

Article

# Through Smoke to Policy: Framing the EU Forest Fire Policy Landscape

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**Abstract:** The global community is grappling with a significant increase in forest fires' frequency, size, and intensity, presenting a profound challenge. To complement existing framing literature on forest fires, this paper examines collective frames applied to forest fires in a broader EU context. Employing a content analysis covering 354 EU policy documents—spanning both soft (non-legally binding) and hard (legally binding) policy documents—via the use of Atlas.ti, six collective frames on forest fires are outlined, identifying four as particularly dominant: 'climate adaptation and resilience', 'risk mitigation and protective governance', 'agriculture and rural development', and 'technocratic perspectives on forest fires'. These frames capture dominant perspectives promoted within specific policy domains, such as energy and agriculture. Despite the diverse approaches to framing forest fires and their varied objectives, a common thread connects the narratives in these documents, namely, the central theme of 'risk'. Whether it emerges in the context of reporting or as part of a call to action for adopting certain EU measures, the use of risk operates as a narrative device that negatively frames the discourse, consistently employed to call for action. The findings underscore the importance of considering communication strategies surrounding forest fires, particularly in light of their implications for forest governance.

**Keywords:** forest fires; EU forest policy; European Commission; framing; frame analysis



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## 1. Introduction

Fires constitute a significant natural hazard for European forests, causing extensive damage in forests and agricultural and urban areas. Wildfires cost up to 1 percent of most European countries' gross domestic product (GDP). Every year, fires in the European Union (EU) reduce around 500,000 hectares (ha) of forest to ash. Europe suffers over 50,000 forest fires every summer [1]. It is also worthwhile mentioning that during the exceptional heatwave in 2022, it was estimated that forest fires burned a record 786,000 ha of forest [2]. This is the largest area since records began in 2006 (see <https://www.euronews.com/my-europe/2022/08/18/forest-fires-have-burned-a-record-700000-hectares-in-the-eu-this-year>, accessed 5 September 2024). The increasing impact of mega-fires in Europe and globally emphasizes the relevance of studying how the EU views forest fires and other extreme weather disasters.

Forest fires are fundamentally complex (natural and anthropogenic) events with structural causes that are linked to land and urban planning, cultural traditions, climate, and weather conditions [3]. Even more, forest fire (or wildfire) policies differ significantly between EU Member States. This is due primarily to different risk exposure and management strategies across countries, political priorities, and governance structures, such as varied government agencies with distinct mandates responsible for fire risk management [1]. It is further linked to the EU subsidiarity principle, whereby the formulation of forest policies is the responsibility of the EU Member State, making forest fire management dependent on national and regional laws and regulations [4–6]. The implication of this legislative background for forest fire policy is that the EU has only been able to complement the efforts of its Member States, such as

providing financial assistance to forest fire prevention projects through its Rural Development Programs (RDPs) or the EU solidarity fund, funding research through EU Research Framework Programs, and the creation of a common European Forest Fire Information System (EFFIS) [7] (see <https://effis.jrc.ec.europa.eu/>, accessed 18 October 2022). For example, EFFIS is presently part of the emergency management services in the EU Copernicus program (see <https://www.copernicus.eu/en/copernicus-services/emergency>, accessed 18 October 2022).

There has been extensive critical analysis and academic work on forest fires, such as wildfire prevention, fire mapping and monitoring, and control and (integrated) management systems [8,9]. Scholars have, amongst other things, explored policy instruments and governance structures that underpin EU forest fire policies, looking at the roles of EU institutions, Member States, and local governments in policy development and implementation. Examples include Aguilar and Montiel [10], who critically examined governance mechanisms, emphasizing Mediterranean countries such as France, Greece, Italy, Portugal, and Spain, which are particularly vulnerable to wildland fires. Several additional studies have scrutinized wildland fire legislation and policies within the EU, indicating a trend toward harmonization and increased efficiency [11–13]. San-Miguel-Ayaz et al. [14] and McInerney et al. [15] have reviewed the European Forest Fire Information System (EFFIS), underscoring its significance within the EU's environmental policy framework. Additionally, there is a robust collection of research on the EU's Civil Protection Mechanism, detailing its critical function in orchestrating responses to forest fires across Europe [16,17]. Considering the escalating climate threats, researchers have increasingly concentrated on how EU forest fire policies integrate climate adaptation strategies to mitigate the increased risk of wildfires [18,19]. The expanding academic research into EU forest fire policy has improved our knowledge and understanding of managing forest fires.

While there have been many studies covering EU forest fire policy, management, and monitoring [7,11,14], particularly in Mediterranean Europe, there has been no analysis of how forest fires are being framed across relevant EU policy instruments to date. More specifically, the framing literature and empirical studies on forest fires have mainly focused on media framing of extreme weather disasters [20–23], such as on public opinions and responses to forest fires [23]. For example, Castelló and Montagut [21] studied forest fires in a Mediterranean context, identifying five media frames in Catalonia. These frames focused on agricultural risk, climate change, and weather conditions; imprudent and negligent attitudes; inappropriate fuel management and woodland conditions; and arson. Similarly, Seijo [24] reviewed how forest fires were framed through the lens of an anti-forest fire media campaign in Spain. More recently, Tietze et al. [25] examined the role of policy narratives regarding forest fires in civil and environmental protection and disaster management in Germany. Tietze et al. emphasize the relevance of narratives in shaping policymaking and disaster management.

Frames have also been extensively explored in EU forest policies. For instance, Elomina and Pülzl [26] analyzed EU forest-related policies by categorizing nine forest frames. This work revealed diverse perspectives across policy areas like the environment, bioenergy, and climate change. Similarly, Söderberg and Eckerberg [27] reviewed the narratives associated with bioenergy promotion, uncovering four frames demonstrating the debate surrounding biofuel production, ranging from energy security to rural development concerns. From another perspective, Bosomworth [28] adopted a new institutional perspective to examine how prevalent frames guide the discourse on adaptation, thereby shaping the forest sector's response to wildfires. This is complemented by Lidskog et al. (2019), who investigated public perceptions of wildfires in Sweden in a study that aligns with framing analysis. Their findings underscore the impact of personal experience, resources, worldviews, and framing on the public understanding of disasters. Further enriching this field of study, Kleinschmit et al. [29] explored different forest frames in the bioeconomy discourse. Beland Lindahl et al. [30] analyzed the framing of forests within Swedish policy frameworks. Social science research on forest fires tends to cover topics such as risk management and

perception [31–33], forest owners' preparedness [34], media coverage [35], and attitudes toward fire mitigation and adaptation [36].

The present paper intends to contribute to this study area by investigating the framing of forest fires in a broader EU context. The aim of this paper is two-fold. First, it will analyze how forest fires are framed in EU forest-related policy documents. This analysis will consider the values, priorities, and biases that underpin these frames, providing insights into the EU's policy approaches to forest fire management. Second, the paper will characterize the dominant forest fire frames articulated across different EU policy domains over time. By mapping out the dominant frames, this research aims to demonstrate how the forest fire discourse varies or aligns across policy domains, including environment, agriculture, rural development, climate action, and civil protection. This exploration will critically engage with the framing literature to distinguish between the types of frames used to describe forest fire issues. The overall intent is to complement the existing framing literature on forest fires, which has thus far primarily focused on media representations and public discourse. Through a mixed-method and grounded approach that combines qualitative content analysis and frame analysis, this paper will review a wide range of EU policy documents, including white papers, directives and regulations, communications, and action plans from the European Commission.

## 2. Background

### 2.1. *Who Framed the Forest Fire?*

With disciplinary roots in psychology and sociology, frames are generally considered a way for people (or institutions) to interpret—or frame—their immediate social and natural environment, providing a system that allows them to manage and classify information more easily. While there are several definitions of 'frames' and 'framing', it is the information filtering process that represents one of the shared assumptions underlying frame theory [37–41]. For instance, it is commonly argued that frames affect how people and institutions interpret information and make decisions [42,43].

Framing, in this context, is the active application of a frame, such as when a person emphasizes a specific aspect of reality [40,41,44] or interprets experiences, facts, and events [45–47]. This is similar to simple heuristics [48], which are cognitive shortcuts, or rules of thumb used to make decisions or judgments more easily. For example, when voting for a political candidate, voters might choose the candidate they have heard of over the ones they have not (this is known as recognition heuristics). This sense-making process is partly innate (e.g., cognitive), socially constructed (e.g., power relations), and learned (e.g., education), providing the basis for people to make decisions [49,50].

However, it is also important to distinguish between different traditions of frame analysis to avoid confusion. For instance, Rein and Schön's [42] approach to frames focuses on collective and individual frames, which differs from Snow and Benford's [44] approach. According to Rein and Schön, collective frames refer to specific lenses or narratives championed by stakeholders or institutions that aim to shape how forest fires are interpreted or articulated in policymaking. These frames result from complex interactions and negotiations between different actors, often leading to a consolidated perspective that would be reflected in the final policy document. In contrast, individual frames are typically advanced by single entities or small, like-minded groups. These personal viewpoints are unmediated by broader discourse and can exhibit more significant variance than their collective counterparts. In contrast, collective frames undergo a negotiation process and are often adjusted through compromise; individual frames are more individualistic and varied [51,52].

It is important to note that Snow and Benford [44], as referenced by Rein and Schön ([42], p. 89), also discuss individual and collective frames from a different conceptual perspective. Snow and Benford focus more on the mobilization potential of frames in social movements, whereas Rein and Schön emphasize the interpretative function of

frames within policy processes. These different types of uses of the frame concept can lead to confusion if not delineated.

Given these dynamics, it is anticipated that policy documents tend to reflect collective frames at the tail-end of a negotiated process. These documents serve as the outcome of a social and dynamic negotiation process, which results in a dominant framing of issues [53,54]. However, collective frames are not always transparent or overtly stated; instead, they often require careful reconstruction and interpretation to uncover. This paper will reconstruct these frames using EU policy documents to illustrate how forest fires are framed and assess whether the frames have evolved over time. For example, the evolution of the EU's approach to forest fire management from a predominantly reactive to a more proactive stance, emphasizing prevention and preparedness, reflects a shift in collective framing over the past decades [55,56]. This evolution can be traced through changes in policy language, funding priorities, and the implementation of initiatives like EFFIS, which has been crucial in monitoring and managing forest fire risks [57–59]. By analyzing these documents, this study hopes to highlight the dominant frames that have shaped EU policy on forest fires.

This review will, by design, only examine adopted EU policy documents that address forest fires in some capacity. The analysis is limited in scope by focusing solely on policy documents, principally, as this material does not cover the dynamics of the policy negotiation process itself. By stating this boundary, it is acknowledged that this paper cannot reconstruct the dialogue that resulted in these dominant frames (such as other frames that did not prevail). To do so would require a methodological framework that includes the analysis of draft texts, meeting minutes, stakeholder inputs, and interviews with key participants in the policymaking process. This is an area for future work that could provide complementary information on the forest fire policy discourse.

## 2.2. What Does the EU Do on Forest Fires?

Preserving Europe's forests is primarily the responsibility of individual EU Member States. However, various Directorates-General (DGs) of the European Commission (EC) still play a role in addressing forest fires, spanning activities from firefighting to restoration. These include the DG for Environment, Research, Agriculture and Rural Development, Regional Policy, and the DG for European Civil Protection and Humanitarian Aid Operations (ECHO). Historically, one of the initial EU policy frameworks for combating forest fires was established by [60], which, from 1992 to 2002, backed national forest fire prevention and restoration efforts. This was superseded by the Forest Focus Regulation [61], which maintained the momentum in supporting preventative measures against forest fires. Subsequently, the LIFE program [62], which extends its financial support until 2027, took over the objectives of the Forest Focus, focusing on forest monitoring, information systems, and the prevention of forest fires.

Complementing these efforts, the Common Agricultural Policy (CAP) and the regulation supporting rural development via the European Agricultural Fund for Rural Development (EAFRD) offer additional support (Regulation 1305/2013). This includes backing for forest restoration and preventive actions against fires, and it compels Member States to identify high-risk fire zones within their forest management plans. Moreover, the EU Solidarity Fund assists Member States in the aftermath of catastrophic events, including forest fires [63]. This support is operationally connected with the EU Civil Protection Mechanism (see [https://civil-protection-humanitarian-aid.ec.europa.eu/what/civil-protection/eu-civil-protection-mechanism\\_en#related-information](https://civil-protection-humanitarian-aid.ec.europa.eu/what/civil-protection/eu-civil-protection-mechanism_en#related-information), accessed on 5 September 2024), which guarantees the mobilization of emergency resources and personnel. This mechanism is significant as wildfires accounted for 30% of all assistance requests between 2007 and 2019.

In terms of coordination and advice, the EC's Emergency Response Coordination Center (see <https://ercportal.jrc.ec.europa.eu/>, accessed 18 October 2022) oversees forest fire risk and emergency monitoring in Europe, integrating national efforts with European monitoring services, such as EFFIS. Adding to this framework is the Expert Group on Forest

Fires (see <https://ec.europa.eu/transparency/expert-groups-register/screen/home?lang=en> accessed 18 October 2022), set up by DG Environment in 1998, which not only guides the EC and Member States on fire prevention and mitigation but also works closely with EFFIS to deliver EU-level assessments pre- and post-forest fires, including risk mapping and post-fire evaluations. This group has made concrete contributions, like publishing the 2021 guidelines on land-based wildfire prevention, reflecting its ongoing commitment to enhancing forest fire management across the EU [64].

### 3. Methods

#### 3.1. Finding and Selecting Policy Documents

The first step was to create a study sample. This was achieved by searching EUR-LEX (<http://eurlex.europa.eu>), an official repository of EU law and other public documents of the EU. An initial basic search using the keywords “forest” and “fire” provided 4362 hits.

Two advanced queries were carried out to narrow the number of documents, one focusing on soft documents (strategic and non-legally binding policy documents) and one on hard documents (specific and legally binding policy documents). The query on hard documents was an advanced search for legal acts, covering regulations, directives, and decisions but excluding implementing and delegated documents. This search resulted in a sample of 354 policy documents—208 soft and 146 hard policy documents (Supplementary Figure S1) (carried out on 10 March 2022). The period covered by the soft policies ranged from 1982 to 2021 and the hard policies from 1966 to 2021 (Supplementary Tables S1 and S2).

All policy documents were subsequently collated into an Atlas.ti 22 database for further analysis. The Supplementary Materials outline more details on the screening, queries, and samples.

#### 3.2. Determining Relevance, Coding, and Content Analysis

The next step was determining whether all 354 policy documents were relevant to the study. This was done through a two-step process: First, an initial “fire” frequency count was carried out. This allowed for an initial assignment of a low, medium, and high relevance score based on the frequency count (see Supplementary Materials on assigning relevance).

Second, each document was read to verify whether the assigned relevance was applicable. For example, in the Commission staff working paper Security Industrial Policy (SWD(2012)233), fire is mentioned 46 times; however, this is entirely in the context of fire alarms. In this case, a low level of relevance was assigned. 94 policy documents were excluded from the analysis at this stage as they did not address forest fires directly.

This was followed by a second, more in-depth content analysis conducted by screening the text of the 263 policy documents listed in Supplementary Tables S1 and S2 [65,66]. The strategy was to review all explicit references to forest fires. This was achieved by using the text search function in Atlas.ti, without considering the relevant context. The query was for paragraphs using the keywords ‘forest’ and ‘fire’, including inflected forms under the advanced model for English. This produced 608 paragraphs (or citations) for the soft policy instruments, including all inflected forms of forest and fire, and 235 paragraphs for the hard policy instruments.

The outputs from the content analysis were subsequently read and screened to codify all citations that referenced forest fires inductively. The codification took a grounded approach in that codes were assigned progressively depending on the findings [67] and focused on identifying the thematic focus of the citation [66,68,69]. The coding scheme grew to include 64 codes for categorizing all citations (see Supplementary Materials). For example, Council Regulation 1610/89 calls for “protective measures against forest fires” (No. L165/3) under the European Agricultural Guidance and Guarantee Fund. This was codified as: ‘agriculture’, ‘forest protection’, ‘funding’ and ‘forestry measures’. This approach made it possible to discover and systematically analyze relationships in the primary text material.



### 3.3. Frame Analysis

After coding the data, a co-occurrence analysis was conducted to identify the number of co-occurrences across the respective codes [69]. This analysis also examined the prevalence of codes within the different groups of documents (six groups: soft and hard policy documents, each categorized by low, medium, and high relevance). The results were presented in two tables, one showing frequency counts by document type and another showing co-occurrence across all 64 codes. For example, the ranking from high to low relevance is reflected in the coding. In soft policy documents, 1227 codes were assigned, with 830 (67.6%) found in highly relevant documents. These 830 codes came from only 38 documents, which is 23.2% of the entire sample, suggesting that the coding and analysis accurately reflect their overall relevance. Similarly, 429 codes were assigned in hard policy documents, with 242 (56.4%) in highly relevant documents. It is also worth noting that 54 search results were labelled as not relevant. This included 19 (3.1%) soft policy documents and 35 (8.1%) hard policy documents. These documents often contained weblinks or source references that mentioned forest or fire but did not contribute meaningful information. The higher proportion of non-relevant citations in hard policy documents was due to the inclusion of many reporting templates.

The frame-building process started by grouping themes (or topics) that frequently co-occurred, distinguishing between hard and soft policy documents. For example, themes like 'forest management', 'forest protection', and 'forestry measures' often appeared alongside 'agriculture' and 'rural development' in both document types. This grouping provided an initial understanding of thematic overlaps, including their relative dominance. Next, the thematic groups were ranked based on how often they co-occurred. For instance, 'climate change' emerged as the most prominent thematic group. All the citations attached to each thematic group were then reviewed to determine how 'forest fires' were characterized. This involved assessing the consistency of language and identifying variations between hard and soft documents and between different importance levels (low, medium, high).

In the final step, insights from the previous steps were synthesized and analyzed to construct collective frames on forest fires. This process accounted for variations across different types of policy documents [70]. Using a grounded approach allowed the study to move beyond identifying dominant themes to understanding their interconnections and implications in policy discourse, ultimately resulting in the characterized frames. While the analysis highlights the most prevalent frames, each identified frame is significant. Every frame has been integral to the discourse on forest fires and has influenced the transition from agenda-setting to policy formulation, aligning with arguments presented by Björnehed and Erikson [71].

### 3.4. Study Limitations

It is important to note that characterizing frames in hard policy documents can be challenging, as these are negotiated texts often developed by legal professionals from different epistemic communities [72–74]. Consequently, it is rare to find emotionally charged words or argumentative frames in these documents. This raises the risk that researchers' subjectivities influence the interpretation of information in legal texts. Although this is a common concern for text-based frame analysis [66,68], it warrants attention.

Moreover, the document analysis was limited to adopted EU policy documents. This implies the analyzed content does not account for the entire negotiation process. In other words, by focusing on final, adopted policy documents, the study might miss out on the frame evolution during the negotiation process, which could provide interesting insights into changing priorities or conflicts between stakeholders. It is, however, very difficult to access this type of content (e.g., stakeholder inputs and meeting minutes) for research purposes. Additionally, the volume of materials involved would likely require the analysis to zoom in on a few policy instruments.

Recognizing the complexities of textual analysis, including subjective interpretation of language and the challenge of distinguishing between frame devices and overarching

frames and topics, the grounded and stepwise approach allowed the study to systematically identify and categorize specific narratives on forest fires within the EU context.

## 4. Results and Analysis

### 4.1. Forest Fire Frames in Soft Versus Hard EU Policy Documents

The analysis indicates that non-legally binding policy documents (e.g., communications and reports), referred to as soft policies, mainly address forest fires within a descriptive framework. Specifically, 12.7% of the coded text in these documents present forest fires through a factual lens, outlining statistical impacts such as the area of land affected (e.g., number of hectares lost or restored), implications for risk management, allocated funding to fire prevention (e.g., LIFE+), and the relationship to broader environmental issues like natural hazards and climate change. These references commonly do not entail directives but serve as narratives that underscore specific viewpoints, such as the increasing socio-economic challenges posed by climate change.

On the other hand, hard policies, which are legally binding (e.g., regulations and directives), are more prescriptive. These documents commonly incorporate calls to action, such as mandates for research into innovative technologies to prevent and manage forest fires (definitions (e.g., other wooded land) are also primarily found in hard policy documents). For example, soft policies often disseminate research findings or outline project outcomes. In contrast, hard policies tend to outline calls for specific actions or interventions, such as national strategies to safeguard populations from environmental threats.

This trend is further reflected in the data, demonstrating that reporting requirements associated with forest fires, ranging from implemented strategies to firefighting efforts, constitute the most common topic within hard policies, accounting for 11.4% of all coded text. Given the inherent nature of hard versus soft policy documents, these differences were anticipated. However, it highlights a notable variation in language and framing between these documents. Regulations, for instance, typically feature more direct and action-oriented language than communications, which tend to include more nuanced and persuasive language.

In other words, soft policies, potentially subject to less negotiation and the absence of legal enforcement, often include language that carries more interpretive freedom, such as value-laden narratives that may not have survived the negotiation process characteristic for hard policy documents. These variations suggest that the linguistic choices and frames in soft policies (e.g., communications prepared by the EC) may be tailored more towards influencing the discourse in a way that hard policies, constrained by their formal weight and legal aspects, do not.

### 4.2. Forest Fire Frames

Table 1 presents a synthesis of six collective frames derived from the analysis, summarizing the topics associated with each frame. Essentially, the categorization of topics under specific themes (such as agriculture and rural development) provided the basis for the corresponding frames. It is important to highlight three observations at this point. First, there is a considerable degree of interconnection between the frames, and the distinctions mainly illustrate the diverse perspectives from which forest fires are approached and understood. For instance, discussions on climate change frequently intersect with those on sustainable energy, yet they are presented as separate frames for analytical clarity. Second, since the analysis is restricted to adopted policy documents, the frames reflect the end-products of policymaking. They do not cover the negotiations that shaped the policy documents *per se*. Third, since the content analysis took a grounded approach, all the frames do not conform to distinct EU policy domains (e.g., technocratic perspectives on forest fires).

**Table 1.** Collective frames across hard and soft policy documents.

Frame	Description
Climate adaptation and resilience	Climate change emerged as the most prevalent theme, referenced 285 times across legally binding (hard, $n = 149$ ) and non-legally binding (soft, $n = 136$ ) policy documents. Within these documents, forest fires are often characterized as a negative consequence of climate change, increasing the likelihood of fires with substantial socio-economic impacts. In this context, ‘fires’ are predominantly mentioned as part of a narrative construct ( $n = 49$ ), stressing the need for climate action by outlining the impact of inaction. Rather than being the central subject, forest fires are often presented alongside other natural hazards, such as floods, within the broader scope of disaster management strategies, including firefighting. In the discourse concerning forests, the dominant response to the threat of fires is framed around enhancing adaptation ( $n = 32$ ) and resilience ( $n = 15$ ), underpinning the prevailing notion that climate change and fire risks are unavoidable phenomena. Additionally, one notable point in the hard policy documents is the significant focus on financing ( $n = 44$ ), particularly concerning funding adaptive strategies designed to mitigate risks. This underscores financial commitments to addressing forest fires in the EU.
Sustainable energy transformation	As a thematic topic, energy does not address forest fires extensively ( $n = 29$ ); however, it is an interesting frame as ‘renewable energy’ and associated forestry measures are set up as a pathway to mitigate forest fire risks. This narrative suggests that by actively managing forest biomass at the ground level, for instance, through bioenergy production, it is possible to reduce the fuel available for fires, thus reducing forest fire risks. Distinct from the other frames, this positive framing sets out a narrative of mutual benefit (more sustainable energy = less forest fires) and as a tactical measure against forest fires. Alongside this, forest fires exemplify the adverse impacts of climate change ( $n = 10$ ), supporting the argument for policy interventions that facilitate the transition to renewable energy sources. This dual narrative serves as a warning and a call to action, linking energy policy with proactive fire management and climate mitigation strategies.
Technocratic perspectives on forest fires	‘Environmental monitoring’ and ‘data accessibility’ emerged as significant thematic topics, with 161 instances focusing on monitoring and 85 on data access. This frame represents a prevalent data-driven and technocratic narrative that emphasizes the role of information as a crucial tool for enhancing awareness-raising, firefighting capabilities, and comprehensive disaster management strategies. The importance of environmental monitoring and data is underscored by frequent references to tools like EFFIS ( $n = 102$ ), earth observations ( $n = 39$ ), and early warning systems ( $n = 44$ ). The significant focus on data and technological tools reveals a technocratic perspective on forest fires. For instance, the emphasis on reporting obligations, particularly in legally binding documents, underscores the importance of environmental indices and indicators. These data flows shape the understanding of the natural environment and influence perspectives and policies regarding forest fires. This frame reflects a commitment to technologically advanced stewardship and fire management.
Ecological diversity and stewardship	The theme of biodiversity and conservation, referenced 60 times, is significantly linked to the concept of forest management, mentioned 16 times, as a strategy to mitigate the effects of forest fires on biodiversity loss. This collective frame tends to depict forest restoration as a preventive measure against fires rather than to enhance biodiversity. This focus is expected due to the direct threat fires pose; however, it also reveals a prevailing negative perspective of forest fires within the policy discourse. Contrary to recognizing the potential natural role and ecological benefits of forest fires, the dominant narrative positions fire as detrimental, a consequence of inaction, and a challenge to conservation goals. Consequently, forest fires are consistently characterized as destructive events that jeopardize conservation efforts, reflecting an underlying assumption that forest management and prevention are essential to safeguard biodiversity. This framing underscores the urgency of intervention and the need for forest management practices that align with conservation objectives.



Table 1. Cont.

Frame	Description
Agriculture and rural development	Agriculture and rural development, referenced 226 times, directly engage with forest fires, primarily through the lens of the CAP and national RDPs. The discussion in this frame centers around strategic forest management, highlighting the funding mechanisms and incentives designed for forest fire mitigation, including prevention, protective measures, and control strategies. Notably mentioned 84 times, these strategies cover a range of activities such as wildfire prevention, post-fire restoration, and afforestation. Distinct from the narrative approach taken in other frames, this collective frame does not use risk as a narrative device. Instead, it focuses on concrete forestry actions and the investments that underpin efforts to reduce the frequency and impact of forest fires. This emphasis is likely linked to the legally binding nature of the CAP, as there is no need for the EC to ask for action. The documents within this frame pivot towards detailing the specific practices that may receive RDP support, such as direct and indirect fire prevention measures, aligning them with the objectives of European rural development policy.
Risk mitigation and protective governance	Disaster management, natural hazards, and civil protection emerged as a significant and standalone collective frame, marked by 208 instances in the analysis, which connect with different EU policy domains, predominantly those concerning water and climate. This frame is action-focused, highlighting the increasing threats to human safety, critical infrastructure, and economic stability. It underscores the need for proactive engagement, highlighting the allocation of funding, noted 36 times, for preventive strategies. These include initiatives for enhanced fire monitoring and national restoration programs to increase fire resilience, fostering EU-wide collaboration and strengthening capabilities for firefighting. This action-oriented frame is mainly concerned with societal vulnerabilities that arise due to forest fires, placing the preservation of human life at the core. The framing consistently points towards a need for heightened readiness and response, reflecting an awareness of forest fires' impacts on local communities and the environment.

The collective frames surrounding the forest fire discourse tend to emphasize escalating risks, with the discourse on renewable energy as a notable exception. Forest fires are often used as a narrative device across various EU policy domains, such as climate action and conservation, to rationalize the need for policy interventions. Forest fires are commonly presented with other natural hazards, suggesting that they do not always represent the central concern of the policy domain but are instead part of a range of environmental challenges. Distinctly, when policy documents zoom in on forest fires, the focus typically shifts to areas where the EU has explicit competencies, such as monitoring through EFFIS and improving civil protection measures. For example, EFFIS mandates include reporting on the frequency and extent of forest fires, reflecting the EU's commitment to monitoring.

The narrative of 'risk' associated with forest fires is framed variably across different policy domains. Within the renewable energy discourse, biomass removal from forests is presented as a means to diminish the risk of fires, thereby arguing for forest management to support renewable energy efforts. Conversely, the biodiversity frame casts forests as increasingly susceptible to fires in a changing climate, advocating for preventive actions and mitigation solutions to reduce this threat. This narrative use of 'risk reduction' in energy policies versus 'risk increase' in climate- and nature-centric policies exemplifies a broader dichotomy, namely, one that contrasts positive framing (promoting action through demonstrating benefits) with negative framing (encouraging action by highlighting adverse effects). Moreover, the use of forest fires as a narrative tool to explain the impacts of anthropogenic influences, such as the increased fire risks associated with climate change, is embedded in a broader narrative that characterizes forest fires as unnatural events that require human management and control. Such framing extends beyond environmental implications, touching on socio-economic aspects such as international trade and concerns over deforestation in areas like the Amazon. This would suggest that the discourse on

forest fires relates to the language of risk and the conceptual framing of fires to advance different policy agendas.

#### 4.3. Dominant Forest Fire Frames

Approximately 30% of all references to forest fires are related to four of the collective frames:

1. Climate adaptation and resilience: Forest fires with the broader discourse on climate impacts and mitigation efforts.
2. Technocratic perspectives on forest fires: Data-driven narratives concerned with the technocratic use of information to manage the forest fire discourse.
3. Risk mitigation and protective governance: Forest fires within the broader spectrum of natural disasters, emphasizing readiness, response, and protection strategies.
4. Agriculture and rural development: Forest fire management and forestry measures as they intersect with agricultural practices and rural development.

These frames prevail equally across both soft (34%) and hard (32.4%) policy documents, indicating their relevance across the different types of policy documents. When considering the narrative role of forest fires in a reporting context (e.g., monitoring obligations), calls for preventive action, and references to funding mechanisms or measures, the combined proportion of these collective frames increases to approximately 55% of all coded references. Notably, 56.7% of these occurrences are found within soft policy documents and 54.5% are found in hard policy documents.

These results underscore the dominance of these frames in shaping the policy dialogue around forest fires, reflecting their integral role in constructing policy narratives and informing the allocation of resources and development of strategic measures. Moreover, the prevalence of these dominant collective frames suggests that they mirror EU policy priorities. In support of this argument, the frames align with areas of EU competency within these policy domains. These findings also resonate with existing literature that discusses the fragmented nature of EU policies, particularly concerning forest management, a sector not under direct EU competency [6,26,75]. However, it is worth noting that this perceived incoherence is predominantly a macro-level issue. When examining individual policy domains, there is coherence in how each policy domain approaches forest fires, considering their specific mandates and objectives; the respective policy domains also make limited calls for improved/increased policy integration ( $n = 25$ ).

The consistent representation of these collective frames across soft and hard policy documents reinforces the notion of a deliberate and sustained focus on specific forest fire frames. This consistency underpins the argument that the EU systematically prioritizes approaches and solutions within its policy discourse. Furthermore, the uniformity of these frames across policy instruments suggests a strategic alignment and an intention to harmonize EU policy directions despite the overarching challenges of policy fragmentation.

The analysis also reveals a notable variation in how different topics are emphasized between soft and hard policy documents. Soft policy documents highlight issues such as climate change and adaptation strategies. In contrast, hard policy documents prioritize discussions around assistance, data/information availability, and development initiatives (Supplementary Figures S3–S5). This divergence likely stems from the inherent differences between legally binding documents, which are more prescriptive and oriented toward regulated action, and non-legally binding documents, which can explore topics beyond the scope of legal obligations and may incorporate more value-driven narratives. However, despite the variations in focus, the underlying consistency of the frames across various topics suggests a shared strategic narrative underpinning forest fires.

Additional layers of complexity are observed when document relevance is considered. For instance, the frame associated with ‘agricultural and rural development’ predominantly emerges from medium- to low-relevance documents. Conversely, ‘technocratic perspectives on forest fires’ is a frame that arises mainly from documents rated as highly relevant (Supplementary Figures S3–S5). Frames like ‘climate adaptation and resilience’ and ‘risk

mitigation and protective governance' are frequently found in soft policy documents classified as highly relevant. This contrasts with the frame of 'technocratic perspectives on forest fires', typically sourced from hard policy documents that are not accorded the same level of importance (Supplementary Figures S3–S5). This suggests that the EU's prioritization of topics within the forest fire policy discourse is not only a matter of content but also a reflection of the strategic importance placed on different policy instruments.

#### *4.4. Longitudinal Policy Developments and the Evolution of Forest Fire Frames*

Taking a longitudinal perspective on EU forest fire policy documents reveals significant shifts in the framing of forest fires, reflecting broader changes in policy paradigms and priorities. Initially, from the 1980s onward, EU policies predominantly focused on forest conservation, with early measures such as Council Regulations 3529/86 and 1696/87 primarily aimed at protecting Community forests against fires and atmospheric pollution. These early policies were characterized by a narrow, protectionist approach that emphasized fire suppression and immediate response to fire incidents. However, over the past 10–15 years, there has been a noticeable shift in policy focus. This period has seen a rapid increase in legislative activity related to forest fires, coupled with a growing emphasis on contemporary issues, such as climate action, renewable energy promotion, and circular economy principles at the EU level. This shift reflects a re-conceptualization of forest utility, moving away from a focus on timber production and reforestation to recognizing a wider array of forest ecosystem services, including recreation, public health benefits, and the provision of non-timber forest products.

Despite these changes in focus, the collective frames identified in EU policy documents show significant consistency over time. This longitudinal stability aligns with existing literature on using the ecosystem concept within EU policy, suggesting that dominant (or master) frames tend to remain stable, even as specific policy tools and narratives evolve [76,77]. The notable evolution resides in the proliferation of competing and alternative frames that reflect a broader diversification of policy tools and the increasing importance of specific narratives within the broader policy discourse.

The evolution of these frames can be traced through specific key developments. For instance, the increased legislative focus on climate change and disaster management has introduced new frames emphasizing risk mitigation and adaptive governance. These frames reflect a shift from a reactive to a more proactive position towards forest fire management, highlighting the importance of preparedness and prevention. Implementing initiatives like EFFIS has been crucial, providing a technological framework for monitoring and managing forest fire risks more effectively. Moreover, integrating forest fire management into broader climate and environmental policies has led to the adoption of frames that link forest fires to issues like renewable energy and biodiversity conservation. For example, forest biomass removal is often framed as a dual strategy to reduce fire risks and support renewable energy goals. Similarly, biodiversity-focused frames advocate for preventive measures to protect ecosystems from the increasing threat of fires exacerbated by climate change.

The analysis of policy documents also reveals how the EU's approach to forest fire management has become more comprehensive over time. Early policies were primarily prescriptive and action-oriented, focusing on immediate responses and legal mandates. In contrast, recent documents present a more holistic view of forest fires within the context of sustainable development, climate adaptation, and resilience building. This shift is evident in the language and framing of policy documents, which now more frequently incorporate terms like risk management, resilience, and sustainability. Despite this expanded view, the core frames have remained consistent, suggesting that while the specific focus and tools may evolve, the underlying narratives around forest fires continue to shape EU policy. This consistency underscores the strategic importance of these frames in guiding policy decisions and actions.

## 5. Discussion

Fire plays a critical role as a natural agent in shaping the ecology of forests, driving cycles of growth and regeneration that are essential to some ecosystems. Fire-dependent ecosystems rely on fires to facilitate the reproduction of specific plant and animal species. For example, certain conifers have adapted to fire, with some requiring the heat of a fire to release their seeds. However, the global community is currently confronted with a marked increase in the frequency, size, and severity of wildfires [1–3]. These developments highlight the need for continued research into forest fire policy and management. Building on the work of Aguilar and Montiel [10] and Montiel-Molina [11], this paper sets out to contribute to forest fire policy research by analyzing how fires are framed within EU policy frameworks, spanning non-legally binding (soft) and legally binding (hard) EU policy documents.

The analysis revealed six collective frames, each illustrating that the concept of ‘forest fires’ is used to communicate a narrative centered around risk within different policy domains such as climate action and civil protection. An exception is found within the renewable energy sector, where, despite a risk-oriented discourse, the emphasis is on opportunities to reduce risks through action. Nevertheless, independent of the positive or negative framing attached to these narratives, the primary function of framing forest fires has been to advocate for policy action. The urgency for policy action manifests in different ways, from advocating for adopting specific adaptive and preventive strategies (for example, within the framework of RDPs) to calling for investments in scientific research and technology and promoting biomass removal for energy purposes.

What differentiates the frames is not their call to action but the impacts they emphasize, such as on biodiversity or timber supply. In other words, the framing of forest fires is interlinked with specific policy domains and the knowledge communities (epistemic communities) shaping these discussions. These findings align with the conclusions of Castelló and Montagut [21] who identified multiple frames in media representations of forest fires. Notably, unlike their study, which focused on a Mediterranean context, this work highlights a broader EU policy perspective, showing that EU forest fire policies are framed predominantly around themes of climate adaptation and resilience, technocratic management, and risk mitigation [11,25]. Moreover, in contrast to Nilsson and Enander [23], who focused on media accountability and public perception, this paper emphasizes policy narratives and their implications, such as for disaster management and civil protection. This approach reveals a significant focus on proactive strategies and the integration of climate adaptation measures within EU policies. Furthermore, the role of epistemic communities in shaping policy narratives is well documented [78,79], and this study illustrates how these communities have influenced forest fire framing in the EU.

Forest fire frames are frequently employed in a reporting context, serving to disseminate scientific findings, provide updates on forest fire incidents in Europe and globally, and present activities carried out by different countries. Additionally, forest fires are often bundled with other risk factors, such as heatwaves, floods, and droughts, highlighting their shared vulnerabilities, including the loss of human life. Consequently, forest fires are usually presented as one factor within a broader framework of challenges, with climate change commonly providing the overarching context or problem environment. This implies that ‘forest fires’ seldom stand alone as the central theme of these narratives. This could be attributed to the limited competencies of the EU [4,5,75], which would explain why EU policy documents avoid addressing forest fires in isolation. The notable exceptions are in areas such as monitoring and reporting, where there are explicit legal mandates requiring EU Member States to take specific actions.

The frames, furthermore, vary in how they advocate for different types of solutions or measures across policy domains. This variation reflects underlying attitudes towards forest fires, portraying them as inevitable impacts associated with climate change or preventable events that can be managed through effective policy measures. For instance, within the ‘climate adaptation and resilience’ frame, the emphasis is on adapting to the impacts

of a changing climate. This frame calls for measures to limit and manage the effects of climate change. In contrast, frames concerned with ‘ecological diversity and stewardship’ and ‘risk mitigation and protective governance’ focus on what causes forest fires and advocate for preventive or mitigating strategies. These frames argue for measures that help avoid biodiversity loss or reduce the impact of forest fires. They also suggest that adaptive measures could inadvertently harm biodiversity by not addressing the underlying causes of forest fires. The distinction between adaptation and prevention, as articulated by these frames, has significant implications. It shapes how messaging on forest fires is interpreted and may affect attitudes toward the respective policy domains. In other words, how these frames are communicated can change how stakeholders perceive and define problems [80,81] and how they envision and pursue solutions. In this sense, forest fire frames serve as communication tools and lenses through which relevant actors view and respond to the issues surrounding forest fires [71].

This brings us to the impact of the collective frames, particularly regarding their influence on policymaking. Research has suggested that frames embedded in soft and hard policy documents are more influential and generate more actions [71,81]. The dominant frames, specifically ‘climate adaptation and resilience’, ‘ecological diversity and stewardship’, ‘agriculture and rural development’, and ‘risk mitigation and protective governance’, could shape the way epistemic communities conceptualize forest fires as a policy challenge, filtering their understanding through established perspectives and biases. However, the dynamic between experts and frames is complex, and it remains unclear whether frames influence the experts’ understanding or if the experts’ existing knowledge reinforces these frames. The current research cannot answer this question, yet it highlights an important issue: the potential for path dependency in policymaking. This implies that decisions and actions on forest fires are more influenced by past perspectives and decisions, even when new and innovative measures emerge [82]. This is exacerbated by the fact that technocratic problem framing is common practice in EU policymaking [70], with epistemic communities playing an important role in defining policy problems and recommending solutions, often relying on their specialized knowledge. This can also obscure the identification and interpretation of frames as experts tend to remove political considerations from the discourse [70,83,84], thus shaping policy formulation in a depoliticized context. This technocratic style of policy development is common in the EU’s system of expert committees, including those focused on forest fires. These committees support the policymaking process by bringing expert insights into deliberations and decisions [84–86].

## 6. Conclusions

This research uncovers a range of forest fire frames within the EU, most of which are linked to distinct policy domains where the EU has explicit competencies. The study highlights six frames, as presented in Table 1, with four emerging as particularly dominant. These dominant frames include ‘climate adaptation and resilience’, ‘technocratic perspectives on forest fires’, ‘agriculture and rural development’, and ‘risk mitigation and protective governance’. These frames tend to be siloed, suggesting that the specific narratives and perspectives associated with them have developed within their respective policy domains, often without significant cross-sectoral dialogue or collaboration. Despite the observed fragmentation, the consistency within individual sectors’ approach to forest fires highlights internal coherence. This internal consistency aligns with previous findings regarding the consistency within specific policy areas. The distinct policy boundaries identified in this study further reinforce long-standing arguments regarding the fragmented nature of forest and forest fire policy.

Despite variabilities across sectors in framing forest fires and the intended purpose of that framing, there is consistency in the narratives surrounding forest fire risks, whether within the context of reporting or in instances where the EU calls for the adoption of specific measures. In essence, the prevailing message across policy documents is one of caution, emphasizing that without proper policy measures to reduce, prevent, or mitigate



the consequences of forest fires, there are significant risks for potential losses spanning infrastructure, human life, and biodiversity. The application of ‘risk’ as a narrative device typically adopts a negative framing systematically used to call for action. This highlights the importance of framing effects and communication on forest fires within policy, considering the implications such framing has on policy development and public perception. In line with this argument, the frames identified in this study also reflect the influence of epistemic communities in shaping policy narratives and promoting specific policy actions. These communities bring specialized knowledge to the policymaking process, driving the framing of issues to align with their expertise and priorities. This technocratic problem framing, common in EU policymaking, can lead to depoliticized policy formulation, where technical solutions are emphasized over political considerations.

The findings of this research suggest that future studies should examine the perspectives and interactions of experts and stakeholders engaged in policy formulation concerning these frames. Additionally, investigating the values embedded within the frames and how they correlate with relevant policy objectives can provide deeper insights into the policy development process. For instance, understanding the values underpinning the emphasis on adaptation versus prevention in forest fire policies could reveal more about the priorities and motivations driving policy decisions. Moreover, a comprehensive review of the longitudinal stability and evolution of forest fire frames over time could offer valuable insights into possible future trajectories of EU forest fire policy. Such a review could enhance our understanding of how policy frames adapt to changing environmental, socio-economic, and political contexts.

**Supplementary Materials:** The following supporting information can be downloaded at: <https://www.mdpi.com/article/10.3390/land13091450/s1>; Figure S1. Number and types of policy documents included after the first screening; Figure S2. AtlasTi word cloud of high relevance soft policy document (e.g., communications and staff working documents); Figure S3. AtlasTi word cloud of high relevance hard policy documents (e.g., regulations and directives); Figure S4. Themes across hard policy documents; Figure S5. Themes across soft policy documents; Figure S6. Distribution of soft vs. hard policy documents across themes; Table S1. Soft policy documents (communications and staff working documents); Table S2. Hard policy documents (regulations, decisions, directives).

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