OPINION
ON NATURAL AND CLIMATIC RISKS IN THE PYRENEES

Transboundary action and cooperation document of the LIFE SIP Pyrenees4Clima Project. **Monographic**

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The entities participating in the LIFE-SIP PYRENEES4CLIMA project issue a joint call to all public administrations, the media, and citizens of the Pyrenees to ACCELERATE action in the face of the growing RISKS associated with climate and global change that threaten MOUNTAIN areas. The Pyrenean Climate Change Observatory (OPCC), in collaboration with the 46 partner entities of the project, is putting at the disposal of the territory its scientific knowledge, experience and recommendations, the result of sustained work in transboundary cooperation, with the aim of strengthening the resilience and safety of the Pyrenean massif in the face of the effects of climate change.

Context

The Pyrenees4Clima project, an integrated LIFE project created and developed by the scientific community, regional administrations, territorial managers and civic associations of the Pyrenees, has among its main objectives to provide effective responses to risk situations derived from climate change that directly affect natural ecosystems and human societies.

We find ourselves in a context marked by an especially devastating summer in 2025, with two heatwaves of great intensity and duration, and large wildfires that have seriously affected the Iberian Peninsula and south-eastern France, particularly mountain areas. The serious damage to the territory makes it urgent to identify the risks which, in an interconnected way, affect the Pyrenean territory, increasingly exposed to extreme hydro-climatic events and to changes in land use and territorial management. Risks amplified by increasingly frequent extreme climatic phenomena (heatwaves, floods) have direct consequences on people's lives, on the overall health of ecosystems, and on the viability of territorial resources and uses.

The Pyrenean Climate Change Strategy (EPiCC), a strategic framework document to strengthen the resilience of the Pyrenean territory, approved by the four Pyrenean autonomous communities of Spain (Catalonia, Aragon, Navarre and the Basque Country), the two French regions (Nouvelle-Aquitaine and Occitanie), and the Principality of Andorra, and in line with the work of the expert group of the LIFE Pyrenees4Clima project, recognises the need to transfer and replicate inspiring examples that promote and generate mitigation and adaptation actions to climate change in the Pyrenees. Such action is only possible through **cooperation and coordination** based on a rigorous understanding of natural phenomena, climate variability and territorial management, and guided by a systemic, multidisciplinary approach oriented towards concrete results in adaptation and prevention in view of future climate scenarios.

In a complex territory such as that of the Pyrenean mountains, this challenge must be addressed with prudence and boldness, aware that we are on the threshold of a situation aggravated by the effects of climate change and by rapid social and economic evolution in recent decades. The Pyrenean massif still retains landscapes and territories of great ecological and environmental value, generators of resources and providers of unique services for mountain and valley populations, forming the core of our culture and territory. It is therefore necessary to seek a collective response and a shared approach from the Pyrenees in order to improve resilience to adverse natural phenomena.

The entities that make up the Pyrenees4Clima project STATE:

1. Key information on the current and future situation

The Pyrenees are undergoing accelerated climate transformation, with an increase in average temperature of 1.9 °C since 1960 (BICCPIR, 2023), which places us 30 % above the world average, together with a reduction in snow cover, more frequent and severe droughts and heatwaves that cause water stress and forest dieback. These factors, combined with land-use changes (abandonment of traditional agro-pastoral activities and reduced forest management, with less use of firewood and charcoal), can intensify the frequency and virulence of forest fires. Likewise, other climate-related risks such as torrential rainfall and its associated hazards (floods, landslides) are expected to occur more recurrently and intensely in the future.

Summers are increasingly warm, and 2025 has set a new record in terms of potential impacts on human and animal health, putting current emergency systems under strain and making it necessary to improve early-warning systems operating in the territory. According to an analysis of data from EFFIS / Copernicus, forest fires have already burned more than one million hectares in the European Union this year. In Spain, according to specialised information sources, the historical record of burnt area has already been exceeded in 2025, with more than 400,000 hectares, representing 40 % of the total burnt area in the EU.

Forests, which cover nearly 60 % of the Pyrenean massif, play a key role in climate change mitigation by acting as carbon sinks, biodiversity refuges and providers of local, renewable materials. In addition, their ecological and landscape value contributes to the attractiveness of the territory and the development of nature-based tourism. All of this highlights the particular interest of these areas, due to their essential protective functions against risks to society and nature. These functions and the benefits provided by forest massifs are transformed into negative effects when they are affected by fires.

In Spain, in just a few days in August 2025, the burnt area increased from 47,000 hectares to 350,000 hectares, revealing massive spatial spread in a very short time. These fires therefore mark a new stage in terms of intensity and complexity. Mega-fires and/or so-called sixth-generation fires are characterised by extreme, self-sustaining behaviour that makes them uncontrollable. They generate their own meteorological conditions (pyroconvection and pyrocumulus), have multiplied destructive capacity and a progression that is difficult to predict. Formerly limited to subtropical areas, these fires now occur in south-western Europe, particularly in Catalonia, Aragon, Navarre and southern France. It has been observed that 60 % of the area burnt in Spain in 2025 was at altitudes above 1,200 metres.

The acceleration of climate change increases the risks to the main pillars of the Pyrenean bioregion: its ecosystems, quality of life, tourist attractiveness, agricultural and forestry activity, and territorial and demographic balance. These effects of climate change also generate increasingly warm atmospheric conditions that require much less energy to alter, favouring the occurrence of more virulent fires in the form of fire storms.

More specifically, it should be borne in mind that:

- The main climate models (time horizons 2030–2050–2100) project an increase in meteorological fire danger (FWI) and a lengthening of the fire season, particularly in the central and eastern Pyrenees, with marked differences between the northern and southern slopes. A reduction in the window of opportunity for extinction is also observed. In the last five years, fires with nocturnal spread have been reported, due to an increase in the number of hot nights (above 30 °C in the Pyrenees and Pre-Pyrenees). Under these drier and hotter conditions, fires can easily exceed traditional operational capabilities.
- In this context, the transition from crown fires to convective fires, the continuity and high load of fuels, and high atmospheric temperatures favour the occurrence of intense pyroconvection, with fire storms.
- These events cause irreversible ecological changes: high-mountain soils and forests may lose their capacity for regeneration, leading to their replacement by heliophilous shrub formations, accelerating the thermophilisation process and the appearance of irreversible erosion phenomena which may lead to drastic transformations of the landscape and of the living beings that permanently inhabit it, with loss of genetic heritage.
- It is evident that society is insufficiently aware of the role and ecosystem function of extensive livestock farming and sustainable forest management; in all cases, the negative impacts are better known than the many positive aspects of these practices. It is necessary to progress towards a better differentiation between extensive livestock practices and close-to-nature forestry.

- The lack of regulated training, the absence of recognised official certification for the profession of shepherd, and the lack of adequate training for the maintenance and creation of resilient landscapes have a major impact on the development of a primary mountain sector adapted to the new parameters of a sustainable and resilient economy.
- Multi-actor organisations oriented towards care and defence of the territory are rare. Yet this approach is essential for the prevention of fires and other extreme phenomena. Forest Defence Groups (ADF), Communal Civil Security Reserves (RCSC) and Municipal Forest Fire Committees (CCFF)[1], are examples to follow. All these organisations bring together forest owners, farmers, municipalities and other actors concerned, with the main objective of collaborating in the prevention and fight against forest fires and, in some cases, of promoting sustainable forest management. There are also other organisations focused on rural development (Local Action Groups – LEADER) which should be more oriented towards structuring a young, innovative primary sector adapted to new climate scenarios.
- The current decline in land use and in the exploitation of many forest and agricultural areas should be seen as an opportunity to reorganise and clarify property, and to implement differentiated management of high-risk areas (of fires or other hazards), based on transfers, agreements or auctions. To do this, major obstacles must be overcome, such as lack of access to land and high prices, dispersion and inaccessibility of properties, absence of title deeds and outdated cadastral information, among others.
- Risk perception among the population remains low. Citizens do not associate their everyday practices (unauthorised agricultural burns, conflicts of use, negligence, etc.) with the origin of fires. According to the Ministry for Ecological Transition (MITECO) and data from the European EFFIS system, between 80 % and 95 % of fires in the Pyrenean and Pre-Pyrenean region are caused or triggered by human activities, albeit with diverse motivations.

[1] In the case of RCSC and CCFF, these are groups of volunteers who help monitor forest areas during periods of risk. During a crisis, these volunteers are available to the mayor and the commander of rescue operations to provide support to firefighters.

As indicated in the MONTCLIMA report (2021), we are facing a dual climate and territorial crisis. Climate change and rural decline increase the conditions that heighten the fuel load, leading to uncontrolled vegetative growth in mountain areas which, moreover, due to high temperatures and droughts, have increasingly low moisture content. At the same time, there is a reduction in local (proximity of intervention teams, accessibility), regional and national response capacity (lack of communication and absence of methods adapted to current conditions). It is also necessary to bear in mind the effects of combined risks and the complexity of the response to intensified and cascading impacts, which also affect human health (One Health).

2. Ongoing inspiring practices:

A significant number of experiences and projects funded by European funds have focused on this situation. Among them, the LIFE MIDMACC, Interreg Sudoe-MONTCLIMA and LIFE-SIP PYRENEES4CLIMA projects have shown that landscape management through extensive grazing, clearing operations and adaptive forest management, applied to the restoration of agro-forestry mosaics, improves resilience to fires and reduces erosion in high-risk sectors. These interventions also reduce potential chain reactions with other natural risks (floods, debris flows and landslides, among others). They also highlight the need to consider and review socio-economic aspects linked to territorial and social dynamics, and to public policies that do not respond to current patterns and needs.

The LIFE-SIP PYRENEES4CLIMA project brings together the most recent experiences and defines 33 lines of intervention covering key aspects for addressing natural and climate risks, incorporating a multidisciplinary vision and ensuring the involvement of local actors, thereby generating the capacities needed to better confront risks and, in particular, fire risk: LIFE PYRENEES4CLIMA catalogue of demonstration experiences.

1. **Creating a real-time platform for climate risk monitoring at Pyrenean scale.** The aim is to develop a climate services platform for droughts and extreme heat episodes, providing real-time information that is useful and accessible to society as a whole, as a decision-support tool. This will be complemented by modelling of climate scenarios at 1 km² resolution.

2. **Deepening a clear and balanced vision of mountain uses: tourism, grazing, forestry, etc., and their necessary complementarity.** This action addresses the main challenges associated with balanced management of mountain uses, from a holistic, global and integrated approach. It proposes mediation actions (with

visitors) for improved management of tourist flows (in the most frequented areas). These actions help reduce risks and vulnerabilities.

3. **Assessing and making visible the ecosystem services of mountain areas.** This action capitalises various models that highlight the ecosystem services generated by mountain areas, including agro-pastoralism and mosaic silviculture, while remaining compatible with biodiversity conservation and the existence of areas reserved for ecosystem maturity. It also contributes to maintaining water resources and soil quality, which are indispensable for lowland areas. This information is made available to local and regional entities so that they can more effectively adapt their resilience strategies and raise awareness of the strategic and economic value of these services for the entire Pyrenean territory.

4. **Ensuring the continuity of extensive livestock production systems, recognised for their ecosystem services, incorporating technological advances and services for farms and workers, and making the model more attractive to young people**. Interventions aimed at restoring and maintaining resilient landscapes also increase the natural resource base for animal feed, while improving the economic basis of farms through support for pastoral management and the economic viability of the activity. At the same time, they help control the advance of scrub encroachment and the build-up of vegetative fuel, and favour the maintenance of agroforestry mosaic landscapes, thereby contributing to improved territorial planning, availability of natural pasture for livestock and reduction of fire risk.

5. **Valuing pastoral products, both food and non-food (such as wool).** The aim is to consolidate socio-economic models based on a renewed form of extensive livestock farming, generating new models of economic activity and new marketing channels. Together, these actions will maintain or restore activity and the presence of active people in the territory, particularly in open mountain areas, and consequently reduce the risk of fires.

6. **Promoting diversification of mountain agriculture with local fruit trees, vines, medicinal and aromatic plants, and truffle cultivation.** The intention is to select and introduce local and commercial varieties of fruit trees and to promote traditional practices and emerging opportunities through the establishment of new crops adapted to climate change in mountain areas. Land-use arrangements are also proposed that contribute to the conservation of traditional mosaic landscapes, enhancing resilience to risks such as fire.

7. **Promoting the forest-wood value chain to improve forest adaptation and development in the face of climate change.** The aim is to deploy an integrated forest management model that takes into account the “forest–wood” value chain, considers the multifunctional nature of forests and establishes a

connection between forest and territory. To this end, it is essential to establish dialogue and joint action between upstream and downstream stages of wood processing. The objective is to achieve silviculture adapted to the ecological functioning of these forest habitats, reducing risks and generating greater added value for the mountain economy.

8. **Supporting local and inter-municipal risk management and planning in the Pyrenean territory**. This action seeks to develop a risk resilience strategy, with specific objectives depending on the area, while promoting an appropriate level of governance, improved urban planning that takes into account risks, and a risk culture aimed at citizens as territorial actors, from a multi-risk perspective.

9. **Promoting the use of nature-based solutions (NBS), particularly the protective function of forests against avalanches, mass movements / rockfalls, landslides and torrential risks in the Pyrenean territory**. These solutions have lower installation and maintenance costs, low carbon footprints and better landscape integration, while promoting a circular economy. The aim is to gather, describe and apply different NBS methodologies, considering the protective role of mountain forests in the Pyrenees. Experiences and results are analysed and evaluated, as well as their potential for replication and scaling up, with the creation of a georeferenced NBS inventory.

10. **Strengthening the restoration of geo-ecological processes and soils, together with the development of the local seed-production sector**, to improve knowledge and techniques for ecological restoration in high mountain areas. This also involves disseminating good practices through networking.

11. **Strengthening prevention and management measures for invasive alien species as a driver of habitat and ecosystem transformation.** The objective is to improve prevention and management practices by drawing up protocols, common monitoring methods and transboundary prevention and control plans.

12. **Identifying key areas to ensure ecological connectivity at the scale of the Pyrenean massif.** Based on this analysis, the main causes of fragmentation are identified, key habitats vulnerable to climate change are located, and prevention, conservation and restoration measures are proposed.

13. **Supporting small mountain municipalities in implementing Climate Stewardship Agreements and/or Communal Civil Security Reserves (RCSC).** These instruments make it possible to mobilise the population and coordinate climate adaptation and resilience actions, and thus improve preparedness for extreme events.

3. Main RECOMMENDATIONS to activate Prevention and Preparedness for mega-fires and adverse natural phenomena in the Pyrenees

Nº	Specific recommendation	Technical description and actions
1	Prioritise mosaic landscape structures and promote mixed forests	Transforming and managing the current landscape into a mosaic landscape and mixed forest is necessary to avoid high-intensity fires and prevent them from exceeding extinction capacity. *It is necessary to:* • Promote agro-silvo-pastoral models, which requires a series of coordinated actions and a review of rural support policy in order to achieve a diversified territory, better allocation of existing resources and greater complementarity. • Plan at landscape scale, defining strategic actions at local and regional level that allow a shift in the model towards prevention and towards integration of primary-sector activities (forestry, agriculture and livestock), and ensuring their respective value chains within the same territory.
2	Revitalise and guarantee extensive agriculture and livestock grazing at regional scale	It is essential to reverse the trend of loss of extensive livestock farming and mountain agriculture, in order to halt the spread of scrub and dense forest and to make these activities more attractive through modernisation that guarantees their contribution to climate and ecosystem services, particularly in high-risk areas. *It is necessary to:* • Integrate agri-environmental incentives that encourage better management of plots and properties. • Support local cooperatives in order to ensure the economic and social viability of mountain farms and to improve the quality of life of those engaged in these activities. • Incorporate technologies for livestock monitoring (virtual fencing). • Integrate pasture quality control. • Diversify economic models linked to environmental grazing and native breeds. • Create landowners' associations or public land banks that facilitate joint management of non-wooded forest areas.

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3	Promote evolution in the way support and payments are allocated to the primary sector, both under the CAP and from national and regional resources	The Common Agricultural Policy (CAP) is undoubtedly one of the main financial instruments for bringing about the structural change in the landscape that is needed, but it must be reoriented and the payment system must be modified in order to improve its efficiency, accelerate responses and make necessary transformations possible. These subsidies and bonuses, combined with other regional and national funds, will make it possible to address many important aspects for ensuring the resilience of the Pyrenean territory. *It is necessary to:* • Link CAP payments both to livestock (number of head), to hectares (including mountain grazing areas) and to the ecosystem services they provide (provision, food production and environmental services). • Review the maintenance of CAP entitlements for retired farmers and abolish the maintenance of entitlements for inactive livestock farms. • Promote transition contracts and compensate retiring livestock farmers who facilitate the transfer of their entitlements and holding. • Promote transfer of CAP entitlement ownership from private owners to the State. • Modify the subsidy coefficients for CAP pastures to include wooded pastures among eligible areas. • Rethink regional subsidies, particularly those aimed at areas with difficult access, in order to reorient them towards truly extensive farms located in remote and mountain areas. • Rethink subsidies promoting the integration of young people and local enterprises involved in forest management, and favouring a low-impact mechanisation of the sector. • Guarantee agricultural use of pastoral areas and strengthen property management and pasture restoration tools (such as pastoral property associations or grazing groups). • Promote land consolidation in forest areas to facilitate their management (updating title deeds, improving access, increasing plot size, etc.). • Promote payment systems for ecosystem services based on clear, easily verifiable indicators, ensuring agile management and results-based payment. • Develop a market for environmental credits or bonuses (CO_2, water, biodiversity) inspired by Catalan and Andorran models, including pastoral ecosystems and encouraging private investment in local restoration. This

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		initiative could also generate new activity opportunities in the field of environmental certification and offsetting. • Draw up multi-annual sylvo-pastoral plans for critical areas.
4	Implement a "Pyrenean Emergency Protocol for Fires", with interoperable meteorological and mapping data, availability of resources and crisis communication	Regulatory and communication differences among Spain, France and Andorra slow response. Fires cross administrative borders without unified mechanisms. A more effective and coordinated response is needed. *It is necessary to:* • Guarantee interoperability of equipment and mutual knowledge of procedures and resources. • Improve the exchange of information, protocols and available means, and effective cooperation agreements across the entire Pyrenean territory.
5	Develop specific, transboundary and inter-administrative safety and firefighting protocols for pyroconvection	Fighting high-intensity fires, which release large amounts of heat by generating convective columns and creating their own atmospheric conditions, requires new approaches and modes of intervention. *It is necessary to:* • Integrate real-time meteorological simulations into planning. • Coordinate teams and available resources adapted to the new characteristics of events. • Define protocols and make emergency equipment and resources available. • Train crews and share knowledge among them for pyrocumulus scenarios, in order to ensure maximum safety and effectiveness in interventions.
6	Prioritise training of professionals and volunteers at local or supra-municipal level	In mountain areas, where forest cover is extensive, it is necessary to have teams prepared to intervene in fires at the initial stage and reduce the number of simultaneous outbreaks. *It is necessary to:* • Encourage rapid extinction, provided that the necessary basic means are available. • Establish continuous training on how to act when a fire starts. • Promote a culture of risk and carry out simulation exercises.

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		• Ensure joint training and work by mixed groups of professional fire-fighting bodies and livestock farmers, in order to guarantee best practices in controlled burning (use of technical fire).
7	Maintain a Pyrenean early-warning system with high-resolution data and local validation	It is essential to continue integrating key data and tools for fire management, from universities, AEMET, Météo-France, SMC, SAM and other meteorological agencies operating in the territory. *It is necessary to:* • Generate applicable indices based on a sufficiently robust information base. • Continue strengthening the link between climate research and operational management with real-time systems, particularly for drought and heatwaves. • Study fires on a historical basis in order to carry out modelling that enables more effective intervention, both technically and scientifically, taking climate scenarios into account.
8	Adapt surveillance and extinction calendars to the new risk seasons	The increase in average temperature (+1.9 °C in the Pyrenees since 1960) and the reduction in summer rainfall lengthen the duration of events such as droughts and the fire season. *It is necessary to:* • Implement a permanent real-time monitoring system. • Strengthen the monitoring network for water, atmospheric humidity and soil moisture in mountain areas. • Integrate these indicators into decision-making systems. • Establish and disseminate fire-risk notices.

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9	Establish integrated sylvo-pastoral management plans at landscape scale, with common transboundary criteria and active participation of landowners, fire-fighting teams, agro-pastoral activities and forest management	Less than 30 % of the Pyrenean territory has active forest management plans. Lack of continuity between regions prevents control of fuel status and the necessary step from mere extinction to fire prevention. *It is necessary to:* • Jointly plan forest management with grazing areas and agricultural land, defining strategic points where extinction is possible and necessary. • Implement active planning, accompanied by multi-actor governance. • Support planning through training enabling rapid and safe intervention in emergencies. • Promote a close-to-nature forest management model, allowing forest resources to be used to produce wood for high-value structures (construction). • Promote the development of biomass plans in local entities, in order to prioritise the use of firewood / pellets as an energy source, in addition to forest management with other purposes (construction timber, etc.).
10	Draw up municipal multi-risk self-protection plans	The increase in leisure and tourist activities, as well as the proliferation of scattered rural dwellings in wooded areas, raises exposure to risk. In France, there are Municipal Safeguard Plans (PCS) and, more recently, Inter-municipal Safeguard Plans (PCIS), which are compulsory for all municipalities exposed to risks. However, in the southern Pyrenees, many municipalities lack self-protection plans and evacuation systems. *It is necessary to:* • Identify these risks according to the geography and activity of each municipality, and thus define, implement and activate the most appropriate measures to reduce exposure to risk. • Integrate these risks into urban planning and into an operational multi-annual risk-reduction and prevention plan. • Create wildland-urban interfaces and auxiliary strips, and establish inter-administrative and local alliances for their maintenance. • Implement a system of annual evacuation simulations. • Establish incentives for household-level prevention. • Promote, from local government, the construction of buildings in wood from local resources.

Nº	Specific recommendation	Technical description and actions
11	Promote the use of extensive livestock to maintain fire-protection infrastructure (firebreaks, auxiliary access strips, circulation strips, wildland-urban interface)	Encourage extensive grazing as a structural prevention tool, maintaining the landscape and creating the fragmentation needed for fire protection. *It is necessary to:* • Integrate maintenance of protection and access strips within grazing areas. • Assess fuel-load reduction needs and plan grazing accordingly. • Coordinate actions at local level with forest and civil-protection services. • Include professional monitoring. • Recognise the socio-economic value of grazing as a measure for climate change adaptation.
12	Implement pilot projects with communal, village and mixed herds	The decline of extensive livestock farming is an obstacle to the necessary increase in livestock presence in high-risk areas. *It is necessary to:* • Study in depth the different options offered by the three models of management for new communal herds: municipal, village and mixed. • Develop new regulations that allow these models to be implemented in the territory and respond to new collective arrangements. • Draw up administrative protocols that include aspects such as insurance, days off, holidays, result indicators, funding and product sales. • Ensure continuity beyond political change, through territorial alliances. • Seek new sources of public funding so that promoting municipalities receive support to cover costs (from rural employment, civil-protection schemes, etc.).
13	Apply nature-based solutions (NBS) and promote the protective role of new plantations.	Intense fires destroy soil organic matter and reduce infiltration. In mountain areas, a fire does not end when the flames go out. If rapid action is not taken, a chain reaction of hydrological, geomorphological and ecological risks may be triggered, whose cost and impact can exceed those of the fire itself, particularly on schist soils. Nature-based solutions (NBS) provide a viable and adaptive response.

Nº	Specific recommendation	Technical description and actions
		It is necessary to: • Promote and extend the definition and application of NBS that favour restoration of affected areas and prevent cascading effects. • Restore burnt areas with species adapted to new climate scenarios, ensuring a diversity of responses to future fires. • Control runoff using fascines, monitor soil carbon and encourage infiltration. • Analyse the protective role of existing massifs and closely monitor these areas to ensure their functioning and protection against events such as fires.
14	Implement official regulated training programmes and permanent environmental education	At present, knowledge on pastoral management, prescribed burning, regeneration felling and selective clearing for environmental purposes is clearly an option for rural employment and professional development in the prevention of emerging risks. Many of these traditional practices have been lost and others must incorporate scientific knowledge with a global, updated vision. *It is necessary to:* • Officially recognise training provided by shepherd schools and the function of fuel manager. • Enhance the social and professional value of pastoral activity. • Establish prescribed-burning plans (technical fire) as a regulated tool, coordinated with forest-management objectives and civil-protection criteria. • Advance in regulated qualifications and professional training, integrating these new areas of knowledge into relevant curricula. • Develop agro-forestry volunteer programmes, as well as citizen training and awareness-raising initiatives, to improve understanding of fire risks and other hazards, their causes, and self-protection and climate co-responsibility plans. • Create a support and capacity-building role-“forest and pastoral extension”- responsible for energising, coordinating and advising on preventive actions in rural areas.

Nº	Specific recommendation	Technical description and actions
15	Implementation of Multilevel Governance at Local, Regional and Pyrenean Scale	A multidisciplinary and multi-actor vision is necessary to efficiently address prevention, extinction and restoration in the face of extreme natural phenomena, which are becoming increasingly frequent due to the impact of climatic conditions. Likewise, the evidence that the consequences and damage generated in territorial and social dynamics, and in the functions and health of ecosystems and people, are more significant highlights the need for a differentiated organisational framework to strengthen coordination. *It is necessary to:* • Establish multilevel governance that integrates public administrations, local entities, associations and the private sector in territorial management (all sectors involved) at different scales: local, regional and transboundary. • Strengthen multi-actor organisations at the local level oriented towards the care and defence of the territory, such as Forest Defence Groups (ADF), Municipal Civil Security Reserves (RCSC) and Municipal Forest Fire Committees (CCFF). • Promote a greater focus on risk prevention and climate-change adaptation actions within county-level organisations dedicated to rural development (Local Action Groups – LEADER). • Contribute to the consolidation of transboundary governance at Pyrenean scale on climate-change and emergency issues, based on organisations such as the CTP and AECTs.
16	Implement a learning system based on sharing post-event experiences.	The current accelerated climate evolution and the context of uncertainty and complexity affecting mountain areas-particularly the Pyrenees-require cooperation and the creation of shared learning in order to achieve a high level of transfer and replication, thereby accelerating more effective recovery. *It is necessary to:* • Set up an open space for ongoing dialogue and exchange of experiences, especially at the local level. • Establish common monitoring protocols in the event of fires in order to extract lessons learned. • Organise and facilitate multi-regional and transboundary meetings that allow results and progress to be presented, and jointly adapt resources and actions. • Produce documents based on post-event learning.

4. Final Reflections

The climate emergency knows no borders. Only through effective cross-border cooperation, active local governance and stable financing will we be able to guarantee the safety, sustainability and habitability of mountain areas. The LIFE SIP Pyrenees4Clima project invites all institutions, organisations and inhabitants of the Pyrenees to join this collective response: ***to understand more in order to fear less, and to act today to protect tomorrow.***

The goal is to accelerate the response and prepare the Pyrenees for the most likely climate-change scenarios, considering the increasing human impact on the territory, and strengthening and expanding cooperation ties among entities and those responsible for administration, territorial management and civil society, within the framework of the actions foreseen in the LIFE SIP Pyrenees4Clima project on transfer and replication (WP10).

Inspired by Marie CURIE: *"Nothing in life is to be feared, it is only to be understood. Now is the time to understand more, so that we may fear less."*

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