The importance of volunteer agents of Civil Protection and Defense in the communication of accidents and disasters: A case study of the mapping of occurrences in Nova Iguaçu-RJ

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Claudia Avelar Barboza Lima Moura[1], Lucas Onofre Costa[2], Sebastião dos Reis Soares Filho[3], Zaire Januzzi Veloso Beck[4], Miriana Hilcenko[5], Lucilene Almeida de Souza[6], Vitória Clem Belchior dos Santos[7] and Alexandre Luís Belchior dos Santos[8]

ABSTRACT

This article presents the benefits of a tool that trains volunteers who support the Municipal Coordination of Civil Protection and Defense, working in risk reduction and in the management of accidents and disasters. The research focused on the study of the role of volunteering in civil protection and defense in Brazil, identifying the type of disaster, by neighborhoods, most relevant in the municipality of Nova Iguaçu, which caused the greatest damage and losses: flooding and flooding. In addition, the relevance of the trained volunteer and the performance of the Training Center for Emergencies and Disasters in the training and preparation of volunteers for a more technical vision were considered. The research methodology was qualitative, with the researchers analyzing the information, actions and activities listed, to obtain data on the practical actions, involving the community target audience. The information was of paramount importance for the preparation of the map and for its maintenance through the reports of the volunteer agents of the NUPDECs, who were in

[1] Municipal Secretariat of Civil Defense of Nova Iguaçu/ Community Protection - SuPC/SMDC Post Graduation in Occupational Safety and Communication Management - Faculdade Educaminas
E-mail: avelarblm@gmail.com
LATTES: http://lattes.cnpq.br/0615716534312101
[2] Municipal Secretariat of Civil Defense of Nova Iguaçu/ Meteorology
Undergraduate student in Geography-UFRRJ/ IM
E-mail:lucasonofree@ufrrj.br
LATTES: http://lattes.cnpq.br/3675991445436518
[3] NUPDEC AMAT TINGUÁ
Post Graduate in Environmental Management and Education - UERJ
E-mail: srs.adv@gmail.com
LATTES: http://lattes.cnpq.br/5944535162339052
[4] MPRJ
Post-Graduation in Civil Liability – Faculdade Estácio de Sá
E-mail: zildajanuzzi@hotmail.com
LATTES: http://lattes.cnpq.br/3721157076172487
[5] Department of Health of Nova Iguaçu Specialist in Homeopathic Pharmacotechnics – Hahnemanniano Institute of Brazil / IHB
E-mail: mirianahil@gmail.com
LATTES: http://lattes.cnpq.br/7253712876848110
[6] Nova Iguaçu Department of Health Post-Graduation of Specialization in Health and Clinical Management in the Metropolitan Health Care Networks - Emphasis: "Maternal and Child" / Syrian Lebanese Institute of Teaching and Research.
E-mail: lucilene_las@yahoo.com.br
LATTES: http://lattes.cnpq.br/0725843287725868
[7] NUPDEC AMAT TINGUÁ
Agricultural and Environmental Engineer with a postgraduate degree in ESG and Corporate Sustainability - Unopar
E-mail: vitoriaclem@gmail.com
LATTES: http://lattes.cnpq.br/7662877604282209
[8] Instituto Ecopreservar Doctor in Educational Sciences at the Inter-American Academy of Social Sciences - Paraguay
E-mail: abelchior.unr@gmail.com
LATTES: https://lattes.cnpq.br/6442571977328854

the affected communities. It is positive to conclude on the relevance of the tool created, despite the difficulties in obtaining data for its elaboration, which were overcome with the partnership of several actors involved.

Keywords: Volunteer, Training Center for Emergencies, Disasters, Civil Protection and Defense and NUPDEC.

INTRODUCTION

PROBLEMATIZATION

How important is it for volunteer agents to provide real-time information on accidents and disasters?

OBJECTIVE

Present the advantages when information on adverse events is passed on, in real time, by volunteer agents to a Municipal Coordination of Protection and Civil Defense (COMPDEC), for the reduction of risks of accidents and disasters.

METHODOLOGY

According to Yin (2015), a case study was carried out with the Civil Protection and Defense Centers (NUPDECs), formed by groups of individuals and legal entities, which support the Municipal Secretariat of Civil Defense of the Municipality of Nova Iguaçu, to deepen knowledge about disaster risk reduction, as well as in responses to accidents and disasters. especially natural disasters (Brasil, 2022), which, in 2024, affected the municipality during the seasonal rains in the months of February and March. The Municipal Secretariat of Civil Defense of Nova Iguaçu prepared a mapping of events and set up a tool, translated into a map of accident and disaster points, informed by the members of the NUPDECs, according to the GIS geographic information system, by neighborhoods that were affected, in order to base its response planning on minimizing suffering. damages and losses to the society of the municipality. The map was made available at the Network/SVAC, from where, by the inductive method, data were analyzed and discussed with the tool produced.

THE CIVIL PROTECTION AND DEFENSE CENTERS (NUPDECS) THE TRAINING CENTER FOR EMERGENCIES AND DISASTERS (CETRED)

The Civil Protection and Defense Centers (NUPDECs) and the Training Center for Emergencies and Disasters (CETRED), are established institutional tools to train and train volunteers, including, among others, community leaders, residents' associations, and governmental and non-governmental representatives, working in the provision of free courses and seminars in order to address various aspects of emergencies and disasters.

Volunteering, based on Federal Law 9.608/98 (Brasil, 1998), can be defined as a "voluntary service" and thus as unpaid activities, where an individual disposes of or employs his or her workforce for altruistic purposes, restricting this service in favor of a non-profit legal entity of public or private law (Reis, 2022).

Generally, the volunteer's bond with the Civil Defense is through the so-called Civil Protection and Defense Centers (NUPDECs), which was based on Federal Decree 5,376/2005 and Resolution No. 2, of December 12, 1994, of the National Civil Defense Council, which instituted the National Civil Defense Policy. The following National Policy for Civil Protection and Defense (PNPDEC), Brazil (2012), does not expressly mention the term "NUPDEC", however, it does mention volunteer associations when it assigns powers to municipalities to encourage participation and promote the training of volunteer associations (Law 12.608 of April 10, 2012. Art. 8, XV).

In Nova Iguaçu, in the State of Rio de Janeiro, CETRED, created based on Rio de Janeiro (2020), has been seeking to involve all members of society and the Government, unifying all citizens of the municipality, towards a common goal focused on disaster risk reduction (DRR) and support for the management of responses to accidents and disasters (Cetred, 2023).

Reiterating, therefore, that the research was carried out in February 2024, based on the legal norms in force: Law 12,608 of April 10, 2012, Brazil (2012), Federal Law 14,750 of December 12, 2023, Brazil (2023) and RJ State Decree No. 46,935/20, in articles 4, XIV and 8 I, Art.14o VIII, Rio de Janeiro (2020), which establish guidelines for the participation of civil society and the prioritization of preventive actions aimed at minimizing disasters.

Communication is a crucial and conditioning factor for the execution of the work, in the scope of prevention, mitigation, preparation, response and recovery, because it is the condition that articulates the actions, it is the channel in which the orders are manifested and the acts on the territory are articulated.

The importance of the community in the pre-disaster and post-disaster period is crucial, the support for initiatives, the training and capacity building of volunteer agents for civil protection and defense creates a culture of prevention, making the community, as a whole, more resilient. People, previously prepared, face adverse situations with a different look, being able to act in the notification and communication with the Civil Protection and Defense Agencies during the occurrence of rains, floods and landslides and in the dry season, inform and communicate about forest fires, whether in urban or rural areas, especially in Nova Iguaçu, a municipality that, according to MAPBIOMAS (2024), has a vegetation cover with a large percentage of its territory under vegetation cover, distributed by conservation units (UC) of full protection and conservation unit of sustainable use (Brasil, 2000).

The purpose of the research in question is to report the importance and role of this channel with the volunteer, as a collection of reliable information, through the report of a series of locations, in order to create a list of affected neighborhoods for the preparation of a map with a visualization legend, easy to understand, whose reading, through the QGIS geographical map, will indicate the neighborhoods that were affected by the rains in the month of February 2024, using as a source of

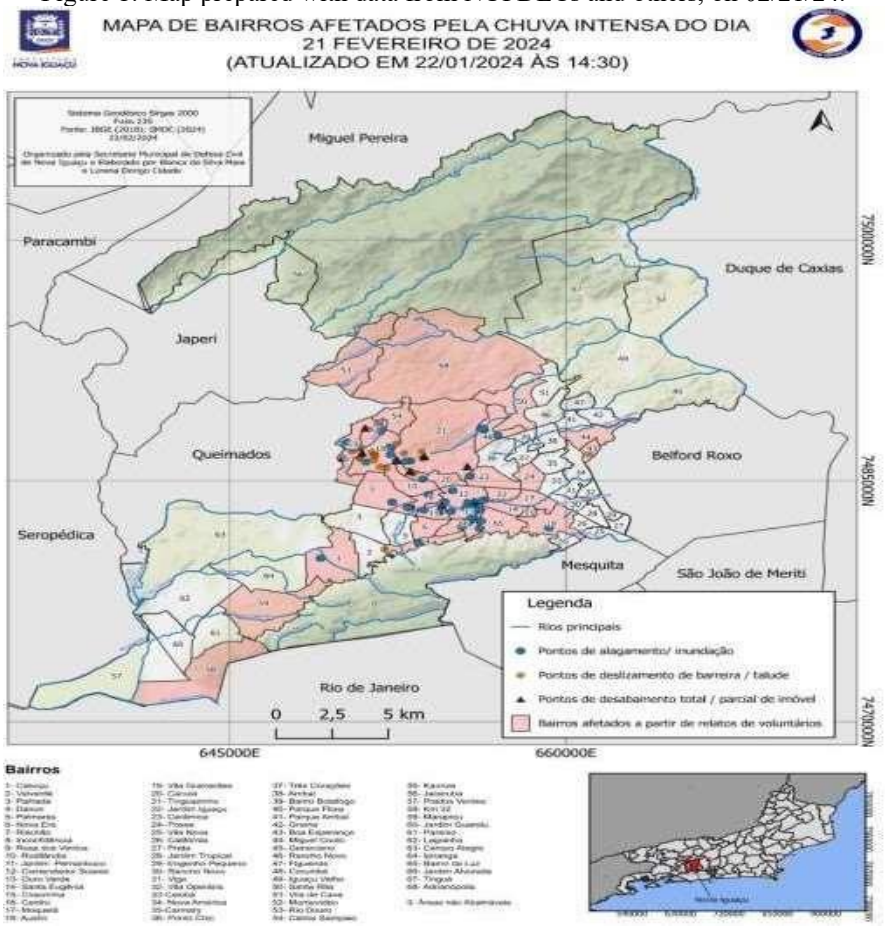
information and communication the data indicated by public agents and, above all, by civil protection and defense volunteers, from the Civil Protection and Defense Centers (NUPDECs).

It should be noted that the volunteer agents of the NUPDECs are officially recognized and their members are registered in the Municipal Network of Servers, Volunteers and Friends of the Community (REDE/SVAC, 2010), formed by employees, volunteers and friends of the community.

DATA COLLECTION AND ANALYSIS

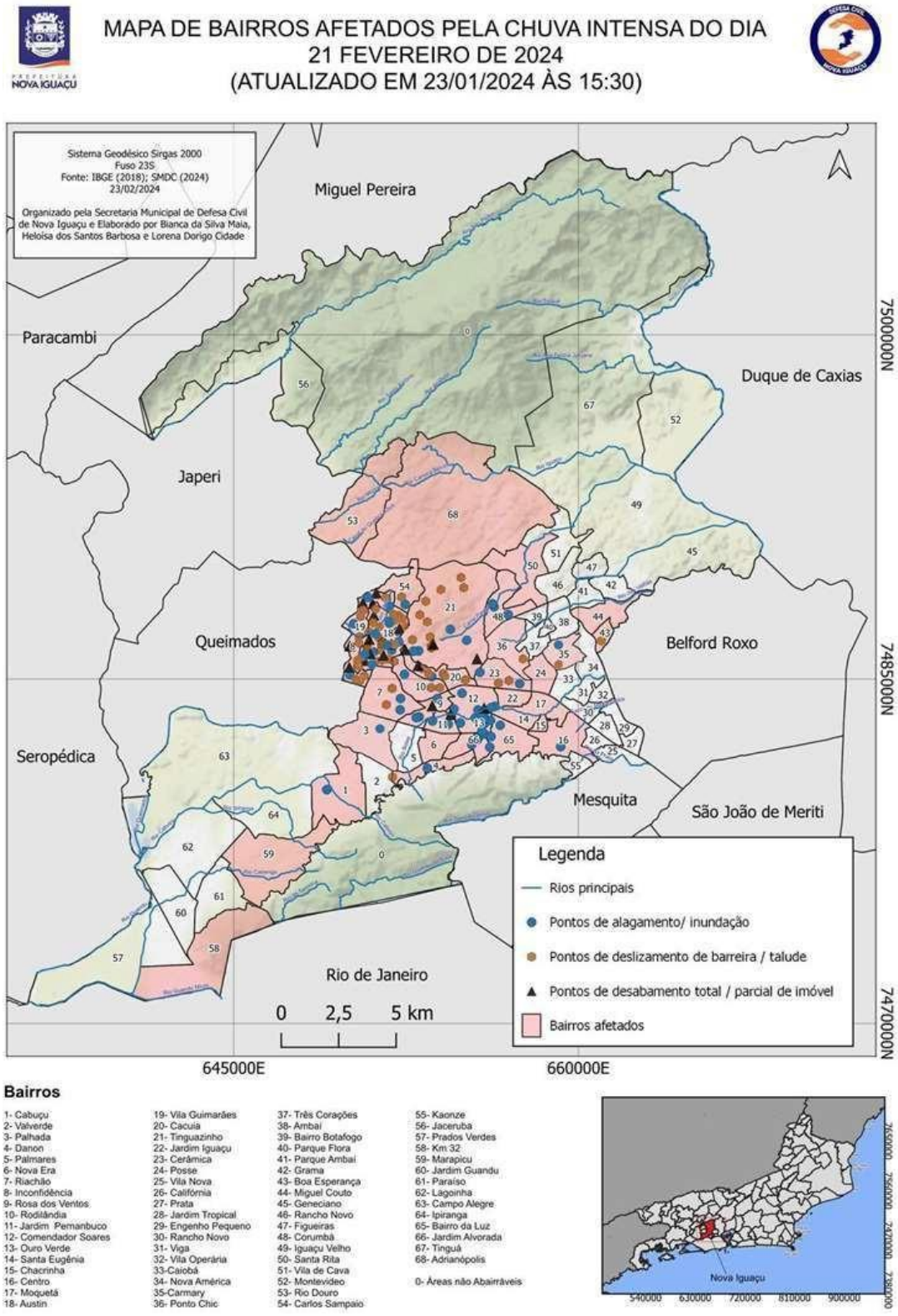
The data collected are described in the maps in Figure 1 and Figure 2, where the authors of this article participated, sometimes as public agents, sometimes as voluntary agents of civil protection and defense, and went on to the analysis and discussion of the data, which are present in the respective legends of each map, where the bases and technical sources of the maps are analyzed and verified; the distribution and totalization of neighborhoods in the municipalities; the municipalities that surround the Municipality of Nova Iguaçu and that border it and also, the main fluvial description, of the rivers that make up the Hydrographic Basins of the Region; flooding points; barrier/slope slip points; points of total/partial collapse of the property; and, above all, the neighborhoods affected by reports from volunteers.

Figure 1: Map prepared with data from NUPDECs and others, on 02/21/24.



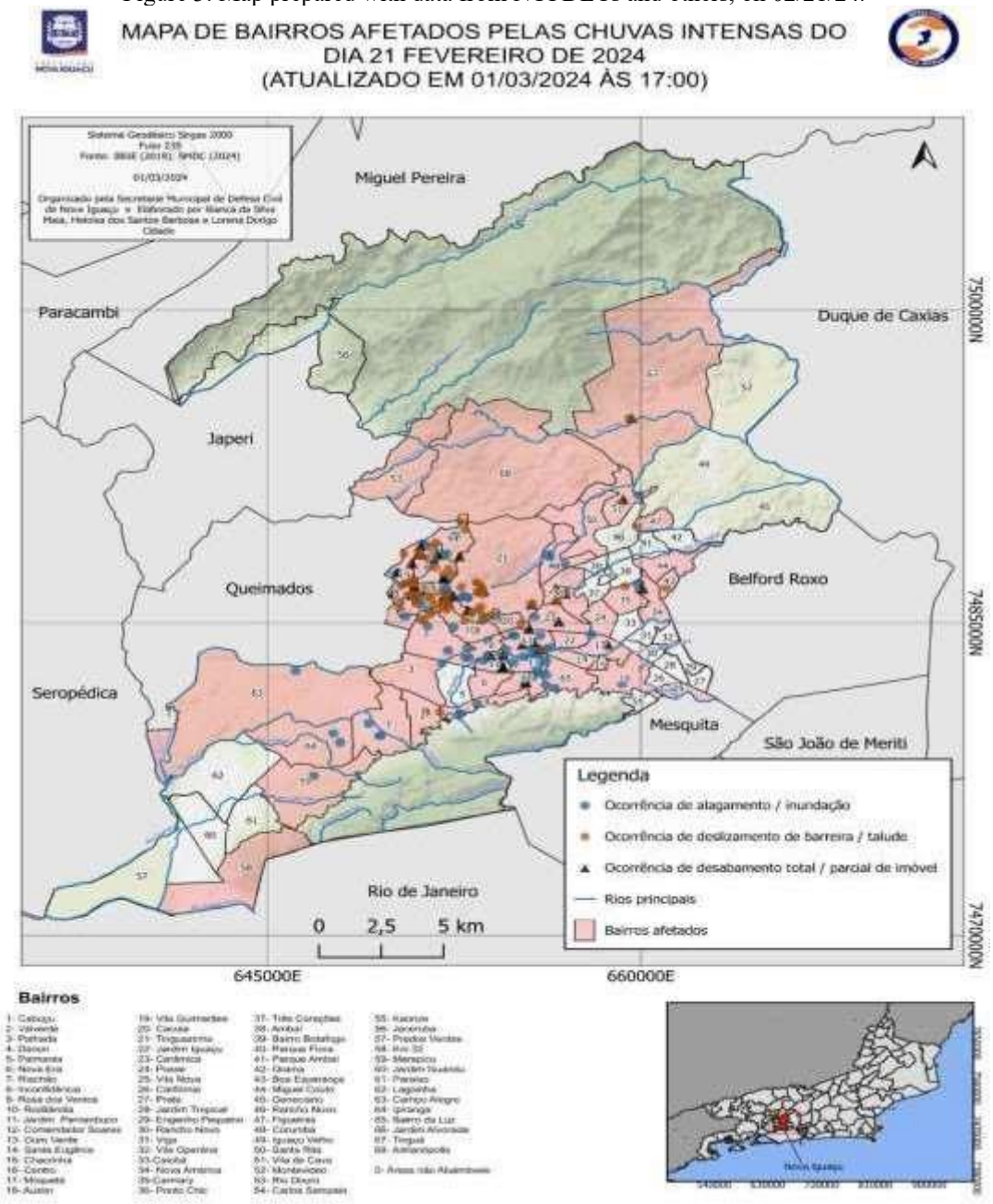
Source: Municipal Secretariat of Civil Defense of Nova Iguaçu - SMDC (2024)

Figure 2: Map prepared with data from NUPDECs and others, on 02/21/24.



Source: Municipal Secretariat of Civil Defense of Nova Iguaçu - SMDC (2024)

Figure 3: Map prepared with data from NUPDECs and others, on 02/21/24.



Source: Municipal Secretariat of Civil Defense of Nova Iguaçu - SMDC (2024)

RESULTS AND DISCUSSION

The Civil Defense Secretariat of Nova Iguaçu allowed the disclosure of the data used in the academic article. Permission was granted on the condition that the data be used exclusively for academic purposes.

The article in question presents an unprecedented analysis of the Civil Defense data, which means that the information was used in a different and original way. This analysis contributes to the improvement of knowledge about the dangers and disasters in the region of Nova Iguaçu.

Located in the Baixada Fluminense region of Rio de Janeiro, Nova Iguaçu stands out for being a relevant urban center in constant growth. With approximately 785,867 inhabitants (IBGE data from 2022), the municipality is the second most populated in the state, behind only the capital.

To make the administration of the city of Nova Iguaçu more effective, it is divided into nine (9) Regional Government Units (URGs), each with its own peculiarities and characteristics. The following is a complete summary of each URG, with its 68 sub-neighborhoods:

URG 1 Centro – Bairro da Luz, California, Caonze (K11), Chacrinha, Engenho Pequeno, Jardim Iguaçu, Jardim Tropical, Moquetá, Prata, Rancho Novo, Santa Eugenia, Viga, Vila Nova, Vila Operária.

URG 2 Posse – Ambaí, Bairro Botafogo, Carmary, Cerâmica, Kennedy, Nova América, Parque Flora, Ponto Chic, Três Corações.

URG 3 Comendador Soares – Danon, Jardim Alvorada, Jardim Nova Era, Jar- dim Palmares, Jardim Pernambuco, Ouro Verde, Rosa dos Ventos.

URG 4 Cabuçu – Campo Alegre, Ipiranga, Lagoinha, Marapicu, Palhada, Val-verde

URG 5 KM32 – Jardim Guandu, Paraíso, Prados Verdes.

URG 6 Austin – Cacuia, Carlos Sampaio, Inconfidência, Riachão, Rodilândia, Tinguazinho, Vila Guimarães.

URG 7 Vila de Cava – Corumbá. Figueira, Iguaçu Velho, Rancho Fundo, Santa Rita.

URG 8 Miguel Couto – Boa Esperança, Gerenciano, Grama, Miguel Couto, Ambaí Park.

URG 9 Tinguá – Adrianópolis, Jaceruba, Montevideo, Rio D'Ouro.

It should be noted that in the period chosen for study, the disaster was caused by heavy rains that occurred from Wednesday night (02/21/2024). All neighborhoods, characterized as urban or rural areas contained in the URGs, suffered to some extent from the extreme event. More precisely, there were 41 neighborhoods affected by the heavy rains out of the total number of 68 neighborhoods. Of these, 25 neighborhoods are bordering other municipalities, which suffered from the same event.

During the event, through communication and input from volunteers, we identified the needs of the 26 neighborhoods that were most affected. With this information, collected in real time from the volunteers, it was possible to create a map, as shown in figure 03.

Figure 1, which represents the beginning of the event, provides an initial idea of the situation. However, it is in Figures 2 and 3 that the power of real-time information is revealed. Figure 2, obtained during the event, shows a significant increase in community participation and volunteering. This engagement, motivated by the urgency of accurate information, has made it possible to identify new affected areas, flood hotspots, and a growing demand for assistance.

Figure 3, which shows the last update and the end of the event, reinforces the importance of real-time information. With the participation of the volunteers, it was possible to accurately map the affected areas, assess the damage and direct recovery efforts more efficiently.

Volunteering is more than real-time data collection. Their work contributes to a deeper understanding of the issues in the city's neighborhoods, especially in relation to climatic events. By standing at the front, volunteers directly suffer the effects of flooding, which makes them able to have a unique and valuable look at the needs of the community.

In view of the above, it is also possible to analyze the relevance of volunteering for the understanding of the problems existing in the neighborhoods of the municipality with regard to the aforementioned climatic events.

Thus, based on community communication, it was observed that volunteering registered occurrences in most of the neighborhoods, either by direct connection to the network, or by information from third parties, family members or acquaintances of any nature.

It is also worth mentioning that the municipality of Nova Iguaçu has local peculiarities, whether of a social nature, or even material in the morphological sense, or better said, geomorphological, being susceptible to accidents due to floods. The Municipality is located, in the first observation, in the middle of two alkaline complexes, one referring to the alkaline complex of the "Serra do Mendanha" and the other in the Tinguá Biological Reserve, an integral component of the Serra do Mar that extends along a considerable part of the Brazilian coast.

In addition, the hot and humid climate favors intense rainfall, directly interfering in the relationship between occupation and risk, especially because a large part of the territorial occupation is distributed along the drainage of water bodies, which are present throughout the administrative territory, increasing the vulnerability of this population.

Emphasizing this issue, we put another not so unusual peculiarity, referring to the floodplains, which, in a past historical moment of the Municipality, allowed it to be an area suitable for cultivation, so much so that a fruit such as the orange became a form of representation of the place, based on a past of the city where it was even known as the "perfume city".

After this agricultural cycle, the city was recognized with a new nomenclature: "Dormitory City", as it began to house a large part of the working class of the state of Guanabara. However, it is not of interest at the moment to discuss historicity in such a direct way, but its historical pair is fundamental for the understanding of the relations that are made in the present, in the face of the materiality of the objects that are placed in the face of the relations that are based on it.

It is also relevant to bring up that the municipality of Nova Iguaçu is a watershed divider, and as much as, mostly, the competing portion of the Guanabara Hydrographic Basin is more present in the territory, part of the Guandu Basin also marks its presence.

Considering the geographic space as a factor and condition for the reproduction of living conditions, the Hydrographic Basins gain prominence in our analysis, because the studied Municipality is a municipality that recurrently suffers from intense rains and, consequently, from

flooding, flooding and flooding, especially in the neighborhoods that are cut by the main river of the Region. the "Botas River" and its tributaries, whose drainage converges into this main river.

Another situation to be highlighted is landslides and mass movements, which occur less frequently, but no less catastrophic and important for civil defense preparedness and response plans and territory management. In this area, it is appropriate to return to the discussion about the relationship "occupation X risk", due to the perception of the effective occupation of these inappropriate areas, which are, however, the product of a historical disordered occupation process that precedes the elaboration of this article, so that what is put on the agenda are the forms of training, communication, communication, structuring and organization of this same territory, in order to contemplate better forms of prevention and responses, such as the mitigation of the impacts of the phenomena.

CONCLUSIONS

The research revealed the relevance of trained volunteering as an important link between the Civil Protection and Defense Agency and communities affected by disasters, in the face of floods, floods and forest fires, which are the most challenging events in the researched territory. The training tool, combined with the close liaison with NUPDECs, proved to be effective in supporting the response, decision-making and allocation of resources to the sites affected by accidents and disasters, thus minimizing their negative impacts.

The technical training of volunteers, offered by initiatives such as the Civil Defense Training Center (CETRED), as conceived by the Civil Defense Secretariat of Nova Iguaçu, prepares agents to multiply information and guidance for the communities. This acquired experience is the true answer to the problem question of the research, as trained people will act as local leaders, directly supporting civil protection and defense actions, promoting the safety and well-being of the population, reducing their social vulnerability and making them more resilient to adverse events as a whole, these are the advantages that the research sought to show.

Despite having faced some difficulties, the positive results achieved prove its relevance. The advantages lie in the benefits arising from the agility in the response and the restoration of social normality, that is, minimizing the damage and accelerating the recovery of the affected areas.

Therefore, by investing in the training of volunteers and the promotion of cooperation between different sectors, the Civil Defense of Nova Iguaçu contributes to a safer future. Information, organization and joint action make it possible to face the challenges posed by accidents and disasters in more efficient and effective ways, protecting lives and property.

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