

# Disaster management in Brazil: innovation through the gender perspective

Gestão de desastres no Brasil: inovação por meio da perspectiva de gênero

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## Abstract

Climate change and uneven urbanization processes have intensified the occurrence and magnitude of disasters. The purpose of this article is to discuss the integration between the National Policy for Protection and Civil Defense and the empowerment of women and communities in Brazil, revealing the innovative potential of gender-sensitive disaster management policy. For that, we base ourselves on a theoretical-conceptual survey to explain the special vulnerability of social minorities to disasters. We present the disaster management policies practiced in Brazil, which are essentially technicist, and propose the adoption of epistemologies of the South as a counterpoint. We end the article with propositions that have the potential for creating effective responses to the challenges posed by the climate emergency.

**Keywords:** disasters; vulnerability; women; informal settlements; epistemologies of the South.

## Resumo

*As mudanças climáticas e o processo de urbanização desigual vêm intensificando a ocorrência e a magnitude de desastres. O objetivo deste artigo é discutir a integração entre a Política Nacional de Proteção e Defesa Civil (PNPDC) e o empoderamento feminino e comunitário no Brasil, contribuindo para a discussão ao revelar o potencial inovador de uma gestão de desastres sensível a gênero. Para tanto, baseamo-nos em levantamento teórico-conceitual para explicitar a especial vulnerabilidade de minorias sociais a desastres. Apresentamos a gestão de desastres praticada no Brasil, essencialmente tecnicista, e propomos a adoção das epistemologias do Sul como contraponto. Finalizamos o artigo com proposições à PNPDC que teriam potencial de criar respostas mais efetivas aos desafios impostos pela emergência climática.*

**Palavras-chave:** desastres; vulnerabilidade; mulheres; assentamentos informais; epistemologias do Sul.



## Introduction

A disaster can be defined as a publicly observed phenomenon that exposes a vulnerability in the relationship between the State and the society in face of a certain impact that could not be prevented, or whose effects cannot be reduced, since considerable socio-economic and environmental damages and losses were inflicted (Valencio, 2009). Floods, landslides, droughts, and epidemics are some examples of disasters that occur frequently in Brazil and in the world.

Although such phenomena are influenced by adverse weather conditions, they are also strongly aggravated by human action. The latest report by the Intergovernmental Panel on Climate Change – IPCC (2021) agrees on the fact that greenhouse gas emissions from human activities have led to an increase in the frequency and intensity of extreme climate events. Therefore, there is a point of contact between the current climate scenario and the occurrence of disasters in recent decades, which have been increasing in frequency and magnitude. Data from the Emergency Events Database – EM-DAT (2020) reiterate this fact as they demonstrate that there has been a significant increase in the number of extreme events recorded worldwide, from 250 disasters recorded in the 1960s to 6,300 in the 2010s.

In Brazil, the most frequent disasters are related to atmospheric instabilities, known as hydrometeorological disasters, which generate floods and landslides as the result of intense rainfalls that affect a large number of people every year (Gonçalves; Sousa, 2014). Considering the Brazilian context – in which social inequalities and socio-spatial

segregation are evident – urbanization not infrequently expands towards areas that are unsuitable for occupation, such as environmentally sensitive areas that, when occupied, put the settling populations at risk, increasing the probabilities of occurrence of a disaster (Valencio, 2009). Hence, this uneven urbanization process generates episodes of floods, landslides, and disease outbreaks as it leads to soil sealing, inadequate waste disposal, occupation of slopes and watercourse banks, in addition to deforestation. In this context of precariousness, peripheral countries experience more than 70% of all disasters recorded worldwide (Fiala, 2017).

In order to reduce urban vulnerabilities to disasters, a necessary aspect to be considered is directly related to the critical vulnerability of social minorities (which includes aspects of social class, color, and gender),<sup>1</sup> as they are the most impacted by disasters. This is due to environmental injustice, that is, the realization that most of the environmental risks impact mostly groups that are historically subordinated (Bullard, 1983). Therefore, an intersectional approach to disaster risk mitigation and management processes is essential for an appropriate response to this matter. Acknowledging the multiple and overlapping segregations faced by certain groups, and that this fact leads to greater vulnerability in the face of extreme events, is a starting point to deal with this issue properly (Camey et al., 2020).

With regard to the vulnerability of women to disasters, which is the object of study of this article, a survey carried out by the United Nations revealed that women and children are 14 times more likely to die in such disasters (United Nations Office for

Disaster Risk Reduction, 2012a). This scenario is a fact because women are often subject to subordinate positions, restricted mobility, less decision-making power, underpaid jobs, and politically underrepresented, which are all factors that increase their vulnerability (ibidem, 2012a). Oktari et al. (2021) state that elements such as physical and sexual violence, time dedicated to care for children, the elderly, and the household, added to the poor access to education, are other causes that subject women to be disproportionately vulnerable to the adverse effects of disasters worldwide.<sup>2</sup>

Despite the special vulnerability that many women face, they should not be seen as passive victims of such a situation, as they are important agents in the fight against extreme events and are capable of developing and leading effective actions to deal with the problem. The international scientific consensus has acknowledged the importance of female empowerment when it comes to resilient cities, a vision that has been formalized in several international treaties of which Brazil is a signatory, such as the Sendai Framework, the 2030 Agenda, the Paris Agreement, and the New Agenda for Urban Habitat III.

However, the institutional responses from the governmental authorities to disaster management actions in Brazil, as formalized in the Brazilian Civil Defense and Protection Policy – PNPDC (Federal Law n. 12.608/12) are essentially of a technical nature and barely involved with the complexity of the communities affected by disasters. It is not a reason of surprise that such strategies have proved to be insufficient in the defense against extreme events, which justifies the adoption of a different approach to deal with these issues. With this in mind, the purpose

of this article is to discuss the integration between the PNPDC and the empowerment of women and communities in Brazil, so as to contribute to the discussion by revealing the innovative potential of a gender-sensitive and, therefore, more inclusive, participatory, and emancipatory approach to disaster management. This is due to the fact that social innovation can be understood as a way of creating new and more effective responses to the challenges faced by society, promoting a collective learning process that allows for the effective application of social transformations and the formation of new social relationships (Juliani et al., 2014).

To this end, at first, the method used herein aims at carrying out a theoretical-documentary survey to demonstrate: a) the particular vulnerability of social minorities to disasters in Brazil (Enarson et al., 2006; Collins, 2009; Ipea, 2011; Alisson, 2012; IBGE, 2019a, 2019b, 2019c; Fundação João Pinheiro; Corecon MG, 2020; Lacerda et al., 2021); b) the way disaster management is carried out in Brazil, marked by a technical bias (Chauí, 1982; Freire, 2014; Valencio, 2014, 2016; Portella; Oliveira, 2021); c) the innovative potential of adopting epistemologies from Southern Brazil to achieve a more participatory, inclusive, and emancipatory risk management (Santos, 2002, 2007, 2021; Grosfoguel, 2009; Porto; Finamore, 2012; Holston, 2016; Sulaiman et al., 2019).

Based on the previous analyzes and arguments, we propose a national strategy for Disaster Risk Reduction – DRR – capable of integrating women and communities at risk into the PNPDC, making them agents of this process. To prepare this material, we drew on UN guiding documents on best practices in

disaster management, on international treaties that address an integration between disaster management and gender, and on reports resulting from international conferences on the subject (Picard, 2014; Galperin; Wilkinson, 2015; United Nations, 2015; Le Masson, 2016; Habtezion, 2016; Nguyen et al., 2020).

## Development

### Vulnerability to disasters in Brazil and its relationship with gender, color and social class.

Wisner et al. (2004) state that, in order to understand disasters, we must not only know the types of hazards (heavy rainfalls, droughts, earthquakes, etc.) that can affect people, but also the vulnerability levels of different social groups. In this discussion, “vulnerability” can be understood as the physical, economic, political, and social predisposition that a community or individual has to be affected by the occurrence of a destabilizing phenomenon. That is, it is the ability to anticipate, respond to, and recover from the damage inflicted (Cardona, 2001). Therefore, it is natural that different social groups are subject to different degrees of vulnerability.

In the Brazilian case, white and black, rich and poor women do not experience such vulnerability in the same way. This is related to a historical context that is expressed in the vast and customary allocation of the majority of the black and poor population to informal and poorly paid jobs, with scarce political representation, high levels of violence, difficulty to access formal education, and the

lack of alternatives to dwelling in inappropriate places.<sup>3</sup> Therefore, the discussion of the gender perspective associated with disaster risk reduction policies – DRR, a racial perspective should also and necessarily be included. Since the population residing in inadequate conditions in the Brazil is mostly black, this factor must be essentially considered in the formulation of responses to the risk experienced in informal settlements, so that DRR policies and programs can also take this aspect into consideration. As described further herein, precarious housing conditions, the lack of access to adequate urban infrastructure, the feminization of poverty, political underrepresentation, the role of caregivers imposed on the female population, and gender violence in its various expressions are critical elements to understand the greater vulnerability of women to disasters, especially black women.

When it comes to the housing aspect, women are the people of reference for most of the families with a housing deficit in Brazil, that is, 3.523 million (60%) of the households with a deficit in 2019 had a woman as the breadwinner (Fundação João Pinheiro, 2021), which characterizes the “feminization of the housing deficit” (Lacerda et al., 2021). Also according to Lacerda et al. (ibid.), it is important to analyze such data in terms of the Brazilian family organization: since the 1960s, families called “single-parent families with children” have been the ones that grow the most in numbers – a group that is mostly formed by single mothers and their children. In 2018, there were more than 11 million families in this typology – approximately 5% of the country's household arrangements in Brazil (IBGE, 2019b). Moreover, according to

data from the Brazilian Institute of Geography and Statistics (IBGE, 2019b), 61% of the Brazilian sole mothers are black. Also, 63% of the households that have a black woman as the person of reference, with children of up to 14 years of age, are below the line of poverty (ibid.). Such data reinforce the importance of the intersection between the variables of color, gender, and class in the housing experiences of the Brazilian population and, therefore, their exposure to urban-environmental risks.

In addition, according to the latest edition of the report named *Retrato das desigualdades de gênero e raça* (A portrait of gender and racial inequalities), produced by Ipea (2011), only 33.9% of households in substandard settlements in Brazil are led by a white person, while around 66% are led by a black person. This is related to the significant differences in salary income related to gender and color, as observed in Brazil. In 2018, women were paid 78.7% of the amount paid to men. Black or brown people, on the other hand, were paid 57.5% of the income paid to white people. This difference is explained by factors such as “occupational segregation, fewer educational opportunities, and lower wages in similar occupations” (IBGE, 2019c, p. 3). Biroli (2018) adds to this fact by stating that paid work is not experienced in the same way by all women. While, for white women, it means autonomy, career, and better-paying jobs, for black women, who are the majority of domestic workers, it implies the performance of alienating work that adds to the continuation of class exploitation.

Having exposed the precarious conditions of housing and infrastructure that many women are forced to live with, it

is appropriate to recall the phenomenon of “feminization of poverty”. As pointed out by Fundação João Pinheiro and the Regional Council of Economics of the State of Minas Gerais – Corecon MG (2020), the mechanisms that contribute to this phenomenon are: a) the gender division of labor, which translates into greater occupation of precarious positions and the socioeconomic devaluation of tasks traditionally performed by women; b) the discrimination inherent to the labor market, which assigns lower wages to women and a lower rate of occupation of positions of power; c) the impact of recent changes in social policies, which affect women more significantly.

With regard to the gender division of labor, it is noteworthy that women dedicate an average of 18 hours a week to caring for people or household chores, that is, 73% more than men (IBGE, 2019b). This factor is related to the hierarchy of work: while “the work assigned to men is paid, with labor guarantees, and socially valued” (Fundação João Pinheiro; Corecon MG, 2020, p. 8), the reproductive work, usually performed by women, is not remunerated, in addition to being socially undervalued, with no guarantee of any social protection. However, the imposition of the reproductive work on women increases their economic dependence on men, which also produces an inequality of power between men and women within the household (ibidem, 2020). In addition, the pressure imposed by activities involved in the home and family care adds to the fact that many women end up allocated in precarious, informal, and poorly paid jobs, in order to be able to make domestic activities compatible with paid activities.

In turn, the labor market discrimination faced by women is related to the fact that the majority of employees in higher, better paid positions, both in the public and private sectors, are men. On the other hand, most workers who occupy lower positions are women (Fernandez, 2019). According to the report *Estatísticas de Gênero: Indicadores sociais das mulheres no Brasil* (Gender Statistics: Social indicators of women in Brazil), published by the Brazilian Institute of Geography and Statistics – IBGE (2019b), in 2016 men occupied 60.9% of managerial positions in the country, while women occupied 39.1%. The wages received by men and women that occupy the same role also vary. In management positions, this difference reaches 27% (ibidem, 2019b).

Such dynamics are not only reflected in the feminization of poverty, but also in the underrepresentation of women in politics. Despite being the majority in popular movements that fight for better living and working conditions, the representation of women in the State spheres (legislative, executive, and judiciary) is still quite low. This is directly related to factors such as the sexual division of labor and discrimination in the labor market, as mentioned already. For Montaner and Muxí (2021, p. 51), “if there is a space where the exclusion that the patriarchal system exerts on women is clear, it is that of politics, the utmost space for the representation of visible power”. As a result, women occupy only 15% of formal spaces of power in Brazil (Tribunal Superior Eleitoral, 2018). This situation is even more severe when it comes to black women, who represent only 2.5% in the Chamber and 1.2% in the Senate (Boldrini, 2019). At the

international level, Brazil ranks 132nd among the 190 countries that reported to the Inter-Parliamentary Union the percentage of seats in their chambers or parliament held by incumbent women (IPU, 2019).

Finally, it should be noted that changes in social policies implemented in the post-2015 period have been disproportionately affecting the female population as they contribute to the burden of women, who are forced to deal with double or triple working hours. It is not by chance that women are responsible for taking care of children when they cannot find space in public day care centers, and the elderly who fall ill due to the lack of medical resources. As a result, the female population is deprived of time, energy, and money. In addition, the amount allocated to public policies for women with the objective of promoting women autonomy and combating violence reached BRL 147 million in 2014. In 2018, with an 83% drop in the budget, this investment dropped to BRL 24 million. It was also observed that approximately one million families were disconnected from the family grant program *Bolsa Família* between May 2019 and January 2020 (Fundação João Pinheiro; Corecon MG, 2020). Combined, these aspects contributed to the feminization of poverty in Brazil.

The result of this process is that, with low wages and the responsibility for the care of the home and family, Brazilian women, especially peripheral and black women, need to find balance “between productive and reproductive work, and often cannot afford household expenses” (Laceda et al., 2021), which leads them to occupy areas ignored by the formal real estate market and, consequently, makes them more vulnerable to the occurrence of extreme events.

Furthermore, the “caring nature” culturally imposed on women leaves them exposed to emergency contexts, as they tend to protect others first, and then worry about themselves (Alisson, 2012). Enarson et al. (2006) corroborate this statement by arguing that, in most societies, the daily and immediate responsibilities of care are female tasks, representing an additional burden for women before, during, and after the occurrence of an extreme event. As pointed out by the authors, when there is a need to evacuate, it is up to women to recreate the feeling of security for children in makeshift shelters or temporary homes, which represents an obstacle for them to resume their paid activity and guarantee their financial autonomy. This being explained, it is concluded that women’s vulnerability to disasters is not only related to objective aspects, such as precarious housing conditions and urban infrastructure, but is also characterized by sociocultural and economic variables.

## The Brazilian National Civil Defense and Protection Policy

Having clarified the phenomena that make the female population more vulnerable to the occurrence of disasters, it is important to understand how the government deals with the issue in Brazil. First, it is important to emphasize that preventing severe natural phenomena from occurring is beyond human capacity. However, with the application of preventive measures, it is possible to develop and implement programs and actions to minimize the impacts caused by them. Such measures can be divided into two categories: structural and non-structural.

Structural measures are understood as those related to civil engineering, such as dikes, dams, containment works, among others. Created in 2007, the Growth Acceleration Program – “PAC” was the main structural device to prevent risks in Brazil and gained prominence for promoting infrastructure works carried out by the government that, in addition to improving sanitation, housing, transport, energy, etc., reduced the probability of occurrence of disasters. However, in 2019, the Brazilian Federal Government announced that the PAC would no longer receive new investments, continuing only with the works that were already in progress. Pupo (2019) points out that this measure was adopted after successive cuts in the funding to the program, as the amount allocated to those works fell by 52% between 2014 and 2018. As a result, at this date, these structural measures are not assigned to any specific program or funding, with parliamentary amendments as the only source of federal funds.<sup>4</sup>

On the other hand, non-structural measures are related to actions that, through rulings, laws, regulations, and educational actions, aim at reducing the damage caused by disasters. This category includes planning and management instruments, specific regulatory frameworks, and international treaties. Among the international treaties that address the issue, to which Brazil is a signatory, the most significant are the Sendai Framework for Disaster Risk Reduction, the Paris Agreement, the 2030 Agenda for Sustainable Development and the New Habitat III Urban Agenda. These are the result of intense discussions in the global political scenario that have been taking place over the last twenty years.<sup>5</sup> As a result, the topic of “gender” was progressively

included in the world disaster risk reduction agenda (United Nations Office for Disaster Risk Reduction, 2012), giving visibility to the issue by recognizing and reinforcing the importance of adopting measures intended to mitigate extreme events through a participatory and gender-sensitive approach.

The National Policy for Civil Defense and Protection – PNPDC (Federal Law no. 12.608/2012) is the main Brazilian regulation related to this subject and has incorporated relevant advances in the national legal system related to the management of disasters. While the previous regulation (Federal Law n. 12.340/2010) was more focused on response and reconstruction actions, the PNPDC now warns of the need for preventive measures. Moreover, the PNPDC points out the need to integrate sectoral policies to deal with the risk and, for that, mobilizes themes related to health, environment, climate change, sanitation, housing, etc.

On the other hand, it is important to emphasize an important gap in the PNPDC: the advances formalized in the legal apparatus brought with them challenges related to its operationalization, since the regulations do not provide the instruments for their effective implementation, which led to advances in legislation that were not put into action (Freire, 2014). It is also worth mentioning the change brought about by the National Council for Civil Defense and Protection – CNPDC, which had its importance reduced, since article 11 of the aforementioned Law establishes the CNPDC as a consultative body of the National Civil Defense and Protection System. However, the previous legislation (Federal Law n. 12.340/2010) established the CNPDC with a consultative and deliberative

nature, responsible for the formulation and deliberation of government policies and guidelines (Freire, 2014). Considering that the councils are linked to bodies of the Executive Power, whose purpose is to allow society to participate in the definition of priorities for the political agenda, as well as the formulation, monitoring, and control of public policies, the disqualification of social participation is noticeable and undeniable when it comes to the elaboration of the public agenda. The PNPDC also reinforces the need for civil society participation, but how such participation should be carried out or even encouraged is still unclear (Almeida, 2015).

Added to this framework of notable challenges is the lack of recognition of women's vulnerabilities and capabilities in this context. If, on the one hand, women constitute the majority of victims of disasters, on the other hand, they have much to contribute to the prevention of risks in their communities.

Therefore, there is a clear disagreement between the disaster risk management practiced in Brazil and the international consensus on the subject. The Sendai Framework makes it evident, as it emphasizes that “women and their participation are critical to an effective disaster risk management and to the preparation, fundraising, and implementation of gender-sensitive disaster risk reduction policies, plans, and programs” (United Nations, 2015). In addition to signaling the special vulnerability of women, these milestones point out that the effective application of gender equality and the empowerment of women and girls represent an important step to mitigate disaster risks. Despite being a signatory to these treaties, Brazil maintains a risk management policy



away from such premises, as it does not have a gender approach in its policy, nor does it aim to integrate with the local complexity of communities at risk.

This situation reflects a broader condition of lack of participation observed in Brazil. Even though the Brazilian Federal Constitution of 1988 and the Statute of Cities require municipalities to implement a participatory mechanism for urban planning, Manzi and Latendresse (2018) state that, when the population is involved through collaborative planning, the population is not infrequently impeded of effectively contesting or rejecting a proposal for urban intervention, which renders it as a mere exercise of public consultation. Such a situation defines the so-called “low level participation”, since the final decisions remain in the hands of “experts”. This fact explains, in part, a trend to low participation of the population, as well as their distrust and skepticism regarding such processes (ibidem, 2018). However, Valencio (2014, p. 3641) points out that “the starting point of technical practices would be the involvement with the social complexity, instead of forgetting it”, since it is through popular initiative that the community plays active roles in public policies, and is not treated as an object thereof.

It follows, therefore, that the government’s stance in relation to the way in which it has treated risk prevention in Brazil proves to be insufficient in the fight against to the risks currently faced, as it fails to approach local particularities and dedicate effective attention to vulnerable populations. This is related to the overvaluation of technique and what Chauí (1982) refers to as a “competent speech”, that is, what can be uttered, heard,

and accepted as true and authorized. It is the experts’ speech. According to the author, the bureaucratization of contemporary societies and the idea of organization are at the base of this phenomenon. On the one hand, bureaucratization does not refer only to the scope of the State, but to the entire civil society – bureaucracies in businesses, schools, hospitals, labor unions, cultural agencies, etc. Such bureaucratization process takes place under the aegis of the idea of organization since, as the complexity of social life grows, the State expands itself, taking charge of a considerable part of human life. The Organization’s discourse would therefore be a resource used by the dominant ideology to hide the almost absolute presence of the State in civil society (ibid.).

Through this phenomenon, “one has the impression that no one exercises power because it emanates from the immanent rationality of the organized world or, in other words, from the competence of positions and functions that, by chance, are occupied by determined men” (Chauí, 1982, p. 9). However, the effectiveness and prestige of a competent discourse depend on the incompetence of men as social and political subjects, and must then be reduced to the condition of social objects in order to allow for:

Mediating and promoting artifices of knowledge that constrain each and every one to submit to the language of the specialist who holds the secrets of the experienced reality and which, indulgently, provides the non-specialist with the illusion of participation in knowledge. (Ibid., p. 12)

It is necessary to emphasize that the recognition of the human sphere in the prevention of disaster risks does not rule

out the important advances that technology provides in this field, since forecasting, modeling, and monitoring techniques produce a repertoire of information capable of delimiting threat factors, their dynamics, and their scope (Valencio, 2014). However, the overvaluation of technique in deliberative spheres related to disasters poses an obstacle to a more humanistic approach. As it alienates the population from the solutions adopted by professionals, preventing such population from expressing the way they understand the problem and from participating in decisions, an institutional indifference to the humanity of the affected communities is revealed (ibid., 2014), which are then seen as social objects, but not social and political subjects. Therefore, as they emphasize physical risk conditions, technocratic interventions fail to reduce social vulnerability and undermine the local knowledge and the strategies employed by communities to deal with the risks they face (Collins, 2009).

Furthermore, this technocratic approach gives rise to the idea of “naturalization” of disasters that, according to Portella and Oliveira (2021), develops from some essential points, such as: 1) the idea that a disaster is the result of a natural cause; 2) the concentration of government intervention in the response to disasters to the detriment of prevention and, in particular, preventive community organization; 3) the conformation of the affected communities as objects of assistance, not equipped with the knowledge of experts; 4) the solutions proposed are mostly technological works (bridges, dams, containment works, etc.) that are engulfed in the political game of private companies interested in granting technological actions to local governments.

Thus, it is essential that government responses to the risks experienced be guided by a historical and political notion of the social construction of risk in order to impose the denaturalization of disasters. According to Valencio (2016, p. 41), this is relevant because “the way in which the scientific community categorizes and interprets disasters influences State decisions when it comes to interpretations of the law, the claims of victims, the orientation of civil defense and protection priorities, and other public services.”

## Innovation potentials of a participatory and gender-based disaster prevention policy

As for the technocracy that permeates the management of disasters in Brazil, which ignores the particularities of communities at risk and their potential for contribution, we believe that a review of the PNPDC could benefit from concepts that are now present in the epistemologies of southern Brazil. This would bring disaster management to the global paradigm of centrality on victims, who must participate in the formulation of actions to combat risks. As a result, we hope to contribute to a more participatory, inclusive, and emancipatory management by women in conditions of vulnerability, thus benefiting the entire care network (comprised of children, the elderly, and the ill) in which they operate.

Briefly, the epistemologies of southern Brazil reveal a contrast to the hegemonic Eurocentric paradigms that, over the last few centuries, have inspired Western philosophy

and science as the only forms of valid knowledge. This rationality can be understood as a totalitarian model, since it denies the rational character of forms of knowledge that are not guided by the same epistemological principles and methodological standards (Santos, 2002).

Such a denial of other forms of knowledge is associated with the fact that, in the Western sciences, the speaker is often hidden, excluded from the analysis. By breaking the link between the author of speech and the ethnic/racial/gender epistemic place, Western sciences have generated a myth about a “true” universal knowledge that hides not only the speaker, but also the epistemological and geopolitical place from which the subject manifests itself (Grosfoguel, 2009). Neutrality and objectivity appear as a myth that allowed Western people to represent their knowledge as the only one capable of reaching universality, as well as dismissing local knowledges for being “particularistic” and, therefore, inferior, thereby instituting a global hierarchy of knowledge (ibid.). However, as Grada Kilomba (2016) points out, “we all talk about specific times and places, based on specific realities and stories. There are no neutral speeches. [...] the theory is neither universal nor neutral, but is always located somewhere and always written by someone” (p. 17).

Having this said, it is important to emphasize that the epistemologies of southern Brazil do not incite an anti-science posture. On the contrary, these epistemologies point out that the role of science is “all the more relevant, as long as science knows its limits and is willing to dialogue with other fields of knowledge” (Santos, 2021, p. 294). In this sense, popular involvement and the adoption of a gender

perspective in disaster management plans, programs, and actions breaks the traditional boundaries between technique and community knowledge, promoting the Ecology of Knowledge<sup>6</sup> (ibid., 2007), and assumes an innovative character in the formulation of actions for the construction of resilient cities in the face of the climate emergency.

Porto and Finamore (2012) emphasize that listening to local knowledge is essential for the definition of institutional strategies, as it allows for the understanding of important data, such as notions of identity and place, as well as traditional local elements that shed light on values and shared community insights. Therefore, listening to the community makes it possible to point out the inaccuracies and limits of technical knowledge, reorienting the investigation work and institutional actions from problematic situations in a contextualized manner, so as to expand the ability to adopt more effective actions to that location (ibid.).

Historically, in Brazil, innovations in local urban citizenship have deeply shaped the country as they influenced the Federal Constitution of 1988, enabled the emergence of new political parties, acted to favor the development of public policies for urbanization and many other aspects related to the transformation of democracy in Brazil (Holston, 2016). The actions of grassroots movements such as the Central Union of Slums (*Central Única de Favelas – Cufa*), the Movement of Landless Rural Workers of Brazil (*Movimento dos Trabalhadores Rurais Sem Terra – MST*), and the Homeless Workers’ Movement (*Movimento dos Trabalhadores Sem Teto – MTST*) are proof that, when self-organized, the population is capable of formulating innovative solutions to face social issues.

This is related to the fact that the organized civil society makes diagnoses and forecasts, creates solutions, collaborates to solve problems, and generates innovations (Gohn, 2006). According to the author, it is at the local level that the social forces of a community are concentrated, allowing difficulties to be overcome, generating social cohesion and emancipatory forces – which then become a source of change and social transformation. In short, the participation process provides citizens with the opportunity to actively participate in the life of their communities, about which they have knowledge that is often ignored (ibidem, 2006).

Sulaiman et al. (2019) state that this “collective action” encompasses various social actors and innovative practices to create other forms of management in order to foster “the understanding and acceptance of new paradigms, which generate information for new choices by the public authorities and the society from a perspective progress towards making cities and human settlements inclusive, safe, resilient and sustainable” (ibid., p. 44).

Paulo Freire (1981) argues that the human being is a key element of transformation because, when in an active role, humans have the potential to expand, reinforce, and radicalize democracy. Hence the importance of community involvement at the local level for the construction of

collective knowledge, therefore innovative and capable of mitigating the occurrence of disasters and reducing the vulnerability of the population. Educational practices combined with environmental issues are related to the formation of critical, creative, inclusive thinking, in tune with the need to provide answers for the future (Jacobi, 2007). Such practices allow for an analysis of the complex relationships between natural and social processes in a global perspective that respects the environment and social diversities. Finally, Porto and Finamore (2012) state that the integration between popular knowledge and other forms of knowledge enhance the development of more democratic practices, as they reduce power asymmetries to access resources that shape contexts of socio-environmental vulnerability.

## Propositions for the Brazilian scenario

At this point, we must propose innovative measures capable of integrating communities at risk, particularly women, to the processes and practices of disaster management in Brazil. The aspects that we believe the PNPDC should consider in order to achieve this goal are presented in Chart 1 and explained below.

Chart 1 – Aspects to ensure a gender perspective in the PNPDC

Aspects that the PNPDC should consider
<ul style="list-style-type: none"> <li>• The inclusion of women and other vulnerable groups as active subjects of the law</li> <li>• Ensuring equal female participation in the political and strategic sphere related to the prevention of disasters</li> <li>• Enforcement of actions that include gender-sensitive methodologies in all of the stages of any disaster</li> <li>• Prevention of sexual and gender-based violence in disaster contexts.</li> <li>• Creation of a strategic gender plan as a guiding instrument for the institutionalization of actions related to gender in disaster risk management.</li> <li>• Creation of a disaggregated gender and color database to cover and include vulnerable and disaster-affected communities</li> <li>• Creation of mechanisms to ensure and stimulate the participation of civil society and, especially, vulnerable groups</li> <li>• Inclusion of a gender perspective in training courses for members of the Civil Defense forces</li> <li>• Fostering the development of research that relates minorities and disasters.</li> <li>• Creation of an Observatory on Gender and Disasters.</li> <li>• Fostering the development of the leadership capacity of women and girls and creating environments to enable and strengthen their active role in DRR.</li> </ul>

Source: elaborated by the authors (2022).

*The inclusion of women and other vulnerable groups as active subjects of the law*

The first aspect listed here refers to the inclusion of women and other vulnerable groups as subjects of the National Civil Defense and Protection Policy. The importance of such a measure is highlighted as these segments of the population are not even mentioned in Federal Law n. 12.608/2012. The lack of recognition of the special vulnerability of

these groups to extreme events, as well as the failure to specify the relevance of their participation in the construction of resilient cities, goes against the information provided in numerous international treaties to which Brazil is a signatory. Therefore, the first step towards the adoption of a gender perspective in plans, measures, programs, and actions to combat disaster risks in Brazil is to recognize these groups, both for their vulnerability and for their potential of contribution.

*Ensuring the equalitarian participation of women in the political and strategic sphere related to the prevention of disasters*

In view of the context of unequal representation in political spheres, an equalitarian participation of men and women is a critical element. The UN Women Organization (2018, p. 4) points out that, some goals could be achieved through equal political participation, such as: a) “women politically empowered to exercise their rights on an equal footing with men, so as to influence the political agenda in order to make it more inclusive and sensitive to gender equality”; and b) “equal participation in all spheres of society, with institutions firmly committed to gender equality.” In this sense, the equalitarian participation of women in the political and strategic sphere for disaster risk prevention is an essential factor to allow for the expression to women’s perspectives, needs, and interests in this field (Habtezion, 2016).

*Enforcement of actions that include gender-sensitive methodologies in all of the stages of any disaster<sup>7</sup>*

Godinho (2004) points out that an obstacle to be faced for the implementation of public policies with a gender perspective in Brazil is the alleged “neutrality” of sectoral policies related to gender. That is, as these policies deal with technical issues, they would not need to address gender issues, theoretically.

However, as Le Masson (2016) states, disaster management projects are never neutral, either in relation to the way they are formulated or in relation to their social impacts, as they reflect the values and priorities of the organizations responsible for these matters.

Therefore, DRR plans, measures, and actions that take purportedly neutral approaches often fail in the attempt to respond to the specific needs of women and other vulnerable groups. Implementing DRR actions with a gender approach requires the recognition of social differences, the roles assigned to men and women, the expectations and needs of each of these groups (ibid.). Therefore, the prediction of actions that derive from gender-sensitive methodologies in DRR processes proves to be fundamental.

The adoption of gender-sensitive methodologies in the pre-disaster phase could lead to measures that prove to be essential, such as: guaranteeing the inclusion of women in the institutional structure of disaster management; adoption of guidelines to deal with violence against women and sexual minorities; ensuring that women are involved and heard in the disaster management, mapping, and monitoring activities. In the post-disaster phase, it is essential to ensure that women’s needs are met in temporary shelters, preparation of specific hygiene kits, provision of adequate infrastructure for homeless pregnant women and mothers, and the guarantee of reproductive health services during emergencies, among other actions.

### *Prevention of sexual and gender-based violence in times of disasters*

Socioeconomic and infrastructure stresses, which occur or are reinforced by the incidence of disasters in a community, can increase gender inequalities and violence against women (Camey et al., 2020). In this sense, Nguyen et al. (2020) claim that the spread of gender-based violence after disasters reflects pre-existing structural inequalities that are exacerbated after the disaster and deepen existing vulnerabilities. However, this situation is not even mentioned in the PNPDC, revealing a disregard or even a lack of knowledge regarding the threats to the well-being of women and girls subjected to disasters. For Smith (2019), these responses to emergencies are characterized by the “tyranny of urgency”, which puts aside structural inequalities, such as gender inequality, in favor of meeting the most immediate needs. However, such a strategy exposes a sociopolitical context that ignores the way in which different groups experience disasters, as well as their specific needs in these contexts.

### *Creation of a strategic gender plan as a guiding instrument for the institutionalization of actions related to gender in disaster risk management*

The creation of a strategic gender plan appears as an important tool to ensure the institutionalization of this theme in the management of disasters. Its creation and implementation would enable a multisectoral and participatory action to promote the DRR,

as well as ensure that the specific needs of women and girls are met in disaster contexts. This plan would make feasible to establish a gender unit within the institutional framework to lead the implementation, monitoring, and evaluation of DRR policies practiced in Brazil. Such a process could also generate periodic reports, participatory workshops, technical assistance, etc., in order to ensure the integration of a gender perspective in the programs, plans, and actions of disaster risk management practiced in Brazil.

### *Creation of a disaggregated gender and color database to cover and include vulnerable and disaster-affected communities*

The expression “disaggregated data” refers to the separation of collected information into smaller units to reveal underlying trends and patterns, as the data compiled can have numerous variables such as age, gender, geographic area, education, ethnicity, etc. (PAN American Health Organization, 2020). Therefore, the disaggregation of data makes it possible to accurately describe the profile of the analyzed population and, from there, delimit who and where the most vulnerable groups are (Nguyen et al., 2020).

When properly collected and analyzed, disaggregated data are an important instrument to implement prevention systems and execute planning and training activities. With the disaggregation of data, it becomes possible to produce reports with quantitative and qualitative information to measure the effectiveness of developed programs, plans, and actions, as well as to monitor and follow

the progress made to meet the goals of gender equality in the disaster management actions (Habtezion, 2016). In short, data disaggregation allows for more effective interventions and contributes to policies and strategies that address the inequalities underlying disasters.

*Creation of mechanisms to ensure and stimulate the participation of the civil society and, especially, vulnerable groups*

For Picard (2014), the existence of devices that ensure the participation of the population is an important recognition that, on the one hand, the contribution of civil society is a fundamental part of DRR strategies and, on the other hand, that communities have the right to engage in their own risk management (ibidem, 2014). However, even when the legal provisions provide for the participation of civil society in disaster management processes, this is not always easily implemented.

In order to strengthen disaster management with effective community participation, legislators are recommended to include more comprehensive and detailed provisions in relevant regulations, so as to determine the representation of civil society organizations and communities affected by disasters in institutions in both national and local levels. This is an important element in achieving a disaster management policy that is tailored to the needs of those most vulnerable, taking into account the local knowledge and support to communities in the decision-making process.

*Inclusion of a gender perspective in training and qualification courses for members of the Civil Defense forces*

Considering the role of Civil Defense in coordinating preventive, relief, assistance, and reconstructive actions aimed at preventing disasters, it is essential that employees and volunteers who work in that body are aware of the special vulnerability of women and other minority groups in the face of disasters, as well as the important contributions that these segments of the population can bring to disaster risk prevention processes and practices. That said, integrating a gender perspective into the training courses for Civil Defense agents is an interesting opportunity to alert them to the need to understand the role of women in society and, thus, better carry out prevention, rescue, and recovery actions.

*Fostering the development of research that relates minorities and disasters*

The approximation between these two themes, despite being discussed for at least twenty years in the international spheres, remains little discussed and debated in Brazil. Therefore, considering that it is the role of the university to produce knowledge, generate critical thinking, and articulate knowledge, it is essential to encourage the development of research that broadens and deepens the understanding of the relationship between gender and disasters. More than that, it is also necessary to encourage research dedicated to studying the relationship and the impacts of



disasters on other vulnerable groups, such as the elderly, the LGBTQIA+ community, children, people with disabilities, the black population, migrants, etc., Zaidi and Fordham (2021) also point out that the promotion of education and training opportunities for women in the areas of science and technology and in fields related to DRR are fundamental.

This is particularly important in a context where much of the scientific production on disasters is produced by a minority. In a review of articles published in journal *Disasters* since 1977, Gaillard (2019) concluded that 84% of publications on this theme are authored by researchers based in OECD countries, while 93% of deaths from disasters occur in countries not belonging to the Organization for the Economic Cooperation and Development – OECD,<sup>8</sup> as is the case of Brazil. This indicates that those most at risk are excluded or at least marginalized in the production of scientific knowledge related to disasters.

#### *Creation of an Observatory on Gender and Disasters*

The creation of an Observatory on Gender and Disasters would make it possible to work in a systematic and articulated way with civil society on the challenges of gender integration in DRR processes in Brazil. Furthermore, by promoting such an initiative, it would be possible to prepare dossiers, promote meetings of experts, politicians and civil society, evaluate public policies currently in force, map and analyze innovative initiatives,

and denounce cases in which women's needs are not guaranteed in the risk management process. In short, it would be feasible to carry out diagnoses and monitoring actions along with the civil society on the effective inclusion of the concept of gender in institutional practices that aim at bringing resilience to Brazilian cities.

#### *Fostering the development of the leadership capacity of women and girls and creating environments to enable and strengthen their active role in DRR*

Finally, there is a need for the PNPDC to promote targeted capacity building and training that challenge gender stereotypes in disaster management, allowing women to change their self-perception from victims to agents of change, and men to review conceptions in which they often infantilize and subjugate the female population. In this sense, the development of training programs that combine classical training approaches with dialogues and experimental activities proves to be a very interesting initiative, since formal training courses, based on theory, are less effective in strengthening capacity than practical exercises that involve works of evaluation or planning (Galperin; Wilkinson, 2015). Therefore, capacity development activities that mobilize the community and build on existing experiences appear as interesting solutions for strengthening an active role of vulnerable groups in DRR processes and practices (ibidem, 2015).

## Conclusions

Throughout the text, we emphasized the greater vulnerability of women to disasters and highlighted that the institutional approach to risk prevention and management, which uses a technician approach to deal with the issue and fails to observe the relevance of the social forces involved in the process. The awareness that the DRR responses used nationally are not sufficient to deal with the challenge imposed motivated us to list elements to approach the issue from the paradigm of epistemologies of southern Brazil. Hence, we seek to discuss a participatory model as a way to reinforce democracy, so as to empower historically marginalized sectors and produce resilient cities, which can be considered innovative as

it combines the knowledge of different agents to solve the challenge at hand, creating diverse knowledge and promoting a transforming potential in the planning and management of the territory.

Therefore, we emphasize the importance of listening and giving voice to the demands, reflections, and contributions of citizens regarding the problems they experience. To this end, listening to communities appears as an imperative need. Academics, technicians, and professionals in the area should open the door to discussions with people who experience this reality in their daily lives. The first step is to recognize that affected communities are not just victims. On the contrary, they have much to contribute in the search for solutions intended to reduce vulnerability and increase resilience.

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**Translation:** this article was translated from Portuguese to English by Henrique Mariotto, email: [contact@henriquemariotto.com](mailto:contact@henriquemariotto.com) or [henriquemariotto@gmail.com](mailto:henriquemariotto@gmail.com)

## Acknowledgements

This work was carried out with the support of the Coordination for the Improvement of Higher Education Personnel – Brazil (CAPES) – Funding Code 001.

## Notes

- (1) Although women, impoverished communities, the black population, etc., represent the numerical majority of the population, we will use the expression “social minorities” herein to refer to these groups because, in the Social Sciences, this term refers to populations that are somehow marginalized or disadvantaged in relation to other groups, and are often subject to a discriminatory treatment.
- (2) It is critical to emphasize that there is not a universal category of women and that not all women are equally vulnerable to extreme events. Individuals belong simultaneously to different social groups related to age, ethnicity, sexual orientation, income, religion, etc. Therefore, it is not our intention to reduce women to a homogeneous category.
- (3) According to the booklet issued by IBGE (Brazilian Institute of Geography and Statistics, 2019a, p. 5), “in the two largest Brazilian municipalities, São Paulo and Rio de Janeiro, the chance of a black or mixed-race person residing in a subnormal agglomeration was more than double that observed among white people.”
- (4) Parliamentary amendments are those made to the General Budget of the Union which, after approval, is referred to as the Annual Budget Law. In general, these amendments are proposed by means of which “the parliamentarians can give their opinion or influence the allocation of public resources according to the political commitments they assumed during their term of office” (Agência Senado, 2021).
- (5) The first international meeting dedicated to discussing and relating women and disasters took place in Turkey in 2001. The meeting focused on women’s skills and capabilities for risk management, challenging the image of women often portrayed as victims in this regard. Since then, several international conferences and forums have been debating this topic.
- (6) The Ecology of Knowledge is a concept coined by Boaventura de Sousa Santos to confront the monocultural mindset of modern science, based on the recognition of the plurality of forms of knowledge beyond the scientific knowledge. In the author’s opinion, the Ecology of Knowledge takes place in contexts of dialogue that allow for the emergence of different voices and, therefore, is understood as a collective process of knowledge production that aims at social emancipation.
- (7) A disaster can be divided into three phases: before, during, and after. The preliminary phase includes activities of prevention, mitigation, preparedness, and alert to the population. Response actions are triggered during the occurrence of a disaster. After the disaster, the stages of rehabilitation and reconstruction begin.
- (8) Founded in 1961, the OECD is an international organization comprised of 37 countries. Its objective is to promote research and studies to generate recommendations on public policies and the exchange of experiences between member and partner countries.

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Received: March 8, 2022

Approved: June 8, 2022

