European Program for Wildfire-Prepared Communities

FIREPRIME

GA number 101140381

Co-funded by the European Union

Deliverable D7.1
FIREPRIME Sustainability Plan

WP - Task	WP7 Task 7.1	**Version (1)**	Final
Code (file name)	D7.1_FIREPRIME_SustainabilityPlan	**Dissemination level (2)**	PU
Programmed delivery date	31/01/2026	**Actual delivery date**	30/01/2026

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Abstract	This deliverable presents the sustainability plan for the FIREPRIME pilot sites, with a focus on ensuring the continuity and scalability of project outcomes beyond the project lifetime. It outlines how FIREPRIME can be maintained as a collaborative framework for wildfire risk management in wildland–urban interface areas. The document analyses the roles of key stakeholders, governance arrangements, integration into existing civil protection planning, capacity-building needs, annual programme functioning and funding mechanisms, among others. Particular attention is given to strengthening trust-based relationships between communities and public authorities and embedding FIREPRIME into municipal and regional operative structures. The deliverable proposes a sustainability strategy for each pilot that consolidates local implementation, supports institutional embedding and enables regional scaling.

(1) *Draft / Final*

(2) *Public / Restricted / Internal*

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1. Introduction

FIREPRIME (2024 – 2025) is a project funded by the European Union Civil Protection Mechanism (UCPM) programme under the UCPM-2023-KAPP-PREV call. Many of the wildfires that take place in Wildland-Urban interface (WUI) areas involve extremely complex civil protection challenges. On the one hand, the population experiences threats to their lives and property, highlighting a widespread lack of wildfire risk awareness and preparedness of affected communities. On the other hand, emergency services are often immersed in scenarios where emergency management involves both wildfire suppression and protecting people and property.

It is in this context that the FIREPRIME project seeks to lay the foundations of a European program that promotes wildfire risk culture and resilience among communities, with a civil protection perspective. FIREPRIME is developed in three different regions of the EU, in close collaboration with local authorities and communities. The case study of the Mediterranean is in Barcelona region, specifically in the urbanizations of La Floresta and Sol i Aire in Sant Cugat del Vallès. The other two case studies are found in Austrian Tyrol (Central Europe) and the Gothenburg region (Northern Europe).

Through FIREPRIME, a set of risk awareness and assessment tools, named as FIREPRIME Toolkit, have been designed and adapted to the EU context, discussed and approved with both authorities and communities, through three streams: homeowner fire safety, community engagement and resilient infrastructures. Through the implementation of the FIREPRIME Toolkit, the aim is to:

- To promote wildfire resilience and adaptation of homeowners in WUI areas, community engagement and critical infrastructure resilience.
- To foster a wildfire risk culture among affected communities.
- To improve the necessary coordination and risk governance among local and regional authorities and communities.
- To design an EU adapted strategy promoting wildfire risk awareness among WUI communities.

The project has already been successfully implemented in the three pilot sites and this document provides insights on project sustainability at each pilot site, both at local and regional level. To ensure long term impact, each pilot site must evolve into a self-sustaining community for wildfire preparedness. This will require a combination of community engagement, institutional support, operational maintenance and local resource mobilisation.

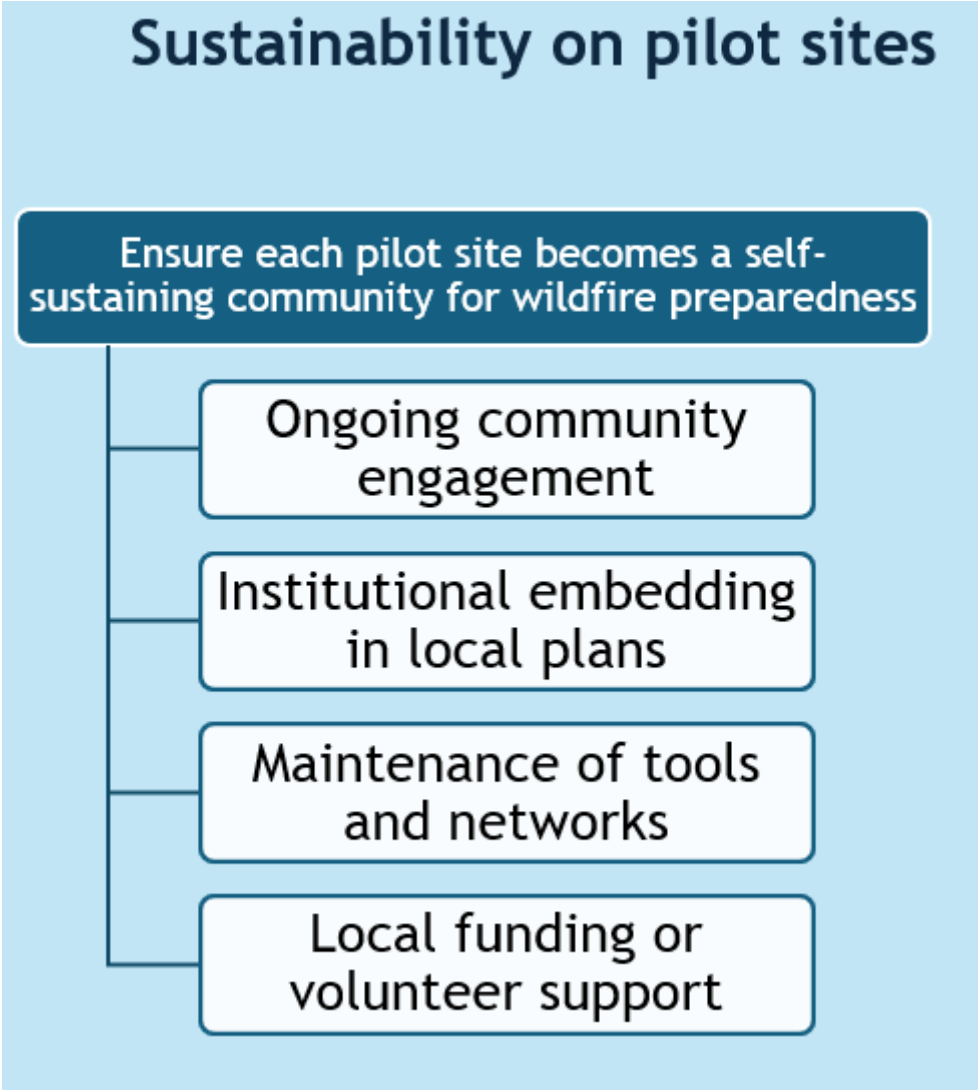

Figure 1. FIREPRIME sustainability framework after project lifespan.

2. Objectives

The main objective of Sustainability Plan is to provide the key steps for each pilot site to become a self-sustaining and operational community for wildfire preparedness beyond the duration of the project.

Specific objectives include delineating actions to:

- To maintain active involvement of households, communities, volunteers and local authorities.
- Promote continuous risk awareness and participation in wildfire preparedness activities.
- Integrate FIREPRIME tools and methods into local or regional wildfire plans.
- Ensure long-term support and commitment from local authorities and civil protection bodies.
- Establish procedures for regularly updating risk assessments, agreements and procedures at local level.
- Maintain active collaboration between stakeholders (i.e. civil protection authorities, municipalities, communities).
- Document lessons learned, best practices and required conditions for replicating the pilots approach in neighboring areas.

Given specificities of each pilot, this document is divided into three sections, one per pilot, where all the above mentioned topics are discussed, tracing the key steps to move towards the sustainability of FIREPRIME in each site.

3. Sustainability at the Spanish pilot

3.1. Pilot general description

3.1.1. Pilot sites description

The three urban developments selected for the pilot test are La Floresta, Sol i Aire and Mas Fortuny, all located in the municipality of Sant Cugat del Vallès. The choice of this municipality is based on a combination of factors that, when analysed together, create a highly favourable scenario for implementing the pilot test and ensuring its continuity beyond the project's completion.

One of the most relevant factors is the risk scenario. Sant Cugat has a significant portion of its territory within the Collserola Natural Park, with multiple urban developments located in high-wildfire risk sites. This diversity of urban areas is of great interest to the project, as it allows different risk contexts to be addressed while working with the same local and regional authorities.

Another key factor is the municipality social fabric, where residential communities are organized collectively (i.e. neighbourhood associations and self-protection groups) and by interest groups (e.g. hiking groups, sports clubs, scouts).

Finally, the previous work carried out by the city council on risk reduction, such as firebreak zones and meetings with residents, as well as its willingness to participate in the project, make Sant Cugat an ideal municipality for the pilot test.

Within Sant Cugat, three specific urban developments have been selected, representing different neighbourhood realities in terms of population size, connectivity to the municipal centre, wildland-urban interface typology, and the stages of risk reduction work. The following section introduce both cases.

As for the FIREPRIME Critical Infrastructure Stream, the Chemical Company SVC has been chosen as the most suitable in the Barcelona Metropolitan area to develop and test the toolkit of this stream. This is a company rated as Seveso-upper-tier, meaning that the hazards of fire, explosion and toxic release are high considering the substances and quantities present in the site. As it is located close to the wildlands in a very wildfire-prone area of Catalunya, it is a very suitable site to test FIREPRIME risk assessment tool.

3.1.1.1. La Floresta

La Floresta is characterized by its proximity to forested areas of the Collserola mountain range. It has a population of approximately 4,955 inhabitants and a high population density of 1,439.6 inhabitants per square kilometre (IDESCAT, 2023). While the majority of residents are aged 16 to 64, older adults make up a significant part of the community (15.3%), with a noticeable presence of women among those aged 80 and above. La Floresta is a residential area where home-ownership predominates (73% of the total number of properties). In recent years, new residents have arrived from Europe, especially England and France, representing more than 9% of the resident population. The community is very well connected to the city centre by public transport, although people tend to heavily rely on private vehicle. Despite the sloppy terrain and zigzag streets hinder pedestrian mobility and bicycle use, La Floresta people enjoy leisure activities visit La Floresta due to its proximity of Collserola Natural Park.

La Floresta Neighbourhood Council serves as the coordinating body for these organizations and residents. Among them there are the Association of Property Owners and Residents of La Floresta, El Senglar Cultural, and El Mussol Association, which promote cultural and social activities to strengthen community bonds. Due to drought and the public debate surrounding the risk of wildfires, La Floresta has started organizing to work on prevention and protection issues. Active community associations organise activities and debates to participate and collaborate with the administration in reducing fire risk. It is currently in the early stages, but it benefits from a population that is already aware and engaged on these matters. There might be also conflicts and controversies over risk management, with people who are less involved, newer, or more disconnected from these dynamics.

Regarding wildfire risk, the location of the community makes it essential to implement risk reduction measures. For instance, fuel breaks have been established and are generally well-maintained. However, in certain areas with steep slopes, there is the possibility of extending them beyond the mandatory 25 meters (Law 5/2003, 22nd April, wildfire prevention measures in Wildland-Urban Interface) to enhance protection.

Unbuild plots within the urban area are an important factor, as a low level of construction increases wildfire spread within the community. In the case of La Floresta, most of the plots are already developed, with few remaining plots available for construction. The green areas in the community are properly managed. However, the presence of a central forested area increases fire permeability and its potential to reach homes.

A notable weak point are private gardens. Many homes have densely vegetated gardens with combustible decorative elements, reed fences, wooden or plastic outdoor furniture, etc. Additionally, shrubs and trees in close contact with houses are commonly observed, increasing the risk to homes in the event of a wildfire.

Regarding building materials, most structures are non-combustible, which, when combined with proper protective measures, allows for the possibility of safe sheltering during a fire.

In terms of signals, access points, dead-end streets, and hydrants are well-marked, complying with current regulations and ensuring that emergency responders can efficiently manage a wildfire event. However, accessibility and traffic flow present another critical challenge. Although La Floresta has multiple entry points, the streets are narrow and maze-like. During an emergency, smoke and stress could cause residents' vehicles to block roads, creating significant evacuation issues. Additionally, parked vehicles further restrict space, limiting two-way circulation, which would complicate both evacuation and the entry of firefighting teams.

Finally, as a positive point, La Floresta has public spaces, such as the social and healthcare center, which could be used as gathering points and for horizontal sheltering in the event of an emergency.

All of these factors are well known by both the residents and authorities. Recently, a collaborative process has been initiated to help the neighbourhood undergo a risk adaptation and mitigation process, which should assist the population in managing the risk across all its phases: prevention, preparation, and response.

3.1.1.2. Sol I Aire

Sol i Aire is a residential development located within the Collserola Natural Park. Its history dates back to the 1950s, with the first construction, and it began as an extended residential area in 1967. Currently, it has over 60 homes and a population of approximately 130 inhabitants.

The development enjoys a small and cohesive community, with residents who have fought for decades to legalize and regularize their homes. The area is located on land designated as a forest park, which has led to legal and urban planning conflicts. The risk of wildfires has been, and continues to be, a key concern for many of its residents, who have organized themselves into a self-protection group, with a recently drafted protocol (2024). Sol i Aire organized itself after the major wildfires of 1994, and since then, they have been carrying out community-based risk reduction actions. They are already well-organized, and the challenge now is to create tools that will allow them to continue improving as a group.

Economically, the residents have assumed significant costs for the improvement and maintenance of their properties, as well as for the legal efforts required for the regularization of the development.

The development has shaded fuel breaks already implemented, and they are generally in good condition. However, in some areas with steep slopes, it could be important to extend these strips beyond the mandatory 25 meters to ensure greater safety in the event of a wildfire.

Regarding the structure of the development, it is sparsely built, particularly in the plots located on steep slopes. This results in a high permeability to fire, as the lack of continuous buildings facilitates the spread of flames between the forested area and the homes. It is, therefore, a diffuse development, where the forested and urbanized areas do not have a clear boundary.

Another critical point is the gardening. Many of them are characterized by a high density of vegetation and the presence of man-made fuels. Additionally, in several homes, shrubs and trees have been observed in direct contact with the facades, which increases the risk of fire spreading to the homes in the event of a wildfire.

Regarding the buildings, the vast majority are made of non-combustible materials, making them more resistant to fire. However, some structures are made of wooden elements, which can be a vulnerable point if proper protective measures are not taken.

In terms of signage, Sol i Aire benefits from well-marked access points, dead-end streets, and hydrants, which facilitates the identification of key elements for firefighting efforts and the safety of the population.

On the other hand, the access and traffic within the development represent some of its main weaknesses. The only existing entry and exit significantly limits the evacuation capacity in case of an emergency. Although there is an alternative sandy path, it is currently blocked by a chain, although it is understood that the self-protection group holds the key in case of need. Additionally, many streets are extremely narrow, often dead-end, and with vehicles parked along the edges, which could obstruct the passage of emergency services. In some cases, the streets have steep slopes and are made of sand, which could further complicate mobility in a risk situation.

Finally, regarding public spaces, the neighbourhood association's building presents a potential gathering and sheltering point in case of an emergency, offering a safe place for the population in critical situations.

3.1.1.3. Mas Fortuny

Mas Fortuny is a small residential settlement located within the Collserola Natural Park, in Sant Cugat del Vallès. It is more isolated than other developments in the area, with a single access point and a very narrow, complex street network. Public space maintenance is limited, which increases vulnerability in emergency situations, particularly in the event of a wildfire.

Mas Fortuny was not initially included in the project. However, residents participated in one of the public events (First Preparedness Day), which led the consortium to incorporate the neighbourhood as a study case. Following this inclusion, residents have begun to organize collectively, creating a self-protection group and initiating community-based coordination around risk management.

Wildfire risk is a major concern due to the forested surroundings, steep slopes and limited accessibility. Fire protection measures are insufficient or discontinuous in several areas, and the diffuse urban structure creates a highly permeable WUI.

Private plots often contain dense vegetation and flammable elements such as wooden fences and outdoor furniture, with vegetation in some cases directly touching buildings. While most homes are built with non-combustible materials, some wooden elements remain vulnerable.

Access and evacuation represent the most critical weakness. With only one entry and exit and narrow, irregular streets, emergency response and evacuation would be severely constrained. Additionally, the lack of clearly defined public spaces limits options for safe gathering or sheltering during an emergency.

3.1.1.4. SVC Chemical Industry

The company RAVAGO CHEMICALS SPAIN, S.A. (hereinafter referred to as SVC), located at Carretera C-55, km 19.5, Sant Vicenç de Castellet, is engaged in the reception, packaging, and dispatch of various chemical products. It stores chemical substances in both fixed and mobile containers. As such, a range of logistical activities related to the main operation is carried out on-site; however, no chemical synthesis processes are performed at the facility.

The main activities carried out include:

- Sampling
- Loading of tanks into tankers
- Unloading from tankers into tanks
- Packaging of substances
- Handling of loads
- Preparation of mixtures

Due to the types and quantities of substances stored at the facility, the establishment is subject to the provisions of Article 3 of Royal Decree 840/2015, of September 21, which establishes

control measures for the risks inherent in major accidents involving hazardous substances—commonly known as Seveso III—at its highest threshold level.

Although the Seveso III Directive requires establishments to consider external natural hazards—such as wildfires, floods, or earthquakes—when assessing major accident risks, it does not provide any specific guidance or methodology on how to identify, assess, or integrate these hazards into risk analyses.

SVC has always been highly concerned about the potential impact of wildfires on their facility. Although they are fully compliant with all applicable regulations, they recognize that their current level of protection against wildfire hazards is insufficient. They are aware of the need to more thoroughly assess the potential for a wildfire to trigger an accident at the plant or cause major disruptions to their operations.

3.1.2. Pilot implementation description

As reported in D4.1, the implementation plan was designed to be carried out between March and October 2025, involving activities to test all the tools developed across the three FIREPRIME streams: household fire safety, community engagement and education, and resilient infrastructures. The plan was tailored to the local wildfire risk context and to the needs of the involved stakeholders. An updated overview of the scheduled and implemented activities, based on Table 2 of D4.1, is presented in Table 1.

Table 1. FIREPRIME Spanish pilot – Implemented activities in 2025.

Activity	Mar.	Apr.	May	June	July	Aug.	Sep.	Oct.	Nov
Household risk assessment method - testing and training with local agencies		5th							15th
The FIREPRIME risk assessment questionnaire testing with homeowners		11th 12th							
Wildfire Preparedness Day – Risk Preparedness			17th						
Wildfire Preparedness Day – Risk Prevention								4th	
The FIREPRIME Challenge Race	22nd								
Preparatory session with Scout and video		26th			22nd				
Wildfire risk assessment guidelines for the Chemical Industry					22nd				
TOOLS ASSESSMENT AND IMPROVEMENT									

During the implementation phase, the FIREPRIME program was successfully deployed in the Sant Cugat pilot through a combination of household-level actions, community engagement activities and resilient infrastructure assessments. Household fire safety activities and testing of the risk assessment methodology were carried out as planned in spring 2025, involving residents, fire service, Civil Protection technicians and ADF volunteers. The FIREPRIME app tool proved

particularly effective in supporting household analysis and informed decision-making, since it underwent several validation rounds in Sol i Aire, La Floresta and Mas Fortuny. The inclusion of Mas Fortuny (initially outside the pilot scope) demonstrated the project capacity to attract and respond to emerging local interest.

Community engagement was a central pillar of implementation. Preparedness Days were delivered as planned and facilitated dialogue, participatory mapping and scenario-based exchanges between residents, authorities and emergency services. Collaboration with established groups such as the Sol i Aire Self-Protection Group and the La Floresta Scouts strengthened trust and continuity. Notably, youth-led initiatives, including the production of an educational video on wildfire response, exceeded initial expectations and highlighted strong local ownership.

In the resilient infrastructure stream, the wildfire risk assessment guideline for industry was successfully tested with SVC Ravago Chemicals, supported by early stakeholder engagement and site visits. Overall, the pilot increased awareness, preparedness and collaboration across all stakeholder groups. While some tools require facilitation and further refinement for broader uptake, the results demonstrate high relevance, strong acceptance and clear potential for replication and long-term integration into local and regional preparedness strategies.

3.2. First insights on challenges and opportunities for sustainability

The sustainability of FIREPRIME in the Spanish pilot, implemented in the municipality of Sant Cugat del Vallès, was jointly discussed with the main actors involved in the pilot during a dedicated meeting held on 15 January 2026 at the town hall. The meeting brought together municipal technical and political representatives (environment, civil protection and citizen participation), the Catalan Fire Brigade (Bombers de la Generalitat), and residents from the neighbourhoods of Sol i Aire and Mas Fortuny.

Overall, participants expressed a very positive view of the project and highlighted how FIREPRIME has contributed to improving wildfire risk preparedness from multiple perspectives. One of the most highly valued aspects was the neutral role played by FIREPRIME. Under Spanish and Catalan legislation, responsibility for wildfire risk management in the wildland–urban interface lies primarily with municipalities and residents. This division of responsibility does not always facilitate close and fluid collaboration between the two parties. FIREPRIME has helped promote cooperation between local authorities and residents by acting as a neutral, external actor. This role would not have been possible without the trust built through the project, based on close engagement with both the community and the local authorities and the practical tools provided by FIREPRIME.

Another highly appreciated aspect was FIREPRIME's role in fostering coordination among different authorities. Residents noted that they often receive messages from multiple authorities, usually separately and sometimes addressing similar issues. FIREPRIME was valued for bringing all relevant actors together around the same table, helping to align messages and improve coordination.

From the municipality's perspective, the strong potential of self-protection groups was also acknowledged. These groups are seen as an effective tool for improving coordination between authorities and residents in risk management, not only for wildfires but for other types of risks as well.

The main challenges identified for ensuring the continuity of the pilot are:

- **Engaging additional communities** in the area, both within Sant Cugat and across the wider Barcelona province. Social cohesion within communities is a key factor. Experience shows that La Floresta, a much larger neighbourhood (around 5,000 inhabitants) is better connected to the urban centre, has lower social cohesion, which makes coordination and wildfire-related work more difficult. In contrast, smaller and more isolated communities appear to have greater potential to see FIREPRIME as an opportunity for collective action.
- **Maintaining long-term commitment from the pilot communities.** Once FIREPRIME actions have been implemented, there may be a perception that the community is fully prepared. However, this is not the case: both the environment and communities are dynamic. FIREPRIME is therefore not a goal, but a continuous process. Establishing an annual FIREPRIME cycle, allowing actions to be reviewed and practiced regularly, will be essential.
- **Integrating FIREPRIME into municipal routines and structures.** This integration was achieved during the pilot, but it needs to be sustained by aligning FIREPRIME with municipal policies and plans. FIREPRIME should not become a standalone programme, but rather a tool that supports the implementation of actions already envisaged in existing legislation and regulations.
- **Securing stable funding.** While many actions can rely on the goodwill of volunteers and residents, long-term development of FIREPRIME will be difficult without stable funding, whether financial resources or sustained institutional support from authorities.

At the same time, the pilot has highlighted several key opportunities for FIREPRIME:

- **Strong volunteer engagement**, particularly from Forest Defence Associations (ADF) and civil protection volunteers. These groups can play a crucial role in ensuring local sustainability, supporting app testing and annual activities together with residents. As these volunteer groups exist throughout Catalonia, they also offer significant potential for scaling up the project at regional level.
- **Self-protection groups have proven to be highly effective community governance structures**, with strong potential for replication in other areas. Their value is particularly evident in small, isolated residential developments, where the need for collective organisation is more acute and where these groups have been most successful.
- **Strong alignment among all local actors** (residents, authorities, emergency services and volunteers) around FIREPRIME and the need for coordinated prevention and preparedness for wildland–urban interface fires. This alignment has been key to the success of the pilot and will enable further development of the FIREPRIME methodology. Wildfires are a clear priority for the municipality, providing a solid foundation on which FIREPRIME has been built.
- **Finally, the FIREPRIME Toolkit has been designed and refined using Sant Cugat as a living laboratory.** As a result, the tools developed are well adapted to the local context. This demonstrates that the long-term continuity of FIREPRIME is entirely feasible, supported by tools that have proven to work effectively in Sant Cugat del Vallès.

3.3. Sustainability issues to address

3.3.1. Tools and services

Who will be responsible for maintaining and updating these tools after the project ends?

The FIREPRIME Toolkit has been designed to be used autonomously by both public authorities and residents. In the short to medium term, this means that no regular maintenance of the tools is required. The tools are operational as they are and can be directly applied by municipalities, civil protection services, self-protection groups and individual households without external support.

Moreover, no further adaptation of the tools to the local context of Sant Cugat del Vallès is currently necessary. The municipality has been one of the main pilot sites of the project and has acted as a "living laboratory" during the implementation phase. This process allowed the tools to be tested, adjusted and improved in real conditions, ensuring that they are already well aligned with the local risk context, governance framework and community characteristics.

However, in the long term, and considering the dynamic nature of wildfire risk (climate change, land-use changes, social dynamics, new regulations), the FIREPRIME Toolkit will need to evolve. This evolution may include new functionalities, updates to existing tools and the development of additional tools to further strengthen wildfire risk management at both individual and collective levels.

In this perspective, continued collaboration between the FIREPRIME consortium and local actors will be essential. On the one hand, the Catalan members of the FIREPRIME consortium (UPC, UOC and PCF) have expressed a clear commitment to continue working on the development of FIREPRIME beyond the project duration, understanding it as a collaborative framework for wildfire risk management in wildland–urban interface areas, regardless the financing framework. On the other hand, both residents and local authorities have demonstrated strong willingness to continue using and promoting the FIREPRIME tools in the coming years. Overall, FIREPRIME is widely perceived as an opportunity to advance towards a more collaborative and coordinated approach to wildfire risk management than has traditionally been the case.

What resources (technical, human, financial) are required?

In the short to medium term, the resources required to maintain the use of the FIREPRIME Toolkit are limited. Technically, the tools are already developed and validated. Human resources are mainly needed for facilitation, coordination and occasional technical support, roles that can be assumed by municipal staff, civil protection services and trained volunteers (e.g. ADF and self-protection groups). Financial resources at this stage are minimal and mainly linked to coordination activities, communication materials and occasional training or refresher sessions.

In the longer term, if the toolkit is further developed or expanded, additional technical and human resources will be required for software updates, methodological improvements and content development. These efforts would likely require dedicated project funding or institutional support from regional, national or even EU bodies, rather than municipalities.

Need to adapt tools to local context?

At present, there is no immediate need to adapt the FIREPRIME tools to the local context of Sant Cugat del Vallès, as they have already been refined through the pilot implementation. However, if the tools are transferred to new municipalities or regions, contextual adaptation will be necessary to reflect different risk profiles, governance structures, legal frameworks and social dynamics. In this sense, Sant Cugat can serve as a reference model for future adaptations at regional or national level.

In any case, linking with project exploitation, it is considered that the FIREPRIME Toolkit is adapted to Mediterranean countries.

3.3.2. Stakeholders and governance structure

Who is involved?

In Sant Cugat del Vallès, the following actors have actively participated in the FIREPRIME project. All of them have expressed high satisfaction with the project outcomes and a clear willingness to continue working under the FIREPRIME methodological framework beyond the project duration:

- Sant Cugat local council
  - Environmental service
  - Civil Protection Unit (together with local volunteers)
  - Community engagement service
- Forest Defence Association (ADF)
- Catalan Fire Service through the local fire station
- Catalan Civil Protection
- Sol I Aire Self-Protection group
- Mas Fortuny Self-Protection group
- La Floresta Self-Protection group

How are stakeholders organized?

The governance structure of FIREPRIME in Sant Cugat is primarily based on trust and on the positive working framework that has been progressively built over the two years of project implementation, involving both residents and public authorities. Rather than creating a new formal governance body, FIREPRIME has functioned as a collaborative platform that strengthens existing relationships and coordination mechanisms.

A particularly positive element is that all three pilot communities have established self-protection groups. In Sol i Aire, this group has existed since 1994 and has long played a central role in community-based risk management. Through FIREPRIME, and using Sol i Aire as a reference, the communities of Mas Fortuny and La Floresta have been encouraged to create their own self-protection groups.

The existence of these groups significantly enhances the capacity of the three neighbourhoods to self-organise before, during and after potential emergency situations, not only for wildfires but also for other types of risks. Self-protection groups act as key intermediaries between residents and authorities, facilitating communication, coordination and collective action. This structure provides a solid governance basis for the long-term sustainability of FIREPRIME at local level.

Table 2. Stakeholders of FIREPRIME in Sant Cugat, as well as their roles.

STAKEHOLDER	ROLE
Sant Cugat Environmental Service	Coordination of wildfire prevention actions at municipal level, from fuel reduction perspective. Integration of FIREPRIME tools into environmental and land management policies. Technical reference for vegetation management and fuel reduction measures in WUI areas. Liaison with ADF.
Sant Cugat Civil Protection	Overall coordination of preparedness and response planning. Liaison with emergency services and civil protection volunteers. Integration of FIREPRIME outputs into municipal civil protection plans. Support to self-protection groups.
Sant Cugat community engagement	Facilitation of community participation. Support to neighbourhood organisations and self-protection groups. Organisation of awareness-raising and preparedness activities. Communication between residents and municipal services.
Forest Defence Association (ADF)	Operational support in wildfire prevention and first response. Technical advice to communities (e.g. app implementation). Participation in training and preparedness activities. Support to annual FIREPRIME activities at local level.
Catalan Fire Service through the local fire station	Technical authority on wildfire behaviour and response. Validation of preparedness measures. Participation in training, drills and awareness activities. Advisory role in the improvement of FIREPRIME tools.
Catalan Civil Protection	Strategic coordination at regional level. Alignment with regional civil protection frameworks. Support for scalability and replication of FIREPRIME at regional level. Contribution to methodological consistency and policy integration.
Sol I Aire Self-Protection group	Community coordination for wildfire preparedness. Implementation of FIREPRIME tools at neighbourhood level. Dissemination of information among residents. Organisation of local preparedness actions.
Mas Fortuny Self-Protection group	Community coordination for wildfire preparedness. Implementation of FIREPRIME tools at neighbourhood level. Dissemination of information among residents. Organisation of local preparedness actions.

La Floresta Self-Protection group	Community coordination for wildfire preparedness. Implementation of FIREPRIME tools at neighbourhood level. Dissemination of information among residents. Organisation of local preparedness actions.

Based on the roles described above, the core governance dynamic of FIREPRIME in Sant Cugat del Vallès relies on a direct and continuous interaction between the self-protection groups and the municipality. This relationship constitutes the core of the local sustainability model.

Self-protection groups act as the main community-level interlocutors, representing residents' needs, concerns and capacities, while the municipality provides the institutional framework, technical expertise and links to emergency services and regional authorities. The relationship is conceived as balanced and bidirectional: both parties must be able to express their priorities, constraints and expectations, and to coordinate actions accordingly. FIREPRIME is therefore not understood as a top-down initiative led by the administration, nor as a community-driven process, but as a shared responsibility based on mutual commitment.

This balance can only be achieved through a strong relationship of trust and regular communication. Trust is particularly critical in wildfire risk management, where responsibilities are shared and decisions may involve sensitive issues such as prevention measures on private property, behavioural change or emergency procedures.

In this context, the presence of an external, neutral and impartial actor during the two years of project implementation has been a key success factor. The FIREPRIME project partners have played a mediating role, facilitating dialogue, aligning expectations and helping to bridge potential gaps between communities and public authorities. This neutral positioning has allowed all stakeholders to engage in an open and constructive manner, reinforcing collaboration and laying a solid foundation for the long-term sustainability of FIREPRIME once the project ends.

3.3.3. Integration into local and regional civil protection plans

Local/regional planning and legal frameworks to consider

As mentioned above, FIREPRIME is conceived as a collaborative working framework that can, in principle, be applied autonomously by communities, even without formal institutional support or direct alignment with local policies and plans. However, this approach is not recommended in the medium to long term. In such a case, FIREPRIME would remain limited to a neighbourhood-based self-organisation strategy, with reduced continuity over time and very limited potential for scaling up or replication.

For this reason, linking the FIREPRIME framework with local and regional policies and planning instruments is a key strategic objective for sustainability. In this sense, FIREPRIME should be understood as a practical tool that supports wildfire risk reduction and preparedness within the existing legal and planning framework, rather than as a parallel or alternative system. Institutional alignment provides legitimacy, continuity and access to resources, while FIREPRIME contributes operational capacity, community engagement and practical implementation.

At the local and regional levels, several planning and regulatory instruments are particularly relevant for the integration of FIREPRIME, including:

- Municipal Civil Protection Plans, including specific wildfire emergency plans.
- Self-Protection Plans for neighbourhoods and critical infrastructures.
- Catalan Civil Protection planning framework.
- Catalan wildfire prevention legislation in the wildland–urban interface (e.g. Law 5/2003 and related regulations).
- Municipal urban planning and land-use instruments affecting WUI areas.
- Regional strategies and plans for wildfire prevention and resilience promoted by the Government of Catalonia.

Is there any chance to create synergies with local civil protection plans or self-protection plans? How FIREPRIME can assist in CP plans implementation?

There is strong potential to create synergies between FIREPRIME and both local civil protection plans and neighbourhood self-protection plans. FIREPRIME can contribute especially in the preparatory and implementation phases of these plans by providing community engagement and participatory tools that ensure plans are developed in line with the actual social, spatial and organisational realities of neighbourhoods.

A common limitation of civil protection plans is that they risk becoming formal documents, largely unknown to the population. In the case of civil protection, this significantly reduces their effectiveness: plans are only useful if people are aware of them, understand their role and have practised the procedures they contain. Annual review, dissemination and drills are therefore essential.

FIREPRIME directly addresses this gap. Through participatory activities, preparedness days, risk assessments and community-based exercises, FIREPRIME helps translate civil protection plans into concrete, understandable and practised actions at neighbourhood level. In this way, FIREPRIME acts as an operational bridge between planning and real-world implementation, enhancing the effectiveness of civil protection plans and strengthening community preparedness over time.

3.3.4. Capacity building

Key stakeholders to train

The key stakeholders to be trained for the long-term sustainability of FIREPRIME in Sant Cugat del Valles are local leaders and volunteers, who already play an active role in wildfire risk management.

In particular, priority should be given to:

- **Leaders of self-protection groups**, who act as the main coordinators at neighbourhood level. They are responsible for mobilizing residents, maintaining regular communication with municipal services and emergency responders and ensuring continuity of preparedness over time. These leaders are well positioned to assume the role of local FIREPRIME coordinators within each neighbourhood.
- **Civil protection volunteers and Forest Defence Association (ADF) volunteers**, who already have a basic level of technical knowledge and operational experience related to wildfire risk. These volunteers can support the organisation of activities, contribute

technical expertise, assist residents in using the FIREPRIME tools (including the app) and collaborate in specific actions such as preparedness events, drills or awareness campaigns.

These two roles are considered central to the sustainability of FIREPRIME, as they combine community trust, local presence and operational capacity. Tailored training programs should therefore be designed specifically for these groups.

In parallel, and with a slightly lower priority, **local authority staff** should also receive targeted training. This training should focus primarily on community engagement methodologies, coordination with self-protection groups and volunteers and the overall management of the FIREPRIME programme at municipal level.

Capacity building sessions and content to be developed

Based on the experience of the pilot, capacity building activities should focus on practical, action-oriented content, including:

- Training on the use of the FIREPRIME Toolkit, including household risk assessment methods and the FIREPRIME app.
- Guidance on implementing FIREPRIME at neighbourhood level, including the organisation of preparedness days, drills and participatory activities.
- Community engagement and facilitation techniques to effectively involve residents and sustain participation.
- Coordination mechanisms between self-protection groups, volunteers and local authorities, including roles and responsibilities before and during emergencies.
- Basic refresher sessions on wildfire risk, behaviour and preparedness, adapted to the local WUI context.

These training activities should be modular and adaptable, allowing them to be delivered periodically as part of the annual FIREPRIME cycle and updated as tools and methodologies evolve.

3.3.5. FIREPRIME program annual functioning

Defining FIREPRIME Annual cycle

FIREPRIME is not conceived as an end goal, but as an ongoing process and a long-term approach to wildfire risk management. Therefore, any sustainable implementation of FIREPRIME necessarily requires the definition of an annual cycle. This cycle should establish a set of activities and milestones to be achieved each year, as well as medium-term objectives that allow communities to progressively reduce risk and improve preparedness year by year.

The annual cycle should be structured around both annual achievements (to maintain preparedness and awareness) and multi-year achievements (to consolidate governance structures, improve infrastructure and strengthen risk reduction). This approach enables

communities applying FIREPRIME to sustain risk reduction efforts while continuously improving their level of preparedness from one year to the next.

Annual activities within the FIREPRIME programme

The specific activities carried out each year may vary depending on the local context, community capacity and risk profile. Typical annual activities may include:

- Wildfire Preparedness Days and community awareness events
- Coordination meetings between self-protection groups, volunteers and local authorities
- Awareness-raising activities, including school-based initiatives
- Periodic completion or updating of the FIREPRIME app risk assessment questionnaire
- Table-top exercises and emergency drills
- Review and testing of self-protection plans

These activities can be implemented either as standalone actions or, preferably, linked to clearly defined objectives within the civil protection and wildfire prevention framework, such as the drafting, updating or testing of community and individual self-protection plans.

Coordination and organisation of activities

Ideally, FIREPRIME activities should be jointly organised by residents and the municipality. The pilot experience has shown that citizen participation and involvement are essential for effectiveness and continuity. Activities should therefore be agreed upon through coordinated planning processes, ensuring alignment between community priorities and municipal objectives, and fostering shared ownership of the programme.

Expected calendar

The annual calendar should remain flexible and adaptable each year, depending on local needs and conditions. However, a general seasonal structure is recommended:

- Before the wildfire season: preparedness actions (awareness sessions, drills, review and testing of self-protection plans, community coordination).
- After the wildfire season: prevention and mitigation actions (fuel management, maintenance of protection strips, infrastructure improvements, evaluation and lessons learned).

Sharing lessons learned between pilot sites

An important element to be further developed in the future is the systematic exchange of experiences between communities. Establishing a shared channel or platform where communities can present their activities, challenges and achievements would allow other pilot sites to learn from their experience. This peer-to-peer exchange would reinforce the FIREPRIME network beyond individual pilot areas.

3.3.6. Scalability at regional level

FIREPRIME components with replication and scaling potential

One of the central elements in the discussion on scalability is the balance between standardisation and flexibility. For FIREPRIME to be successfully replicated, it is essential to clearly distinguish which components can be transferred as they are and which require local adaptation.

Several core components of FIREPRIME are highly replicable across municipalities. For example, the Preparedness Day model includes structural elements that can be maintained in any context, such as clearly defined roles and responsibilities, methodological devices, periodicity, evaluation indicators, and the creation of both formal and informal spaces for trust-building and networking among stakeholders. These elements constitute the backbone of the approach and can be standardised without compromising effectiveness.

At the same time, other elements necessarily require local adaptation. These include local risk analysis, linguistic translation and cultural contextualisation, the development of accessible and inclusive materials and adjustments to the specific socio-demographic characteristics of each community, such as age structure, previous experience with wildfire risk and levels of community self-organisation.

From a governance perspective, FIREPRIME is based on a general and transferable architecture linking community–municipality–region–state–Europe. This multi-level governance structure can be replicated conceptually, but its concrete implementation must be tailored to local institutional arrangements, governance traditions and political cultures related to risk management in each territory.

Another key aspect for scalability is the public–private interface. The long-term sustainability of the model depends on better articulating relationships between public administrations (municipal, regional and national), communities, insurance companies, forest owners, private companies and other relevant actors.

Regional actors with potential to adopt the model

To grow and consolidate, FIREPRIME will likely require deeper institutional integration. Regional and local actors with strong potential to adopt the model include municipalities in wildfire-prone WUI areas, fire service, civil protection authority and organisations responsible for emergency planning and prevention. FIREPRIME can become a practical and operational tool within municipal self-protection plans, particularly in WUI settlements and play a relevant role in the preparation of preparedness and awareness activities.

In Catalonia, regional governments of the four provinces (Barcelona, Girona, Tarragona and Lleida), may play a key role on the broader implementation of FIREPRIME. At the pilot phase, implementation has been approached from municipalities. But it would be interesting to test the implementation through the provinces, in coordination with interested municipalities from the province.

Alignment with existing regional strategies

The FIREPRIME approach aligns well with existing regional strategies focused on wildfire prevention, community resilience and civil protection preparedness. Its emphasis on community engagement, preparedness and coordination complements regional wildfire prevention policies and civil protection frameworks. To ensure long-term sustainability and broader uptake, stable funding mechanisms will be required to continue improving, implementing and evaluating transfer and exploitation actions beyond the pilot sites.

Finally, establishing alliances at national and European levels will be essential. Cooperation with other countries, engagement with DG ECHO and the creation of potential FIREPRIME municipal networks would strengthen institutional support, facilitate knowledge exchange and enhance the replicability and visibility of the model across different territories.

3.3.7. Funding mechanisms

Ensuring the long-term sustainability of the Spanish pilot requires a balanced approach to funding, combining local commitment, volunteer engagement and, where necessary, targeted financial resources. FIREPRIME has been designed to minimise recurring costs at local level, while allowing for progressive improvement and scaling through additional funding when available.

Costs associated with maintaining the pilot

The main costs associated with maintaining FIREPRIME after the end of the project are largely related to coordination and implementation rather than to infrastructure or technology. Key cost categories to consider include:

- Coordination and facilitation of annual FIREPRIME activities (meetings, preparedness days, drills).
- Time and effort dedicated by municipal staff (civil protection, environment, community engagement).
- Support materials for awareness and training activities (communication materials, basic equipment).
- Occasional technical support related to the use of tools (e.g. support for the app or risk assessments).
- Minor operational costs linked to drills or exercises.

Most of these costs are relatively limited and can be absorbed through existing structures if FIREPRIME is well integrated into municipal routines.

Funding sources for long-term sustainability

In general, the maintenance of FIREPRIME in Sant Cugat relies primarily on local support from both the municipality and residents. Their continued involvement is essential for carrying out annual activities and sustaining the programme over time. This local ownership does not exclude external support, but it ensures that FIREPRIME remains rooted in the territory.

A significant share of FIREPRIME's sustainability is based on community participation and voluntary work. Volunteer time (whether from self-protection groups, ADF members or civil protection volunteers) represents a major contribution to programme continuity and significantly reduces financial needs.

Some actions, however, will require direct financial resources. In this regard, it is expected that the municipality can allocate a small annual budget line, either in direct funding or through dedicated staff time, to support FIREPRIME-related activities. Neighbourhood associations may also contribute financially, within their possibilities, to specific actions at community level.

For the further development and structural improvement of FIREPRIME (e.g. tool enhancement, methodological upgrades, large-scale transfer actions), European or national funding instruments are considered particularly relevant and appropriate.

Existing budget lines and institutional support

At local level, the municipality already carries out annual actions to reduce fuel load in the wildland–urban interface, which represents a major investment in reducing exposure to wildfire risk. In addition, the municipal community engagement unit has the capacity to organise or provide human resources to support neighbourhood-level activities, directly contributing to FIREPRIME implementation.

In the longer term, an interesting option (already implemented in countries such as the USA and Canada through programmes like Firewise or FireSmart) would be to establish small grant schemes allowing communities to apply for funding to implement local risk reduction measures. Such an approach could strengthen community ownership while providing targeted financial support.

Role of community-based and volunteer-driven models

Community-based and volunteer-driven models can effectively cover a large part of FIREPRIME's operational costs. Most FIREPRIME activities rely primarily on people's time rather than on financial expenditure. When this time is contributed by volunteers or residents, costs are largely absorbed. Municipal staff time can also be considered an in-kind contribution, representing a concrete form of institutional commitment. This combination of volunteer engagement and municipal support forms the core of FIREPRIME's sustainable funding model at local level.

3.4. Sustainability plan

The sustainability of FIREPRIME in the Spanish pilot (Sant Cugat del Vallès) is based on consolidating the progress achieved during the project and progressively embedding the programme into local governance structures, community practices and regional frameworks. The sustainability plan is conceived as a medium- to long-term strategy, structured over a 10-year horizon and organised around the key sustainability dimensions identified in Section 3.3.

Rather than proposing a rigid roadmap, this plan outlines a phased approach that allows FIREPRIME to evolve gradually, adapting to changing risk conditions, institutional arrangements and community capacities.

Phase 1 (Years 1–2): Consolidation at local level

The first phase focuses on consolidating FIREPRIME within the three pilot communities and the municipality of Sant Cugat del Vallès.

Key actions include:

- Formalising the role of self-protection groups as the main community-level coordinators of FIREPRIME activities, in close collaboration with municipal services.
- Integrating FIREPRIME practices into existing municipal routines, particularly within civil protection, environmental management and community engagement services.
- Establishing a stable annual FIREPRIME cycle, including preparedness days, coordination meetings, use of the FIREPRIME app and periodic review of self-protection plans.
- Delivering targeted capacity building activities for self-protection group leaders, civil protection volunteers and ADF members.
- Ensuring continuity of coordination mechanisms between communities, the municipality and emergency services, even in the absence of external project partners.
- Seeking regional, national or European funding to support large-scale transfer, tool evolution and methodological development.

Phase 2 (Years 3–5): Institutional embedding and optimisation

The second phase aims to strengthen institutional embedding and improve the effectiveness and visibility of FIREPRIME.

Key actions include:

- Strengthening formal links between FIREPRIME activities and municipal civil protection plans, self-protection plans and wildfire prevention programmes.
- Improving coordination with regional actors (Catalan Civil Protection, Fire Service, ADF networks) to ensure consistency with regional frameworks.
- Updating and refining training content based on lessons learned from annual cycles and evolving risk conditions.
- Exploring small-scale funding mechanisms at municipal or neighbourhood level to support local initiatives and preparedness actions.

Phase 3 (Years 6–10): Scaling and transfer at regional level

The third phase focuses on scaling up and transferring the FIREPRIME model beyond the original pilot sites.

Key actions include:

- Using Sant Cugat del Vallès as a reference case for replication in other wildfire-prone municipalities, particularly within the Barcelona province.
- Supporting regional-level adoption of FIREPRIME components through collaboration with provincial administrations, civil protection authorities and volunteer networks.
- Facilitating peer-to-peer exchanges between communities implementing FIREPRIME, creating a broader learning network.
- Contributing to the further development of the FIREPRIME Toolkit, incorporating feedback from multiple territories and adapting tools for wider use.

4. Sustainability at the Swedish pilot

4.1. Pilot general description

The FIREPRIME tools and activities implemented in Sweden has been largely adjusted to fit the north European context and make them relevant for the end-users in the region. Likewise, to account for differences in Sweden vegetation, climate, the built environment and culture in different parts of the country, the project outcome was implemented in three different regions.

4.1.1. Pilot sites description

Brief description of the sites included in the pilot.

4.1.1.1. Berga Southeast rural area

Berga is a small village in a sparsely populated region in southern Sweden. The surrounding forest is often on typically lean soil, favouring fire prone forest floors with lichens, feather mosses and pine litter. It is also one of Sweden's driest areas and irrigation bans during summers are common., with towns surrounded by forest. A fast spreading fire with the potential of large damages burnt during the summer of 2021 but was effectively suppressed by the rescue services which managed to contain it at 100 hectares. More info in the region and the citizens relation to wildfire can be found in Eriksson et al. (2024). For more info, see Deliverable D5.1.

4.1.1.2. Sundsvall – Main city in central part of Sweden

Sundsvall is the capital city of the 'Västernorrlands county' with about 71 000 citizens. It lies 630 km north of Berga and is surrounded with very sparely populated areas. The surrounding area has frequent fires and resources for suppression are scares. Much of the eastern parts of town boarders the forest with typical pine forests and fire prone forest floors. For more info of the region, see Deliverable 5.1.

4.1.1.3. Outskirts of Goteborg – Coastal area

Göteborg is Sweden's 2nd largest city with about one million inhabitants in the metropolitan area. Surrounding the city is rural areas to the east and a varied coastline of grasslands, heather landscapes and mostly unproductive forests to the west and along the coast both north and southward.

The region has a strong cultural tradition of agricultural burning, now mostly as a traditional pastime. Grass- and heather landscapes are frequently burned but the tradition mostly lingers among the older generation. Accidental (and controlled) burning exhibit a characteristic spring peak which is more pronounced compared to inland Sweden. Thus, the region differs in vegetation and climate from the other two pilot sites in that it is not covered with continuous forests but significantly more fragmented areas with low production. Also, the region is more populated even outside of the main city.

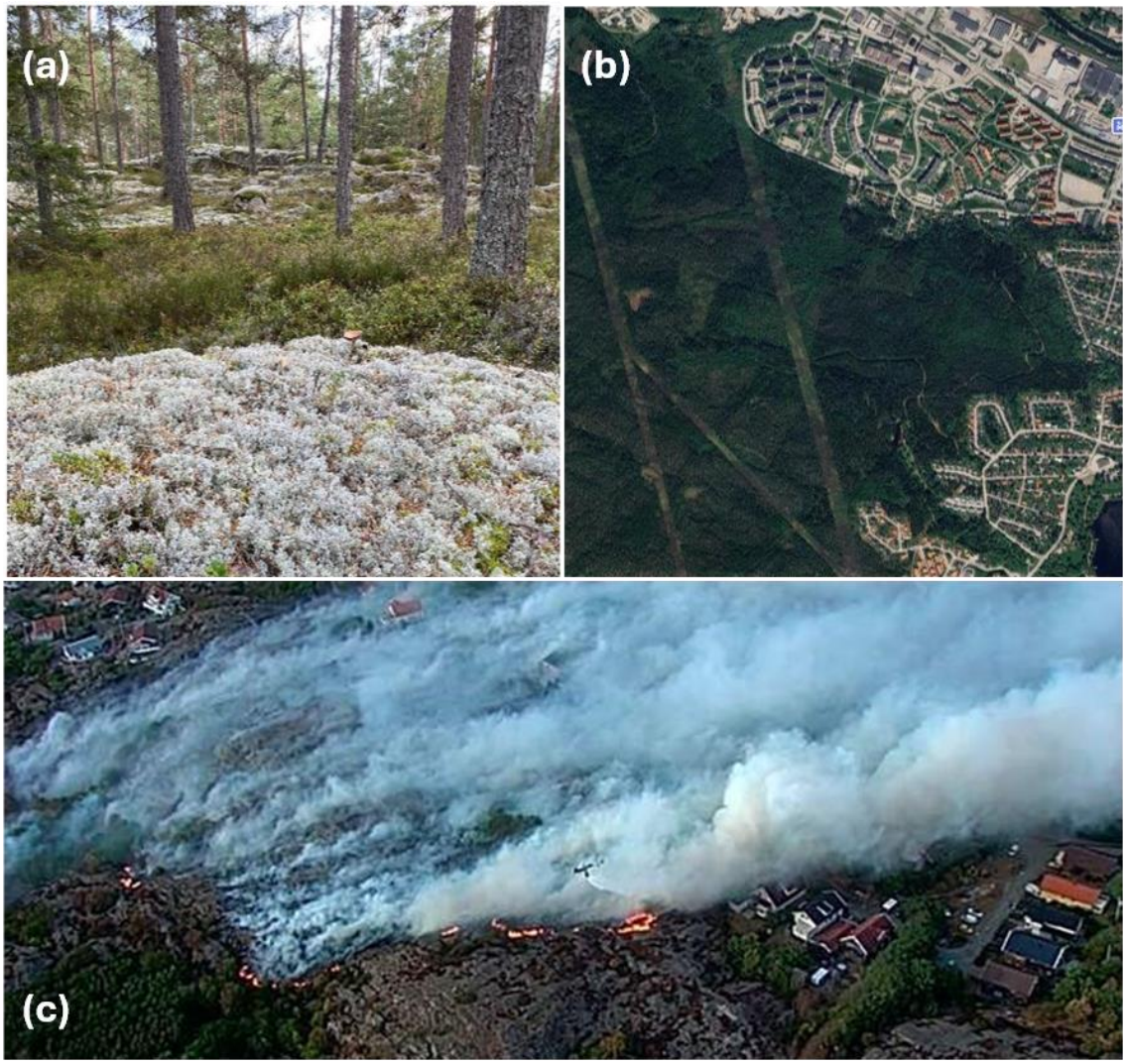

Figure 2. The Swedish pilot sites. (a) characteristic forest of Berga. Photo: Frida Vermina Plathner. (b) Aerial view of the eastern edge of Sundsvall @Google maps (c) Wildfire on an island outside Göteborg spreading in mostly heather igniting one building. Photo: Polismyndigheten.

4.1.2. Pilot implementation description

While some of the activities that are implemented are specific to the locations of the Pilots, others covered the whole country. The Prevention and responsibility tool was developed and tested in Oskarshamn (close to Berga) and then implemented in Sundsvall and Göteborg. The Wildfire risk assessment questionnaire was implemented on all properties in Berga by a project team member and the questionnaire was also shown to workshop participants in Sundsvall. The structure of the mobile app was thereafter shown to the participants in Göteborg.

A nationwide implementation was instead performed for the flyers of wildfire risk assessment and the safe burning practices through the national civil contingencies agency. Likewise, the wildfire risk assessment for rail networks was discussed on a national level with the responsible governmental agency to initiate nationwide future actions on this topic. See Table below for more details on the implementation.

Table 3. FIREPRIME Swedish pilot – Implemented activities.

	2024	2025						
Activity	**Winter**	**March**	**April**	**May**	**June**	**July**	**Sept.**	**Oct.**
The FIREPRIME Wildfire Prevention And Responsibility Tool. Testing and developing the concept.	Oskarshamn							
The FIREPRIME Wildfire Prevention And Responsibility Tool			3rd Sundsvall				11th Göteborg	
The FIREPRIME Smart Phone App for wildfire risk assessment at homeowner level							11th Göteborg	
The FIREPRIME Homeowner Wildfire Risk Assessment Questionnaire		Berga	3rd Sundsvall					
The FIREPRIME Homeowner Wildfire Risk Assessment Flyer								24th
The FIREPRIME Safe Burning Guideline								24th
Wildfire Risk Assessment For Rail Networks								
TOOLS ASSESSMENT AND IMPROVEMENT								

The implementation of the community engagement stream enabled the recognition of the different cultural aspects in relation to use of fire, protection against wildfire and concerns for future wildfire hazards.

4.2. First insights on challenges and opportunities for sustainability

Challenges

The material and tools presented by FIREPRIME was very well received from both the individual people and organisations that participated in the workshops as well as the fire fighting and civil protection authorities.

There are however obstacles in attracting sustainable ventures for sustainability given the low frequency of high-consequence incidents in Sweden. Although larger than for central Europe, the frequency of incidents gathering high attention is low compared to Mediterranean regions

and thus the long lasting momentum of engagement is difficult to uphold compared to other natural hazards such as flooding, storms and blizzards.

Since the high-consequence summers of 2014 ad 2018, much of the mitigating work has been moved from local control to centralized governance. This has generally had a positive impact on the forest fire outcome but also raises concerns of decreasing local and private initiative and experienced responsibility. It is exactly these issues that the *FIREPRIME Wildfire prevention and responsibility tool* in combination with the *FIREPRIME mobile App* as well as the information *flyers* try to address.

Another challenge is the unclear roles and responsibilities among different actors. Again, this is exactly one of the issues that are addressed in the tools themselves but naturally also pose a problem for the uptake of these very tools. To overcome this, one might have to address the issues via parallel paths, one through formal organizations such as the national and regional civil defence organizations and municipalities and one through less formal organizations such as local hunting and fishing teams or unofficial neighbourhood organisations.

Opportunities

One of the opportunities is the recent reorganization of the Swedish civil defence in light of the new security situation in Europa as well as with the recent NATO accession. This involves a rebranding of the main organization of the national civil defence (previously: Swedish contingencies agency (MSB), now: Swedish Civil Defence and Resilience Agency (MCF)). Their primary focus is to distribute actions and responsibility to the local societies and organisations. In this work they gladly receive the help of the developed FIREPRIME tools. Discussion on how this is to be preformed was held on December 18th, 2025.

Other opportunities are associated with a general trend for self-sufficiency in crises, fed by the increasingly more severe discourse on Swedish and European security. Thus, there is a more open minded approach to local and individual responsibility and mitigation actions.

4.3. Sustainability issues to address

4.3.1. Tools and services

The information flyers on *Wildfire risk assessment* and on *Safe burning practices* are finalized and the national authorities have included links to these on their national web pages for civil defence. The information in these are relatively stable and will not need updating on their content within the next few years. However, there might be a need for repackaging the information to relate to recent events new security situations and new means of communication in the future. Further discussions on this was also brought up on the meeting with MCF in December 2025. For now, it is RISE's responsibility to check that the links to the flyers continue to work as time evolves.

Concerning the *FIREPRIME Wildfire prevention and responsibility tool*, the present status of the tool will be available through both the FIREPRIME consortium web page as well as the RISE web page. RISE will utilise other funds for communication to publish a report on the tool. Even though there is relatively little that currently needs updating the report will cover aspects to consider for anyone who would like to perform further local adaptation of the tool.

The *FIREPRIME Smart Phone App for wildfire risk assessment at homeowner level* as well as the The *FIREPRIME Homeowner Wildfire Risk Assessment Questionnaire* are both maintained by the FIREPRIME consortium as of now. A dedicated project is required for adapting (or at least testing) these to other European regions such as eastern Europe. As of now, the applicability and access of the app and questionnaire must be checked regularly by RISE, at least every six months, for the following years. This requires only little resources in terms of time and funding and will therefore be conducted in-kind by RISE.

Other tools and services that were translated to Swedish include the project animations and the Wildfire preparedness day. Some of the content was changed in the process to make them realistic and suitable for a Swedish audience.

There are other tools in the FIREPRIME toolkit that could be considered for translation, depending on the amount of adaptation that is needed. The responsibility for this lies on the RISE partner and will be assessed during winter/spring 2026.

4.3.2. Stakeholders and governance structure

Who is involved?

RISE has provided the current version of the tools that are adapted to Swedish conditions (except for the mobile app which was just currently released) to the municipal authorities of each of the three regions that workshops were held in. These constitute central parts of the Swedish civil society and are therefore the best starting point for spread. For further dissemination other actors within wildfire mitigation include the County Administrative Boards (Länsstyrelser), the national MCF and the local firefighting organisations (which are organised under the municipalities but most often consolidated over several adjacent municipalities).

How are stakeholders organized?

There is a strong local self-governance in Sweden but during the recent decade municipal organisations has delegated much of the responsibility to centralized organizations. To reach the local communities with the FIREPRIME tools, one needs to both go through the municipalities but also through the less formal organizations.

Table 4. Stakeholders and roles of FIREPRIME stakeholders in Sweden.

STAKEHOLDER	ROLE
Swedish Civil Defence and Resilience Agency (MCF)	Responsible for providing fire risk assessment to industry, the public and to other authorities. Responsible for communication of crisis preparedness and to provide municipalities with tools and guidelines. One channel for communication is the web page 'krisinformation.se', where coherent information to the public is given. Responsible for providing national resources (fire fighting equipment, GIS knowledge, Aerial fire fighting, command and control) to the fire and rescue services in extra critical events.

	Provides feedback on FIREPRIME tools and materials. Adopts the guidelines and the risk assessment information as their official communication.
County Administrative Boards	Responsible to coordinate incidents at large incidents Responsible for approvals of changes in land use and coordinating the climate change adaptation efforts. Responsible for issuing fire bans throughout each jurisdiction. A few county administrative boards have asked for guidance of using the information flyers.
Municipal Administration	Responsible for providing Fire and Rescue Services to residents and landowners. Responsible for local plans on climate change adaptation and on public safety in settlements. Approval of changes on private properties. Responsible for informing residents on regulations such as fire bans issued by the County Administrative Boards The Göteborgs, Sundsvall and Oskarshamn municipalities are officially trying the simplified assessment of the FIREPRIME app on some of their own buildings (see section 4.4).
Fire and rescue services	Responsible for acting on immediate danger. Provides recommendations and advice to the public regarding mitigating physical risks in society (incl. wildfire safety). Have actively asked for the use of the guidelines and questionnaire (see section 4.4).
Houseowner association of Oskarshamn, Sundsvall, Göteborg, Lerum, Kungälv and Öckerö.	These organizations are regional (municipal) departments of the national homeowner association. They have been given the material of the FIREPRIME toolkit through their participations in the FIREPRIME workshop. The participants have said to spread it within their organizations and to communicate the lessons learned from the *Wildfire prevention and responsibility tool*.
Landowner associations	As several landowner associations participated in the FIREPRIME workshops they were given direct access to the toolkit (but not yet the app) and showed dedication to spread it within their own organizations.

4.3.3. Integration into local and regional civil protection plans

Each municipality in Sweden is obliged to present and update an annual vulnerability assessment over their area. In this work they have been asking for tools on wildfire risk mitigation. Since the Swedish authorities have taken extra precautions not to send mixed signals in the current state of misinformation, the guidelines from FIREPRIME has been adopted as the official recommendations for the municipalities. The questionnaire and app are suggested for municipalities that want to go further in their assessment.

Part of the work (background of damages and the recommendations) are included in MCF's government commission to assess future needs for wildfire protection across the nation.

However, the FIREPRIME products are intrinsically aimed for mitigating actions at the local (community) level. These do not comply strictly to civil protection plans but for volunteering work the municipal vulnerability assessment would be the first stop for guidance.

As municipalities, also the County Administrative Boards are obliged to present annual vulnerability assessments. These are less focused on settlements and buildings but more on general hazards for the county. We will target a few County Administrative Boards with the FIREPRIME toolkit during 2026 (see section 4.4).

The Swedish Act on Protection Against Accidents (LSO) dictates the municipal responsibilities to protect its residents. This not only includes the protection against urgent threats, but also mandates preventive actions. As very little guidance is available concerning wildfires the FIREPRIME toolkit provides a good source for guidance on this preventive work.

4.3.4. Capacity building

Key stakeholders to train.

There are three type of stakeholders with high potential for efficient mitigating effects after knowledge increasing activities. These are:

- Volunteer fire units. These are increasingly activated throughout the country, especially since the severe summers of 2018 and (in southern Sweden) 2021. Training these volunteers, not only in suppression and rescue actions, but also in preventive work. As these volunteers often have a strong root and connection to the (in particular rural) local area, they can have a strong impact on implementation of preventive actions and mitigating strategies where it is needed the most.
- Local neighborhood associations. These may take different forms and have different designations but in general they are forums for community cooperation, in particular for rural areas. As much of the mitigating work need a joint take on responsibility, as shown in the *FIREPRIME Wildfire prevention and responsibility tool*, such loosely formed organizations may serve as a the best point for effective implementation.
- Hunting and fishing teams. These provide central, but informal, parts of activities in forests around the country and are always associated to landowners, either consolidated or (normally for large forestry companies) individual. These teams have significant local social capital around the nation and therefore constitute another less formal route of for reaching capacity building

Capacity building sessions/content that should be developed.

Several different parts of the FIREPRIME toolkit should be compiled to target the volunteer fire units. These are trained by the municipal fire fighting organizations and therefore it is these organizations that should be targeted. Such material could be presented at the Förebyggandekonferensen (the national conference for fire and rescue service's preventive work), taking place every early autumn and is organized by the National authority MCF. This provides probably the best opportunity for reaching the local volunteering fire units.

The local neighbourhood association could be presented with the lessons so far learned from the FIREPRIME workshops during the *Wildfire prevention and responsibility tool* sessions. One way to reach these is through the magazine *Villaägaren* (https://www.villaagarna.se/tidning), which represent the member organization and reaches 514 000 readers (https://www.villaagarna.se/medlemsformaner/tjanster/villaagaren/annonsera/) . We have received interest in ariting an article about this for the magazine.

Similarly, the hunting teams are best approached by the Swedish hunting association's magazine called *Svensk Jakt*, with a coverage of 210 000 physical and 93 000 digital readers *per week* (https://svenskjakt.se/start/nyhet/uppat-for-svensk-jakt/).

For these articles, a dediacted compilation of the toolkit, with specifically adjusted text, should be provided.

4.3.5. FIREPRIME program annual functioning

The FIREPRIME Annual cycle defines what should be done throughout a year to keep each pilot site in the FIREPRIME project active.

Mobile app:

- Every year (before grass fire season) review the app and that the content for Sweden is valid, functional and up to date.
- Review the risk assessment questionnaire is new modifications are needed.

Flyers of safe burning practices and homeowner protection:

- Every year (before grass fire season) review the flyers, preparing press releases about the worst season for building damages (spring) and making sure to promote their existence.

FIREPRIME prevention and responsibility tool:

- Annually review the content and promote it at suitable fora, see below.

Securing reach:

- Attend the annual 'Förebyggandekonferensen' (autumn) and 'Skogsbrand' (spring) to secure contacts with municipal fire fighting organizations and their roles in using the tools.

- Writing articles in magazines (such as those presented in 4.3.4 as well as 'Brandsäkert' by the Swedish fire safety association and 'Brandposten' from RISE). These should present the toolkit and be timed for jsut before the grass fire season.

Expand the applicability of the FIREPRIME toolkit:

- Continuously seek funding for expanding the applicability to other parts of Europe. In particular, this includes Romania and the Balkans, but also the Baltics. European regions not in the European Union of interest would also be the UK, Switzerland, Caucasus and Uzbekistan.

Implement the risk assessment guidelines for the rail network:

- Continuously maintain the contact to the traffic authorities to push for developing the guidelines for Swedish rail system.

All these activities will and should be performed by RISE in order to keep the teh momentum of implementation and outreach of the FIREPRIME project.

4.3.6. Scalability at regional level

All of the FIREPRIME components in the toolkit that are adapted to Swedish conditions can be used throughout the country. Is possible, some of the formulations in the *FIREPRIME Wildfire prevention and responsibility tool* could, but do not need to, be modified to adopt local names of the locations and local terms. All other tools can be directly applied to any municipality throughout the country.

As there is very little guidance concerning wildfires anywhere in Sweden, there is great potential for impact. The simplest way is through the national MCF authority, since they have direct connections to all fire and rescue services and also to all municipalities. The condition is that any communication must align with that given on the authority's information web page 'krisinformation.se').

4.3.7. Funding mechanisms

The resources required to maintain the pilot (in this case Sweden as a whole) are not very high. Two annual weeks of work would probably suffice to update material, make it visible in digital channels and at civil protection events as well as making sure the links to contents are available. For further development, more resources are needed. A minimum funding to safeguard maintenance is around 10 000 Euro annually but much work could be done with even less resources. This would include one workshop, complete update of information for others to run workshops as well as dissemination activities to raise awareness and engagement.

As a start, internal funds from RISE could cover the maintenance of the pilot, making sure that the outcome of the project can evolve and have real impact. This would include supporting the managing of the app for Swedish conditions but not the actual software updates themselves. For longer sustainability, further funds are required, either as regional support from the European Commission, as further DG ECHO support or from national sources. With the reorganization of the civil defence and the new focus on security (to both antagonistic, accidental or natural threats) there might be possibilities for this type of funding.

One such is a partner programme being developed between RISE Research institutes of Sweden and MCF. This does not involve large amounts of economic funds but smaller parts and are intended for practical use and implementation. Which funding sources can support long-term sustainability (municipal budgets, regional funds, grants, private sponsorships, volunteer contributions)? Other forms of informal funding such as volunteer-driven, community-based or other partnerships are less likely to be successful given the smaller threat wildfires constitute compared to other threats (blizzards, storms, flooding or antagonistic/accidental threats).

4.4. Sustainability plan

The sustainability goals and the key steps, summarizing the potential strategy of section 4.3 can be found in the table below.

Table 5. Stakeholders and roles of FIREPRIME stakeholders in Sweden.

SUSTAINABILITY GOAL	KEY STEPS
Institutional embedding	• Making sure that national authorities reference the correct material in their communication against the public, municipalities, and other organizations. • Reaching municipal representative working with preventive actions through the “Prevention conference”, see section 3.4.3. • Reviewing (and if needed updating) all the tools aomed for Swedish end-users.
Upscaling	• Include the FIREPRIME toolkit in other and future RISE projects. This will support the evolution of the developed products and tools. • Adaptation of the tools to even further European regions. This would in particular be interesting for wildfire vulnerable countries such as Romania and the Balkans.
Capacity building	• Prepare summarized kits for (a) Volunteer fire units, (b) Local neighbourhood associations and (c) Hunting and fishing teams. • Reach out to these organizations through the channels described in section 3.4.3.
Funding	• start with internal in-kind funds to keep momentum of the • Keep discussion with national authorities, where the best possible source for small funds of maintenance are given. • Keep discussions with DG-ECHO for future maintenance funding.

Expanding the risk assessment guidelines for the rail network	• Keeping continuous contact with the transport authority since it is their funding that need to be secured in order to proceed.

5. Sustainability at the Austrian pilot

5.1. Pilot general description

The Austrian pilot study focuses on the municipality of Haiming in Tyrol. Haiming is a municipality located in the Alps and has 4885 inhabitants and 1449 buildings (Statistik Austria, 2021). The area demonstrates a very high variety of land and building uses including tourism (there are 39 hotels in Haiming), infrastructure (there 3 electrical substations) and industry (large industrial area with at least 68 buildings). Moreover, the municipality of Haiming is home of at least 4 volunteer firefighter groups that are active in the area. It is important to note that Austria has a very large body of volunteer firefighters (340,000 at national level). Finally, although the surrounding vegetation of the municipality of Haiming is mainly dominated by Spruce (Austria's main tree species), a natural forest (*the Forchet*) with dominant species like the European red pine (*Pinus Silvestris*) is located in the central part of the municipality a natural forest dividing the municipality in two parts and demonstrating higher flammability than the surrounding forest.

5.1.1. Pilot sites description

There are many sites of special interest in the area including outdoor sport facilities, an industrial zone, a listed train station and many hotels, commercial and industrial buildings. However, the Austrian pilot focused mainly on the residential area of the municipality and the largest of the three electrical substations.

The residential area: there are 1449 buildings in Haiming and 1236 (Statistik Austria, 2021) of them are residential and house 1890 households. Most of the buildings in rural areas in Austria are made of non-combustible materials (concrete, stone, bricks) but have large combustible parts (wooden balconies, terraces and roofs) that make them particularly vulnerable to wildfire (Figure 3). Moreover, most of them are surrounded by gardens with dense vegetation (horizontal and vertical continuity).

Figure 3. Typical residential buildings in the case study area.

The electrical substation: within the municipality of Haiming there are three electrical substations (APG, Tiwag and ÖBB). The pilot study focused on the larger of them (APG). All of them are located within the Forchet which means that the surrounding vegetation is particularly flammable.

Figure 4. The electrical substation in Haiming.

5.1.2. Pilot implementation description

Activities related to the Homeowner stream:

- The first version of the FIREPRIME App was evaluated in residential parts of Haiming as part of a field excursion. Specifically, it was applied to a housing cluster within the WUI that lies immediately adjacent to forested areas. The testing process demonstrated that the App required substantial modification before it could be effectively used by citizens in Austria. A key limitation was that the FIREPRIME App assigns generally low wildfire risk across much of Austria because it is based on EFFIS data, which classifies wildfire hazard at the European scale. Consequently, when Austria is assessed alongside countries such as Spain, Greece, or Portugal, its wildfire hazard appears minimal, directly influencing the resulting risk scores for individual buildings. To address this issue, the application was revised so that, in the Austrian context, it focuses on building vulnerability rather than overall wildfire risk. The updated version was then applied to the same buildings to clearly demonstrate the significance of this change. The revised App consists of two stages: a basic stage and an advanced stage. The basic stage now includes 10 predefined questions to be completed by the user. These questions were adapted to reflect Austrian conditions and were translated into German.

Activities related to the Community stream:

- Within the community stream, materials designed for school children and adolescents (e.g. card games) went beyond simple translation and were reworked to align with Austria's specific environmental, social and institutional setting. Notably, fire-related resources for children already available in Austria primarily address domestic fires, rather than wildfires, or are integrated into broader forest education initiatives.

Activities related to the Infrastructure Stream:

- For this stream, the emphasis was placed on the largest of the three electrical substations which is located the Forchet and is operated by APG (Austrian Power Grid). In collaboration with APG operators, we developed a wildfire risk assessment matrix for electrical substations as well as guidelines for wildfire risk assessment and management. The substation was visited during the Haiming field trip, in order to evaluate its wildfire risk. The wildfire risk assessment matrix was used for the assessment of the electrical substation.

5.2. First insights on challenges and opportunities for sustainability

The FIREPRIME project was accepted with interest by the local, regional and national stakeholders. Nevertheless, the project will end at the end of January 2026, and its sustainability has to be ensured. There are many challenges related to the sustainability of the FIREPRIME tools and many opportunities that are connected to their sustainability. In more detail:

Challenges:

- **low risk perception** of the communities living in the WUI: it is assumed that communities with limited experience with wildfires demonstrate a low-risk perception which affects their willingness to prepare at household level, to participate in municipal activities but also to respond to a potential event. Indicatively, the only 10% of the respondents in a European survey (European Commission, 2024) felt that they are exposed to wildfire in comparison with a 16% of the EU27. Low risk perception of authorities may also lead to neglecting the tools developed in FIREPRIME or other available tools related to wildfire.
- **Low acceptance** of climate change and scientific proofs. This is a political problem, which is not only concentrated in Austria but globally. Residents of the WUI often are not willing to believe that climate change alters precipitation and temperature patterns in the Alps which may result in more frequent wildfire events.
- Focus **on other hazards** (e.g. floods, torrential hazards) seem to occupy the interest of communities and authorities: frequent hazardous events in Austria, and particularly Tyrol include river floods, flash floods and debris flow as well as snow avalanches. According to a European survey (European Commission, 2024) the Austrians feel exposed mainly to extreme weather events (39%) and human health emergencies (33%). The natural hazard that they feel the most exposed to after extreme weather events is flood (26%) and geological disasters (18%). Memories of recent disastrous events other than wildfire encourage these views. For example, in the area of Haiming, apart from the massive rockslide (part of the Tschirgrant mountain collapsed 3000 years ago and affected the geomorphology of the area) which is a constant reminder of dangerous geomorphological processes, recent debris flow (2023) and flood (2021) events in the area caused disruptions and material damages and have remained in the collective memory of the residents.
- **Key stakeholders**, including the tourism sector, are sensitive to interventions that might discourage visitors or restrict development opportunities. Haiming hosts a thriving energy and industrial sector, including three electrical substations and a large industrial zone. In addition, tourism plays a significant role, with numerous hotels and outdoor recreational activities attracting visitors throughout most of the year. As a result, certain local stakeholders express concern about overly alarmist risk narratives, fearing potential economic impacts and reputational losses.

- **Financial support** (e.g. maintenance of the App, printing material, organization of events) may be difficult if the stakeholders/authorities are not convinced of the necessity of the tools that FIREPRIME offers. Although the short-term costs of maintaining the tools are relatively low, some stakeholders may perceive these costs as a reason to avoid taking responsibility for ongoing maintenance and associated expenditures.

Opportunities:

- There is an **increasing interest** of authorities and ministries given recent significant wildfire events elsewhere in Europe in other central and northern European countries and in Austria. More specifically, wildfire events and burnt land are increasing. Several recent events have received increased public attention and have highlighted wildfires as an emerging risk. For example, the wildfire in Lower Austria in 2022 burnt more than 800ha (550ha of forest)(Müller, 2023).

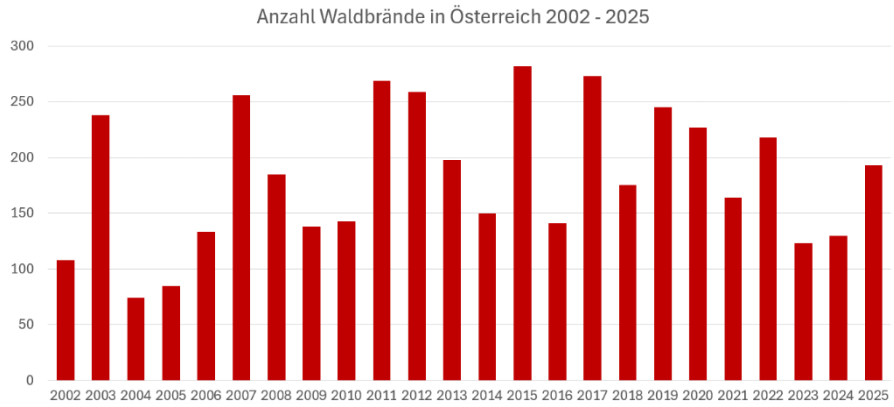

Figure 5. Number of wildfire events for the period 2002-2025 (https://fire.boku.ac.at).

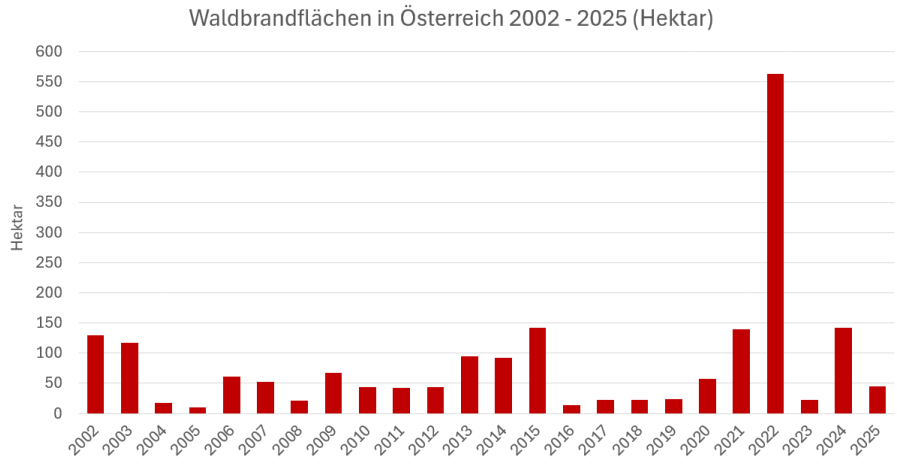

Figure 6. Burnt area in Austria for the period 2002-2025 (https://fire.boku.ac.at).

As far as Tyrol is concerned, there was a wildfire in Summer 2025 very close to the pilot case study area that gained attention although it did not destroy any building or threaten citizens.

Furthermore, in December 2025, a significant event was recorded close to Innsbruck (ORF – Österreichischer Rundfunk, 2026).

Figure 7. Wildfire in Silz (neighbouring municipality to Haiming) in June 2025 (Source: Freiwillige Feuerwehr Silz).

The rising frequency of events and their coverage of the media is an opportunity for the public to improve their awareness and to decide to use the available tools to improve their preparedness towards wildfires.

- The FIREPRIME program could be integrated into existing schemes originally planned for other hazard types or generally for climate change. An example is the program “Klar!Regionen” a national funding program that supports Austrian municipalities in collaborating on climate change adaptation, developing local strategies to manage climate impacts and increase resilience.
- Voluntarism, especially in the fire services is large in Austria (more than 4500 volunteer fire fighters) and could support the further deployment of FIREPRIME.

5.3. Sustainability issues to address

5.3.1. Tools and services

The tools and services developed during the FIREPRIME project has already been shared with Austrian stakeholders and they are going to be shared with even more stakeholders in the future since the BOKU team remains very active in the field. At the moment, the resources required are minimal. The Ministry (Austrian Federal Ministry of Agriculture and Forestry, Climate and Environmental Protection, Regions and Water Management) has already agreed to share a link for the German version of the FIREPRIME mobile App in its website that will be for every citizen free to download in Google Play and Apple store. The maintenance of the App and its update

remain in the responsibility of the FIREPRIME consortium in a voluntary basis. More organisations are interested in including a link of the App but also sharing the tools and the FIREPRIME Website in their own website and social media.

The tools developed in FIREPRIME were translated in German and had to be adapted to the local context in two cases:

- The games for schools and young people had to be adapted to the local environment to reflect e.g. the Austrian vegetation types and land use classes in order to be realistic for the Austrian audience.
- The App had to focus entirely on the vulnerability of residential buildings rather the wildfire risk. The reason was that the general version of the App includes the assessment of hazard based on the information of EFFIS. Nevertheless, in the European context the hazard in Austria is always relatively low. This does not mean that a wildfire in Austria is not possible so, in this case including the hazard could be misleading for the user. For this reason, the FIREPRIME consortium has developed an Austrian version of the App which includes only questions regarding the vulnerability of the building (building characteristics and surroundings).

5.3.2. Stakeholders and governance structure

Austria is a federal country and, therefore, wildfire management responsibility is thus shared among local, regional, and national actors, with clear emphasis on community-based preparedness and rapid local response. There are many actors at the national level (Ministries), the subnational level (federal states (Länder)), and the local level where wildfires are coordinated through local authorities and fire brigades (*Freiwillige Feuerwehr*). At the national level, the Austrian Federal Ministry of Agriculture and Forestry, Climate and Environmental Protection, Regions and Water Management) and the Austrian Fire Brigade Association provide overarching guidance, training, and prevention strategies. Another important ministry is the Austrian federal ministry of the Interior (BMI) and more specifically the SKKM which is responsible for the strategic coordination and management of major crisis and disasters.

Regarding the ministry (BLFRV), the responsible agency within the ministry is the WLV (Wildbach- und Lawinenverbauung) which translates into *Torrent and Avalanche Control*. The WLV is responsible for natural hazard management in general (not only for torrents and avalanches) and is active in the fields of protection, construction and maintenance of protective structures and preparation and management of hazard zone maps. Their role in wildfire management is not related to suppression activities but mainly to the forest, landscape and protective measures. The Ministry published recently an Action's program (Figure 8) (Bundesministerium für Land- und Forstwirtschaft, Regionen und Wasserwirtschaft, 2022) The Ministry has been also a very close contact of the FIREPRIME Austrian partners throughout the project.

Figure 8. The action's program of the Austrian Federal Ministry of Agriculture and Forestry, Climate and Environmental Protection, Regions and Water Management for the awareness, mitigation and suppression of wildfires.

Another important actor or the sustainability of the project (and not directly the management of wildfire) is the Austrian Environment Agency which Austria's is leading expert institution for environmental protection, climate policy, and sustainability, providing scientific analyses, data, and policy advice to support evidence-based decision-making at national and EU levels. The Austrian Environment Agency provides scientific expertise and data that support KLAR! Regions in planning and implementing local climate change adaptation measures. "KLAR! Regions" are Austrian Climate Change Adaptation Model Regions that support municipalities in developing and implementing local adaptation measures, raising awareness, and strengthening resilience to climate change impacts through tailored strategies and pilot actions.

At the subregional and local level forestry authorities, municipalities, and volunteer organizations also play key roles in prevention, early detection, and suppression.

5.3.3. Integration into local and regional civil protection plans

The integration of the tools into local and regional civil protection plans will happen in six streams:

- **Civil protection-Ministry of Interior:** The ministry is responsible to disseminate the tools that are relevant to civil protection at the regional and local level by communicating them to regional civil protection agencies.
- **Austrian Federal Ministry of Agriculture and Forestry, Climate and Environmental Protection, Regions and Water Management:** the Austrian FIREPRIME partners are already in close contact with this ministry. They are already positive towards promoting

the FIREPRIME tools and integrate a link to the App in their website. The tools can be integrated and included in an updated future Version of the Action's Program of the Ministry.

- **Local fire fighters:** the information about the availability of the FIREPRIME Tools can be disseminated through common education programs and activities of firefighters at the regional level to federal fire brigade associations. This may include the ÖFKAD Training and Education Program (*Österreichische Feuerwehr- und Katastrophenschutzakademie*), annual events such as the KAT25 in Lower Austria. KAT25 is a major firefighter event and performance showcase in Lower Austria (Niederösterreich) organized by the Lower Austrian Fire Brigade Association (NÖ Landesfeuerwehrverband). It is a large public event where volunteer and professional fire brigades present their work, equipment, capabilities, and rescue demonstrations to the public.

- **Synergies with research projects** with a focus on stakeholders: the Austrian partners of FIREPRIME have additional wildfire research projects that offer opportunities of synergies and further sustainability and exploitation of the FIREPRIME tools. In early 2026 an outreach workshop has been organised for a Waldfonds project (REVEAL) that is focusing on the co-creation of vulnerability tools for wildfire in different municipalities in Austria. Through this event the FIREPRIME tools can be promoted and adopted by other municipalities in Austria that have already shown interest in adopting the program.

- **"KLAR! Regionen" and Austrian Environment Agency:** the Austrian FIREPRIME partners are already in contact with the contact person of KLAR! Regionen" in the Austrian Environment Agency in order to promote the FIREPRIME tools in other regions and municipalities in Austria that can use it as a tool for climate change adaptation.

- **Fireblog (BOKU)** (*https://fire.boku.ac.at)*: the Austrian partners work very closely with the operators of the Fireblog and Fire database at BOKU University. This is the only database of wildfire events in Austria, and the blog is a common point for scientists but also regional and local authorities.

- **The Austrian Civil Protection Association (ÖZSV):** although they do not have an operational task, they are responsible for informing the public and circulate self-protection information (for different hazard types). The material developed in FIREPRIME can be disseminated together with similar information for other hazards to the public through public relation activities. Additionally, educational material and games may be communicated through the "Children's Safety Olympics "Safety-Tour"". This is a nationwide program that familiarizes children in a playful manner with important topics in civil and self-protection.

5.3.4. Capacity building

Key stakeholders to train:

- Local volunteer firefighters
- School kids, sport unions or other groups with young people

- Local residents (contacts through approaching be specific unions/groups e.g. pensioners, chorus, theatre groups)

Capacity building content should include:

- Knowledge material including YouTube videos, PowerPoint presentations from experts that could explain with audiovisual material the context of the wildfire
- The FIREPRIME tools accompanied with material (printed or in the form of presentation) as instructions to use them
- Opportunities of hands-on training in the field in organised capacity building sessions or as part of other events (e.g. fire fighters' day, village festival, environment day, forest education etc.)
- Evaluation and feedback questionnaires that can give ideas for further development or improvement of the FIREPRIME tools.
- Local contact points for further information and support but also contact points to the FIREPRIME consortium.

5.3.5. FIREPRIME program annual functioning

The FIREPRIME Annual program:

Biannually:

Mobile App:

- Regular software updates to ensure compatibility with new operating systems.
- Review and update risk assessment questions based on new wildfire damage data.
- Monitor user feedback and fix technical issues promptly.

Guidelines for Electrical Substations and Industrial Sites:

- Annual review to incorporate regulatory changes and technological advances.
- Update best practices and lessons learned from case studies.

Games, Brochures, and Community Guidelines:

- Evaluate and Refresh content annually to reflect new insights.
- Translate into additional languages as needed for broader European dissemination or use by minorities

Annually:

- Track user engagement with the app and educational materials.
- Evaluate the impact of training sessions and update content accordingly.
- Collect feedback from communities, schools, and industrial partners on usability and effectiveness.

- Organize train-the-trainer sessions for local authorities, firefighters, school educators, and community leaders.
- Conduct workshops for residents using the app or teachers using the games.
- Identify opportunities to integrate new technologies (e.g., AI for risk assessment, AR in games).
- Document lessons learned and prepare publications or reports for broader dissemination.
- Define roles for tool maintenance, training, and evaluation within partner institutions.
- Seek long-term funding or co-funding opportunities for sustainability.

5.3.6. Scalability at regional level

The FIREPRIME tools are scalable and adaptable at different scales. Regional authorities can integrate the tools into existing civil protection, forestry, education, and infrastructure management frameworks, enabling coordinated implementation across multiple municipalities. Capacity building activities, including train-the-trainer approaches and standardised guidance materials, support efficient replication. The limited need for region-specific adaptation and the low marginal costs of deployment facilitate cost-effective upscaling to additional regions.

5.3.7. Funding mechanisms

The **main costs** are associated with the maintenance and updating of the tools. In more detail, although the app is available for free in the Google-Play and Apple store there will be needs for software updates and possible updating of the questions. The educational material needs to be evaluated and updating and for this reason (unless it is possible on a voluntary basis) there will be minimal personnel costs. The same applies for any train-the trainer activity or workshops with the community to promote the use of the App.

These costs could be covered through **existing budget lines,** such as municipal and regional funds dedicated to disaster preparedness, fire brigade operational budgets as well as school and adult education budgets. Existing funding sources include programs such as “Klar! Regionen” (see previous sections) and KEM (*Kima und Energie-Modellregionen*). Indicatively, around EUR 11 million is available for KEM and EUR 8.8 million for “KLAR! Regionen” projects across Austria. KLAR! and KEM funding can support content adaptation, risk modelling updates, and the development of region-level modules as part of climate adaptation strategies. In the past, KLAR! regions have already supported public awareness and risk mapping initiatives, such as wildfire response maps for emergency services covering approximately 181,000 hectares.

New budget opportunities may emerge from follow-up DG-ECHO projects, or national research projects (e.g. ACRP and FFG) and European projects focusing on regional development such as INTERREG. Strong potential also exists for public-private partnerships (PPP) and/or private sponsorship. In addition to local industry, infrastructure operators and insurance companies would have clear interest in the uptake of the FIREPRIME tools - particularly those related to buildings and infrastructure- and may therefore support them financially. Similar opportunities exist in the tourism and hospitality sector, which has a strong interest in reducing the physical vulnerability of hotels, enhancing tourists’ sense of safety, and avoiding negative impacts on the

area's image as a touristic destination. Sponsors and PPPs can sponsor events and workshops, co-brand brochures and other awareness materials and co-fund educational campaigns. Regarding infrastructure, According to MASTERPLAN2014 APCIP (Austrian Program for Critical infrastructure Protection, these PPP are foreseen and encouraged (Bundesministerium für Inneres, 2014).

A final funding option are **community based and volunteer-driven models**: volunteer fire brigades are already operating in the pilot study area but also in all municipalities in Austria and they are often engaged in training and outreach activities with the local community. Local associations and unions may also contribute (especially the ones with an environmental focus). The involvement of volunteers not only reduces the costs but also enhances the awareness, collaboration and participation of the public and strengthens social networks.

Minimum funding required:

Mobile App maintenance (OS updates, bug fixing, respond to user-reported issues, update content): EUR 5,000-10,000 annually

Training and workshops on-site (pilot study area): Annually €2,000 per workshop

Further dissemination and promotion of the tools (in meetings, conferences etc.): 3,000€ annually.

5.4. Sustainability plan

To ensure the sustainability of FIREPRIME the following are necessary: institutional embedding, upscaling at the regional and national level, capacity building of relevant actors, updating the tools developed in the project and finally diversified funding or/and engaged volunteers.

Concrete steps for a structured sustainability strategy for FIREPRIME in Austria are demonstrated in Table 6.

Table 6. Austrian pilot sustainability plan.

SUSTAINABILITY GOAL	KEY STEP
Institutional embedding	• Identify an organisation that leads the coordination (e.g. municipality) • Define roles and responsibilities
Upscaling	• Ensure the adaptability of the tools • Identify communication channels for the dissemination of the tools • Identify existing protocols and tools that may include FIREPRIME tools (e.g. existing guidelines and action plans)

	• Organise some pilot adaptations (e.g. through "Klar!Regions")
Capacity building	• Organise workshops with the community and trainer the trainer workshops • Develop material that will enable capacity building • Develop material for the evaluation of the tools (questionnaires)
Updating	• Schedule technical and content updates. • Define the responsible organisation/person for these updates
Funding	• Identify funding sources • Explore PPPs • Contact major private actors in the area (e.g. infrastructure operators, tourism union etc.)
Volunteers	• Establish a good contact with volunteer fire fighter groups • Identify other voluntary groups (e.g. local groups of naturalists) • Actively involve them in the dissemination of the FIREPRIME program and tools.

6. Main conclusions to guide sustainability and further exploitation

- FIREPRIME has proven to be an adaptable framework for wildfire-prepared communities, capable of operating across very different European contexts (Mediterranean, Central and Northern Europe).
- Local communities–authority collaboration is a key factor on sustainability. The project greatest added value lies in strengthening coordination and shared responsibility between residents, municipalities, civil protection authorities and emergency services.
- Self-protection groups and local volunteers are key enablers of long-term continuity. Where these structures exist or are fostered, FIREPRIME can be maintained with limited financial resources and strong local ownership.
- FIREPRIME tools are operational and ready for autonomous use, making them suitable for project continuation and for adoption by municipalities and communities.
- Institutional embedding is essential for scalability. Integrating FIREPRIME into municipal and regional civil protection plans, wildfire prevention strategies and self-protection planning is key to ensure continuity at larger scales.
- An annual FIREPRIME cycle is necessary to sustain preparedness over time. Regular activities (preparedness days, drills, plan reviews, risk assessments) transform FIREPRIME into a continuous risk management process.
- Capacity building should prioritise local coordinators and facilitators, particularly leaders of self-protection groups, civil protection volunteers and forest defence associations.
- Scalability depends on balancing standardisation and flexibility. Core methodological components (governance principles, engagement formats, toolkit structure) can be standardised, while risk assessments, communication and implementation must be locally adapted.
- Regional and national authorities represent key leverage points for wider uptake. Their involvement can facilitate replication and provide access to stable funding mechanisms.
- The FIREPRIME Toolkit has strong exploitation potential at European level, particularly as a reference model for prevention and preparedness actions fostering collaboration between residents and authorities.
- FIREPRIME demonstrates that wildfire preparedness is not only a technical challenge but a governance and social process, and that wildfire resilience requires continuous engagement and institutional alignment.

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