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Review Article

Evolution and Implementation of Emergency Plans on the Island of Menorca: Territorial Planning, Risk Management, and Institutional Coordination

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ABSTRACT

The study of the implementation of emergency plans allows an examination of how risk management evolves and integrates with territorial planning, civil protection, and multi-level governance. Based on a document review and its analysis, this article examines advancements in emergency management on the island of Menorca, focusing on Municipal Emergency Plans and Local Action Plans for wildfire risk on the island, as well as the Local Action Plan for the Sant Joan Festival in Ciutadella, and their assimilation into the national and regional civil protection frameworks. The results show progress in implementing, officially validating, and institutionally incorporating emergency plans, along with a consolidation of preventive management, linked to multi-level governance, territorial resilience, environmental protection, and climate change adaptation. The Local Action Plan for the Sant Joan Festival in Ciutadella offers insight into managing risks associated with traditional celebrations, large crowds, animals, and intensive use of public space. The study concludes that implementation of Municipal Emergency Plans in three of the island's eight municipalities, Local Action Plans for wildfire risk in all of them, and the Local Action Plan for the Sant Joan Festival in Ciutadella improves anticipation and response capabilities. However, the lack of an Island Emergency Plan limits cooperation, coordination, and prevention in a Biosphere Reserve territory that is sensitive to climate change and subject to intense seasonal demographic pressure.

KEYWORDS

Civil protection; emergency planning; Menorca; risk management; territorial resilience; multi-level governance.

1. Introduction

Risk management has evolved from disaster-response approaches to integrated models that consider risk as a social and territorial construct, determined by interactions among hazards, exposure, vulnerability, and institutional capacities (Rajabi et al., 2022). From this perspective, risk is not only an external factor linked to natural or technological events; it is a condition shaped by planning decisions, land use, social inequalities, and administrative preparedness (Birkmann et al., 2016; Tröger & Braun, 2024; Wisner et al., 2004). In this context, resilience is the capacity of territorial systems, communities, and institutions to anticipate, adapt, and recover from events without losing their essential functions (UNISDR, 2009; Wisner et al., 2004); it is an evolving process involving multiple dimensions and the active participation of actors at all levels (Milenković & Cvetković, 2025). In civil protection, this implies combining response mechanisms with strategies for prevention, public awareness, institutional learning, coordination, and continuous adaptation to changing scenarios (UNDRR, 2015).

Emergency planning is a strategic area of public risk management, as it organizes anticipation, preparedness, response, and recovery for situations that can compromise personal safety, asset integrity, and the stability of territorial systems (Blanchard, 2008; Bumgarner, 2008; Lillywhite & Wolbring, 2022). Far from being merely a reactive measure, it is part of a broad conception of risk governance in which norms, institutional capacities, coordination infrastructures, and prevention mechanisms converge (Albris et al., 2020; Febles et al., 2026). This perspective acknowledges that exposure and vulnerability also stem from territorial decisions, coordination deficits, and inequalities in the distribution of protection resources (Cardona et al., 2012). Consequently, the systemic-risk approach is particularly useful, as it enables understanding of interdependencies among threats, territories, institutions, and social groups (Schweizer & Renn, 2019).

Territorial governance provides an analytical framework for understanding how public decisions related to risk management are organized, coordinated, and legitimized (Davoudi et al., 2008; Farinós, 2008). Its effectiveness depends on coordination across levels of government, integration across public policy sectors, and the capacity to link regulatory instruments, spatial planning, and operational resources (Schmitt & Van Well, 2015; Van Well et al., 2018). In island territories, this dimension is particularly significant due to the concentration of critical infrastructure, resource constraints, reliance on external networks, and ecosystem sensitivity. In such contexts, multi-level governance goes beyond a formal distribution of competencies; it entails institutional arrangements that integrate civil protection, territorial planning, sustainability, and climate change adaptation within a unified framework of territorial resilience (Moyo et al., 2026).

At the international level, the Sendai Framework for Disaster Risk Reduction 2015–2030 serves as a key reference for understanding this transformation. Adopted by the United Nations, it shifts the focus from disaster management to proactive risk reduction and outlines four priorities: understanding risk in all its dimensions, strengthening multi-level governance, investing in resilience, and enhancing preparedness for effective response, while incorporating the principle of “building back better” during recovery and rehabilitation (UNDRR, 2015). This approach is particularly relevant for island territories, where ecological fragility, dependence on critical infrastructure, and spatial constraints heighten the potential impact of natural, climatic, or human-induced disturbances.

In Spain, the National Civil Protection System Act (Government of Spain, 2015) supports this conceptual evolution by defining civil protection as a public service that protects people and property and ensures an adequate response to emergencies and disasters of natural or human origin. The legislation emphasizes anticipation, prevention, planning, and inter-agency coordination, while incorporating risk information, citizen participation, and institutional cooperation as essential components of the system (Pastrana-Huguet et al., 2019). Complementing this framework is the Basic Civil Protection Standard (Ministry of the Interior, 2023), which reinforces the system’s coherence by establishing the catalog of risks subject to planning, the minimum content of plans, and the foundations for their functional and operational integration (Pastrana-Huguet et al., 2025). In the Balearic Islands, these principles are implemented through the Territorial Civil Protection Plan of the Au-

onomous Community of the Balearic Islands (PLATERBAL) (GOIB, 2014), specific special plans addressing particular risks, and the recent promotion of municipal instruments, specifically PEMUs and PALs.

The island of Menorca is a particularly relevant case study because emergency planning is intertwined with its status as a Mediterranean island, its designation as a Biosphere Reserve, its high environmental sensitivity, and the pronounced seasonality of tourism. These factors shape a scenario in which risk management is integrated with spatial planning, environmental conservation, climate adaptation, and coordination across administrative levels (CIME 2020a, 2020b; GOIB, 2014; UNDRR, 2015). Consequently, the analysis of emergency plan implementation in Menorca reveals a technical-administrative standardization process and the consolidation of a risk governance framework grounded in prevention, institutional coordination, and territorial sustainability.

This article analyzes the implementation of municipal emergency instruments in Menorca, specifically Municipal Emergency Plans (PEMU) and Local Action Plans (PAL) for forest fires—within the Balearic Islands' civil protection system. The study examines their territorial coverage, institutional integration, and relationship with land-use and environmental planning. The inclusion of the Local Action Plan for the Sant Joan Festival allows the analysis to extend beyond conventional natural or territorial risks to incorporate a collective risk associated with a deeply rooted traditional celebration characterized by high attendance and significant operational complexity. From this perspective, the study identifies key advances and challenges regarding emergency planning on the island.

2. Methods

The study uses a qualitative, descriptive-interpretative design aligned with Merriam and Tisdell (2016) and Corbin and Strauss (2008) to examine how emergency plan implementation in Menorca has evolved within a risk governance framework. To this end, it combines a document review, a regulatory analysis, and a content analysis of institutional and technical-administrative sources, seeking to identify both the formal requirements of the plans and the institutional rationales underpinning their development. For analytical purposes, this study uses the term “implementation” broadly, although four levels can be distinguished that should not be interpreted as equivalent. Formal approval refers to the competent body's adoption of the plan. Documented administrative implementation concerns assigning responsibilities and resources, as well as procedures for maintenance, training, dissemination, coordination, and updating. Operational activation relates to the full or partial putting into effect of the plan. Finally, effectiveness concerns the plan's performance (Van Meter & Van Horn, 1975).

The analysis was structured into three complementary phases (Table 1). In the first phase, we identified, classified, and systematized sources by their normative, programmatic, territorial, or operational nature. In the second phase, an analysis matrix was constructed based on four central categories: the territorial scope of the instruments, required technical components, inter-administrative coordination mechanisms, and links between emergency planning, land-use planning, and sustainability. In the third phase, the study conducted a comparative and interpretive review of the documents to identify continuities, recent changes, institutional gaps, and patterns in consolidating risk planning. Because the study focuses on the institutional architecture of implementation, it did not evaluate the plans' operational performance during specific events; it focused on their formal configuration, logic integration, and significance within the island's civil protection system.

Table 1. Analysis procedure.

Dimension	Description
Documentary sources	State and Autonomous Community laws, civil protection technical documents, territorial and environmental planning instruments, institutional communications, international risk reduction frameworks, and academic literature.
Analysis categories	Territorial coverage, required technical components, inter-administrative coordination mechanisms, and links between emergency planning, territorial planning, and sustainability.
Procedure	Identification and classification of sources; comparative and interpretive reading to detect continuities, recent changes, institutional gaps, and patterns of consolidation.

Source: own elaboration.

The review analyzed 30 institutional and technical documents—including laws, planning instruments, statistics, and official communications—primarily covering 2015–2026. The corpus was defined by its connection to Menorca and its usefulness for analyzing territorial coverage, technical components, inter-administrative coordination in emergency management, and the integration of sustainability criteria and disaster risk reduction (DRR).

The documentary corpus reviews state and regional regulations applicable to civil protection and emergency planning, with particular attention to PLATERBAL, approved by the Autonomous Community Government (GOIB), because of its role in structuring the system within the Autonomous Community of the Balearic Islands. The study analyzed the minimum content, operational integration, and validation criteria for the PEMU and the PAL for forest fires. Additionally, the study examined territorial and environmental planning instruments from the Island Council of Menorca (CIME)—such as the revision of the Island Territorial Plan (PTI) and the Menorca 2030 Strategy (CIME, 2020)—for their relevance in interpreting the interplay between risk, land-use planning, and sustainability within Menorca’s municipal plans. Finally, international reference documents on emergency management and DRR. In addition to institutional and technical documents, we reviewed relevant academic articles to situate the case study within the broader debate on emergency management, resilience, and multi-level governance. The documents deemed most relevant to our study regarding emergency management on the island were PLATERBAL, the PEMU, the Local Action Plan for the Sant Joan festivities, the PAL for forest fires, and PLATERME (Table 2).

Table 2. Summary of emergency planning instruments.

Instrument	Scope	Situation described	Main function
PLATERBAL	Regional	Current guiding framework for civil protection in the Balearic Islands.	Coordinate resources, establish a common organizational structure, and integrate lower-level plans into emergency management across the archipelago.
PEMU	Municipal	Aproved: Ciutadella, Maó, and Ferreries. In the review phase: Es Castell and Es Migjorn Gran.	Identify local risks, organize municipal resources, and coordinate the response with higher-level authorities.

Instrument	Scope	Situation described	Main function
Local action plan for the Sant Joan festivities in Ciutadella	Municipal (Ciutadella)	Security management framework for the Sant Joan festivities in Ciutadella.	Prevent and minimize risks to people, preserve the essence of the festival, and define the roles of the parties involved in its management.
PAL for forest fires	Municipal and specific risk	Island-wide coverage is complete across the eight municipalities. Instrument pending approval and not yet effectively operational due to conflicting competencies on civil protection within the regional territorial system, involving the CIME and GOIB.	Plan local action regarding forest fires and integrate municipal resources into INFOBAL.
PLATERME	Insular		Structure island-level coordination, functionally integrate municipal plans, and reinforce the territorial coherence of the system.

Source: own elaboration.

3. Context and emergency planning instruments

3.1. The island of Menorca: geographical, demographic, and environmental characteristics

The island of Menorca is located in the Mediterranean Sea, off the eastern coast of the Iberian Peninsula, and covers an area of approximately 700 km². It is part of the Balearic archipelago and has a Mediterranean climate, with mild winters, summer highs that can exceed 30°C, and rainfall concentrated mainly in autumn (Jansà et al., 1981). Its position at the northern end of the Balearic Islands exposes it to northerly winter windstorms known as the *Tramontana*, which originate in the Gulf of Lion (Balaguer et al., 2017; Cañellas, 2010). Furthermore, the absence of rivers and reservoirs means the island relies exclusively on its groundwater reserves (Pastrana-Huguet & Casado-Claro, 2024).

According to the National Statistics Institute (INE), as of January 1, 2025, Menorca's population was 102,821 (INE, 2026). This population is distributed across eight municipalities: Sant Lluís, Es Castell, Maó, Alaior, Es Migjorn Gran, Es Mercadal, Ferreries, and Ciutadella (Figure 1). Maó and Ciutadella, located at the eastern and western ends of the island, respectively, account for more than 60% of the population, with 32,431 inhabitants in Ciutadella and 30,666 in Maó (INE, 2026). As reflected in the Statute of Autonomy of the Balearic Islands (2007), Menorca's political organization operates at the island level through the CIME, regulated by Law 8/2000 on Island Councils, revised in 2022.

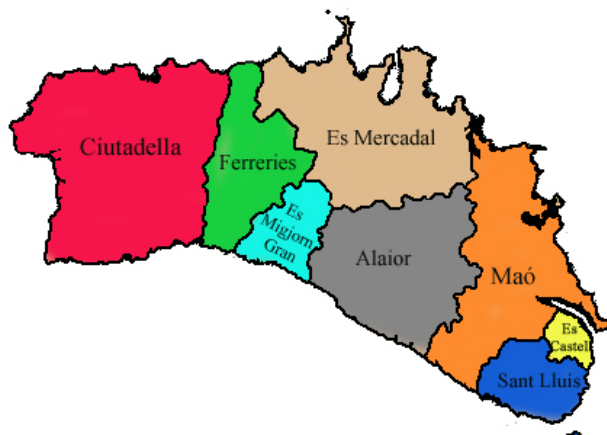


Figure 1. Territorial distribution of the municipalities on the island of Menorca.

Source: PLATERME review, 2017.

Economically, Menorca shifted from an agricultural, rural economy to one based on industrial development in the 19th century, eventually settling on an economic model almost exclusively based on tourism (Casasnovas, 2006). Mass tourism took hold in Menorca in the early 1980s, diminishing the prominence of the island's traditional economic activities (Fullana, 2005; Beltrán, 2014) and placing human pressure on its resources. Illustrating tourism's significance, data from the Balearic Islands Statistics Institute (IBESTAT) show that Menorca received 1.77 million visitors in 2025 (IBESTAT, 2026), with a human pressure index of 230,549 people in August.

A key milestone for the island occurred in 1993, when UNESCO designated Menorca a Biosphere Reserve in recognition of the balance it strikes between economic activities and the preservation of its cultural heritage and natural landscape, a balance that contributes to the diversity of Mediterranean habitats (UNESCO, n.d.). This designation has made the island one of the most protected territories in the Mediterranean, featuring an island-wide spatial planning model grounded in the principle of sustainability (Mata, 2006). The CIME manages the Reserve, and since its designation, Menorca has allocated resources to preserve its territory. Its strategy rests on five fundamental pillars: the environment, social well-being, tourism, culture, and the economy (Pastrana-Huguet & Casado-Claro, 2022). In this regard, the PTI establishes that 77.4% of the territory falls under some form of official protection, whether for its ecological, scenic, or agricultural value (PTI, 2023). Furthermore, Menorca is the largest Marine Biosphere Reserve in the Mediterranean, protected under the Menorca Biosphere Reserve Law (GOIB, 2023). Another significant development is UNESCO's designation of "Talayotic Menorca" as a World Heritage Site, owing to the vast number of archaeological sites belonging to the Talayotic culture situated within agropastoral landscapes (UNESCO, 2023).

The geographic, demographic, environmental, and economic characteristics described place Menorca in particular exposure and sensitivity to certain risks. Factors such as its island status, reliance on groundwater resources, seasonal tourism pressure, the protection of extensive land areas, and critical infrastructure make emergency planning a key element of territorial and multi-level governance.

3.2. Risk management and civil protection in the Balearic Islands:

PLATERBAL as an instrument for territorial emergency coordination in the archipelago

Under Spanish law, emergency and civil protection services manage risk, with responsibility shared among all public authorities. Royal Decree 524/2023 establishes a functional and cross-cutting framework of competencies to ensure the effectiveness of the National Civil Protection System (Pérez & Pursals, 2025). In this sense, the autonomous communities manage and respond to civil protection emergencies and develop regional territorial plans and special plans to address specific risks within their respective territories (floods, forest fires, earthquakes, etc.). Additionally, the Autonomous Communities elaborate on municipal competencies in their civil protection laws, including requirements for territorial and special planning; integration measures; coordination centers and bodies; the regulation of volunteering and self-protection; and civic duties of collaboration (Pavón, 2022).

In the Balearic Islands, Law 3/2006 of March 30—revised in 2024—regulates the public emergency management system and the role of civil protection volunteers, establishing a legal framework that addresses emergency situations while promoting a culture of prevention and social co-responsibility (Pérez & Pursals, 2025). Meanwhile, Decree 40/2014 of August 8 approves the Territorial Civil Protection Plan of the Balearic Islands (PLATERBAL); this serves as the regional master plan for managing emergencies not covered by special plans and establishes the organizational framework for mobilizing public and private resources, coordinating between administrative bodies, and integrating lower-level territorial plans. As Pérez & Pursals (2025) note, PLATERBAL represents a significant advancement in strategic civil protection planning by providing a common framework for coordinated action in the face of various emergencies. Its territorial approach allows the response to be tailored to the specific characteristics of each island and municipality, thereby strengthening the system's resilience. The Plan includes risk definitions, hazard zone mapping, and an inventory

of existing risks based on historical data. It also outlines the organizational structure that island and municipal civil protection plans must follow (Rosselló, 2015).

3.3. Municipal Emergency Plans: PEMU

The PEMU is the fundamental local-level planning instrument for identifying the municipality's most significant risks, determining available capabilities and resources, and establishing mechanisms for mobilization and coordination with other relevant public authorities. It is a technical instrument that defines operational rules and procedures that constitute the local-level emergency response system, with the municipal government responsible for its implementation and maintenance. The approval process for a PEMU begins with the Municipal Plenary Session adopting the initial document; the Regional Civil Protection Commission then reviews and validates it before the Municipal Plenary grants final approval.

In the Autonomous Community of the Balearic Islands, Municipal Emergency Plans (PEMUs) must be reviewed by the Balearic Islands Emergency and Civil Protection Commission. Currently, on the island of Menorca, three of the eight municipalities have an approved plan—Ciutadella, Maó, and Ferreries—while two—Es Castell and Es Migjorn Gran—are under review. The first municipality in Menorca to have a PEMU was Ciutadella (approved on April 11, 2024); this plan accounts for up to 21 potential risks and addresses the “main hazards” facing the population: coastal phenomena, **rissagues** (meteotsunamis), and **delubis** (torrential rains) (Salvador, 2024). The Maó PEMU, approved on October 16, 2025, analyzes nine risks and operational guidelines, and organizes the necessary means and resources for emergency prevention and response, coordinating the actions of the relevant public authorities (Lliteras et al., 2025). The Ferreries PEMU, approved on April 20, 2026, identifies the 13 most significant risks present within the municipality's territory (Bosch, 2026). All PEMUs, including Es Castell and Es Migjorn Gran municipalities pending approval, follow a standardized structure adapted to regional regulations.

3.4. The Local Action Plan for the festival of Sant Joan

The festival of *Sant Joan* in Ciutadella is a traditional celebration of medieval origin, characterized by the central role of the Menorcan horse breed and the direct participation of thousands of people in the streets and squares of the historic center (Al-lès, 2009; Bosch, 2009). Ciutadella, with a population of approximately 32,000, hosts between 120,000 and 150,000 people during the festival's main days, 23 and 24, tripling the municipality's population.

This combination of tradition, constant movement, animals (horses), crowds, and narrow urban spaces turns the festival into a setting of high collective risk (Figure 2). Consequently, a specific instrument is needed to manage safety, establish emergency protocols, and protect people without compromising the festival's essence.



Figure 2. Jocs des Pla and Caragol des Born.

Source: Menorca info. <https://sl1nk.com/9973161>, <https://l1nq.com/ee37s6m>

In this context, the Local Action Plan for the Sant Joan Festival—approved by the Ciutadella City Council Plenary Session on June 4, 2026—replaces the former Security Master Plan implemented in 2017 and is integrated as a sectoral plan within the PEMU structure. This revision updates the security framework, integrates emergency protocols, and incorporates self-protection plans for events with the largest crowds—such as the **Caragol des Born** and the **Jocs des Pla**—with the aim of preventing and minimizing risks to individuals, preserving the essence of the festival, and establishing clear roles for the parties involved: the City Council, security forces, volunteers, the **Caixer Senyor**, and the **caixers**.

Given the festival's complexity and the large crowds, the Local Action Plan operation involves multiple government bodies and public services. The operation combines resources from the Ciutadella City Council, the Government of the Balearic Islands, and the State administration, with the participation of local police, emergency services, civil protection, private security, and volunteers. The Ciutadella Local Security Board centrally commands the operation and is co-chaired by the town Mayor and the central Government Delegate. At the operational level, the Ciutadella Local Police coordinate security resources in close cooperation with the Local Operational Coordination Center (CECOPAL) and the 112 emergency service. This institutional coordination results in a major deployment of personnel and equipment during the festival's main days and can mobilize between 450 and 500 people.

The Ciutadella Local Police handle police security, supplemented by reinforcements from other municipalities on the island and inter-island Local Police deployed from Mallorca. State security forces also participate, featuring a substantial National Police contingent and Civil Guard surveillance along the coast and at access points to the municipality.

The medical and emergency response setup for the festivities integrates doctors, nurses, and technicians from SAMU-061 and the Red Cross, with Basic and Advanced Life Support ambulances stationed at strategic locations and field hospitals set up near areas with the highest visitor density. Additionally, the CIME fire prevention, firefighting, and rescue service will carry out a special operation.

On logistics, Civil Protection and the "Sant Joan Volunteers"—a group officially established in 2014—will support the plan, along with private security hired to manage access and crowd capacity at the entrances to the town squares. The plan also includes technical staff for public works, municipal cleaning, and port operations to manage passenger arrivals at the *Son Blanc* dock.

The need for the Plan is explained, on the one hand, by the festival's characteristics and, on the other, by the large influx of visitors during the Sant Joan festivities, which has a particularly significant impact, including at the island-wide level.

3.5. Local Emergency Action Plans for Forest Fires: PAL

PALs are strategic planning documents that outline environmental, social, economic, cultural, and organizational actions—based on broad strategic lines—sequenced and designed to meet each municipality's specific needs. The goal of this planning is to achieve more sustainable development: economic growth that considers the public and their needs while respecting the environment. These strategic lines form the basis for defining action programs or specific measures that, in turn, shape concrete projects and initiatives.

Local authorities play a limited role in forest fire management; regional administrations hold primary responsibility and, in particularly serious situations, the state administration does as well. Nevertheless, Spanish legislation assigns certain competencies to local authorities, primarily regarding forest planning and civil protection (Álvarez, 2026; Ortega, 2026). Local Emergency Action Plans for Forest Fires are specific documents within the municipal-level Civil Protection planning framework. Local authorities draft these plans in accordance with guidelines established by the relevant Autonomous Community plan; PAL provides for integrating its resources into the overarching special plan.

In the case of the Autonomous Community of the Balearic Islands—as outlined in PLATERBAL and the Special Civil Protection Plan for Forest Fire Emergencies (INFOBAL)—the governing decree stipulates that Local Action Plans (PALs) must be drafted and implemented by municipal governments (GOIB, 2023).

INFOBAL mandates that municipalities where 50% of the municipal area is classified as being at high, very high, or extreme risk—as well as municipalities containing residential developments at risk of forest fires, in accordance with the **Guide to Municipal Civil Protection Plans**—must have a local-level emergency action plan for forest fires (INFOBAL, 2023); see Figure 3 and the corresponding delineation for the island of Menorca. Local authorities must approve these plans, and the Autonomous Community’s Civil Protection Commission must ratify them. The objective is to establish the organization and operational procedures for the resources and services of the local administration—as well as those assigned by other public administrations or private entities—to respond to emergencies and pre-emergency situations arising from forest fires within the municipal territory.

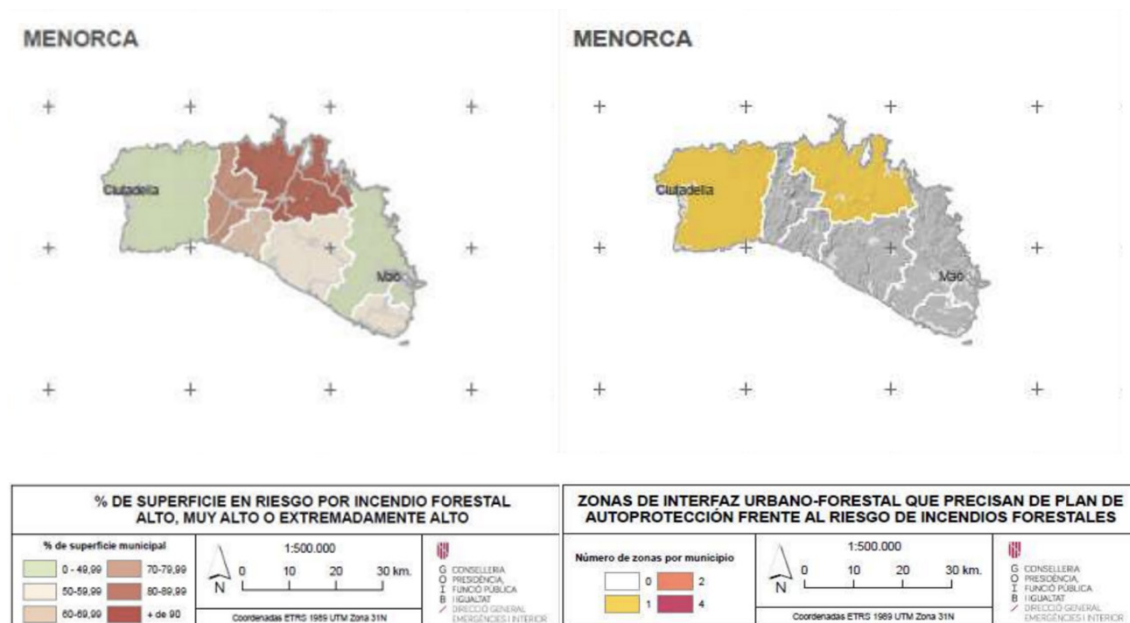


Figure 3. Percentage maps of land area at risk of forest fire and wildland-urban interface zones requiring self-protection plans. Source: INFOBAL

Currently, all municipalities on the island have a PAL in force; Maó was the first to approve one in 2025 (Ajuntament de Maó, 2025). The other municipalities approved their respective plans in 2026, driven by the CIME (GOIB, 2026). In July 2026, the CIME also developed an island-wide forest fire prevention plan—funded with €2.9 million—to reduce fire risk and protect the population and the island’s natural heritage. The project, financed by Sustainable Tourism Tax (ITS) funds linked to the Biosphere Reserve Law, will target 186 hectares of forest cover: 64% on rural land and 36% on urban land, primarily in municipal green areas. The plan will create 30-meter-wide perimeter protection strips along the boundary between urban and forest zones across all eight municipalities (CIME, 2026).

3.6. The Territorial Emergency Plan for the Island of Menorca, *PLATERME: an unfinished business*

PLATERME is the civil protection system that coordinates human and material resources in emergency situations on the island of Menorca. The Plan was definitively approved on January 4, 2005, and subsequently revised in 2017 to align with regulatory changes—at both the national and regional levels—regarding emergencies and civil protection. However, the Directorate General for Emergencies did not approve the PLATERME revision because it allegedly encroached on regional

competencies; the Government GOIB viewed the Plan as a substitute for municipal emergency plans rather than an island-wide instrument, resulting in the plan's suspension and its non-approval.

The primary function of the Plan was to manage and coordinate municipal emergency plans and organize island-wide human resources—such as the fire prevention, firefighting, and rescue services managed by the CIME—thereby ensuring a comprehensive, proportionate, and effective response to situations threatening collective safety through the appropriate mobilization, organization, and coordination of the island's available human and material resources. In this regard, the revision of the PLATERME established a central coordinating role for the Island Council in managing municipal emergency plans and organizing the operations of the various responding services, including the Council itself. These services primarily included security forces and agencies, fire prevention, firefighting, and rescue services, the Local Police, the Civil Guard, and health services, all of which were required to operate based on principles of cooperation, complementarity, and operational efficiency. The plan was designed to address situations of serious risk, catastrophe, or public calamity within the island's territory, with the aim of protecting people and preserving the environment and assets at risk.

The PLATERME established the general organizational structure required to respond to emergencies arising from risks previously identified within the plan itself, should those risks materialize. To this end, it provided for the coordinated integration of services, assets, and resources belonging to both local public entities and private entities on the island, as well as the potential incorporation of resources from other public administrations, based on criteria regarding prior allocation, availability, and concurrent operational needs. Furthermore, the plan enabled the functional and operational integration of lower-level planning instruments, such as PEMUs, Citizen Self-Protection Plans for established communities, and Corporate Self-Protection Plans, ensuring their proper alignment with higher-level planning instruments like PLATERBAL, in accordance with the principles of territorial coherence and planning hierarchy.

4. Results

Based on the analytical categories used in the study, the following results derived from the document review can be interpreted. First, we observe a significant acceleration in implementing municipal emergency instruments in the Balearic Islands since 2024, with a particularly noticeable impact in Menorca. According to available official data, as of April 2026, the regional system comprised 31 approved instruments—14 PEMU, 14 PAL for forest fire risk, and 3 PAL for flood risk—of which 26 had been processed and approved during the current legislative term. This figure reflects quantitative growth and institutional revitalization after a prolonged period of limited official approval; however, from a territorial governance perspective, the situation in Menorca remains uneven across municipalities, and the mere fact of their formal approval does not, on its own, attest to the effectiveness of all approved plans in real emergency situations.

In Menorca, implementation is progressing unevenly but clearly cumulatively. Three municipalities—Ciutadella, Maó, and Ferreries—have an approved PEMU, while Es Castell and Es Migjorn Gran plans are currently under review. In addition, the eight PALs for forest fires have been officially validated, and the Local Action Plan for the Sant Joan festivities in Ciutadella has been approved. Taken together, these instruments expand the territorial scope of emergency planning and broaden the range of scenarios addressed, covering everything from natural and forest-related risks to situations involving large crowds and festive events with high operational complexity. The documentation examined allows us to identify how these measures were institutionally incorporated and how coordination was planned; however, it is not yet possible to verify their activation in specific situations, given their recent implementation across the three municipalities with approved PEMU and the eight PAL for forest fires. In contrast, the Local Action Plan for the Sant Joan Festival in Ciutadella—which is integrated into the recently approved PEMU and replaces the Master Security Plan—demonstrated its effectiveness during the festivities held last June; it ensured safety and regulated maximum capacity limits in the most critical areas, involving a deployment of approximate-

ly 500 personnel. Furthermore, the preliminary information campaigns proved effective in raising public awareness among visitors and residents, serving as a preventive driver of the Local Action Plan's success.

Secondly, the document analysis reveals a progressive technical standardization of the plans. The reviewed documents include common components aligned with the Sendai Framework guidelines, such as risk identification and assessment, territorial characterization, operational mapping, inventories of assets and resources, activation and escalation protocols, assignment of responsibilities, implementation and maintenance measures, and integration with regional coordination systems (particularly the 112 emergency service), which reinforce risk understanding, preparedness, and the conditions for resilience. This shared structure facilitates comparisons between municipalities and demonstrates greater alignment between local instruments and the regional civil protection framework (GOIB, 2025; GOIB, 2014; Ministry of the Interior, 2023).

Thirdly, the results show that emergency planning in Menorca is developed in close coordination with instruments for spatial planning, sustainability, and climate adaptation. The revised PTI incorporates an analysis of risks and vulnerabilities in areas such as the coastline, rural environments, and natural spaces, while Law 3/2023 on the Menorca Biosphere Reserve reinforces an integrated approach to land management. This alignment places civil protection within a broader spatial planning framework, where risk reduction is also linked to land-use regulation, environmental conservation, and strategic resource management. From a systemic risk perspective, this connection links civil protection with land use, environmental conservation, and strategic resource management, shifting the emphasis from response to prevention (CIME, 2020a, 2020b; GOIB, 2023; UNDRR, 2015).

Overall, the implementation assessment shows substantial improvement in formal municipal coverage and documented progress in administrative implementation coverage; however, it also confirms a gap in multi-level governance due to a shortfall at the island level. The absence of a fully operational PLATERME, which would allow coordination among the public services and entities involved in an emergency in Menorca, due to the dispute over emergency management competencies between the CIME and the GOIB, limits the capacity to functionally integrate municipal plans and establish intermediate coordination between the local and regional levels. This issue stands out as the primary outstanding element in Menorca's civil protection territorial architecture.

Given the study's scope—which focuses on documentation rather than field operations—this assessment cannot determine the frequency or quality of operational activations, nor can it demonstrate the effectiveness of these instruments during actual emergencies, with the sole exception of the Local Action Plan for the Sant Joan festivities in Ciutadella, where operational efficacy was successfully verified.

5. Discussion

Today, Spain is adopting an institutional architecture geared toward strategic convergence, driven by global and EU-level frameworks such as the European Green Deal, the EU Strategy on Adaptation to Climate Change (European Commission, 2021), and the Sendai Framework for Disaster Risk Reduction (UNDRR, 2015). The global and systemic nature of climate risks renders fragmented responses inadequate. Consequently, Spain has established a multi-level governance model for competencies spanning from the European Union to local government. This entails the progressive institutionalization of prevention, systematically integrated into policy and administrative design (Forino et al., 2015).

In Spain, implementation of emergency plans at the local level was previously very limited (Martin Romero, 2015); however, this trend has shifted in recent years, with numerous municipalities approving such plans (Martín Fernández, 2026). This process points to the growing institutionalization of prevention and administrative coordination, aligning with contemporary approaches to DRR and climate change adaptation, which converge across public policy. In a context where impacts

may intensify due to climate change and increased territorial exposure, local civil protection plays a strategic role given its proximity to the population, the territory, and directly exposed resources (Birkmann et al., 2022; Lavell et al., 2012; Martín Fernández, 2026).

The municipality acts as an autonomous entity in managing routine emergencies within its jurisdiction; however, it becomes a functionally integrated component subordinate to other administrative bodies when a crisis's exceptional nature requires regional- or state-level direction (Boix, 2026). The technical standardization observed in these plans has significant implications for multi-level risk governance. By establishing common structures for risk identification, responsibility allocation, resource inventorying, and operational activation, municipal instruments not only organize the local response but also facilitate integration into higher-level coordination frameworks. However, approval and official validation of municipal emergency plans are only the starting point; they must be followed by effective implementation—beyond regulatory compliance—through resource allocation, training, maintenance, updates, exercises, and, where appropriate, operational activation. Only evaluating drills or actual emergencies using verifiable indicators allows a claim of demonstrated effectiveness.

This is particularly relevant when contrasting Menorca's case with existing academic literature. Various authors, such as Cvetković (2025) and Zhang & Lee (2024), point out that the mere existence of legislation, strategies, and formal structures does not guarantee a high level of preparedness; it also depends on adequate staffing, equipment and infrastructure, accredited and continuous training, multi-level coordination, interoperability, and the availability of common procedures and metrics. From this perspective, the main challenge in Menorca is not limited to the implementation of emergency plans, but rather ensuring that municipalities possess the technical means, financial resources, specialized training, and inter-administrative support needed to maintain their planning instruments. As Martín Fernández (2026) notes, many municipal governments struggle to draft, update, and implement their plans properly, even within advanced regulatory frameworks. In island territories, these limitations are compounded by a reliance on external networks and the need to coordinate across different administrative levels.

Institutional preparedness through emergency plans must also be complemented by a social and adaptive dimension regarding climate-related risks. In this sense, the perception of climate vulnerability, knowledge of the link between climate change and disasters, and the willingness to adopt preventive measures vary according to sociodemographic factors, with education serving as a particularly significant predictor (Cvetković & Grbić 2021; Olcina, 2025; Olcina & Morote, 2026; Lee et al., 2015). In this regard, the Menorca Biosphere Reserve and its connection to public awareness are directly linked to emergency management through prevention, community resilience, and territorial protection.

The Sant Joan festivity case in Ciutadella expands the debate beyond traditional natural or environmental risks. Its inclusion demonstrates that local civil protection must also adapt to collective risks associated with cultural practices, large gatherings, temporary population surges, and the intensive use of public space. This dimension highlights the importance of combining technical expertise, local knowledge, public risk communication, and shared civic responsibility—aspects the literature identifies as essential for strengthening societal preparedness for emergencies (Vasileiou et al., 2022). In this regard, it shows how local planning can incorporate unique scenarios without losing sight of the broader logic of territorial resilience.

6. Conclusions

Menorca has evolved from the absence of local emergency plans to an operational, institutionalized model integrated into the Autonomous Community's emergency planning. Updates to legislative frameworks reflect public administrations' progressive adaptation to increasingly complex risk scenarios. Consequently, our main conclusion is that Menorca has developed a broader, more institutionally integrated emergency planning framework; however, it remains to be seen whether

this translates into improved real-world performance in the PEMU and the PAL for forest fires. The implementation of the Local Action Plan for the Sant Joan festivities in 2026 was successful and adhered to the plan's provisions.

The approval of three PEMUs, the fact that two others are under review for imminent approval, and the implementation of PALs for forest fires in all municipalities reflect substantial territorial coverage in terms of formality and projected preventive capacity. This is significant on an island characterized by seasonal tourism pressure, residents' environmental sensitivity, and rising climate risk.

In Menorca, forest fire management results reflect a historically low incidence and high effectiveness of the rapid response protocol, making it one of the least affected islands in the archipelago (GOIB, n.d.). For example, on September 1, 2026, Menorca recorded only three forest fires, the lowest number among the islands, affecting 1.81 hectares in total (Department of Agriculture, Fisheries and Natural Environment, 2026). This suggests that implementing PALs for forest fires across all municipalities—ensuring island-wide coverage—will strengthen forest fire management and, in all likelihood, sustain these positive results.

The Local Action Plan for the Sant Joan festivities demonstrates that local-level civil protection planning also addresses emergencies associated with major cultural events, large crowds, and the temporary use of public space. In particular, its implementation during the June 2026 festivities can be considered an operational success, resulting from efforts initiated by the previous Security Master Plan launched in 2017. The Sant Joan's Local Action Plan enabled coordination of the deployment of approximately 500 personnel from various sectors—including volunteers—managed crowd capacity in the most critical areas, and reinforced preventive measures through information campaigns aimed at both residents and visitors. However, the Plan's medium- and long-term success will depend on continuous evaluation and improvement. Administrative implementation in a formal document does not demonstrate the effectiveness of the Action Plan.

Emergency planning becomes more robust when linked to broad frameworks for spatial planning, sustainability, and climate adaptation. In this regard, the Menorca Biosphere Reserve Law and island planning instruments allow a shift from a predominantly reactive logic to a preventive, structural one, aligned with the Sendai Framework, Sustainable Development Goals, and European Union regulations. Civil protection is thus integrated into a more complex territorial strategy, where vulnerability reduction also depends on decisions regarding land use, critical infrastructure, water management, environmental conservation, and institutional coordination.

While challenges remain, the implementation of Menorca's emergency plans shows stronger multi-level risk governance. The expansion of municipal coverage integrated into the PLATERBAL and aligned with territorial and environmental policies creates conditions that strengthen prevention, preparedness, and response, although it does not in itself demonstrate an actual improvement in these capabilities. Such improvement could only be established through evidence regarding activation, exercises, performance, and outcomes. However, in our view, consolidating the system requires ensuring the PLATERME's operational viability as a structural instrument for island-wide coordination. Given the nature of the Balearic Islands Autonomous Community as an island territory—where each island possesses unique characteristics—and considering the powers granted to the CIME by the Island Councils Law and the fact that an island-level emergency plan, in our opinion, aligns with Spain's current legal framework for emergency management, we deem it necessary to integrate this plan into Menorca's civil protection architecture; the absence of PLATERME creates significant tension. While municipal instruments are moving toward greater coverage and consistency, the absence of a fully operational island-level plan limits the ability to integrate these advances into an intermediate coordination framework. Consequently, we consider that consolidating the PLATERME is a key prerequisite for transforming the observed improvements in emergency documentation into more robust risk governance.

In our view, another relevant issue is the need to establish municipal flood management plans. Climate change is causing progressive atmospheric warming and generating extreme weather events, such as torrential rains or explosive thunderstorms in the Mediterranean Sea. Furthermore, island

tourist zones are characterized by high natural hazard levels and the occupation of flood-prone areas—often the result of poor planning (Olcina & Díez, 2025). Although PEMUs include flood risk measures, the Special Civil Protection Plan for Flood Risk of the Balearic Islands (INUNBAL) requires municipalities with risk areas to have flood plans in place (GOIB, 2022). The review and update of the flood risk management plan (2nd cycle)—approved via Royal Decree 198/2023—identifies Areas of Significant Potential Flood Risk (ARPSI) in the municipalities of Ciutadella, Es Mercadal, Maó, and Sant Lluís (GOIB, 2022). Concurrently, the INUNBAL risk analysis identifies Es Castell, Maó, Alaior, Ferreries, Es Mercadal, and Ciutadella as high-risk municipalities.

Finally, as authors such as McEntire and Myers (2004) and Alexander (2015) note, effective emergency planning requires fostering a culture of prevention, providing technical training, conducting periodic drills, allocating adequate resources, regularly assessing the operational viability of plans, and continuously updating emergency plans. Furthermore, it is advisable to strengthen inter-institutional coordination and ensure coherence among the various instruments affecting the specific territory, so that emergency responses are proactive, integrated, and adapted to the island's characteristics.

The case of Menorca illustrates how institutionalizing local and island-level civil protection instruments can help consolidate a more robust risk governance framework aligned with contemporary approaches to territorial resilience. Only by combining formal standardization, institutional learning, and constant adaptation will it be possible to transform planning into an effective tool for protecting the population, preserving the territory, and responding to increasingly complex emergency scenarios.

6.1. Limitations

This study presents certain limitations that should be considered when interpreting the results. First, it is based on a qualitative document review; consequently, the findings depend on the sources consulted. While this approach allows examining the regulatory, territorial, and organizational architecture of emergency planning in Menorca, it does not permit a direct assessment of the plans' operational effectiveness in actual emergency situations. Nevertheless, based on the documentation reviewed, the Local Action Plan for the Sant Joan festivities has proven to be effective.

Secondly, the analysis focuses on the formal implementation of the instruments and their institutional coordination mechanisms. It does not include interviews with technical or political officials, observation of emergency drills, or a comparative assessment of how the coordination arrangements function in practice. Consequently, the study evaluates the system's level of documentary and institutional development, but not its practical performance or the actual response capacity in specific events.

Third, the lack of quantitative indicators on operational performance, public perception, response times, inter-agency coordination, or territorial impact limits the capacity to measure how these plans translate into improvements in social and institutional resilience. Future research could complement this analysis with fieldwork, interviews, surveys, reviews of emergency drills, and comparative studies involving other islands or territories to better understand the relationship between formal planning, institutional capacity, and effective risk management.

Finally, this study is specific to Menorca, which limits the generalization of its findings to other territories or administrative contexts. However, we think it offers useful insights into how emergency planning, civil protection, territorial planning, and sustainability integrate in sensitive islands under intense seasonal pressure.

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