Networks that unite: Study on community support networks in contexts of environmental and anthropic vulnerability due to torrential floods as an expression of community resilience *

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ABSTRACT

KEYWORDS
Torrential flood; risk management; support networks; community resilience; vulnerability

This article aims to contrast community support networks in vulnerable contexts, recognizing them as expressions of community resilience within the framework of the project "Vulnerability, resilience and risk of communities and watersheds affected by landslides and avalanches," where two territories are chosen, ex-post and ex-ante respectively, with risk factors for torrential flooding. As a result, two types of support networks are evident: first, combined networks, where different actors come together to work around the population's needs, and second, circumstantial networks, which arise at a particular moment and disappear when the situation is resolved. This qualitative research seeks the understanding, reconstruction, and interpretation of moments, events, situations, and actions from the voices of the subjects who experience certain phenomena, developing with them a "meaningful whole" according to their stories, trajectories, and subjectivities. Document review techniques, community-based reports, and semi-structured interviews were implemented, and instruments for identifying and characterizing actors and networks were applied.

Authors' contributions:
• Author 1: Supervise, conceptualize, and write the original draft.
• Author 2: Support in writing and methodology.
• Author 3: Support in writing, reviewing, and editing the text.
All authors contributed to the collection and analysis of the data.

Cañaveral-Guisao, *et al.*

Networks that unite: Study on community support networks in contexts of environmental and anthropic
vulnerability due to torrential floods as an expression of community resilience

Redes que unen: Estudio sobre las redes de apoyo comunitarias en contextos de vulnerabilidad ambiental y antrópico por avenida torrencial como expresión de resiliencia comunitaria

R ESUMEN

PALABRAS CLAVE
Avenida torrencial; gestión del riesgo; redes de apoyo; resiliencia comunitaria; vulnerabilidad

El presente artículo tiene como objetivo contrastar las redes de apoyo comunitarias en contextos vulnerables reconociéndolas como expresiones de resiliencia comunitaria en el marco del proyecto -Vulnerabilidad, resiliencia y riesgo de comunidades y cuencas abastecedoras afectadas por fenómenos de deslizamientos y avalanchas- donde se elige dos territorios, ex post y ex ante respectivamente, con factores de riesgo de avenida torrencial. Como resultado, se evidencian dos tipos de redes de apoyo, primero, redes combinadas donde diferentes actores se unen para trabajar en torno a las necesidades de la población y la segunda, redes circunstanciales, que surgen en un momento particular y desaparecen en el momento en que la situación es resuelta. Esta investigación es de carácter cualitativo, busca la comprensión, reconstrucción e interpretación de momentos, hechos, situaciones y acciones desde las voces de los sujetos que vivencian determinados fenómenos, elaborando con ellos un -todo- con-sentido-, de acuerdo con sus historias, trayectorias y subjetividades. Se implementaron técnicas de revisión documental, informes de base comunitaria y entrevistas semiestructuradas, así como la aplicación de instrumentos de identificación y caracterización de actores y redes.

Redes que unem: um estudo sobre redes de apoio comunitário em contextos de vulnerabilidade ambiental e antrópica devido a enchentes torrenciais como expressão de resiliência comunitária

R ESUMO

PALAVRAS-CHAVE
Inundações torrenciais; gerenciamento de riscos; redes de apoio; resiliência comunitária; vulnerabilidade

Este artigo tem como objetivo contrastar as redes de apoio comunitário em contextos vulneráveis, reconhecendo-as como expressões da resiliência da comunidade no âmbito do projeto "Vulnerabilidade, resiliência e risco em comunidades e bacias de abastecimento afetadas por deslizamentos de terra e avalanches", no qual foram escolhidos dois territórios, ex post e ex ante, respectivamente, com fatores de risco de inundações torrenciais. Como resultado, dois tipos de redes de apoio são evidenciados: primeiro, redes combinadas, em que diferentes atores se unem para trabalhar em torno das necessidades da população, e segundo, redes circunstanciais, que surgem em um determinado momento e desaparecem quando a situação é resolvida. Esta pesquisa é de natureza qualitativa, buscando a compreensão, a reconstrução e a interpretação de momentos, fatos, situações e ações a partir das vozes dos sujeitos que vivenciam determinados fenômenos, elaborando com eles um "todo-com-sentido", de acordo com suas histórias, trajetórias e subjetividades. Foram implementadas técnicas de análise documental, relatórios comunitários e entrevistas semiestruturadas, bem como a aplicação de instrumentos para a identificação e caracterização de atores e redes.

1. Introduction

Landslides and floods are the natural threats that impact Colombian populations the most. Due to the country's wide geological, geomorphological, hydrological, and climatic diversity, human intervention in the territory and environmental deterioration result in a set of dangers for communities and their social and economic development (Campos et al., 2012). In addition, events associated with natural phenomena such as torrential floods affect communities to a greater extent due to the rapid growth of the water level of rivers and high-slope ravines accompanied by sediment flow that can cause significant damage to infrastructure and lead to the loss of human lives (Castaño, 2023).

According to Campos et al. (2012) between 1970 and 2011, 36% of deaths due to natural events are attributed to landslides, the highest percentage compared to other events, and floods are responsible for 43% of the destruction of homes. These types of sudden flooding and debris flow phenomena, which have been extensively studied in Colombia, have shown the lack of a technical and regulatory framework for disaster promotion and response programs in territorial planning, coupled with the limited knowledge and classification of the degree of environmental, political and economic vulnerability of many of the communities that live on the banks of rivers and ravines, which make it more difficult for them to anticipate, survive, resist and recover from the impact of a natural phenomenon (Blaikie, Canon, David y Wisner, 1996).

In light of this, background information was identified regarding knowledge for risk reduction, the link between different actors for this purpose, and the communities' relationships with their environment. In this regard, Sandoval-Díaz, Navarrete Muñoz y Cuadra Martínez (2023) analyze the theoretical-methodological incorporation in various investigations of the community resilience component as an adaptation capacity to disasters associated with natural phenomena in Latin America and the Caribbean, where the main problems faced by communities are the economic, political and social vulnerabilities that open a gap to develop coping strategies. Therefore, they invite the enhancement of citizen participation and social learning as fundamental axes to overcome the crisis since knowledge of the risk allows communities to cope with, adapt to, and manage the danger.

Faced with this, González-Gaudino y Maldonado-González (2017) specify an approach to education as a channel to reduce vulnerabilities and achieve community resilience, where it is possible to develop skills for risk management through the reconstruction of the network of relationships between society and the environment, and of social organization, taking into account the collective memory of the communities and the learning from previous experiences. Even this knowledge that the communities have can collaborate with scientific knowledge, since as Iwama et al. (2021), explain, in order to advance the understanding of the effects of climate change, it is necessary to take into account the observations of the communities and the historical knowledge they have of their environments. In this sense, the response of the communities has to do with their knowledge of the risk, as in the case of Moreno, Lara y Torres (2019), who studied the case of the Tsunami that occurred in 2010 in Chile and explained how a small fishing community was able to survive using local resources to deal with the event, due to the absence of a government response, where losses were less thanks to the rapid action of the community.

For his part, Monge (2004) focuses on territorial analysis to understand how populations, being aware of the sustained relationship with bodies of water, seek to create direct action practices and community networks for risk reduction. Within this framework, the author highlights the different community, governmental, and institutional actors committed to disaster prevention, mitigation, and response processes, thus creating bonds of support and technical and humanitarian accompaniment.

For its part, the approach to community networks proposed by Montero (2006) is constituted by a network of constant relationships that allow maintaining the flow of information and mediation with the different members of the community to achieve a common goal aimed at strengthening relationships in a particular context, but also with solid institutional and community scenarios to withstand loss or prepare for some threat or catastrophic event associated with natural phenomena. Regarding this, Landau (2004) explains community resilience as the collective capacity that communities develop to overcome difficulties; this allows them to intuit that they are capable of coping with trauma and transcending loss thanks to tools and skills acquired throughout their lives to face problems. However, the goal of resilience is not to promote people who adapt to adversity without critical agency in the face of situations; on the contrary, it seeks reflection on the available resources to gain autonomy (Llobet y Wegsman, 2004), relying not only on themselves but understanding the power that comes with integrating with others to act together.

Cañaveral-Guisao, *et al.*

Networks that unite: Study on community support networks in contexts of environmental and anthropic vulnerability due to torrential floods as an expression of community resilience

This capacity is fundamental for communities because, as Smith et al. (2017), point out, when a disaster occurs, institutions carry out emergency interventions when the event has already occurred or carry out civil engineering solutions aimed at preventing a possible event. However, they need to remember strategies to confront risks in a concerted manner, which prevents the development of actions in the short, medium, and long term in order to identify strategies that link the various actors in risk management.

Taking into account the above, this article aims to contrast community support networks in vulnerable contexts, recognizing them as expressions of community resilience in two municipalities of the department of Antioquia, the first is the municipality of Salgar, where after the torrential flood that occurred in 2015 that resulted in the death of 104 people, 10 missing and more than 500 victims (Frog-Corradine, 2022), the families who were victims of the disaster were relocated through an unprecedented deployment of efforts in which government organizations, corporations, social foundations and civil society intervened, an event that would leave excellent marks among the affected population and in which it is possible to evidence forms of resilience based on its own history; The second is the municipality of Barbosa, specifically the settlement of La Primavera, a large recipient of vulnerable population at the departmental level, primarily victims of forced displacement (Euse-Bermúdez, 2015), in addition to having a risky location as it is on the old railway tracks of Antioquia, which is why they are on evacuation alert due to the reactivation project known as "Tren del Río" (River Train). They are also next to the flood zone of the Aburrá River and on a hydrocarbon transport system that may eventually endanger their integrity.

Both communities were chosen due to the particularity of the cases: one population ex-ante disaster (La Primavera) and another ex-post disastrous event (Salgar), since their relationship with risk is understood differently. On the one hand, there is a community that has already been the victim of a phenomenon where living conditions were modified, and on the other, a population that has not yet experienced a large-scale disaster despite being at constant risk.

Furthermore, the social dynamics of each community and their resilience histories are different, thus allowing us to examine the different ways of coping, how support networks are woven, and the actors involved in them. The following objectives are proposed: first, to identify the support networks that are formed in each of the selected communities, then to characterize the community resilience processes that have arisen in these contexts, and finally, to determine the relationship between the support networks and the community resilience dynamics in both territories.

It is worth clarifying that vulnerability is a crucial component of the research. However, the analysis focuses on community resilience. Therefore, the description of the vulnerable conditions of each population is taken as part of understanding their circumstances to understand better why community support networks in these contexts constitute a central point in the way community resilience works and develops in the communities under investigation.

Thus, for the development of the study, the concepts of vulnerability, community resilience, and community support networks are taken as central categories that allow us to understand the realities of both communities. Regarding vulnerability, reference is made to the definition of Blaikie et al. (1996) understood as "a combination of different factors that determine the degree to which someone's life and subsistence are at risk by a distinct and identifiable event of nature or society" (p. 14) because although disasters associated with natural phenomena are linked to the geophysical conditions of the places where they occur, vulnerability is also caused by socioeconomic and political conditions that influence the degree of affectation and the intensity with which groups confront the disaster.

Thus, the Pressure and Release (PAR) model of Blaikie et al. (1996) "is based on the idea that an explanation of disaster requires us to find a progression that connects the impact of a disaster on the population through a series of levels of social factors" (p. 3) these factors describe that vulnerability has its roots in two components, the first is the underlying causes, understood as a set of social, economic, demographic and political processes (political systems, ideologies, structures) that affect the allocation and distribution of resources, this gives rise to vulnerability and its prolongation over time; and the second are the dynamic pressures, which channel the underlying causes towards specific forms of insecurity which are related to the types of threats faced by people.

> These include reduced access to resources due to how regional or global pressures such as rapid population growth, epidemic disease, rapid urbanization, war, foreign debt and structural adjustment, export promotion, mining, hydropower development, and deforestation manifest themselves in specific localities. (Blaikie et al., 1996, p. 5)

The concepts explained above are a precedent for analyzing how unsafe conditions, that is, specific forms in which vulnerability is expressed, such as dangerous locations, low-income levels, and lack of preparation for disasters, are transformed into disasters, given their exposure. The model allows us to show biophysical, social, political, and economic stress factors that can often be far removed from the disaster (O'Brien et al., 2008).

In this sense, vulnerability can be considered a multidimensional and differential issue since it depends on space, the individual, and the groups. It is also dynamic since its characteristics and the forces that drive it change over time (Vogel y O'Brien, 2004), its characteristics and the forces that drive it change over time (Vogel and O'Brien, 2004). It allows us to understand that not all populations are vulnerable to the same risks or even not all have a real risk of a disastrous event occurring because they are vulnerable, since the threat, which is the possibility of a disastrous event occurring, is a necessary determinant of risk, understood as the potential damage or loss after the occurrence of a disaster. That is, there must be a combination of vulnerability and threat for a risk to exist; if there is a threat or danger of a disaster occurring, but the population is not vulnerable, then there is no risk of disaster; likewise, if there is no threat, but there is a vulnerable population, the risk does not exist (Cardona et al., 2012; Blaikie et al., 1996).

Based on the above, vulnerability is related to "the predisposition, susceptibilities, fragility, weakness, deficiencies, or lack of capacities that favor the adverse effects of the exposed elements" (Cardona et al., 2012, p. 5), hence the factors that influence the disaster are often the result of the lack of attention paid to the management of vulnerability, populations are not necessarily aware of the threats to which they are exposed, but this ignorance does not exempt them from being the object of a disastrous event, since vulnerability is not only a current state, it is a continuous state of imminent danger of present conditions that impact the future and affect the quality of life of those who suffer from it, therefore Anderson (1985) expresses that the best way to reduce vulnerability is to satisfy the basic needs of human beings both for current consumption and to sustain communities during a disastrous event, otherwise, populations may reach conditions of disease, famine and crisis.

Meanwhile, the organizational capacity of communities to deal with crises is as essential as material capacity. In this sense, Anderson (1985) explains that communities with scarce material resources, close unity, and good neighborliness can resist or recover from disaster more effectively than a more prosperous community without close social ties. It could be measured in terms of a group's social capital, understood as those aspects of social organizations, such as networks, norms, and trust, which facilitate action and cooperation for mutual benefit (Putnam,1993). In this way, social networks become a fundamental element for communities to interact in favor of mutual aid and thus overcome the vulnerability barriers for prevention and effective recovery from a disaster. Consequently, in the community experience, it is possible to demonstrate the presence of network relationship modes that favor organization and social cohesion so that the communities are unaware of this process (Montero, 2006); this is known as a community network.

Thus, the community network is a structure that allows societies to find shelter, support, and resources, creating an open system of relationships between actors; these begin to communicate to achieve valuable ends. A key aspect in support networks is the complexity of the relationships (framework), given the diversity of implicit actors (diversity of ages, gender, training), the multiplicity of styles to establish and maintain these relationships, and the mobility of the elements or aspects of exchange in favor of the intended objective that is linked to community development. At this point, Montero (2006) clarifies that organizational processes do not necessarily involve all community members. Among those who participate, individuals or organizations usually assume the direction of specific activities from their style and even based on different ideologies (religious, neighborhood, academic, partisan, among others), but this is separate from the value of the community process.

This multiplicity of ways in which networks are built gives rise to a series of characteristics to identify a community network, such as the interrelation of members, which involves a constant exchange of information; interdependence, where each of the actors in the network establishes a relationship with the others, recognizing the importance of participation for the functioning of the network; the exchange of experiences, information, and services, where the wealth of the network is in the amount of resources it has for the development of actions, assessable to the extent that members can share their achievements and participate in the actions that are done together; and co-management, where the network assumes that the different actors involved maintain a relationship of collaboration and cooperation (Montero, 2006). Based on the above, in this research, community actors are understood as individuals, families, community-based non-governmental organizations, private organizations, and local governments (Monge, 2004). Two types of networks are prioritized: one is the

Cañaveral-Guisao, *et al.*

Networks that unite: Study on community support networks in contexts of environmental and anthropic vulnerability due to torrential floods as an expression of community resilience

combined networks that involve any of the entities mentioned above and come together to work around the needs of the population; the second is the circumstantial networks, which arise at a particular moment to cope with a specific situation and disappear when the situation is resolved, or the common goal is met (Montero, 2006).

Finally, Fuentes Aguilar, Alzugaray Ponce y Basabe (2021) recognize the use of strategies and resources by communities to overcome adverse conditions that generate resilient processes through the regulation of shared emotions, the provision and use of both material and human resources, and collective efficacy that translates into the perception of the community's competence and capacity to face challenges and achieve specific achievements. However, the authors highlight that there is no consensus regarding the evaluation of community resilience, so it is necessary to study the concept in specific areas to determine the experiences and qualities of resilience. For this reason, this attribute becomes an opportunity to understand social contexts and the formation of relationships that help solve the difficulties that populations must face.

Indeed, social relationships are essential to cope with crises, and added to this, the resilience capacity of communities becomes an attitude inherent to the relationships that are woven because in the face of a crisis, the capacity to cope and reorganize demonstrates the strengths and resources that a community has, because as Carrasco Tapias (2011) explains, the crisis is a shared matter, since both the family and the community that face the disaster are a source of help, even coping with trauma is more effective when living with people who have gone through similar events. Therefore, resilience is a capacity acquired as a result of experiences in a complex social system and "refers to aspects of coping with trauma and collective conflicts by human groups in which other psychosocial aspects influence, in addition to individual responses to stress" (Uriarte, 2013, p.9).

The research methodology is presented below, followed by the results and discussion, in which the particularities of each of the priority territories are defined, the emerging networks of solidarity and cooperation in contexts of environmental and anthropological vulnerability are identified and analyzed, and finally, given the production of systems and programs for risk management, some conclusions derived from the research process are presented.

2. Methodology

This research is qualitative and works under a hermeneutic method, which emphasizes the understanding, reconstruction, and interpretation of moments, events, situations, and actions from the voices of the subjects who experience certain phenomena, elaborating with them a "meaningful whole," according to their stories, trajectories, and subjectivities (Ramírez Robledo, Arcila, Buriticá, y Castrillón, 2004).

The emerging support networks in areas with environmental vulnerability and exposure to disasters due to natural and anthropic threats, two territories with similar characteristics of a torrential flood catastrophe, were selected, one case ex-ante and one ex-post, to be contrasted within the community resilience framework. This approach allowed us to understand the forms of response, organization, and self-management of the communities, as well as to explain the relationships built between them and their environment from a dialogical perspective of exchange and recognition of multiple meanings (Galeano, 2003).

With the above in mind, documentary review techniques and semi-structured interviews were implemented, as well as the application of instruments to characterize actors and networks. The search for information was oriented towards reviewing community and institutional documents and reports that could describe some forms of solidarity and collective and citizen cooperation emerging in the foundation and construction stages of the territory. This review is based on scenarios of the social construction of risk, understood as the possibility of recognizing both individual and community capacities for the generation of attention and response strategies, for the promotion and prevention of risk, and the generation of networks and strategic alliances in terms of broad participation processes established between government institutions, private/ mixed companies, and other community actors.

Likewise, workshops and focus groups were implemented to identify strategic actors, with an average of 60 actors tracked among the institutional, private, NGO, and community sectors, as well as the application of semi-structured interviews for the recognition and classification of emerging mutual support networks, with a universal sample of approximately 150 to 200 residents. Primary information was collected from the community in general and the leaders of each of the territories. In each of the exercises with the communities and institutions, informed consent protocols were used, through which the use of the names and testimonies collected within the framework of the fieldwork was authorized.

Finally, coding matrices were used, and the Nvivo software was used to classify and systematize the information based on the categories torrential flood, risk management, support networks, community resilience, and vulnerability.

3. Results and discussion

This section presents the case studies discussed in light of the contexts of vulnerability and the conditions that make networking and community resilience possible.

Ex post case: Municipality of Salgar

The municipality of Salgar is located in the southeast of Antioquia, where the Cauca River basin and the San Juan River sub-basin are located, waters received by the Barroso River, the main tributary of the municipality. (See Figure 1). It is also crossed by 15 ravines, the most important of which are La Liboriana, La Fortuna, and La Hondura, demonstrating the territory's water wealth.

Post Disaster Event
Location: southwestern Antioquia
Type of disaster: torrential flood
Tributary: Quebrada la Liboriana
Date: May 18, 2015
Affected people: more than 1930 people

Figure 1. Location of the municipality of Salgar
Source: Own elaboration.

In addition, there are geographical accidents such as Cerro Plateado and Alto de los Alpes. This combination makes it susceptible to disastrous events such as torrential floods, which put population centers at risk. Its primary source of income comes from coffee crops, so in August and December, farmers are dedicated to harvesting the grain, a time during which the municipality receives a large number of people since hundreds of collectors from other regions arrive in search of work. These types of crops, when managed inappropriately, can cause soil degradation, making it vulnerable to the occurrence of disastrous events.

On the other hand, the municipality has suffered various periods of violence that worsened due to the presence of paramilitary groups in the mid-nineties. The report Southwest Antioquia, a silenced conflict 1984 - 2016, indicates that some 10,423 people from the municipality are victims reported in the Single Registry of Victims (RUV), that is, 60% of the population. This document also explains how the region was characterized by the silencing and targeting of the community, where threats and murders of members belonging to social and union organizations occurred. These crimes were covered up by political elites who externalized an image of peace in the territory through interference in the media so that the facts were not known, which resulted in a deep distancing of the population in terms of participation and fear of assuming leadership. During the investigation, several testimonies revealed a population deeply affected by forced displacement, massacres, kidnappings, and land dispossession. Added to this are the conditions of poverty, since according to the National Planning Department (DNP), the municipality has a multidimensional poverty rate of 75% (DNP, 2005).

Cañaveral-Guisao, *et al.*

Networks that unite: Study on community support networks in contexts of environmental and anthropic
vulnerability due to torrential floods as an expression of community resilience

With this panorama of vulnerability, there is the torrential flood that occurred in the early morning of May 18, 2015, when a loud bang woke up the inhabitants of the Las Margaritas district who were surprised to notice the overflow of the La Liboriana Creek, which was slowly erasing the houses that were in the Mango and Escuela Vieja areas. Thus, the arrival of organizations to assist the population began, in the midst of which actors from municipal, departmental, and national orders intervened and different institutions were identified, which will be mentioned later in the text, which was part of the reconstruction and unification of those affected, through the stages of attention to the tragedy, reconstruction, and post-event.

In this sense, the importance of the actors within a network lies in the resources they make available to solve the difficulties. The first resources provided by the organizations had to do with assistance to those affected. Firefighters, Civil Defense, the National Army, and the Red Cross arrived in the territory; the community also strongly supported relatives and neighbors' search and rescue efforts. The testimonies point to the deployment of efforts so that people could have a place to stay and meet their basic needs, "some paid us the rent. (…) And another was taken to the coliseum." (Celina Cardona, comunicación personal, 2022), as well as the importance of family networks, since many affected people had to live with relatives after the tragedy.

In this way, networks begin to be woven into cooperation with organizations, and the peace of mind generated for the population by working with these, in which they placed their trust.

> Look, in a short time, even though there were people who were missing, who were never found, they managed to find most of the people who were lost. (Mariluz Céspedes, comunicación personal, 2022)

After the first moment of emergency response, efforts were identified in the psychosocial field, led by the Corporación Antioquia Presente, which implemented psychological support and coping strategies that condensed several lines of action to promote community strengthening and resilience. This same organization also carried out community-strengthening processes by restructuring five Community Action Boards (JAC) in the municipality, which is important because it solidifies community ties and motivates participation. Also noteworthy in the work with communities is the Horus Foundation, in charge of community processes focused on the environment and climate change through the ADAPTO[1] project, through which community gardens and environmental seedbeds were built in educational institutions, which encouraged people to mobilize in favor of actions for mitigation and adaptation to climate change. Despite the variety of purposes, the highest priority was the timely construction of the houses. For that reason, the Bertha Martínez Foundation received the resettlement and housing allocation contract as the leading operator, activating, as one of the first actions, the housing and impacted/beneficiary census to validate the effects and prioritize relocation through shelters, temporary housing, social housing, leasing, and others. (Juan Sebastián, comunicación personal, 2022).

However, a rupture in the social fabric is evident since, in the resettlement, many people were not placed with their former neighbors, so neighborhood relations were weakened, and even the sectorization and new ways of living triggered conflicts in the private and everyday sphere. This process took place in two sectors, the first called La Aldea in the Las Margaritas district, built with a prototype of a single-family rural home that resembled the living conditions before the disaster event, and the second in buildings with urban characteristics and multi-family design in the settlements of La Florida and La Habana, which currently present problems of coexistence associated with issues of insecurity, misuse of facilities, shared spaces and conflicts between neighbors. This effect is recurrent in resettlement processes where the change between rural and urban dynamics impacts the historical productive, family, and communal relationships with their territory. It establishes new forms and practices of economic, social, and cultural exchange of unequal apprehension for many communities.

Considering the organizations involved, three components are evident within the actors' goals: the attainment of housing, social care, and community integration. These lines respond to the specific needs of the community because, as Montero (2006) expresses, a characteristic of community networks is the multimodality or multidimensionality of the intervention when seeking to integrate and articulate dimensions, strategies, and visions to achieve a common goal, in this case, the material, psychological and social recovery of the community. It is worth highlighting a fundamental characteristic of the institution-community relationship for the configuration of the network, which is trust since this attribute allows communities and institutions to build lasting ties. In Salgar, the ties were maintained until the crisis was overcome, corresponding to the type of network identified for this case, which is circumstantial.

In addition, an essential particularity of this case is its capacity for solidarity and mutual help, not only from the organizations that were established in the territory but from a repetitive characteristic in the municipality:

> I believe that the most outstanding value people have had is solidarity and support among the same families and communities. From the torrential avenue, much solidarity was obtained from all of Colombia because one hears about tragedies everywhere, but the solidarity there was with the municipality of Salgar, you cannot imagine what it was like to go to the Coliseum, the number of donations. (Luz Marina, personal communication, 2022)

This form of solidarity is typical in rural contexts, where communities gather to have parties to repair and improve living conditions. The torrential flood demonstrated the joint work of the community to provide support in the rescue efforts and the recovery of the victims.

> Well, we stayed there all day. The boys: – Oh, Mom, I am hungry – let us drink some panelist water –. Then, what then? Are we going to stay here with our hands crossed? This land and this here, so what? Then Charo's husband left and gave us water on the other side, and we took it and between the husband and I, because everyone went over there […] because then we already put it there so that people could carry water and cook. Some very dear neighbors over there… – come here, come so that you can stay here all night, do not stay… (Olga Lucía, personal communication, 2022)

In short, thanks to these networks, the community had the tools to overcome the disaster. As explained by Alzugaray et al. (2018), using effective collective strategies allows the regulation of emotions through collective feelings, the provision and use of both material and human resources and the ability of the community to face challenges. These characteristics were evident in the Salgareña community in terms of the use of material and human resources. The fact that the houses were built quickly made people feel safe and better able to cope with the loss and face the shortcomings brought by the torrential flood.

On the other hand, in terms of emotional regulation, a dichotomy was presented. On the one hand, many people stated that they received psychosocial support, and the corporations pointed to significant participation of those affected in these spaces, in which individual and collective psychological work strategies were implemented with the creation of support groups (Antioquia Presente, personal communication, 2022). However, other people said they had not had permanent or insufficient support, in addition to those who refused to talk about the tragedy, since, due to their convictions, they did not intend to receive support from a professional.

These contrary experiences make sense in that, as already mentioned, the community had low participation due to the violent events that occurred in the municipality, making them reluctant to express their emotions or be in participatory environments; the coping then taking place from a denial of emotions that many people could not overcome.

> They somehow looked for that way of giving themselves as, – okay, I have to continue my life, because it is what I have to do, I have to continue – because it is what they have to do, because if they do not do it, then, what becomes of them? – Where do we go? – (Tatiana Guerra, personal communication, 2022)

Despite this being a negative aspect at first glance, the idea of living day to day has made the people of Salgar resilient since, due to the violence experienced in the territory, the support networks that emerged in this context are based on cooperation, solidarity, and work, managing to consolidate their capacity to absorb adversity and their ability to recover from damage (Twiggs, 2007), which has made them develop perseverance, self-efficacy, and coping skills.

However, the networks built during and after the disastrous event materialized disaster prevention actions. This ability to anticipate risks, as well as to recover after adversity, constitutes a form of community resilience (Twiggs, 2007), as communities learn from the events they have gone through and can overcome future difficulties, in addition to developing tools for action in the event of a disaster. To this end, in Salgar, instruments such as the Municipal Risk Management Plan, Emergency Response Strategy (EMRE), Rain Contingency Plan, Municipal Fund for Risk Management, and the Early Warning System have been implemented. All of these instruments aim to prepare the population for disasters, which would not be possible without the articulation of institutions that were present in the territory as a result of the torrential flood,

Cañaveral-Guisao, *et al.*

Networks that unite: Study on community support networks in contexts of environmental and anthropic vulnerability due to torrential floods as an expression of community resilience

since probably without the occurrence of this event, risk management would not have become an essential issue for the municipality's political agenda. Thus, it is observed that the relationship between support networks and resilience dynamics in the territory is evident from two points: (i) prior intrinsic resilience due to the armed conflict that made the population share bonds of cooperation and solidarity, as well as develop coping capacity; and after the disaster, it was based on the relationship and collaboration between actors guided by the trust to overcome the difficulties that arose, since the articulation between the members of the community and in turn with the different organizations was decisive for people to face the tragedy; (ii) in terms of risk management, since the community developed capacities and acquired knowledge so that a new event of this magnitude does not occur in the territory.

Ex ante case: La Primavera settlement

The La Primavera settlement is located at kilometer 28 of the Autopista Norte in the Hatillo district, Barbosa municipality, north of the Metropolitan Area of the Aburrá Valley. Due to its location, the settlement has several conditions of physical vulnerability among its inhabitants since the houses are located near the banks of the Aburrá River, which results in flooding during the rainy season and undermining; it is also located on an Ecopetrol pipeline and a Transmetano gas pipeline, so the population is in constant danger of a possible gas or fuel leak; in addition, being close to a high-traffic avenue such as the Autopista Norte, there is the threat of traffic accidents and the drainage of the dual carriageway has caused flooding. Added to this are the conditions of poverty, unemployment, and micro-trafficking, plus the occupation of the areas of influence of the meanders as anthropic and environmental risk factors that affect the community. (See Figure 2)

A significant percentage of people living in La Primavera are victims of forced displacement due to the internal armed conflict. According to the surveys within the research framework2, 53% of those interviewed identified themselves as displaced persons, both rural and urban, and only 21% were registered in the RUV. The census carried out within the framework of this project lists 322 dwellings, an exponential growth of 93% in just four years compared to the 2018 census carried out by the Corporación Región, which recorded a baseline of 168, doubling the population. The arrival of Venezuelan migrants in recent years, the expansion of the pristine occupation line, and the progressive construction in height have generated a more significant accumulation of anthropic risk on the buffer terrain, that is, on the load capacity of the defined flood zone, has stimulated problems in good coexistence, emerging forms of intimidation and expulsion of settlers, change of leadership and historical residents, and consequently, the weakening of neighborhood networks of mutual support and social fabric.

Likewise, the inhabitants of La Primavera are uncertain about the Tren del Río project, a state project to promote the reactivation of the Antioquia Railway and the recovery of the railway tracks of the department and the rest of the country. To be Located on the old tracks, this new eviction process gives rise to a possible re-victimization and displacement due to public works since, at present, the resettlement process is not straightforward, nor are the actions in terms of rights that guarantee the permanence in the municipality of Barbosa for each of the families.

Given this scenario, how support networks have been created in this place can be traced back to the neighborhood ties established with the arrival of the first settlers in 1978. The forms of organization and Sunday gatherings become a ritual for the self-construction of homes and the adaptation of the settlement. Neighborhood relations become essential to overcome economic shortages since most of them, upon being displaced, create bonds of gratitude between those who live in the territory and those who arrive.

> That has been recovered; this community is very supportive. If someone has a difficulty, there is the neighbor, the neighbor tells the other, and there is a chain, and we are all helping. That essence of collaboration has been preserved; if someone has a difficulty, the neighbor helps them, we form a chain, and we are there to help that person. (Luz, personal communication, 2022)

These actions have persisted and become evident in situations where risk materializes. Some interviewees stated that when the Aburrá River floods the settlement, collective actions of solidarity and cooperation are launched to receive donations of labor, materials, and financing for the reconstruction of the affected places and homes.

Such links created bonds of community familiarity that allowed for the social construction of actions of accompaniment and care since many families become the support of others due to their similar experiences due to the violence to

Disaster Alert
Location: Municipality of Barbosa
Threat: Torrential avenue, floodin**g**
Tributary: Quebrada la Liboriana
Tributary: Aburra-Medellín River
Population at risk: more than 1000 people

Figure 2. Location La Primavera Settlementa
Source: Own elaboration

which they were subjected in their places of origin. Later, leadership and grassroots organizations emerge in favor of self-management, participation, and, in some cases, articulation with institutional actors. Thus, the community housing board, the Association of Victims and Displaced People Los Meandros Nuevo Amanecer and the JAC have made their way, achieving actions and interventions in alliance with some fundamental government entities for the improvement of the quality of life, such as the installation of essential sanitary sewage services, pipes, and tanks for the rural aqueduct, poles and fences for the connection of electric power (Eleazar, personal communication, 2022). At the same time, rural practices of direct action and maintenance have emerged, assumed by the resident's leaders, such as enabling and cleaning common spaces and roads, raising awareness for the disposal and proper management of garbage, and recently, practices related to prevention and attention to the possible consequences of the flooding of the river that surrounds them.

In general, strengthening collectives and leadership was forging alliances with surrounding communities to carry out articulated and binding projects in the territory. In order to understand these relationships, it is worth mentioning that the municipality of Barbosa is administratively divided into ten rural villages and one urban village; the village Los Meandros, of which the community studied is part, is made up of 11 verandas each with a JAC, each village elects three representatives to be part of a Coordinating Committee that is responsible for making the problems of the territory visible through a report presented to the Municipal Council, this type of organizational strategies allows the mobilization of resources since as Montero (2006), explains, community networks are not in themselves an end of the organization but a strategy to achieve benefits for the communities.

Thus, after several decades of struggle and a call for the defense of the territory, city institutions, in particular the Regional Corporation[3], promote scenarios of citizen participation in the planning and ordering processes. In this case, the debate and social control of public management for the right to the city is revived. The Regional Corporation arrived at the settlement in 2013 and expressed an interest in strengthening and training community leaders, in addition to supporting the actions and strategies of vindication of hundreds of populations affected in their living conditions. This scenario, legitimized by the communities and of mutual trust, becomes a dialogue and opportunity for transformative praxis and improvement of La Primavera.

In this way, the Regional Corporation becomes a bridge for the arrival of different social, academic, and governmental actors, both national and international cooperation to the settlement, building, and weaving of networks for the design and implementation of studies, plans, and programs aimed at knowledge, mitigation, and risk management. Thus,

> In increasingly complex cities, due to the intensity and variety of economic development, as well as social diversification and population mobility (…), We all continue to be actors on the urban scene in the city. However, some can act more than others and have greater visibility, which has to do with their position in the social structure and the ability to make public their demands, aspirations, and interests. (Capel, 2013, p s. 29).

Cañaveral-Guisao, *et al.*

Networks that unite: Study on community support networks in contexts of environmental and anthropic vulnerability due to torrential floods as an expression of community resilience

In this circuit of initiatives, the Interinstitutional Roundtable for the Resettlement of La Primavera was born as a figure of alliance on a macro scale for political participation established with a view to public-community management and which specifies each of the actors who have social responsibility for their industrial and productive practices with a direct environmental impact within the territory. This Roundtable brings together institutions such as manufacturing companies, Transmetano, Ecopetrol S.A., Empresas Públicas de Medellín (EPM), Universidad Nacional de Colombia, Universidad de Medellín, Universidad San Buenaventura, Colegio Mayor de Antioquia University Institution, Council of the Villages of Los Meandros and El Hato, the Local Administrative Boards (JAL), JAC, Association of Victims and Displaced Persons of Los Meandros Nuevo Amanecer, as well as religious groups, youth organizations, environmental roundtables of Barbosa, women's organizations and peasant organizations, municipal mayor's office, municipal council and Ombudsman's Office, Regional Autonomous Corporation and assigned public security authorities, National Institute of Roads (Invías), National Agency of Environmental Licenses (ANLA) and the leading operator of the Tren del Río project, the Empresa Ferrocarril de Antioquia.

This Roundtable is the stage for articulation and confrontation with actors that impact the territory. One characteristic to highlight about this space is that it allows the community's involvement in the issues discussed, so the participation of its leaders is essential to implement the strategies and solutions that the Roundtable proposes since the existence without the effective participation of the community would not make sense.

In this way, the type of combined network is built by converging various public and private actors to try to solve the community's difficulties. These new actors are linked with the existing groups in the territory and manage to create bonds of trust that lead to self-management processes and the strengthening of the community regarding risk management. Although, as has been mentioned, La Primavera has not experienced a disastrous event of enormous proportions, the arrival of these entities contributes to the community understanding its vulnerability and becoming aware of the need to implement strategies that cushion an eventual disaster.

These strategies include the installation of alerts in the territory by SIATA, training and workshops on risk management and first aid, a voice-to-voice alert system in which there is a delegate who warns of the occurrence of a risk, and the construction of a Communal Risk Management Plan. In these risk management actions, it is observed how support networks develop the organizational capacity to face crises, which constitutes an aspect of community resilience since association and collaboration increase the possibilities of overcoming overwhelming challenges.

3. Conclusions

When comparing both communities, there are notable differences, including the type of network where they are part. On the one hand, in the municipality of Salgar, circumstantial networks were woven since the organizations that arrived in the territory once the emergency was over did not continue with their presence there because their function was oriented to humanitarian aid; once the crisis was resolved, it would not make sense to remain. Even so, there is evidence of an effort to maintain community ties, which in this case were not based on institutional organization but on the intrinsic solidarity of the communities since interpersonal ties are based on neighborhood and family relationships built by generations.

On the other hand, in the settlement of La Primavera, a community is observed that is more committed to participation, community organization, and integration, so it is possible to see the combined networks, in which multiple actors intervene, that have been maintained over time and still seek to solve collective problems. It is essential to highlight that the organizations of La Primavera are their own; they are born from the community, and the external ones that have gradually arrived do so through the link with the existing ones. Despite this, the variable that condenses the whole meaning of the networks is mutual support; for this reason, they are called community support networks since, regardless of their typology, they seek to help, support, and alleviate the problematic situations surrounding the community members.

In both cases, the crisis is seen as an element shared by the communities since the way to confront disasters or collective difficulties is done through help and cooperation. Therefore, the response of family networks as the first place to face adversity is a fundamental factor in recovery and resilience; when these dynamics are extrapolated to the community context, the probability of an entire human group effectively overcoming the complications brought by the disaster increases. It is also possible to demonstrate solidarity, cooperation, and trust as values that emerge after a common past

resulting from violence and that find in their neighbors, friends, and organizations the possibility of creating ties that allow them to overcome the difficulties that may arise, not only in risk management but also in the problems of daily life. Thus, community support networks, as a complex structure in which different actors converge and can be linked in support of a common goal, are expressions of community resilience since this is an acquired capacity that is developed from the shared experiences of a group, where they seek to improve their lives in contexts where they can only use the resources managed by themselves, creating a system of relationships to achieve the same objective, survival.

Finally, it is essential to clarify that resilience is not the opposite of vulnerability. However, both attributes coexist since people and communities can develop resilience from their experiences in stressful environments. However, it is stressed that people and communities respond differently to unfavorable contexts, so being in these types of scenarios does not suggest that a coping capacity will be developed per se; instead, what is attempted to be expressed is that the influence of multiple factors means that this can only be explained from a complex interaction of cultural, sociopolitical and relational factors.

Notes

1. The ADAPTO project - Adaptation to Climate Change in Informal Settlements - seeks to create strategies for adaptation to climate change in small and medium-sized cities and integrate these proposals into public policies.
2. In 2022, 138 surveys were conducted in La Primavera, divided into the upper La Primavera Sector -132 surveys- and the lower La Primavera Sector -51 surveys-.
3. It is a non-governmental organization that contributes to constructing a just, democratic, and peaceful society by promoting human rights, strengthening citizenship, gender equality, and defending public property." See: https://www.region.org.co/index.php/somos-region/presentacion-region-2022

Conflict of interest

The authors declare no conflict of interest.

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Networks that unite: Study on community support networks in contexts of environmental and anthropic vulnerability due to torrential floods as an expression of community resilience

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