



Analysis of the importance of maritime groups in the construction of public policies for the prevention of environmental disasters from the perspective of security paradigms

Análise da importância de grupamentos marítimos na construção de políticas públicas de prevenção de desastres ambientais sob a perspectiva de paradigmas de segurança

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ABSTRACT

Disasters, whether defined as natural or environmental, are not mere climatic phenomena that affect the structure of cities, reordering spaces and territories after occurrences such as floods, floods and/or mass movements, among others. They are related to the risk of death of individuals exposed to their threats, contributing to loss of quality of life related to emotional damage, feelings of fear, panic, isolation and decreased self-esteem in response to stress before, during and after the occurrence of a disaster.

Keywords: Security Paradigms, Public Policies, Disasters.

RESUMO

Desastres, sejam eles definidos como naturais ou ambientais, não são meros fenômenos climáticos que afetam a estrutura das cidades, reordenando os espaços e territórios após ocorrências como enchentes, inundações e/ou movimentos de massa, entre outros. Eles estão relacionados a risco de morte de indivíduos expostos às suas ameaças, contribuindo para perda de qualidade de vida relacionada à danos emocionais, sentimentos de medo, pânico, isolamento e diminuição da autoestima em resposta ao estresse antes, durante e após a ocorrência de um desastre.

Palavras-chave: Paradigmas de Segurança, Políticas Públicas, Desastres.

1 INTRODUCTION

Disasters, whether defined as natural or environmental, are not mere climatic phenomena that affect the structure of cities, reordering spaces and territories after occurrences such as floods, floods and/or mass movements, among others. They are related to the risk of death of individuals exposed to their threats, contributing to loss of quality of life related to emotional damage, feelings of fear, panic, isolation and decreased self-esteem in response to stress before, during and after the occurrence of a disaster.



In this way, it is vital to know the types of disaster and the updated references, aimed at planetary defense with regard to subsidizing the promotion of building public policies for disaster prevention which are essential in the protection, defense and security of all species on the planet, which has already been feeling the effects of climate change. In Brazil, these effects have been aggravated since 2011, when more than 1000 fatal victims were recorded in the environmental disaster that affected the mountainous region of the State of Rio de Janeiro (BUSCH & AMORIM, 2011), covering the municipalities of Nova Friburgo, Petrópolis and Teresópolis.

Among the main threats of environmental disasters is the increase in greenhouse gases (GHG) and the consequent global warming, Oliveira (2011), found that data of the increase in air temperature are directly related to the data of the increase in occurrences of increasingly severe convective storms, melting of glaciers and rise in sea level.

Regarding sea level rise, it is correct to state that there is a correlation with hydrological disaster data, which are, in addition to being more frequent, the ones that record the most damage in the Emergency Event Database (EM-DAT - The International Disaster Database) of the United Nations Office for Disaster Risk Reduction (EM-DAT CRED, 2021 *apud* MONTEIRO & RAMOS, 2022).

Among the other natural disasters recorded are: cyclones, severe convective storms, floods and floods, wind gusts with high speed, among others - being observed gradual increase over the years (EM-DAT CRED, 2021 *apud* MONTEIRO & RAMOS, 2022).

According to the Intergovernmental Panel on Climate Change (IPCC), published in 2021, among the most serious impacts and damages are predictions related to sea level rise by up to 3 (three) meters and from 9 (nine) to 15 (fifteen) meters in the worst scenario, in addition to the consequent change in the tidal regime

Among the main causes of disasters, according to the United Nations (UN) since 2005, are human actions, which have caused ecological imbalances, impacts on the environment and future generations. In these terms, the *Intergovernmental Panel on Climate Change* (IPCC), since 2013, has published that the more the climate is disturbed, the more cities risk severe, widespread and irreversible impacts (IPCC, 2013; IPCC, 2021).

However, the IPCC considers that it is possible to reverse even the worst scenario predicted, if control measures are taken and the population, exposed to vulnerabilities, adapts, creating measures and strategies to cope with the threats posed by extreme weather events.

In this context, MARTINS (2021) presents "*The Five Faces of Apophis: on shared evils, paradigms of security and planetary defense*". According to the author, Security Paradigms can be defined as a "*coherent set of ideas capable of guiding individual and collective perception and action in the field of risks and disasters.*" Five (5) Security Paradigms are presented for appreciation:



1. Coping Paradigm;
2. Peace Paradigm;
3. Vulnerability Paradigm;
4. Crisis Paradigm; and
5. Paradigm of Conformity.

Also, by verification of the author, who is a professional agent of protection and civil defense and based on the security paradigms presented, three (3) types of disaster can be contextualized:

1. disaster as a reproduction of war;
2. disaster as an expression of vulnerability; and
3. the disaster as an entry into a state of uncertainty and exceptionality.

This analysis supports the hypothesis that "natural disasters" are considered as a "danger" from the moment it encounters vulnerable groups of people and areas, with vulnerability to the risks of disasters being the greatest cause of, effectively, humanity "*fighting a battle*" with the climatic events that culminate in floods, by the expressive number of victims (MARTINS, 2021).

Thus, regarding hydrological disasters, the understanding of the Security Paradigms can help decision-making and public policies complementary to the National Policy of Protection and Civil Defense (PNPDEC) in order to understand the theme and act together with their vulnerabilities, in the defense of people and territories.

2 GOAL

Base the importance of the performance of the Maritime Groups from the perspective of one of the five Security Paradigms: "*The Five Faces of Apophis: on shared evils, paradigms of security and planetary defense*".

3 METHODOLOGY

This article intends to use multiple case studies (YIN, 2001), for the collection of bibliographic references about the proposed theme - identification of which Safety Paradigm is more appropriate to base the performance of Maritime Groups in the prevention of environmental disasters, especially hydrological ones.

In addition to bibliographic references, this research has experiences based on the challenges imposed on the Lifeguards of the Maritime Group of Saquarema, a city in the coastal region of the State of Rio de Janeiro.

From these criteria, the methodology can be structured as follows:



- Exploratory data analysis - together with the theoretical framework regarding the theme of the Article;
- Diagnostic research with the objective of identifying the Security Paradigms presented by MARTINS (2021);
- From the performance of the Maritime Group in search and rescue at sea and / or in floods and floods, define which Security Paradigm can be used to base the participation of Life Guards in the construction of public policies of planetary defense; and
- Analysis of results

4 DEVELOPMENT

The 5 (five) Security Paradigms presented in "*The Five Faces of Apophis: on shared evils, paradigms of security and planetary defense*" by MARTINS (2021) and described in the Introduction of this Article, make clear the severity of environmental disasters, considering the number of victims, increasing with each occurrence. According to the State University of Campinas (UNICAMP), for example, Petrópolis - a city in the mountainous region of the State of Rio de Janeiro - experienced the worst disaster in its history in 2022, when a hydrological disaster, followed by mass movement, killed more than 200 people and left hundreds homeless (DARÉ, 2022).

In this disaster, which occurred between the months of February and March of the year 2022, the Maritime Group of the city of Saquarema (Salvamar), specialized in rescue under severe sea conditions, was summoned, as a volunteer, to participate in search and rescue actions and played a key role in helping the victims, especially in the search for the missing in the Quitandinha River (PMS, 2022).

From the concept of the Security Paradigms, for some victims, the environmental disaster that hit Petrópolis could be considered a risk both for those who did not know how to face water resources and for those who did not have access to the alerts to evacuate the area affected by the mass movement.

In the scope of Physical Education, the importance of practices such as swimming was emphasized by the Sérgio Arouca National School of Public Health (ENSP) of the Oswaldo Cruz Foundation (FIOCRUZ), which concluded that one of the main causes of deaths can be attributed to the fact that people do not know how to swim, or even defend themselves from the force of the waters during a climatic event of this magnitude (ENSP/FIOCRUZ, 2022).

In addition to the case of the municipality of Petrópolis, also in Brazil in the year 2022, it is possible to evaluate the case of the Tocantins River, which increased approximately 10 meters, above its normal level, and cities in 4 Brazilian states (Goiás, Maranhão, Pará and Tocantins) were affected, generating



victims and homelessness, destroying roads and accesses, in addition to succumbing biodiversity and areas destined to agriculture (RODRIGUES, 2022).

In all the cases presented, the Civil Defense of the affected municipalities decreed a state of calamity. But cities had already been impacted and lives had already been lost. If the concepts of the Security Paradigms, with regard to the natural disaster being considered risk and/or potential danger especially for exposed areas and/or people, had been considered at the time of meeting for decision making, it is possible that the impacts could have been mitigated and/or compensated, with the aim of protecting people from the damages resulting from these severe climatic events.

In Table 1 it is possible to correlate the security, related to the paradigm, the conception of the disaster and the security strategy to be adopted for each analysis. Arguably, the paradigms related to vulnerability require adaptation to risk and/or danger scenarios and promotion of social justice, which refers to public policies for disaster prevention, as a means of enabling actions that promote social equality, maintenance of Permanent Preservation Areas (PPA), mapping of risk areas, relocation of people in situations of vulnerability and control and mitigation strategies, such as alerts, support points for victims and homeless, migration areas, among others.

Table 1 – Security Paradigms in Risk and Disaster Management.

Safety	Disaster Conception	Security strategy
Confrontation paradigm	The disaster is the result of the action of an element external to society - an enemy against which it is legitimate to fight.	Combating the Enemy and Defending the Population
Peace Paradigm	Violent conflicts are disasters	Promoting Peace, Moderating Violence, and Arms Control
Vulnerability Paradigm	Disaster is the product of the interaction between a hazard and a vulnerable community	Adaptation
	The disaster is understood as a result of the interaction between a hazard and a disadvantaged population by current social arrangements.	Promotion of Social Justice
Crisis Paradigm	The disaster is a departure from the condition of normality, a field of uncertainty	Restoration of Normality
Compliance Paradigm	The disaster is understood as a result of the failure of a sociotechnical system, a product of a design	Combating errors and violations; Quality control

Source: Adapted Table (MARTINS, 2021).

The analysis presented by MARTINS (2021) motivates the involvement of Maritime Groups in the subsidy of data for the elaboration of specific training programs, with the objective of elaborating public policies that consider the importance of locomotion and survival techniques in an aquatic environment - a viable strategy with regard to personal and collective defense against extreme climatic hydrological events.



5 FINAL CONSIDERATIONS

According to the results presented in the IPCC Report, published in 2021, it is possible to verify that there was no mitigation of the environmental impacts that contribute to global warming and the simulations point to increasingly devastating climate catastrophes, compromising the survival of all species on the planet. In this way, it is possible to conclude, based on the analysis of data related to hydrological disasters and their respective victims over the years, that effective public policies are needed with regard to preparing citizens to face the challenges posed by extreme weather events.

In this regard, security paradigms as a "*coherent set of ideas capable of guiding individual and collective perception and action in the field of risks and disasters*" (MARTINS, 2021) can be used as a reference to subsidize actions and decision-making, especially the Vulnerability Paradigm, with disaster being an expression - a result - of vulnerability.

Finally, as a result of the analyses, it is possible to conclude that, if adaptation measures are considered to promote management, participation and social justice, minimizing the consequences of vulnerability, paradigms such as those of crisis and compliance can be considered, in order to assist in the restoration of normality with as much quality control as possible, with the objective of ensuring that the interests and real needs of the impacted population will be met - real sense of all those who, in some way, contribute to the Civil Defense.



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