

DISASTERS LAW AS A THEORETICAL-LEGAL FRAMEWORK OF THE EDUCATING CITY: THE CULTURE OF ENVIRONMENTAL EDUCATION TO MITIGATE DISASTERS AND REDUCE VULNERABILITIES OF COMMUNITIES OF THE STATE OF SÃO PAULO

DIREITO DOS DESASTRES COMO ARCABOUÇO TEÓRICO-JURÍDICO DA CIDADE EDUCADORA: A CULTURA DE EDUCAÇÃO AMBIENTAL PARA A MITIGAÇÃO DOS DESASTRES E A DIMINUIÇÃO DA VULNERABILIDADE DAS COMUNIDADES DE SÃO PAULO

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Abstract

This article analyzes Disaster Law as a theoretical-legal framework for the Educating City in order to create a culture of environmental education to mitigate disaster and reduce the vulnerabilities of communities in the state of São Paulo,

Resumo

Este artigo analisa o Direito dos Desastres como arcabouço teórico-jurídico para a Cidade Educadora a fim de criar uma cultura de educação ambiental para a mitigação desses desastres e a diminuição das vulnerabilidades das comunidades do estado de São Paulo,



Brazil, especially in the municipality of São Sebastião, which recently experienced a tragedy due to landslides. Thus, the objectives are to investigate the civil capacity for risk management based on the implementation of legal knowledge of Disaster Law in Educating City projects; and to assess the possibility of active participation of vulnerable communities, alongside basic education, in environmental education activities to mitigate disaster. The methodology used is based on a qualitative approach, with the analysis of documents and judicial processes, as well as the initiative of civil society organizations and local communities. The Educating City initiative plays a crucial role in the context of the environmental crisis by providing schools with resources and guidelines to address environmental challenges in an educational and transformative way. Disaster Law empowers the community to face environmental challenges and disasters, promoting sustainability and the protection of human rights.

Keywords: Disaster Law; Educating City; Environmental Law; risk Management; São Paulo.

sobretudo a cidade de São Sebastião, que viveu recentemente uma tragédia em virtude de deslizamentos de terra. Assim, têm-se como objetivos averiguar a capacidade civil de gestão de risco a partir da implementação do conhecimento jurídico de Direito dos Desastres nos projetos da Cidade Educadora; avaliar a possibilidade de participação ativa das comunidades vulneráveis, junto da educação básica, nas atividades de educação ambiental para a mitigação dos desastres. A metodologia utilizada parte de uma abordagem qualitativa, com a análise de documentos e processos judiciais, além da iniciativa das organizações da sociedade civil e comunidades locais. A iniciativa da Cidade Educadora desempenha um papel crucial no contexto de crise ambiental ao fornecer às escolas recursos e diretrizes para enfrentar desafios ambientais de maneira educativa e transformadora. O Direito dos Desastres capacita a comunidade a enfrentar desafios ambientais e desastres, promovendo a sustentabilidade e a proteção dos direitos humanos.

Palavras-chave: Cidade Educadora; Direito Ambiental; Direito dos Desastres; Gestão de Risco; São Paulo.

Introduction

Brazil suffers from a multitude of natural disasters. Floods, landslides, droughts, and severe storms have caused the country significant economic, social, and environmental damage. In particular, floods and landslides repeatedly hit the city of São Paulo, especially during periods of heavy rainfall. These events result in the destruction of infrastructure, interruption of public services, and human losses. Disordered urbanization and inadequate urban planning aggravate the city's vulnerability to these disasters. At the same time, other regions of the country, such as the Northeast, face prolonged droughts that compromise agriculture and water supply, while the South of the country is hit by severe storms and occasional cyclones. Such challenges highlight the need for both effective public policies on

risk and disaster management, and prevention and mitigation strategies to protect vulnerable communities.

Because of the heavy rains that affected the north coast of São Paulo in February 2023, the State Government, with the State Decree No. 67.502/2023, declared public calamity in the municipality of São Sebastião. The municipality also issued Municipal Decree No. 8.777/2023, declaring a state of public calamity in the region. Urgent search, rescue, and humanitarian aid measures are still currently underway. However, there is extreme difficulty due to the resistance on part of some residents who insist on remaining in risky locations.

Considering this serious circumstance, this article presents the Disaster Law as a theoretical-legal framework for structuring Educating Cities. This proposal aims at contributing to the creation of a culture of environmental education to mitigate disasters and reduce the vulnerability of communities in the state of São Paulo. The increase in frequency and intensity of extreme weather events, such as floods and landslides, has caused significant damage to communities around the world. In this context, Disaster Law has emerged as a constantly evolving field that seeks to develop mechanisms to prevent, mitigate and respond to these events more effectively and fairly.

The methodological approach is qualitative, with an analysis of documents and juridical processes, as well as an investigation into the initiative of civil society organizations and local communities. To this end, a bibliographical review of the main concepts and theories related to Disaster Law, the Educating City, and environmental education was conducted. In addition, by taking as a case study the disaster that occurred in the municipality of São Sebastião, located on the coast of São Paulo, it was sought to: (a) address the social and legal impacts resulting from the landslides that affected the community of this municipality; and (b) investigate the public environmental education policies implemented in the city.

Therefore, the aims of this research are: (a) to ascertain the civil capacity for risk management based on the implementation of the legal knowledge of Disaster Law in the Educating City projects; and (b) to assess the possibility of active participation by vulnerable communities, together with basic education, in environmental education activities for disaster mitigation.

By incorporating Disaster Law into its educational context, the Educating City seeks to empower the entire community, especially children and young people, to deal consciously and responsibly with environmental challenges and extreme events. This includes promoting sustainability, solidarity, and protection of human rights. Thus, there is a chance of making an effective contribution to

reduce the vulnerability of communities, strengthening their capacity to adapt and their resilience in the face of disasters.

Children and young people are not merely passive elements in the social structure. The process of citizenship occurs with the inclusion of these groups in circumstances of activities for the benefit of communities. In cases of high-risk environments, social vulnerability becomes even more pronounced, requiring greater awareness among the entire community. Children and young people, although they are still undergoing physical and intellectual training, can and should be guided within the framework of risk management policies, practices, and processes.

1 Theoretical foundation: Disaster Law, the Educating City, and the culture of environmental education from the school perspective

This topic presents the theoretical foundations regarding Disaster Law, the Educating City, and the culture of environmental education.

We aim to show that Disaster Law can provide a legal framework to guide the formulation of public policies toward preventing, mitigating, and managing risks inherent in natural disasters, ensuring protection to vulnerable communities. The Educating City initiative, promotes the holistic integration of environmental education into all dimensions of the school curriculum, encouraging an interdisciplinary approach related to environmental challenges in various areas of knowledge (such as science, geography, history, and the arts). It is a relevant educational model for building a resilient society that is aware of contemporary environmental challenges.

The Educating City seeks not only to impart technical knowledge, but also to foster a culture of sustainability and environmental responsibility among students from an early age. Thus, the school becomes a privileged locus for the development of skills and attitudes that enable young people to face environmental challenges in a proactive and informed manner, contributing to build a more sustainable and secure future.

Understanding the concepts of Disaster Law, Educating Cities, and culture of environmental education is of the utmost importance, as it both enables individuals and communities to face and mitigate impacts of natural disasters and promotes an integrated education that prepares new generations to be agents of change in favor of sustainability and environmental resilience.

Essential concepts to elucidate the relevance and practical application of these terms in the current context follows.

1.1 Disaster Law in Brazil

For a long time, there was a strong belief in Brazil that it did not need protection from socio-environmental disasters. The country was regarded as privileged due to its nature and geographical condition. Thus, there would be no reason to develop risk management processes and mechanisms to protect against such events. This mentality led to the formation and consolidation of a culture of low sensitivity to disaster risk prevention (Carvalho, 2020). However, major tragedies, with countless deaths and significant damage shook such optimistic beliefs, highlighting the need to include risk reduction in public policies and in the population's routine.

These circumstances prompted the development of a General Theory of Disasters. Established in the field of Disaster Law, this theory argues that disasters are social constructions rather than purely natural events (Carvalho, 2020). Although they are triggered by physical phenomena, the occurrence of a disaster is intrinsically related to the presence of risks and vulnerabilities. Therefore, Disaster Law is understood as a branch that studies and regulates legal issues related to disasters, whether natural or anthropogenic. In addition, it encompasses laws concerning the environment, urban affairs, civil society and labor, among others, with a focus on protecting the environment, human rights, life, health, property, and public safety. Its main objective is to prevent, manage and mitigate the effects of disasters, as well as to promote reparation for the damage caused to victims and the environment, which includes establishing liability, whether in the civil, administrative, or criminal spheres.

Disasters generate effects that are not restricted to certain social strata, but more seriously affect the poorest sections of the population, generating damage, losses, and suffering that are difficult for them to overcome. Regarding the discussion on the causes of environmental disasters, there are ongoing debates about the relationship between these events and the socio-economic development models adopted by countries that promote and maintain social inequalities and disparities regarding access to services and subsistence resources. Vulnerability to disasters is directly related to “socioeconomic, cultural, and environmental aspects, noting that disasters are not natural, although they are linked to specific natural processes” (Furtado; Silva, 2014, p. 14; free translation).

The immediate safeguarding of the lives of people affected by disasters is the priority, but it might call for the sacrifice of other important rights that are not fully guaranteed. The discourse emphasizing the protection of life under any

circumstances is not often aligned with the proper conditions in which life should be maintained. In Brazil, the forced removal of people from their homes, accommodation in inadequate temporary shelters, and the lack or insufficiency of information on procedures to be adopted to deal with disasters and recover affected communities are still common (Furtado; Silva, 2014). The omission of society regarding sexual violence against women, and alcohol and drug abuse in temporary shelters is alarming and little publicized by the traditional media. Some people have their homes blocked for more than a year, without any information on when, if ever, they will be able to return (Furtado; Silva, 2014). During the wait, they are subject to staying with neighbors, relatives, or foster care institutions, with no control over their situation, waiting for the decision of public officials.

To deal with these situations, the Brazilian government created the *Protocolo Nacional Conjunto para Proteção Integral a Crianças e Adolescentes, Pessoas Idosas e Pessoas com Deficiência em Situação de Riscos e Desastres* (Joint National Protocol for the Comprehensive Protection of Children and Adolescents, Older Adults and People with Disabilities in Situations of Risk and Disaster), through Interministerial Ordinance No. 2 of December 6, 2012. The protocol can be interpreted as a political recognition that, in the context of this process of destruction and subsequent recovery during disasters, children are the main ones affected, often appearing both as the majority of fatal victims or orphans, subject to the conflicts and dangers that permeate the post-disaster period. In the same year, an important legislative measure to prevent or mitigate disasters was enacted, Law 12,608/2012, which institutes the National Civil Protection and Defense Policy (PNPDEC), establishing the National Civil Protection and Defense System (SINPDEC) and the National Civil Protection and Defense Council (CONPDEC).

In addition, the law authorized the creation of a disaster information and monitoring system and modified the City Statute requiring the preparation of master plans for municipalities present in the national register of municipalities with areas prone to high-impact landslides, flash floods, and geological or hydrological processes. It turns out that the drafting, review, and management of master plans based on the guidelines of the City Statute do not always adequately address social and environmental concerns (Oliveira Filho; Ritter, 2021). As of May 2021, the changes made to the City Statute by Law No. 12.608/2012 had not yet taken effect, due to the absence of the *Cadastro Nacional de Municípios com Áreas Suscetíveis à Ocorrência de Deslizamentos de Grande Impacto, Inundações Bruscas ou Processos Geológicos ou Hidrológicos Correlatos* (National Register of Municipalities with Areas Susceptible to the Occurrence of Major Impact Landslides,

Flash Floods or Related Geological or Hydrological Processes) (Oliveira Filho; Ritter, 2021).

1.2 Educating City

An Educating City considers education as a process that takes place in all spaces and moments of life, not just in the school environment. It seeks to create an environment conducive to learning and the integral development of its inhabitants, offering opportunities to acquire knowledge, skills, and values in different areas, such as culture, sport, leisure, work, health, the environment, among others. As it is geared towards promoting the well-being of the population, sustainable development, and social justice, educating cities aim to build a more supportive, democratic, and participatory society.

The term “Educating City” was coined in 1990 during the First International Congress of Educating Cities held in Barcelona. The fundamental principles of this approach were summarized and updated in 2004 through the Charter of Educating Cities, which resulted from various congresses and debates on the subject (IAEC, 2020). The main objective of this city model is to offer solutions for the integration of social and cultural activities, with an emphasis on training, promoting, and developing citizens, especially young people. According to the International Association of Educating Cities (IAEC, 2020), this model of political organization has an intrinsic educational character, but it only truly becomes an Educating City when it consciously assumes the commitment that its proposals have an impact on attitudes, social interactions, and the promotion of new values, knowledge, and skills.

The relationship between the territory and the school is based on the latter’s recognition as a modifier of the territorial space. At this point, intersectorality plays an important role, contributing to the effective transformation of the territory. On the program’s official website, you can see the “spirit of cooperation” that animates its creators, who understand that the various sectors can contribute, alongside the school, to the articulation of strategic solutions to solve the community’s problems:

Based on decentralization, intersectorality emerges as an opportunity to manage policies and services in the territories closer to those who need them, as well as to their social control mechanisms. Moreover, through networking, it can build more effective responses to the challenges that arise. By using coordinated strategies in favor of a common goal, intersectorality also allows better use of resources, promot-

ing intelligent and shared financial management, able to find integrated solutions that effectively contribute to local development. To this end, planning, budgets, technical standards, human resources, evaluation and monitoring instruments, etc. must be rethought and restructured from this perspective (ACEA, 2020, p. 17; free translation).

It is worth remembering that the city, although complex, is one of the elements in the complicated scheme of modern society, requiring the exercise of responsibility, commitment, and public sincerity (Aieta; Zuin, 2012). In this context of multiple relationships and factors, citizen involvement is fundamental: the discovery of new forms of social and urban intervention presupposes active citizenship. No less fundamental is the organization of the public sphere. The Welfare State, marked by the actions of the administration funded by an also public economy, emerged as an alternative for social promotion, playing an important role in the whole process (Aieta; Zuin, 2012).

The fundamental principles governing Educating Cities, according to the document on the official website of the Ministry of Education (Brasil, 2011), are as follows: working with schools as a community space; working with cities as a great educational space; learning in the city, with the city and with people; valuing experiential learning; and prioritizing the formation of values. In addition, they aim to promote compliance with the principles of the Charter of Educating Cities; promote partnerships and concrete actions among cities; participate in projects and experience exchanges with organizations; deepen the concepts of Educating Cities in addition to promoting concrete actions; influence decision-making processes of governments on issues of interest to Educating Cities; and dialogue with various organizations, both national and international (Brasil, 2011).

From these principles, it can be seen that the Educating Cities initiative has significant potential to contribute to schools, especially in the context of environmental crises, by providing a comprehensive and integrated approach to environmental education. It is an approach that includes awareness raising, curriculum integration, active student participation, partnerships, and collaborations, and the promotion of active citizenship. These elements allow schools to play a crucial role in shaping citizens who are aware, critical, and committed to finding solutions to environmental challenges. Furthermore, by adopting a more specific perspective, centered on the local reality of many cities facing historical or imminent risks of disasters, such as landslides, the initiative offers a relevant contribution to mitigating these disasters or reducing their devastating impacts on vulnerable communities.

1.3 A culture of environmental education starting at school

Developing a culture of environmental education involves consolidating a set of values, practices, and attitudes shared by a society or community that prioritizes awareness and responsibility towards the environment. In this context, environmental education becomes an essential component of human education and development, seeking to promote an understanding of environmental problems, stimulate the adoption of sustainable practices, and encourage active participation in the preservation and conservation of the environment. It is hoped that such culture can lead to respect for nature, appreciation of natural resources, a search for sustainable solutions, and awareness of the impacts of human actions as essential pillars.

In order to help establish and spread these practices, the development of interdisciplinary knowledge in the environmental field enables educators to play the role of mediators in managing the interactions among human society, its political, economic, social, and cultural activities and the environment. This approach presupposes an understanding that the environment is entirely complex, constituted of interdependent and interactive parts from a systemic perspective (Guimarães, 2004).

Notably, according to Tamaio (2002), pedagogical practice in Environmental Education makes an important contribution to understand local realities. Movements create and modify local spaces, materializing what was built in the pedagogical plans. In other words, the knowledge developed by the school where the students live is the starting point for creating an environmental culture.

Faced with problems experienced in contexts of environmental crisis, an educational model that values sustainable development is essential. For this reason, the National Common Core Curriculum (BNCC) presents guidelines to be followed by basic education and emphasizes the importance of promoting “socio-environmental awareness” related to two main points: responsible consumption and the preservation of the planet as a fundamental principle in the environmental area. Thus, the BNCC establishes that

[...] it is up to the education systems and networks, as well as schools, in their respective spheres of autonomy and competence, to incorporate into their curricula and teaching proposals the approach to contemporary themes affecting human life on a local, regional, and global scale, preferably in a crosscutting and integrative manner. These themes include: [...] environmental education (Law No. 9,795/1999, CNE/CP Opinion No. 14/2012 and CNE/CP Resolution No. 2/2012) [...] (Brasil, 2018, p. 19, free translation).

The initiative proposed by the Educating City encourages schools to assume educational responsibilities regarding their students' relationship with space, especially the environment and the citizens with whom they live. Based on pedagogical (educational), judicial (legal), and discursive (communicational) references, cities would be structured from this cultural learning space (Aieta; Zuin, 2012). Such a broad space would enable citizens to enjoy the City Law, in a spatial and temporal movement within the community, making it actively involved in the learning process (Aieta; Zuin, 2012).

Regarding citizen education as envisioned by the Educating City, implies discussing the dialogue between the school, the city and its inhabitants, considering citizen education as an integral part of the participatory city itself.

2 Context of vulnerable communities in cases of disaster in the state of São Paulo

According to Macedo and Sandre (2022), a mapping carried out by the Institute of Technological Research of the State of São Paulo (IPT) found that, from 1988 to 2022, 4,146 people were victims of disasters caused by landslides and related processes in at least 269 municipalities in 16 states. According to the National Center for Natural Disaster Monitoring and Alerts (Cemaden, 2018), more than 8 million Brazilians live in vulnerable conditions, mainly because they have settled in risky areas.

In the state of São Paulo, as in other regions, vulnerable communities face significant challenges. Because they live in risk areas, such as steep slopes, riverbanks or regions subject to flooding, many São Paulo residents are exposed to negative impacts of disastrous events, such as floods, landslides, and storms.

In February 2023 there was landslides with fatal outcomes on the north coast of São Paulo, especially in São Sebastião. However, although the event was generated by one of the largest volumes of rain ever recorded in Brazil, the state of São Paulo has in its history even worse catastrophes, such as the one that occurred 55 years ago in the municipality of Caraguatatuba, which prompted the creation of the Civil Defense of the State (Fernandes, 2023). At the time, part of Serra do Mar slid over the city, leaving 450 dead and 3,000 missing people (Fernandes, 2023). Currently, Caraguatatuba is among the six cities that have declared a state of public calamity.

Intending to avoid new tragedies, a Military Police operation was carried out on March 28, 2023, one month after the tragedy, in the Sítio Velho neighborhood,

in São Sebastião. The military police surprised the residents and announced the expropriation of houses located in risky areas, with the subsequent intention of demolishing them (Conte, 2023). The intrepid local residents resisted, and, faced with popular mobilization, the police was forced to withdraw.

In these locations, in addition to the chance of new collapses, the risk analysis should also assess the scope and magnitude of post-disaster consequences. Although the majority of injuries (minor and serious) or deaths are recorded in the first few hours (a natural result of rescue operations and emergency care), it is certain that there are also other long-term impacts on the health of the affected population. These consequences are often underreported or not even recorded. They include both communicable diseases, usually related to sanitation issues, and non-communicable diseases. Furthermore, psychosocial and behavioral effects can also be observed, as well as an increase in cardiovascular diseases, malnutrition, and chronic diseases (Bataiero; Elmec, 2016). It is important to consider these developments when assessing the impact of a disaster.

In the context of disaster risk assessments, it is necessary to highlight the important role of the academic community and the partnership between it and local public authorities to formulate studies and produce reports and data on affected areas or those likely to be affected. A notable example is that of the Postgraduate Program in Natural Disasters, a partner of the Institute of Science and Technology (ICT) of UNESP and CEMADEN, which presented a survey of areas at risk of flooding in the municipality of Caraguatatuba. The research, conducted by former professor and researcher Aloísio Lélis de Paula, brings proposals for urban interventions that can reduce the chances of loss of human life in the event of new extreme natural phenomena, such as heavy and long-lasting rains (Conte, 2023). “The work of mapping risk areas also allowed the identification of buildings located within the most dangerous areas, in a total that exceeded the mark of 400 properties” (Conte, 2023; free translation).

Students and researchers assessed that the population located in mountainous areas and places with frequent floods are aware of the risks. However, they live in the only space available for their financial conditions and proximity to their workplaces.

Residents of these places are forced to live with flooding, housing in poor condition, transportation difficulties, deficiencies in urban infrastructure, garbage collection, public lighting, as well as “an infinite number of things” that are often not taken into account, as these people lack basic sanitation, drinking water, and sewage collection (Conte, 2023).

Several actions from other cities in São Paulo were developed with the intention of mitigating disasters. For example, the city hall of Campinas (SP), through the Civil Defense, created a rain alert program through which registered people receive messages containing the main information regarding the circumstance and severity of rainfall. This action is part of an entire plan formulated based on the World Campaign “Building Resilient Cities”, 2017-2020, with the aim of contributing to increase resilience in local and national contexts by promoting the integration of the risk management approach into the development process. Among the various essential aspects, ensuring the effectiveness of preparation and an effective response to disasters stands out.

The Geological Institute of São Paulo promoted another example of environmental education. The institute, linked since 1987 to the São Paulo State Environment Secretariat, is considered a reference center in “Earth Sciences” in responding to society’s challenges. Aiming to facilitate the understanding of warning signs for landslides, the Geological Institute produced, in 2012, a booklet called “Do you know what a landslide is?” containing a playful exposition of lessons aimed at children.

There are many initiatives to structure knowledge and present it in an accessible way to vulnerable communities. However, they are still insufficient in reducing the scope and mitigating the effects of the tragedies.

3 The main challenges faced by the municipality of São Sebastião/SP regarding disasters and vulnerabilities of communities

In the early hours of February 19, the population of São Sebastião, a mountain city of the state of São Paulo, were startled by landslides in Vila Sahy, a neighborhood formed in the 1980, inhabited mostly by employees of vacation homes, hotels, and inns of Barra do Sahy, a beach on the other side of the Rio-Santos highway inhabit it (Catto; Titto; Matos, 2023). According to official information from São Sebastião, there was a death record of 23 children and 41 adults, totaling 64 victims (Cirino, 2023).

Although this is considered the worst disaster in the history of the state of São Paulo, geologist and engineer Fabio Augusto Gomes Vieira Reis, from *Instituto de Geociências e Ciências Exatas da Unesp*, stated that “if the event had been prolonged, we would not be talking about 80 deaths, but from 5 thousand, 10 thousand; It was a close call that this didn’t happen” (Riveira; Garrett Jr., 2023). The rains that were concentrated over the weekend—on the 13th and 14th of

February, in Serra do Mar, extending from the north coast to Guarujá, in Baixada Santista—could have been even more damaging if they had occurred in the days before the tragedy. Events of this type of events are common in the region and, if there had been rainfall in the previous days, the mountain would already be saturated when the most intense rains arrived (Riveira; Garrett Jr., 2023).

The event was largely due to the geographical configuration of the city. Located on the north coast of the state of São Paulo, São Sebastião has geographical characteristics prone to environmental impacts. Allied to this, there is the sociological factor. The municipality has more than 30% of its population residing in areas of high social vulnerability, in a total of 21,925 people, according to the São Paulo Social Vulnerability Index (IPVS; São Paulo, 2010), numbers that can be explained by the historical context of the city's formation.

Therefore, understanding the situation of social vulnerability in relation to environmental disasters requires a look at the historical and geographical context of the region. With the implementation of the “Rio – Santos” highway, which took place in 1955, the municipalities of Ubatuba, Caraguatatuba, São Sebastião, and Bertioga were connected. The highway was paved in the 1980s and accelerated urban expansion in the region, as large urban and tourist centers, as well as small centers located close to the beaches of this coastal region. As a result, and especially in the last 30 years, the beaches, slopes, and plains of the municipality were occupied by land subdivisions, condominiums, and tourist service centers (Messias da Costa, 2023).

It turned out that the rapid urban evolution of the municipality has also made it a place to search for migratory currents from nearby states, resulting in numerous neighborhoods and popular occupations—commonly known as *favelas*—in which there is an intense concentration of residents, the majority of whom are from low-income families, in a situation of social vulnerability. Thus, the occupation of high-risk areas by disorderly and precarious occupations is exacerbated in the region and can be found in deforestation clearings and on the tops of the hills of the Serra de Alto Mar, which therefore generates a very favorable setting to collapses and landslides.

Another factor is the high incidence of rain. São Sebastião is located in a region that presents high levels of rainfall, especially in summer. These and other physical-geographical characteristics of the location, such as the geographic position and climate of the northern coast of the state of São Paulo, lead to intense meteorological phenomena that cause extreme rainfall in the municipality. Hence, the North Coast is the constant target of extreme episodes such as waterspouts

and storms, with a high frequency of records (above 200 mm in hours), making it a center of attention of bodies aimed at preventing environmental disasters (Messias da Costa, 2023). Historically, the most violent episode of this type recorded in Brazil occurred in 1967, on the slopes of Serra do Mar, in the municipality of Caraguatatuba, where 720 mm of rain were registered in two days, resulting in the misfortune of 450 deaths and the destruction of half of the city.

Not by chance, the number and magnitude of environmental disasters occurring in the municipality place São Sebastião in the national spotlight. An example of this notoriety is the inclusion of the municipality by CEMADEN in the *Reunião de Avaliação e Previsão de Impactos de Extremos de Origem Hidro-Geo-Climática em Atividades Estratégicas para o Brasil* (Meeting for the Assessment and Forecast of Impacts of Hydro-Geo-Climatic Extremes in Strategic Activities for Brazil). In the summary of the first quarter of 2023, São Sebastião was highlighted in “human damage” due to the disaster that occurred on February 19, which resulted in 64 deaths, 84 injured or sick, 2,469 displaced, and 9,895 homeless.

Despite São Sebastião being highlighted in February alongside other cities in the region, such as Ubatuba, Bertioga, Guarujá, and Caraguatatuba, the municipality unfortunately leads in the number of deaths, especially due to the disaster that occurred during the 2023 carnival.

Naturally, the recurrence of such events has turned citizens of São Sebastião into “experts” in disasters. Along with the city hall, residents use their painful experiences to prevent, minimize or mitigate damage resulting from landslides, river overflows, and house collapses. Such events affect not only physical integrity, life and property, but also the psychological status of residents of the affected areas.

Regarding the events of February 2023, there is some uncertainty about the true extent of the damage. The heavy rains that caused flooding and landslides on the north coast of São Paulo undoubtedly had material, environmental, and psychological impacts, but the full extent of these effects is still being assessed, given the recentness of the events. So far, it is known that the disaster recorded an accumulation of 83.7 mm of rain in São Sebastião, according to data released by the local town hall, resulting in 64 deaths in the region. Given these circumstances, the São Paulo State Department of Justice and Citizenship, through its Center for Reference and support the indirect victim of violence (CRAVI) program, has since offered free documentation services and psychological support to victims and affected residents in São Sebastião, as detailed by Siqueira (2023).

Shortly after the floods and landslides, the Government of the state of São Paulo, under the leadership of the governor, met with the City Hall of São

Sebastião to establish a rapid action office designed to provide immediate assistance to the affected population. One of the main legal measures implemented was the declaration of a state of public calamity in the municipalities of Bertiooga, São Sebastião, Ilhabela, Caraguatatuba, and Ubatuba. Additionally, the state government allocated R\$ 7 million for the Civil Defense to operate in these municipalities, with a portion of this amount reserved for psychological support for the victims and residents of the region, as announced by the São Sebastião City Hall in 2023.

Despite receiving attention from the state of São Paulo, which worked together with municipalities to mitigate the effects of intense rains, the affected population faced multiple challenges. The situation of vulnerability worsened by misinformation, fear, and resistance on the part of residents to abandon risky places, as their homes often represented everything they owned. The complexity of these challenges highlights the need for coordinated and sensitive responses to local realities, which must effectively help the people affected, minimizing the material, physical, and psychological damage suffered and enabling them to rebuild their lives as fast as possible.

However, resident resistance is a challenge that needs to be overcome with caution. The topic was the subject of Preliminary Precautionary Protection, which is being processed under No. 1000011-74.2023.8.26.0626 in the District of Caraguatatuba, where there is a litigation of the state of São Paulo and the municipality of São Sebastião against residents in risk areas and/or in vulnerable buildings in: Boiçucanga, Juquehy, Cambury, Barra do Sahy, Maresias, Paúba, Toque Toque Pequeno, Barra do Una, Barequeçaba, Varadouro, Itatinga, Olaria, Topolândia, Morro do Abrigo, Enseada, and Jaraguá, in addition to others places that, later and possibly, may be identified as risky in the judicial district of São Sebastião (São Paulo, 2023d).

Filed on 02/21/2023, just two days after the disaster, the lawsuit requested the compulsory removal of residents from the affected risk areas. To do this, it took state and municipal decrees of public calamity as a normative basis, which were published due to the rains, No. 67.502/2023¹ and No. 8.777/2023, respectively. In short, applicants only aimed to protect the residents, who resistance to their relocation to another place.

The preliminary injunction, granted by the judge in the case, Paulo Guilherme

¹ The municipality of São Sebastião has the support of the *Gerência de apoio do Litoral Norte* (North Coast Support Management), created by the state of São Paulo in 2023 and aims to assist the state governor's office in relation to the public calamity situation declared in six municipalities in the state, including São Sebastião, by State Decree No. 67502, of February 19, 2023

de Faria, authorized the state of São Paulo and the municipality of São Sebastião to evacuate residents from high-risk locations, even against their will. In addition to the initial statement, the applicants claimed the impossibility of delimiting the defendants in the action, so as not to further expose the lives of residents living in the locality. The process, which is still in progress at the São Sebastião Forum, aims mainly for the relocation of homeless and displaced people.

This is where 30% of the population of São Sebastião is inserted, a scenario of significant social vulnerability and lack of education and information, exacerbated by adverse climatic conditions and challenging physical-geographical characteristics. Many of these citizens, in addition to facing routine environmental disasters, are devoid of knowledge about the risks to which they are exposed, resulting in resistance to moving from inhospitable locations, as exemplified by the aforementioned precautionary protection. However, significant portions of those who understand the risks simply do not have adequate resources to replace their homes with ones in safer locations.

In this context, it is imperative to focus on measures adopted by public bodies aimed at preventing, mitigating, and minimizing damage resulting from environmental disasters. In addition, it is essential to consider the role of education for residents of these areas. It is crucial to evaluate the commitment of the municipality of São Sebastião in offering all its inhabitants integrated teaching on environmental law, and also disaster prevention and mitigation, as a vital means to disseminate information to this highly vulnerable population that is recurrently affected by catastrophes. Moreover, it is extremely important to consider the provision of suitable housing as alternatives to homes located in risk areas, to ensure that these people have access to safe and decent housing.

4 Public policies aimed at preventing and mitigating disasters risks in the state of São Paulo

The state of São Paulo—as well as other Brazilian states with areas at risk vulnerable to natural disasters—has the help of CEMADEN, a federal body responsible for continuously monitoring areas of environmental risk. Based on geological and meteorological monitoring, CEMADEN issues alerts about possible eminent environmental disasters, so that prevention bodies can act in these areas.

In order for the issued alerts to fulfill their role, there must be state and municipal agencies that act quickly to prevent or mitigate these events. For example, during the intense rains in São Sebastião, in February 2023, CEMADEN warned

the state of São Paulo 48 hours in advance on the high risk of intense rains and landslides. After receiving this information, the state government promptly notified the municipality of São Sebastião. According to the Civil Defense of the State of São Paulo (2023a), two days before the event, an alert was sent by SMS to all residents of the North Coast registered in its system, emphasizing the imminent risk.

However, residents of risk areas reported that they were not informed of the disaster and none of the public entities published on their internet profiles on the possibility of landslides. The SMS messages would not have been clear or explicit enough about a possible landslide/collapse. The warning only conveyed the following messages: “heavy and persistent rain” and “be careful in the coming hours”. One of the possible reasons for the lack of an explicit warning on such risks can be explained by the concern of causing the departure of tourists or discouraging visitors from staying during the carnival period.

From a legal point of view, Decree No. 7073/2017, which “provides for the organization of the Preventive Civil Defense Plan in the Municipality of São Sebastião”, the municipal Civil Defense is responsible for receiving alerts from state or technical bodies and immediately communicate the bodies participating in the contingency plan. This is what item 4.1.2 of the Annex to the aforementioned Decree provides, in the following terms:

Upon receiving an alert from the State Civil Defense or another technical body of the System on the possibility of considered precipitation in the municipality, especially in the headwater area of the main rivers and streams, the Civil Defense must immediately redirect the information to the bodies participating in this Contingency Plan, to start the Situation of Attention and, together with the Municipal Guards and traffic agents on duty, must maintain visual observation regarding the behavior of precipitation, taking into account the flood level of rivers and streams, measured near the passages (bridges) (São Sebastião, 2017, p. 21; free translation).

Apparently, although CEMADEN alerted the state of São Paulo and the city’s Civil Defense, preventive actions were not effective, thus contradicting the contingency plan. The reasons that led to this ineffectiveness have not been clarified yet, but may be related to the lack of communication with residents, negligence on the part of responsible agents, difficulties inherent to the carnival period, etc.

Many municipalities have an audible alert system to notify the population of imminent rain or disaster. This is also the case in São Sebastião. Although it was not possible to determine whether sirens were activated or not at the time of the

event, this is one of the preventive measures that must be carried out, according to the aforementioned contingency plan, as can be seen from of item 4.1.2.2 of its Annex:

If there is a risk of overflow and/or any other harmful consequence to the municipality and/or citizens, these teams, upon guidance from the Civil Defense, will enter an Alert Situation, with each participating body carrying out its previously determined duties and the garrison in charge will activate the “Alert Siren” (São Sebastião, 2017, p. 21; free translation).

Apparently, either the sirens were not sounded or, if they were, the sound alert did not have the expected effects. If the first hypothesis occurred, it is necessary to understand that SMS messages alone are not enough to alert the population about the risks in a location where landslides are expected. The measure is insufficient because either not all residents have a cell phone or, when they do, not everyone knows how to read the messages and notices they receive. In the second hypothesis (the sound alert was issued, but had no effect), it is necessary to consider the possibility that the population resisted leaving the location or simply ignored the seriousness of the risk. In both cases, it is necessary to call on the municipality to take its responsibility as an Educating City, promoting discussion on the risks and raising awareness among citizens on seriously taking disaster warnings issued by public authorities seriously.

In this sense, the role of Educating City as an instrument for disseminating environmental education would serve not only to raise awareness among the population, but also to form, alongside with citizens, a brigade or civil force to work together with the municipal Civil Defense itself. This occurs in some systems in Asia, where residents receive information and training from the earliest years of schooling. Thus, when they hear a specific siren, they know exactly what to do, how and where to look for shelter.

Promoting environmental education that encourages organized reaction and protocols for the issuance of audible alerts helps to dispel distrust, resistance, or ignorance that residents may have regarding warnings issued only via SMS. A curious fact is that São Sebastião instituted a similar training program in Decree No. 3.211/2005, signed by Mayor Juan Manoel Pons Garcia at the time. The normative act created the “Alert day”, a date to be celebrated “every year in the second half of October with the purpose of developing recreational educational activities”. It involved the community, to “permanently train and educate the residents of the TEBAR area, calmly move away from affected areas, and seek safe shelter in cases of disaster” (Arts. 1 and 2) (São Sebastião, 2005). Despite the legal

provision, further investigations are necessary to determine the reasons that led an apparently trained community (assuming, in theory, that the “Alert day” protocol has actually been applied over the years) to ignore or resist the alerts that would have been issued in February 2023.

Unfortunately, some important preventive and mitigating measures were not taken before the disasters—thus missing the opportune time to make the most of their potential. This is the case, for example, of a public policy booklet to be launched by the municipality of São Sebastião, containing guidelines and information for the safe return of families affected by the February 19th catastrophe to homes already released by civil defense agencies. In addition to this example, there is the launch of the “social rental” program, aimed at helping the homeless population, which could have been previously used to relocate the population from risk areas (São Sebastião, 2023b). If measures like these or similar ones had been adopted prior to the disaster, they would have contributed better to preventing and mitigating damage.

5 The importance of Disaster Law as a theoretical-legal framework for the Educating City to reduce vulnerabilities of communities

According to the definition of the Pan American Health Organization (PAHO), a natural disaster is characterized by the combination of two important characteristics. Firstly, it results in a serious disruption of the normal functioning of a community or society, affecting its daily routine. This interruption involves material and economic losses, as well as environmental and health damage to populations, including the occurrence of injuries and illnesses that can lead to immediate or future deaths (Bataiero; Elmec, 2016). Secondly, a natural disaster exceeds the capacity of the affected community or society to deal with the situation using its own resources (Bataiero; Elmec, 2016). This means that the available resources are not sufficient to face the magnitude of the event, resulting in increased environmental and health losses and damages, affecting not only the place where the event occurred, but also other areas beyond its geographic limits.

This definition focuses on the severity of natural disasters and their effects, emphasizing both the interruption of a community’s normal activities and material, economic, environmental, and health losses. As a result of this definition, there is an implicit recognition of the need for external support for the affected community to deal with the calamitous situation faced, since local or own resources are insufficient.

Community participation in all phases of risk management is also a factor to be taken into consideration by Disaster Law. Civil society—following the example of the São Sebastião community, which contributed to campaigns with the city hall—should be encouraged to participate effectively in the stages of risk management. As Carvalho (2019) teaches, “Disaster Law is closely related to risk management and the stages of the disaster cycle”. It is important to highlight that the autonomy of this legal field is based on a risk management cycle that encompasses everything from prevention to the reconstruction phase (Carvalho, 2019).

From the construction of this “environmental legality”, understood as the set of norms and principles that regulate relations between society and the environment, it is possible to establish limits and conditions for the exploitation of natural resources, protection of environmental areas, and mapping of housing in preservation or risk areas. An Environmental Rule of Law can help to guarantee, from a legal point of view, an effective and balanced State intervention that promotes: protection of the environment in an integrated and sustainable manner; respect for fundamental rights; the participation of civil society in risk management; and the effective and intelligent prevention of deaths and other damages caused by disasters.

Many catastrophes have occurred for decades in the coastal regions of São Paulo. Disaster sites remain the same, but victims are constantly renewed. We need to take this sad reality seriously. In fact, risk management, the framework of Disaster Law, has been improved in these and other places, as public agents collaborate to restructure a destroyed environment, with victimized and homeless people. However, it is still necessary to think about disasters in the light of intersectorality, i.e., based on the relationship among different social segments, contributing to the formulation of more effective responses in the implementation of appropriate solutions to post-tragedy circumstances.

It is characteristic of the Law of Disasters to colonize the disaster (Carvalho, 2019), i.e., to dominate its deleterious effects. Disasters have the power to tear apart social fabric, interrupting the normal patterns of community life (Weaver; Kysar, 2017). For this reason, Disaster Law must be taken into consideration in civil and pedagogical programs such as the Educating City.

Children and young people should not be seen as just passive members of the social structure. The citizenship process occurs with the inclusion of these groups in circumstances and activities that benefit communities. In risky environments, the vulnerability of these people is accentuated, which is why they need to be strengthened. Even though they are undergoing physical and intellectual training,

they can and should be guided in the risk management process, preferably using clear language adapted to their cognitive conditions. The preparation of young people and children fulfills one of the ideals of the Charter of Educating Cities, presented at the 1st International Congress of Educating Cities in Barcelona (1990). According to it, the Educating City must encourage dialogue among generations, not only as a formula for peaceful coexistence, but as a search for common and shared projects among groups of people of different ages.

Therefore, it is beneficial to pay attention to the theoretical-legal framework of Disaster Law, in addition to its logistical structure, in order to take advantage of its contributions to the educational activities and projects of the Educating City. This is especially important when they involve cities that experience catastrophes or that have communities in situations of socio-environmental vulnerability.

6 The culture of environmental education as an instrument for reducing the vulnerability of communities

As mentioned in the previous items, the municipalities on the north coast of the state of São Paulo have a high percentage of their population living in high-risk in extreme social vulnerability. Combined with socioeconomic problems and lack of planning, the population lives in fear in the face of constant environmental disasters that cause irreparable environmental, material and psychological losses and damages.

This reality of “urban chaos” is little addressed in the school environment, whether for the purpose of welcoming or raising awareness among students and society. In this context of omission, it is important to debate the educational role of the city, enabling a discussion on social injustices promoted by the segregation between large urban centers and peripheral areas of the city, since statistically the outskirts are the most frequent targets of environmental disasters.

The Educating City, mentioned in the previous item, plays a relevant role in the approach to environmental education, functioning as an information instrument that can help reduce vulnerability in this type of community. Thus, Federal Law No. 9,795/1999 already provides for environmental education and its relevance, as it established the National Environmental Protection Policy, a project emphasizing the transformation of social practices through citizen awareness (Brasil, 1999). Unfortunately, with the repeal of Paragraph 7, Art. 26 of Law No. 9,394/1996, which provides for the guidelines and bases of national education, it is no longer compulsory to include the principles of civil protection and defense,

and environmental education in an integrated manner with the mandatory content in education.

In any educational context, the educator plays a crucial role, especially in the field of environmental education, as they face the challenge of presenting students with a holistic perspective of the subjects, contrary to the fragmented method common in the Brazilian education system, regardless of educational level. For example, an interdisciplinary approach to geography, which considers the specificities of the vulnerable location in which students find themselves, can be fundamental to overcoming their difficulties in understanding the context in which they live. Hence, the environmental educator must integrate knowledge from different areas, such as geography, sociology, physics, and history, encouraging an investigative stance in students, to make environmental education more impactful and meaningful.

The effectiveness of environmental education for the purpose of preventing environmental disasters can be verified by applying this awareness in the municipality of Petrópolis, in the state of Rio de Janeiro, which lives in a very similar situation to the municipalities on the north coast of São Paulo. Petrópolis has a population of 278,811 people, according to IBGE (2023), and an area of 791,144 km². Of this total population, 72,070 citizens, according to 2010 data, are exposed to environmental risk², which is mainly marked by floods and landslides. In this context, the Stefan Zweig Municipal School, located in a high-risk area in Petrópolis, promoted a workshop entitled “*Os Riscos de Deslizamentos de Terra em Petrópolis*” (The Risks of Landslides in Petrópolis). This initiative focused on not only increasing awareness in students residing in vulnerable areas, but also fostering a deep understanding of the region’s socio-environmental challenges. The workshop adopted a transdisciplinary approach, enabling students to immerse themselves in the environmental context in which they are inserted and encouraging critical reflection on local environmental problems (Ferreira; Queiroz; Richter, 2017).

Activities like this highlight the importance of engaging students who live in vulnerable communities, transforming them into active agents in managing their own environment. The educational preparation that takes place within schools, combined with the participation of students in extracurricular activities—in interaction with various professionals such as firefighters, prosecutors, engineers,

² Population exposed in areas at risk of floods, flash floods, and landslides accounted for municipalities considered critical to natural disasters in Brazil and monitored by CEMADEN. Municipalities ‘without data’ are not monitored by CEMADEN or have no published data in respect to statistical confidentiality.

and environmentalists—not only fosters citizenship among the new generations, but also encourages the community to get involved actively in collective learning and development.

Conclusion

This article explored how Disaster Law can act as a theoretical-legal framework to implement of a culture of environmental education in the state of São Paulo, to mitigate disaster risks and reduce the vulnerability of local communities. This is based on the idea of the “Educating City” is an approach emphasizing the importance of education for sustainable development and the creation of environmentally resilient communities.

The Educating City initiative plays a fundamental role in the context of the environmental crisis, especially in the context of disasters, by offering schools resources and guidelines to approach and face environmental challenges in an educational and transformative way. It contributes to schools in a number of ways, such as promoting student awareness on pressing environmental issues such as the climate crisis, biodiversity loss and pollution. This helps to highlight the concern and sense of environmental responsibility from an early age.

Furthermore, the Educating City program encourages the integration of environmental education into all aspects of the school curriculum. Environmental themes and challenges can be addressed in an interdisciplinary manner, relating them to different areas of knowledge, such as science, geography, history, arts, and literature. Also, the Educating City promotes the active participation of students in the search for solutions and concrete actions to face the environmental crisis. Students are encouraged to get involved in projects, initiatives, and activities that promote sustainability, conservation of natural resources, and mitigation of environmental impacts.

The Educating City encourages partnerships and collaboration among schools, government institutions, non-governmental organizations, companies, and local communities. Such partnerships can offer resources, specialized knowledge, and practical learning opportunities, enriching environmental education and strengthening actions in favor of the environment. The Educating City promotes the formation of active citizens, aware of their rights and duties regarding the environment. Students are encouraged to get involved in participatory processes, such as municipal councils, public hearings, and social impact projects, exercising their citizenship in a responsible and engaged way.

Through Disaster Law, the Educating City seeks to promote the active participation of citizens in risk management, encouraging community engagement, knowledge sharing, and the adoption of preventive measures. Furthermore, the legal framework offers instruments for developing contingency plans, protecting vulnerable areas and holding public and private agents accountable in the event of negligence or non-compliance with safety standards.

By integrating Disaster Law into its educational context, the Educating City can empower the community, including vulnerable people, children, and young people, to deal with environmental challenges and extreme events in an aware and responsible manner. This enables the promotion of sustainability, solidarity, and the protection of human rights. Thus, the Educating City can contribute to reducing the vulnerability of communities such as those in São Paulo, which are facing unprecedented tragedies, by strengthening their capacity to adapt and resilience in the face of disasters.

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