being that consumes it; eutrophication, which is due to the excessive enrichment of water by nitrates or phosphates, arising from detergents or industrial and urban waste;

³ PINTO, Keziah. Meio Ambiente Urbano – Estatuto da Cidade. *Revista Direito e Paz*, n. 17, p. 15-54; FIORILLO, Celso A. P. *Curso de Direito Civil Ambiental*. São Paulo: Saraiva, 2000. p. 100-146; DINIZ, Maria Helena. *O Estado Atual do Biodireito*. São Paulo: Saraiva, 2015. p. 1032.

⁴ CHAVES, Antônio. Responsabilidade por poluição. *Enciclopedia Saraiva do Direito*, v. 65, p. 487.

⁵ Free translation.



temperature, since the waste of hot water from sewers and industrial cooling chambers modify the thermal regime of the waters, affecting aquatic flora and fauna.⁶

Water pollution modifies the characteristics of the aquatic environment, making it unsuitable for the forms of life it harbors. For example, pollutants harmful to aquatic life are predatory fishing, plastics, oil, heavy metals, sewage, and pesticides lodged in the sea or in rivers.

To contain the advances in water pollution, it is necessary, among other measures: to treat sewage, improve water quality in supply reservoirs, rationalize the use of water, for human and animal consumption and for use in agriculture and industry; avoid wasting water; develop hydroelectric energy, as it is a renewable source; preserve riparian forests; reforest; consolidate grassroots committees; encourage water reuse; expand environmental education for sustainability, etc.

Noise pollution is all vibration emitted by motor vehicles, industries, buildings, public works, electrical appliances, airports, religious services, nightclubs, bars, etc. above the levels supported by the human being, causing damage to the hearing sense. Noise, that is, unpleasant sound, is a polluting agent, being an environmental problem in urban life, as it can affect public health, causing: hearing damage; anxiety; insomnia; sadness; mental and stomach disorder; stress; hypertension; loss of concentration, motivation and libido; and inability to bear silence⁷.

⁶ DU PONTAVICE. *Règlementation relative à la pollution des eaux douces et des eaux maritimes dans les pays méditerranéens*. 1972. p. 131-132; DINIZ, Maria Helena. *O Estado Atual do Biodireito*. São Paulo: Saraiva, 2015. p. 1033-1037; FERRAZ, Esther Figueiredo. O crime de poluição de água potável. *Estudos em homenagem a Silvio Rodrigues*. São Paulo: Saraiva, 1989. p. 107-120; FROTA, Mario. Água, direito fundamental. *O Estado de Direito*, 27:22; AGUIAR DIAS. *Da responsabilidade civil*. Rio de Janeiro: Forense, v. 2, 1979. p. 45; DIAS CABRAL, Armando H. *Proteção ambiental e seus instrumentos jurídicos*. Curitiba, 1978. p. 2-3, 15; COLLARES, Maria. *Educação Ambiental: preservar água*. JSTJ, 22:55-72; FIORILLO e FERREIRA. *Curso de Direito de Energia*. São Paulo: Saraiva, 2009. p. 53-72.

⁷ PIMENTEL SOUZA, F. *A poluição sonora ataca traiçoeiramente o corpo*. Disponível em <http://www.icb.agmg.br>. Acesso em 09.11.2020; FIORILLO, Celso A. *Curso de Direito Ambiental Brasileiro*. São



Atmospheric pollution is

the release of polluting agents into an ecosystem, such as gases, smoke,

dust, causing serious problems for the ecological balance and, consequently, for human life: greenhouse effect, acid rain, ozone hole, weather changes, temperature inversion, smog⁸.

Atmospheric pollution (JB, 159: 270, 165:174) is extremely harmful, as the polluting gases (carbon monoxide, sulfur dioxide, and nitrogen dioxide), continuously dumped into the atmosphere by deforestation, nuclear plants, herbicides, chimneys of factories, motor vehicles, burning of fossil fuels, agropastoral fires, electromagnetic waves, etc., compromise the natural components of the air (oxygen, nitrogen, carbon dioxide, and water vapor), so indispensable to life, human health, fauna, flora, protection of the earth, conservation of heat radiated by the sun, etc. It causes pathologies such as visual impairment, injury to the psychological system, sterility, respiratory and heart diseases, abortion, due to decreased blood flow in the placenta, cancer, allergic rhinitis, bronchitis, arteriosclerosis, and emphysema.

Paulo: Saraiva, 2000. p. 106; MACHADO, Paulo A. Leme. *Direito Ambiental Brasileiro*. São Paulo: Malheiros. p. 483; OLIVEIRA, Abel C. de. Poluição sonora: crime ou contravenção. *Ciência e Direito*, 1:21-6; FIORILLO e ABELHA. *Manual de Direito Ambiental e Legislação Aplicável*. São Paulo: Max Simonad, 1993, p. 433-446; NASCIMENTO, Franco Jr. Poluição sonora e direito de vizinhança. *Tribuna de Direito*, nov. 2001, p. 6; FARIAS, Talden Q. de. Análise da Poluição sonora. *Direito e Liberdade*, Revista de Esmarn, n. 3, p. 557-574, 2006; ALVARENGA e HIRASHIMA. Argumentos jurídicos e premissão técnico-científica sobre a classificação da poluição sonora como crime ambiental. *Revista de Jure*, 18, p. 357-369.

⁸ FREITAS, Gilberto P. de. Do crime de poluição. *Direito Ambiental em evolução*. v. Autores (org.). Curitiba: Juruá, 1998. p. 128 (Free translation).



The control of air pollution can be done through the denunciation of employees, NGOs, monitoring of air quality, environmental zoning, environmental licensing, inspections carried out by public bodies, and prior study of environmental impact, etc.⁹

To control atmospheric pollution, reducing its evils, one should, for example: a) increase green areas, which can filter and absorb dust, retain carbon dioxide and release oxygen; b) facilitate the use of less polluting means of transport than motor vehicles; c) inform and educate the population, implementing ecological awareness; d) use better quality fuel; e) encourage the rotation operation to restrict the use of vehicles in the areas most affected by atmospheric pollution, since this would not harm the right to property or the right to come and go, given the supremacy of the public interest over the private; f) create maximum levels or limits for the emission of pollutants in the air; g) require catalysts in all vehicles; h) determine, through zoning, areas for the installation of industries, providing standards to be followed by them, with a view to making pollution compatible with the area in which they are located¹⁰.

Space pollution needs to be avoided and requires space vehicles and communication satellites to reduce the amount of debris they produce, to reduce the risk of spacecraft colliding with orbiting debris. Air Force radars and telescopes seek to track and detect such debris, but can only find the largest. That is why it is necessary to build ships that do not generate debris¹¹.

Hormone pollution is caused by toxic substances called endocrine disrupters, such as DDT insecticides, dioxins, and furans from the production of plastics, such as PVC, fungicides, herbicides, cleaning products, food additives, etc. because these hormonally

⁹ SIRVINKAS, Luis Paulo. *Manual de direito ambiental*. São Paulo: Saraiva, 2015. p. 288.

¹⁰ FIORILLO e ABELHA. *Manual de Direito Ambiental e Legislação Aplicável*. São Paulo: Max Simonad, 1993. p. 305-310; CAMPOS FRANÇA, M. Adelaide. Emissões veiculares como fontes de poluição atmosférica. *Revista Escola Paulista de Magistatura*, 4, 138-9; DINIZ, Maria Helena. *O Estado Atual do Biodireito*. São Paulo: Saraiva, 2015. p. 1.038-1.042.

¹¹ REVKIN, Andrea. Cientistas querem controlar poluição espacial. *O Estado de São Paulo*, 9-3-2003, p. A-14.



active agents in the environment have the ability to imitate signaling fluids of the human organism, especially estrogen (female hormone), causing a certain feminization of the male population, by causing reproductive disorders, such as testicular cancer or reduction in the number of sperm, by the presence of hexachlorobenzene in the blood of employees at certain factories¹².

Soil pollution is the discharge of solid or liquid debris, organic or inorganic material, affecting the soil and subsoil, including the groundwater. Industrial waste, solid waste, chemical fertilizers, pesticides, garbage, radioactive material, etc. can contaminate the soil and the natural environment, compromising the physical-psychic safety of the population. However, the main soil and subsoil pollutants are solid waste, generated in agricultural, industrial, commercial, hospital, domestic, railway, pharmaceutical, road, port, and nuclear activities. This pollution by solid waste is also caused by materials coming from: morgues, funeral homes where they are packed, sewage, cleaning of manholes, debris, food leftovers, plastic packaging, batteries, magnetized or radioactive products, space waste from explosion of missile or discarded rockets, etc. Chemical residues such as toxics, chemotherapy drugs, expired or contaminated drugs, flammable and reactive corrosives also pollute the soil¹³.

For this reason, it is important to treat waste, sanitary landfills, reuse of waste through recycling, waste co-processing, urban cleaning plans, and solid waste management, use of composting plants that transform domestic solid waste into synthetic fertilizers; incineration plant; etc, for the transformation of waste into energy.

Visual pollution is the external alteration of the environment through works, graffiti, billboards, advertisements in large dimensions and striking colors, and banners in

¹² LEITE, Marcelo. País ainda ignora ameaça à fertilidade – contaminado tem pouco espermatozoide – poluição hormonal é um assunto novo. *Folha de São Paulo*, 12-9-1999, p. 9.

¹³ FIORILLO e ABELHA. *Manual de Direito Ambiental e Legislação Aplicável*. São Paulo: Max Simonad, 1993. p. 375, 389, 391, 393-394 e 411.



inappropriate places, harming the aesthetic or sanitary conditions of the environment, damaging the beauty of the natural or urban landscape of artistic sites and historical monuments, degrading them¹⁴ and generating, in some cases, advertising anarchy. Visual pollution can affect citizens' well-being, health, and safety.

But it is possible that economic activities coexist with the good appearance of the city if there is common sense in the use of advertising instruments, such as neon facades, posters, billboards, banners with electoral propaganda.

Light pollution, caused by lights from urban centers that spread through the atmosphere, overshadows the light of the stars, making one in every ten people on Earth unable to observe them. Light pollution caused by the misuse of artificial light can cause electromagnetic radiation. It can also cause damage to human health, insomnia, road accidents, disturb fauna and flora, and disrupt activity in astronomical observatories.

Visual pollution occurs gradually and sometimes the population ends up getting used to it, and it is only repressed when it is intolerable to their well-being and health. Tolerability is one of the sustainability criteria so that development does not make the existence of visual harmony unfeasible¹⁵.

It is easy to denote that pollution produces serious physical, chemical, or biological changes in the environment that are harmful: a) to human health, safety, and well-being; b) fauna, flora, and other natural resources; c) social and economic activities.

Faced with the serious inconveniences of pollution, the people and the government must be concerned with the matter in favor of environmental protection, with the main purpose of preserving the environment and obtaining better conditions so that one can have a superior quality of life, well-being, and safety¹⁶.

¹⁴ SIRVINSKAS, Luis Paulo. *Manual de direito ambiental*. São Paulo: Saraiva, 2015. p. 464.

¹⁵ FIORILLO, Celso A. P. *Curso de Direito Ambiental Brasileiro*. São Paulo: Saraiva, 2000. p. 123-124.

¹⁶ DINIZ, Maria Helena. *O Estado Atual do Biodireito*. São Paulo: Saraiva, 2015. p. 1.046.



2. PRINCIPLE OF SUSTAINABLE DEVELOPMENT AND PREVENTION OF POLLUTING ACTIVITY: PRINCIPLES THAT GUARANTEE THE ENVIRONMENT

The principle of sustainable development and the prevention of polluting acts are intended to ensure the well-being of citizens, future generations, flora and fauna, and for that, the social function of property and the company, the good use of free competition, and the protection of the environment must be met. Such principles will not only have to combine environmental protection with socio-economic development to improve the quality of life on planet Earth, through the rational use of natural and non-renewable resources, but they must also seek to preserve the environment so that there is socio-economic responsibility.

Indeed, the idea of socioeconomic development is innate to human beings, but it can only happen if there is maintenance of quality of life, if there is sustainable development, which prevents the ruin of the environment and meets the aspirations of the population, without meeting the needs of the next generations. The environment is a heritage for the current and future generations, thus, human beings depend on its conservation, to not compromise the good quality of life of humanity, fauna, and flora.

These principles can be taken as axioms, for the prohibition of environmental setback, for their evidence, as it is clear that pollution, in any of its facets, should never be allowed for preventing the full development of the nation, because without a balanced and healthy environment there is no dignified life.

At the national level, the Brazilian Constitution makes reference to development in its preamble and in its article 3rd, II, in this case as a fundamental objective of the Federative Republic of Brazil. There is also a simple reference to the country's technological and economic development, specifically linked to industrial inventions, in article 5th, XXIX.



However, despite the lack of express mention in the constitutional text, the right to development can be understood as a fundamental right, both on the grounds that the material concept of fundamental right goes beyond the express constitutional provision, and on the fact that the right to development is provided for as a human right in an international treaty to which Brazil is a party (Article 5th, §2nd, of the Federal Constitution).

The principles of human dignity and social solidarity, provided in the Federal Constitution, respectively, in its arts. 1st, III, and 3rd, I, within a systematic interpretation of the Magna Carta, allow us to conclude that the development bias in the Brazilian legal system is based on sustainability.

Article 170 of the Brazilian Federal Constitution, when disciplining the general principles of economic activity, brings within itself the embryo of sustainability, as a beacon of development, by determining: a) in terms of environmental sustainability the “defense of the environment, including through differentiated treatment according to the environmental impact of the products and services and their preparation and delivery processes” (item VI); b) in the social perspective, “reduction of regional and social inequalities” (item VII); and c) from the perspective of economic sustainability, “the search for full employment” (item VIII) and “favored treatment for small businesses incorporated under Brazilian law and having their headquarters and administration in the country” (item IX).

Specifically to the environment, the Federal Constitution dedicated art. 225, by which, in its caput, “everyone has the right to an ecologically balanced environment, a good for common use by the people and essential to a healthy quality of life, imposing on the Public Power and the community the duty to defend and preserve it for present and future generations”.

In order to ensure the effectiveness of this right, the Federal Constitution (art. 225, §1) determines that it is incumbent upon the Public Power: I - to preserve and restore



essential ecological processes and provide for the ecological management of species and ecosystems; II - preserve the diversity and integrity of the country's genetic heritage and inspect entities dedicated to research and manipulation of genetic material; III - define, in all units of the Federation, territorial spaces and their components to be specially protected, with alteration and suppression only permitted by law, any use that compromises the integrity of the attributes that justify their protection is prohibited; IV - require, in accordance with the law, for the installation of work or activity potentially causing significant degradation of the environment, a prior environmental impact study, which will be publicized; V - control the production, commercialization and use of techniques, methods and substances that pose a risk to life, quality of life and the environment; VI - promote environmental education at all levels of education and public awareness for the preservation of the environment; and VII - protect the fauna and flora, prohibited, in accordance with the law, practices that jeopardize their ecological function, cause the extinction of species or subject animals to cruelty.

On this last point, the Federal Constitution (art. 225, §7th) establishes, by virtue of Constitutional Amendment 96, of 2017, that sports practices that use animals are not considered cruel, as long as they are cultural manifestations, registered as good of an intangible nature that is part of the Brazilian cultural heritage, and must be regulated by a specific law that ensures the welfare of the animals involved.

In terms of civil liability for damages caused to the environment, the Federal Constitution (art. 225, §§ 2nd and 3rd) provides that: a) anyone who exploits mineral resources is obliged to recover the degraded environment, in accordance with a technical solution required by the competent public body, in accordance with the law; and b) the conducts and activities considered harmful to the environment will subject the violators, individuals or legal entities, to criminal and administrative sanctions, regardless of the obligation to repair the damages caused.



Finally, it is stated in the Federal Constitution, art. 225, § 4th, that the Brazilian Amazon Forest, the Atlantic Forest, the Serra do Mar, the Pantanal, and the Coastal Zone are national heritage, and their use will be made, in accordance with the law, under conditions that ensure the preservation of the environment, including the use of natural resources.

In the doctrinal field, several theories have emerged about the right to development, each one of them built from different premises, with the ideas of the Nobel Prize winner in Economics Amartya Sen receiving great prominence¹⁷, which criticizes the descriptive economy, disconnected from ethics, stating that, in addition to the growth of the Gross National Product - GNP, other factors also need to be considered as indicative of development, such as education, health, and civil rights, thus influencing the creation of the Human Development Index - HDI, which considers income, health and education.

In another aspect, the ideal of sustainable development gains prominence in the doctrine, having as a paradigm the efforts undertaken within the scope of the United Nations, initially in the Brundtland Commission, of 1987, which defined it as one that must meet the needs of the present without compromising the possibility of to meet them in the future, by overcoming poverty and respecting ecological limits, combined with an increase in economic growth, as a condition of possibility to achieve greater sustainability of global living conditions¹⁸.

On the subject of sustainability, Juarez Freitas¹⁹ asserts:

¹⁷ SEN, Amartya. *Desenvolvimento como liberdade*. Tradução Laura Teixeira Motta. São Paulo: Companhia das Letras, 2000. p. 17.

¹⁸ DELGADO, Ana Paula Teixeira. *O direito ao desenvolvimento na perspectiva da globalização: paradoxos e desafios*. Rio de Janeiro: Renovar, 2001. p. 113-114; PAYÃO, Jordana Viana; SANTIAGO, Mariana Ribeiro. A função social e solidária da empresa no âmbito das relações de trabalho. *Revista Direito da Cidade*, vol. 08. n. 3 ISSN 2317-7721. 2016. Disponível em <<http://www.epublicacoes.uerj.br/index.php/rdc/article/view/22109>>. Acesso em 09.11.2020.

¹⁹ FREITAS, Juarez. *Sustentabilidade: direito ao futuro*. 2 ed. Belo Horizonte: Fórum, 2012. p. 41.



it is the constitutional principle that determines, with direct and immediate effectiveness, the responsibility of the State and society for the solidary realization of material and immaterial development, socially inclusive, durable and equitable, environmentally clean, innovative, ethical and efficient, in order to ensure, preferably in a preventive and cautious way, in the present and in the future, the right to well-being²⁰.

According to Ignacy Sachs²¹, one of the most important theorists on the subject,

Sustainable development is a planetary challenge. It requires complementary strategies between North and South. Clearly, consumption patterns in the North are unsustainable. The greening of the North implies a change in lifestyle, side by side with the revitalization of technological systems. In the South, the reproduction of Northern consumption patterns for the benefit of a small minority resulted in social separation. From the perspective of democratization of development, the paradigm needs to be completely changed²².

²⁰ Free translation.

²¹ SACHS, Ignacy. *Caminhos para o desenvolvimento sustentável*. Paula Yone Stroh (org.). Rio de Janeiro: Garamond, 2009. p. 58.

²² Free translation.



In line with the aforementioned Johannesburg Declaration, John Elkington²³, author of the Triple Bottom Line theory, states that sustainability must encompass not only the environmental prism but also the economic and social perspectives, all closely intertwined, implying a radical redefinition of new visions of social equality, environmental justice, and business ethics.

When speaking about the theories of sustainable development, Edgar Morin²⁴ makes the important point that

the idea of “supportability” (or sustainability) adds to development a set of actions aimed at safeguarding the biosphere and, correspondingly, safeguarding future generations. This notion contains an important ethical component, but it could not further refine the very idea of development. She does nothing but soften it, cover it with a soothing ointment²⁵.

In fact, the western model used as a universal archetype for the development of the planet has intellectual, psychic, and moral deficiencies. From an intellectual point of view, teaching focused on dissociation generates the loss of the ability to reconnect, impairing the ability to think about fundamental and global problems. The psychic shock is a consequence of the domination of purely economic logic, focused on growth and considering everything

²³ ELKINGTON, John. *Canibais com garfo e faca*. Tradução Patrícia Martins Ramalho. São Paulo: Makron Books, 2001. p. 73-76.

²⁴ MORIN, Edgar. *A via para o futuro da humanidade*. Tradução Edgard de Assis Carvalho e Mariza Perassi Bosco. Rio de Janeiro: Bertrand Brasil, 2013. p. 32.

²⁵ Free translation.



in quantitative and material terms. In the moral field, there is a predominance of egocentrism over solidarity²⁶. These points will be discussed below.

3. SUSTAINABILITY AND ENVIRONMENTAL AWARENESS

The urban and rural development policy must have as its core point the guarantee of the citizen and future generations well-being, ensuring a dignified life and requiring the fulfillment of the social function of property and company, and the defense of an ecologically balanced environment, in search of sustainability for the maintenance of vital goods, avoiding polluting activities.

It is urgent to raise awareness of the sustainable use and conservation of the environment, and it is necessary to provide a window of opportunity for the adoption of measures to protect nature's resources.

It is necessary to inform the population and provide them with current education about polluting means, which degrade the environment, whose balance is a diffuse right, which belongs to the present and future generations. Environmental education is a means to make everyone aware of the importance of preserving the environment (Law n. 9795/99, art. 1st, CF, art. 225, §1st, VI).

Such a goal requires an evolution in the education process itself. The Modern Era, by instrumentalizing the meaning of things, placing man at the axiological center of the moral universe, promoted the rebirth of anthropocentrism, accompanied by the secularization of mentalities, devaluing different perspectives²⁷. True environmental education, in turn, requires a change in the perspective of “knowing”.

²⁶ MORIN, Edgar. *A via para o futuro da humanidade*. Tradução Edgard de Assis Carvalho e Mariza Perassi Bosco. Rio de Janeiro: Bertrand Brasil, 2013. pp. 31-31.

²⁷ GORDILHO, Heron José de Santana. *Abolicionismo animal*. Salvador: Evolução, 2008. p. 23 e 25.



The 20th century unleashed two important scientific revolutions, which highlighted the need for a reform of thought. One, with quantum physics, which, by introducing uncertainty into scientific knowledge, triggered the collapse of Laplace's Universe and the downfall of the deterministic dogma that there was a simple unity at the base of the universe. The other, carried out with the constitution of great scientific links, from organized sets or systems, rejecting the reductionist dogma. Thus, there is a resurrection of global entities, such as the cosmos and nature, with an invasion of the world by complexity²⁸.

When hyperspecializing, education produces new forms of ignorance, fed by the illusion that rationality determines development, confusing techno-economic rationalization, which uses calculation as an instrument of knowledge, with human rationalization, which also involves what cannot be measured, such as joy, love, suffering, dignity, etc.²⁹

By proposing a reform of thought in his acclaimed theory of complexity, Edgar Morin intends to achieve a way of thinking capable of uniting and solidarizing separate knowledge, unfolding in an ethics of union and solidarity between humans, strengthening the sense of responsibility and citizenship, with existential, ethical and civic consequences³⁰. The complex vision implies an effective modification of the discourse, a real division of protagonism between man and other members of Nature.

As Edgar Morin teaches³¹,

²⁸ MORIN, Edgar. *A cabeça bem-feita: repensar a reforma, reformar o pensamento*. Tradução Eloá Jacobina. 22 ed. Rio de Janeiro: Bertrand Brasil, 2015. p. 89-90.

²⁹ MORIN, Edgar. *A via para o futuro da humanidade*. Tradução Edgard de Assis Carvalho e Mariza Perassi Bosco. Rio de Janeiro: Bertrand Brasil, 2013. p. 30.

³⁰ MORIN, Edgar. *A cabeça bem-feita: repensar a reforma, reformar o pensamento*. Tradução Eloá Jacobina. 22 ed. Rio de Janeiro: Bertrand Brasil, 2015. p. 97.

³¹ MORIN, Edgar. *A cabeça bem-feita: repensar a reforma, reformar o pensamento*. Tradução Eloá Jacobina. 22 ed. Rio de Janeiro: Bertrand Brasil, 2015. p. 92-93.



Anyway, we said that complexity is not a new problem. Human thought has always faced complexity and has tried, either to reduce it, or to translate it. (...). The required reform of thinking will generate thinking of the context and the complex. It will generate thought that connects and faces uncertainty. (...). There is a knowledge that is understandable, and it is founded on intersubjective communication and empathy – even sympathy –. (...) Thus, I understand the tears, the smile, the laughter, the fear, the anger, when I see the “ego alter” as an alter ego, because of my ability to experience the same feelings as him. From there, understanding involves a process of identification and projection from subject to subject. Understanding, always intersubjective, needs openness and generosity.

The absolute disjunction between the human and the natural, arising from western technical rationalism and the anthropocentric view of the world, needs to be overcome. This demands a change in lifestyle, through awareness and reforms. It is essential that man understands that it is no longer up to him to try to dominate the Earth but to live on it with harmony and responsibility, in a community of destiny. Only a planetary movement is capable of triggering the necessary changes³².

An efficient environmental education, in turn, involves education for consumption, in the sense of controlling the pathology of consumerism and the excessive and inappropriate disposal of goods, closely linked to the issue of pollution.

³² MORIN, Edgar. *A via para o futuro da humanidade*. Tradução Edgard de Assis Carvalho e Mariza Perassi Bosco. Rio de Janeiro: Bertrand Brasil, 2013. p. 103-105.



The expression “culture of consumption” emphasizes the importance of the world of goods and its structuring principles for the understanding of contemporary society, within a double focus, which verifies the cultural dimension of the economy, through the use of material goods as communicative symbols, and the economy of cultural goods, according to market principles (supply, demand, capital accumulation, competition, and monopolization), operating in the sphere of lifestyles³³.

In this context, consumer culture encourages the game of differences, preaching that they need to be recognized and socially legitimized. As a consequence, total otherness and total individuality tend to be unrecognizable³⁴.

It can be said, along these lines, that the era of consumption, based on accelerated productivity under the sign of capital, also represents the era of radical alienation. The logic of the commodity predominates, as it regulates the entire culture, from work processes to the issue of sexuality. People come to believe that everything can be spectacularized, orchestrated in images, consumable³⁵.

In short, the generalized process of consumption, transmuted into a spectacle, affects the image and the very soul of man. The individual being and its reflections remain abolished in the face of the emission and reception of signs. The consumption man is not interested in his own needs and his own image, making himself the image of the signs he orders. Society thinks and speaks as a consumer society, and, insofar as it consumes, it consumes itself in ideas, of which advertising is the fundamental anthem³⁶.

³³ FEATHERSTONE, Mike. *Cultura de consumo e pós-modernismo*. Tradução Julio Assis Simões. São Paulo: Studio Nobel, 1995. p. 121.

³⁴ FEATHERSTONE, Mike. *Cultura de consumo e pós-modernismo*. Tradução Julio Assis Simões. São Paulo: Studio Nobel, 1995. p. 124.

³⁵ BAUDRILLARD, Jean. *A sociedade de consumo*. S/L: Edições 70, 2010. p. 261.

³⁶ BAUDRILLARD, Jean. *A sociedade de consumo*. S/L: Edições 70, 2010. pp. 261-262, 264.



The society of consumers thus becomes something greater than the sum total of consuming individuals. It is a society that, dangerously, judges and evaluates its members mainly for their consumerist capacities, their consumption behavior³⁷.

In this sense, the expression “consumer society” verbalizes more than the attitude of its members to spend time and efforts to expand their pleasures, reflecting the perception that the life policy of individuals tends to be remodeled based on means and objects of consumption, along the lines of the consumerist syndrome³⁸.

“Needing” to consume to define their role in society, to reach the standard preached by the consumer culture, individuals launch into thoughtless acquisitions, as a result of a distorted assessment of their possibilities and poor management of their finances, which produces effects on the sustainability issue.

The need for a firmer change of view around ecology is well portrayed by Félix Guattari³⁹ when stating that

Today's ecological movements certainly have many merits, but I think that, in fact, the global ecosophical question is too important to be left to some of its archaizing and folklorizing currents, which sometimes deliberately choose to refuse any and all large-scale political engagement. The connotation of ecology should no longer be linked to the image of a small minority of nature lovers or qualified specialists. It calls into question the set of subjectivity and capitalist

³⁷ BAUMAN, Zygmund. *Vida Líquida*. Tradução Carlos Alberto Medeiros. Rio de Janeiro: Jorge Zahar, 2007. p. 109.

³⁸ BAUMAN, Zygmund. *Vida Líquida*. Tradução Carlos Alberto Medeiros. Rio de Janeiro: Jorge Zahar, 2007. p. 109.

³⁹ GUATTARI, Félix. *As três ecologias*. Tradução Maria Cristina F. Bittencourt. Revisão da tradução Suelly Rolnik. 21 ed. Campinas, SP: Papirus, 2012. p. 36.



power formations – which are not sure that they will continue to overcome it, as was the case in the last decade⁴⁰.

In fact, a true response to the ecological crisis must be observed on a planetary scale and involves an educational, political, social, and cultural revolution, reorienting the very logic of the production of material and immaterial goods, in addition to the domain of sensitivity, intelligence, and desire⁴¹.

4. NEED FOR SOLIDARITY TO PRESERVE THE ENVIRONMENT

There are many problems caused by pollution and the degradation of the environment by polluting agents is alarming.

Hence the need for a moral and social standard to be shared by all (State, citizens, NGOs, etc.) to minimize the risks arising from the pollution that threatened humanity, flora, and fauna.

With this, bioethical thinking awakens, as we have already said, questions: what can be done to avoid pollution? How to reduce the harmful consequences of polluting activities? How to impose limits to these practices in the 21st century?

Not raising a voice against pollution would be an environmental setback. It is necessary to ensure that environmental urban developments are not destroyed (Superior Court of Justice, Special Appeal 302.906/SP, Rapporteur Minister Arruda Benjamim. 2nd T, 12-1-2010) since we all have the right to an ecologically balanced environment as it is related to all forms of life.

⁴⁰ Free translation.

⁴¹ GUATTARI, Félix. *As três ecologias*. Tradução Maria Cristina F. Bittencourt. Revisão da tradução Suelly Rolnik. 21 ed. Campinas, SP: Papirus, 2012. p. 9.



Public authorities and all communities have the duty to defend and preserve environmental goods and the obligation to avoid pollution, to protect the environment, under penalty of being civilly, criminally, and administratively liable, directly or indirectly, for activities that cause degradation to the environment⁴². This is in line with social solidarity.

Reference on the topic of solidarity, Edgar Morin⁴³ teaches that

in our world of men, in which the forces of separation, withdrawal, rupture, displacement, hatred, are increasingly powerful, more than dreaming of general harmony or paradise, we must recognize the vital, social and ethical need to friendship, affection and love for human beings, who, without it, would live on hostility and aggressiveness, becoming bitter or perishing⁴⁴.

In a different work, the same author⁴⁵ states:

The great family has disintegrated, the solidarities of the villages or the neighborhood have been reduced to dust, the regional solidarities are very weakened, the national solidarity, which has always needed the vital threat of the "hereditary" enemy, only awakens in the football world cups; mutual protection was left in the hands of bureaucratized administrations, relieving everyone of responsibility

⁴² ABELHA, Marcelo R. *Direito Ambiental Esquematizado*. São Paulo: Saraiva, 2020. p. 61-96, 121-129.

⁴³ MORIN, Edgar. *O método VI: ética*. 2. ed. Tradução de Juremir Machado da Silva. Porto Alegre: Porto Alegre: Sulina, 2005. p. 36.

⁴⁴ Free translation.

⁴⁵ MORIN, Edgar. *A via para o futuro da humanidade*. Tradução Edgard de Assis Carvalho e Mariza Perassi Bosco. Rio de Janeiro: Bertrand Brasil, 2013. p. 70.



for any initiative. (...) The dissolution of traditional solidarities did not, therefore, give rise to the formation of new solidarities. Undoubtedly, the State increasingly assumes functions of this type, but in an anonymous, impersonal, belated manner. The welfare state is increasingly indispensable, but it contributes to the degradation of concrete solidarities, without, therefore, responding to the increasingly clamant problems of human solidarity⁴⁶.

By relating solidarity and justice, Habermas⁴⁷ argues that:

Deontologically conceived justice demands, as its other face, solidarity. It is not, in this case, two moments that complement each other, but aspects of the same thing. Every autonomous morality has to solve, at the same time, two tasks: by claiming equal treatment, and with it an equivalent respect for the dignity of each one, it asserts the inviolability of individuals in society; and at the same time that it requires solidarity on the part of individuals, as members of a community in which they are socialized, it protects intersubjective relations from reciprocal recognition. Justice refers to the equality of freedom of individuals who determine themselves and who are irreplaceable, while solidarity refers to the good, or the happiness of fellow brothers in an intersubjectively shared form of life, and thus also to the preserving the integrity of this way of life. Norms cannot protect one without the other, that is, they cannot protect the

⁴⁶ Free translation.

⁴⁷ HABERMAS, Jürgen. *Aclaraciones a la ética del discurso*. Madrid: Trotta, 2000. p. 75-76.



equality of rights and freedoms of individuals without the good of others and the community to which they belong⁴⁸.

Solidarity enters the legal system as a way of attributing meaning to others, awakening in the individual the recognition of the existence of the other, because it stimulates in each one the perceptive awareness of the social environment. It thus becomes a new paradigm for law, which, in order to improve the State, society, and the quality of life of citizens, implies a legal system that values the full dignity of the human being and the social responsibility of all, in which social indifference and exacerbated individual selfishness do not fit⁴⁹.

From another perspective, solidarity, when seeking equality between individuals as an end, presupposes situations of inequality, as it acts exactly in the space of difference between them. This inequality is the object of solidarity⁵⁰.

Solidarity is present in the Brazilian legal system, having been expressed in art. 3rd, I, of the Federal Constitution, which predicts: "the following are fundamental objectives of the Federative Republic of Brazil: I - to build a free, fair, and solidary society".

It remains clear, from the analysis of the aforementioned art. 3rd, I, of the Brazilian Constitution, that what is intended with this fundamental objective is to guide the construction of an order of free men, in which distributive and retributive justice leads to the dignity of the person, disseminating a feeling of responsibility and reciprocal support,

⁴⁸ Free translation.

⁴⁹ CARDOSO, Alenilton da Silva. *Princípio da solidariedade: o paradigma ético do direito contemporâneo*. São Paulo: Juarez de Oliveira, 2010. p. 109, 116 e 122.

⁵⁰ DI LORENZO, Wambert Gomes. *Teoria do Estado de solidariedade: da dignidade da pessoa humana aos seus princípios corolários*. Rio de Janeiro: Elsevier, 2010. p. 132.



typical of the community founded on the common good. In this way, the democratic rule of law is consequently achieved⁵¹.

In understanding the dimensions of solidarity, it is important to verify that it goes beyond the borders of commutative justice, of formal equality, as it projects the principles of distributive justice and social justice, not only implying a positive duty of the State regarding public policies but also in reciprocal duties between individuals, in favor of the common objective, which provides their own individual dignity⁵².

A society can only progress in complexity, that is, simultaneously in freedom, in autonomy, and in community, if it progresses in solidarity: indeed, increasing complexity entails increasing freedoms, possibilities of initiative as fruitful as they are destructive and generators of disorder. The only way to safeguard the complexity of a society, that is, its freedoms, with a minimum of repressive authority, is by the lived feeling of belonging to the community⁵³.

This connection of belonging to the whole has a profound impact on sustainable development, which is included among the third-dimensional fundamental rights⁵⁴, also called solidarity rights. These are rights of collective or diffuse, indefinite and indeterminable ownership, which are detached from the notion of the individual as a holder and are the result of claims generated by the technological impact, by the chronic state of

⁵¹ SILVA, José Afonso da. *Comentário contextual à Constituição*. 6 ed. atual.. São Paulo: Malheiros, 2009. p. 46-47.

⁵² LÔBO, Paulo Luiz Netto. *Direito civil: parte geral*. São Paulo: Saraiva, 2009. p. 84.

⁵³ MORIN, Edgar. *A via para o futuro da humanidade*. Tradução Edgard de Assis Carvalho e Mariza Perassi Bosco. Rio de Janeiro: Bertrand Brasil, 2013. p. 78.

⁵⁴ A opção terminológica pelo termo “dimensões” dos direitos fundamentais leva em consideração a doutrina de Ingo Sarlet, para quem não há como se negar “que o reconhecimento progressivo de novos direitos fundamentais tem o caráter de um processo cumulativo, de complementaridade, e não de alternância, de tal sorte que o uso da expressão ‘gerações’ pode ensejar a falsa impressão da substituição gradativa de uma geração por outra” (SARLET, Ingo Wolfgang. *A eficácia dos direitos fundamentais: uma teoria geral dos direitos fundamentais na perspectiva constitucional*. 10 ed. rev., atual. e ampl.. Porto Alegre: Livraria do Advogado, 2009. p. 45).



belligerence, by the post-war decolonization process, etc. Within this framework, an effort on a global scale is necessary for its effectiveness, that is, a transnational responsibility, based on solidarity⁵⁵.

CONCLUSION

The western model used as a universal archetype for the development of the planet fails in several aspects. There is an evident unease in individuals when the economy and consumerism are placed above other interests of society, due to the exacerbated materialism that such a worldview represents, with an impact on the degradation of the environment.

Education, in turn, by focusing on dissociation and exacerbated specialization, generates the loss of the ability to reconnect, damaging the ability to think about fundamental and global problems, such as the environmental issue. By developing a critical education, with the strengthening of identity and citizenship, which unmasks the manipulation processes typical of the consumer society, it is easier to implement a sense of environmental responsibility in individuals.

The strengthening of ecological awareness and values, essential for the survival of humanity itself, imposes the recognition of more protagonism for Nature. Thus, the issue of pollution is shown to be of essential importance, once it has also a great impact on the issue of future generations.

⁵⁵ SARLET, Ingo Wolfgang. *A eficácia dos direitos fundamentais: uma teoria geral dos direitos fundamentais na perspectiva constitucional*. 10 ed. rev., atual. e ampl.. Porto Alegre: Livraria do Advogado, 2009. pp. 48-49. FEITOSA, Maria Luiza Alencar Mayer. Exclusão social e pobreza nas interfaces entre o direito econômico do desenvolvimento e o direito humano ao desenvolvimento. In: *Direito e desenvolvimento no Brasil no Século XXI*. Vladimir Oliveira da Silveira *et al.* (orgs.). Brasília: Ipea/CONPEDI, 2013. p. 115.



Solidarity emerges in this scenario as a legal and moral response to society and the environment, as it breaks individualism and exacerbated competition, producing a feeling of social belonging, of collective responsibility, for which individual sacrifices gain meaning.

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