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LANDSCAPE FIRE MANAGEMENT
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Landscape Fire Management Gap Analysis in Republic of Kosovo



ФАРМАХЕМ ФАРМАЦЕМ

HELVETAS

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MINISTARSTVO POLJOPRIVREDE, ŠUMARSTVA I RURALNOG RAZVOJA
MINISTRY OF AGRICULTURE, FORESTRY AND RURAL DEVELOPMENT

Preparation and compilation of the report:
Arlinda Gashi, LFMWB Country Project staff in Pristina

National supervisor of the process:
Tahir Ahmeti, LFMWB Country Focal Point, Ministry of Agriculture, Forestry and Rural Development in the Republic of Kosovo

Expert process support:
Prof. Dr. Nikola Nikolov, Regional expert for landscape fire management, Regional Fire Monitoring Center (RFMC), with support of the RFMC Staff

Expert on process for preparation of gap report:
Aleksandar Karaev

Proofreader:
Elena Jankoska

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LIST OF INSTITUTIONS AND EXPERTS INVOLVED IN THE PREPARATION OF THE GAP ANALYSIS

Central Directorate of the Inspectorate for Forestry and Hunting (CDIFH)
Cadastral Agency of Kosovo (CAK)
Directorate for the Administration of NP "Bjeshket e Nemuna" (DANPBN)
Directorate for the Administration of NP "Sharr" (DANPS)
Emergency Management Agency (EMA)
Federation of Hunters of Kosovo (FHK)
Forestry Department (FD)
Hydrometeorological Institute of Kosovo (HIK)
Kosovo Forestry Agency (KFA)
Kosovo Environment Protection Agency (KEPA)
Kosovo Statistics Agency (KSA)
Ministry of Environment, Spatial Planning and Infrastructure (MESPI)
Ministry of Internal Affair (MIA)
Ministry of Defence of Kosovo (MDK)
Ministry of Agriculture, Forestry and Rural Development (MAFRD)
University of Pristina – Faculty of Mathematical and Natural Sciences (UP-FMNS)
University of Prizren – Faculty of Life and Environmental Sciences (UP – FLES)

LIST OF ACRONYMS

APFOK	Association of Private Forest Owners of Kosovo
ADA	Agriculture Development Agency
CDIFH	Central Directorate of the Inspectorate for Forestry and Hunting
DANPBN	Directorate of Administration of National Parks „Bjeshket e Nemuna
DANPSH	Directorate of Administration of National Parks „Sharr“
EMA	Emergency Management Agency
FHK	Federation of Hunters of Kosovo
FD	Forestry Department
HIK	Hydrometeorological Institute of Kosovo
IEMS	Integrated emergency management system
KCA	Kosovo Cadastral Agency
KEPA	Kosovo Environmental Protection Agency
KFA	Kosovo Forest Agency
KSA	Kosovo Statistics Agency
LFM	Landscape Fire Management
MAFRD	Ministry of Agriculture, Forestry and Rural Development
MEST	Ministry of Education, Sport and Technology
MEDIA	Media
MIA	Ministry of Internal Affairs
MFAD	Ministry of Foreign Affairs and Diaspora
MESPI	Ministry of Environmental, Spatial Planning and Infrastructure
MoC	Memorandum of Cooperation
NFFIS	National Forest Fires Information System
NRP	National Response Plan
NGO	Non-Governmental Organizations
PFRU	Professional Fire and Rescue Unit
RFMC	Regional Fire Monitoring Centre
SWOT	Strengths, Weaknesses, Opportunities, and Threats
UP-FMNS	University of Pristina – Faculty of Mathematical and Natural Sciences
UP-FLSE	University of Prizren – Faculty of Life Sciences and Environmental

EXECUTIVE SUMMARY

This gap analysis provides a comprehensive evaluation of the Landscape Fire Management system in Kosovo assessing its effectiveness. The primary objective is to identify key deficiencies, hereafter referred to as gaps, and propose actionable recommendations to bridge those gaps and enhance the country's LFM system's capacity to manage landscape fires. This aims to safeguard natural resources and local communities' livelihoods, and to integrate the landscape fire management among all of its relevant stakeholders. This gap analysis was developed through a participatory approach, facilitated by multiple workshops organized by the Landscape Fire Management in the Western Balkans (LFMWB) Programme. These workshops brought together participants from the national LFM networks of Kosovo to collaboratively define, discuss and prioritize the identified gaps and measures for bridging them.

This gap analysis first identifies and defines the gaps, then offers brief explanation and context for each of the gaps. It then proposes a well-defined desired future state concerning the respective gaps. The desired state serves as a milestone and a reference for all intended improvements and actionable measures. To achieve this, the gap analysis document culminates in a detailed implementation framework table. This table acts similarly as a strategic action plan, listing each identified gap alongside proposed measures for bridging the gap, their period of implementation, the responsible institutions for undertaking or assisting in implementing the proposed measures, an approximation of a foreseen budget, and a priority level (urgency). The priorities in the implementation framework are colour-coded, meaning: Green (I) stands for the highest priority, Yellow (II) for moderate priority, and Blue (III) for lower priority measures.

The analysis reveals critical gaps across all four main phases (prevention, preparedness, suppression, and post-fire management) of the landscape fire management system in Kosovo:

- Prevention: Effective prevention of Landscape Fire Management (LFM) is fundamentally hampered by a lack of public awareness on LFM and insufficient inclusion of LFM in the educational program. This failure to inform is coupled with deficiencies in planning and data, specifically the lack of a national landscape fire risk map, the lack of landscape fire statistics in agricultural lands, and the lack of national fuel classification. Further structural issues include the non-inclusion of private forest owners in LF planning and the non-maintenance of existing fuel breaks and creation of new ones against landscape fire.
- Preparedness: Preparedness for Landscape Fire Management (LFM) is severely undermined by a deficiency in human resources and organizational structure, marked by a lack of specialized, trained firefighters for LFM and an inadequate forest guard service. Gaps are evident in the absence of 10-year Landscape Fire Management Plans and the insufficient number of water reservoirs necessary for suppression. Furthermore, operational effectiveness is weakened by the insufficient use of existing early warning systems for landscape fires, a lack of LFM knowledge among farmers, and a persistent lack of cross-border cooperation and coordination.
- Suppression: Suppression capabilities for Landscape Fire Management (LFM) are characterized by a critical lack of specialized vehicles for LF suppression and a lack of aerial firefighting resources. These resource deficiencies are compounded by the lack of a centralized Incident Command System for landscape fire suppression, which severely undermines coordinated, effective, and safe operational response during landscape fire events.

- Postfire Management: Effective Postfire Management is characterized by a lack of principles and basic steps in post-fire management methodology. This deficiency is compounded by the non-implementation of existing regulations and measures that would guide recovery. Furthermore, long-term success is hindered by insufficient scientific research on post-fire management, preventing the development of evidence-based strategies for environmental and socio-economic recovery.

The successful implementation of the proposed recommendations is envisioned over a five-year period and is contingent upon strong coordination among government agencies, academic institutions, and local communities (science-policy-practitioners interface). This holistic approach aims to address both immediate critical needs and facilitate long-term systematic improvements, thereby significantly bolstering Kosovo's overall capacity to manage landscape fires effectively and sustainably.

The Landscape Fire Management (LFM) gap analysis report was fully validated and accepted by all participating stakeholders

INTRODUCTION

Background Information

Landscape Fire Management (LFM) plays a critical role in safeguarding ecosystems, communities, and the environment from the devastating effects of fires. In the context of Kosovo, a comprehensive gap analysis of the LFM system is essential for assessing the existing state of fire management practices and identifying areas where improvements are necessary to reach a more resilient and adaptive future state. This process involves comparing the current status of Kosovo's fire management practices to desired objectives and standards, with a focus on reducing fire risks and minimizing the socio-economic and environmental impacts. The aim is to create landscapes that are not only resistant to fire but also capable of recovering from fire events, balancing preventive measures with active management strategies and community involvement.

The Landscape Fire Management in the Western Balkans Programme (LFMWB) is designed to enhance the capacity of the region by fostering multi-stakeholder policy dialogues, promoting cooperation, and integrating fire management into climate change adaptation strategies. Through workshops and collaborative efforts, stakeholders in Kosovo have identified both strengths and weaknesses in the current system, contributing valuable insights to shape this gap analysis. The ultimate goal is to improve Kosovo's fire management framework and develop actionable steps to close the identified gaps.

This document serves as a natural continuation of the National Landscape Fire Management Report for Kosovo, building upon its foundational assessment of the country's landscape fire management. While the National LFM Report provides a comprehensive overview of the current state, this analysis focuses specifically on identifying critical gaps in policies, institutional frameworks, and implementation mechanisms that need to be addressed to strengthen the country's landscape fire management capabilities.

To mitigate the negative impacts of LFs in the WB, it is necessary to have inclusive, cross-boundary cooperation and knowledge exchange to strengthen the capacities for landscape fire management (LFM) in the region. All of these aspects are incorporated in the Landscape fire management in the Western Balkans Programme. The Landscape Fire Management in the Western Balkans (LFMWB) is a project financed by the Swiss Agency for Development and Cooperation – SDC and coordinated by Farmahem from Skopje, North Macedonia with backstopping support from Helvetas Swiss Intercooperation from Switzerland. The first phase is designed to be implemented in the period from 01.02.2022 until 31.12.2026.

Objectives of the Gap Analysis

The primary objective of the Landscape Fire Management (LFM) gap analysis is to assess Kosovo's current fire management practices and identify deficiencies in key phases such as prevention, preparedness, suppression, and post-fire recovery. The analysis will also provide actionable recommendations to enhance fire management strategies, aligning them with best practices and European standards.

Key objectives of the gap analysis include:

- ✓ **Comparing current practices to international best practices** to ensure alignment with global standards.
- ✓ **Assessing vulnerabilities** and identifying gaps in the current system, focusing on areas requiring

improvement.

- ✓ **Improving resource allocation** and optimizing budgeting for more efficient fire management operations.
- ✓ **Supporting decision-making and policy development** through evidence-based recommendations.
- ✓ **Strengthening community engagement** and enhancing public awareness to reduce human-caused fires.
- ✓ **Improving coordination** between government agencies, local communities, and environmental protection organizations to create a more cohesive fire management system.

By addressing these objectives, the gap analysis will help strengthen Kosovo's fire management system, making it more efficient, responsive, and adaptive. This will not only reduce wildfire risks but also improve the safety and resilience of both local communities and ecosystems.

Scope and Approach of the Gap Analysis

The Gap Analysis of the LFM (Land Use and Forest Management) system includes an assessment of the current state of the LFM system in the Republic of Kosovo, considering the practical, political, and scientific aspects, as well as the desired future state.

In the preparation of the report, stakeholders from the national LFM network played a central role. During the third and fourth workshops, participants were actively involved in discussions through working groups, where they shared their experiences and expertise. They had the opportunity to identify challenges and provide recommendations for improving the current LFM management system in Kosovo.

Throughout the workshops and working groups, stakeholders demonstrated a strong professional interest in contributing to the preparation of this document.

The Regional Fire Monitoring Centre (RFMC) also played an essential role in the document's preparation, as the report was drafted in collaboration with their recommendations.

Additionally, the document was sent for final comments to stakeholders, who provided valuable input. These comments have been incorporated into the final version of the report.

1. GAP IDENTIFICATION ON LANDSCAPE FIRE MANAGEMENT IN THE REPUBLIC OF KOSOVO

In order to improve Landscape Fire Management (LFM) in Kosovo, it is essential to identify the key gaps that hinder the effectiveness of the current system. These gaps span various phases of fire management, including prevention, preparedness, suppression, and post fire management as well as resource allocation and policy development. By examining these areas, we can better understand the challenges Kosovo faces in managing fire risks and ensure a more comprehensive, coordinated approach to wildfire management. The following outlines the specific gaps identified across these crucial areas.

STRUCTURE

GAP analysis for each of the elements of the four categories (Prevention, Preparedness, Suppression and Post-fire Management) follows the following structure:

1. GAP formulation
2. Detailed description of the gap – explanation of root causes of the GAP
3. Desired state – Desired state is an outcome or achieved objective in the period between 1 and 5 years. While the desired state defines what needs to be achieved within a period 1-5 years, the Implementation Plan proposes concreate measures/activities on HOW the desired state will be achieved.

1.1 PREVENTION

Prevention involves the implementation of initiatives aimed at reducing exposure and vulnerability to fire, addressing these factors to ensure that fires do not have devastating effects or that the elements at risk also reduce or eliminate their exposure.

Based on the findings of the second workshop on Landscape Fire Management (LFM) in the Republic of Kosovo, the following known weaknesses in the LFM system have been identified:

- ✓ ***Legal regulations***: Need for revision of existing laws and regulations related to landscape fire prevention, need for establishment of law enforcement mechanisms, absence of fire protection plans in some institutions and inter-institutional cooperation, insufficient implementation of the legislation etc.
- ✓ ***Education and awareness***: Need for the development of fire prevention campaigns, raising awareness through educational programmes in schools, and leveraging media to enhance community awareness.
- ✓ ***Regulatory measures***: Planning and sustainable management of forests and land use, along with the implementation of preventive measures as outlined in various laws, guidelines and regulations.

The current fire management system in Kosovo involves multiple institutions and a considerable number of laws, regulations, and strategic documents that are in force. However, these documents need to be

harmonized before implementation, control and continuous monitoring can take place effectively.

After identifying the strengths and weaknesses, the following deficiencies/gaps in the prevention phase of the current LFM system in the Republic of Kosovo are determined.

Table 1. *Identification of gaps in the prevention phase of the current LFM system*

No.	Identification of gaps in the prevention phase of the current LFM system
1.1	**LACK OF PUBLIC AWARENESS OF LFM** One of the major gaps in the current Landscape Fire Management (LFM) system in the Republic of Kosovo is the insufficient level of sensitization and awareness of the importance of LFM practices among local communities, institutions, and key stakeholders. This lack of understanding significantly hinders the effectiveness of fire prevention and management strategies as the community's engagement and proactive participation in fire management efforts are limited. The general public and many local authorities may not fully comprehend the risks associated with landscape fires or the long-term impact they have on both the environment and public safety. This lack of awareness often results in inadequate preparation and response to fire risks, leaving communities more vulnerable to fires when they occur. Additionally, without a clear understanding of the role of LFM, stakeholders may be less motivated to adopt or support preventive measures. This gap affects not only the general population but also local governance and institutions, who may not prioritize LFM or incorporate it into broader land-use and development policies. Without strong institutional commitment, the necessary measures to protect vulnerable areas from fires are not adequately enforced or coordinated. Addressing this gap is essential to improving fire prevention, enhancing community resilience, and reducing the negative impact of landscape fires on Kosovo's environment and its people. The lack of community awareness is of particular importance, especially in the most vulnerable areas that are prone to fires. In order to increase safety for the community as well as for the preservation of the environment, there must be initiatives at the local and national level, and regional level as well. Desired state: *A well-informed, proactive community has been established that understands the risks and implications of landscape fires as well as the importance of effective fire management practices. This has resulted in a more resilient and prepared society, capable of mitigating fire risks and effectively managing landscape fires for the long-term benefit of the environment and local communities.*

LACK OF A NATIONAL LANDSCAPE FIRE RISK MAP

A National Landscape Fire Risk Map is essential for providing a comprehensive, spatially informed overview of fire risks across the country. It serves as a critical tool for decision-making, enabling authorities to better understand the vulnerability of different landscapes to fire. By identifying areas of high, moderate, and low risk, it allows for the prioritization of resources, focused preventive measures, and targeted interventions.

Without a National Landscape Fire Risk Map, fire management efforts become reactive and fragmented, increasing the potential for widespread destruction, inefficient responses, and slower recovery. The lack of targeted planning would hinder the country's ability to reduce fire risks, protect communities, and maintain resilient landscapes.

The lack of a national landscape fire risk map in Kosovo stems from mix of factors, such as for example insufficient institutional coordination. Fire management is spread across multiple institutions, such as forestry departments, environmental agencies, local government bodies, and emergency services. Coordination and collaboration are essential to gather, analyse, and share information about fire risks across different regions.

Moreover, there is a lack of centralized management. Without a central body responsible for overseeing landscape fire management and risk assessment, there is no clear leadership in creating a unified national fire risk map. A fragmented approach to fire management can lead to inconsistent and incomplete data collection.

1.2

Inadequate fire management planning is demonstrated by lack of comprehensive, forward-thinking fire management strategies at the national level. Fire risk mapping has not been seen as a priority since broader fire management plans and strategies are not yet in place.

In addition, there is limited funding and resources. The development of a national landscape fire risk map requires funding for data collection, technology, research, and ongoing updates. Financial constraints within government budgets or a lack of investment in fire prevention and management result in the omission of this critical tool.

Also, key political decision makers do not recognize the value of landscape fire risk mapping as a preventive tool.

Addressing the lack of a national landscape fire risk map requires overcoming these challenges through enhanced data collection, improved coordination between institutions, increased funding, and capacity-building initiatives. By establishing a comprehensive and up-to-date fire risk map, Kosovo would be better equipped to proactively manage and mitigate the risks posed by landscape fires.

Desired state:

Kosovo has created and continuously maintains a comprehensive, accurate, and up-to-date national landscape fire risk map. This map serves as a critical tool in managing fire risks across the country. By achieving this, Kosovo has not only improved its landscape fire management system but has also built a more resilient and informed society capable of reducing the risks and impacts of landscape fires.

LACK OF LANDSCAPE FIRE STATISTICS IN AGRICULTURAL LANDS

Statistics in agricultural lands are crucial for effective Landscape Fire Management (LFM) because they provide valuable data on land use patterns, crop types, vegetation density, and land management practices. This data helps fire management agencies understand where fires are most likely to occur, the potential severity of these fires, and how they spread. Agricultural lands are often at high risk for fire due to human activities such as crop residue burning, and understanding these activities is essential for preventing, preparing for, and responding to wildfires. Key agricultural statistics help identify fire-prone areas, prioritize interventions, and design tailored fire prevention strategies, such as firebreaks, controlled burns, and community awareness campaigns.

Without them, fire management strategies would be less effective, leading to higher risks, more damage, and slower recovery after fire events. The lack of data would hinder efforts to reduce fire risks and safeguard both agricultural landscapes and the communities that depend on them.

Eighty percent of fires in the Republic of Kosovo are primarily caused by the burning of haystacks. It is very important to establish a system for recording fires from agricultural lands. To ensure effective management, it is essential to organize awareness raising meetings through the advisory offices at the local levels. Additionally, it is important to enforce penalties for farmers who cause fires during crop cleaning, ensuring accountability and promoting safer agricultural practices.

1.3 The lack of landscape fire (LF) statistics in agricultural lands in Kosovo is caused by absence of a consistent, standardized system for collecting and recording fire-related data in agricultural areas. Without clear guidelines or protocols for documenting fire incidents, important data is either not collected or is fragmented and inconsistent. Insufficient resources or institutional capacity within relevant departments (such as agriculture, forestry, or disaster management) also prevent the establishment of comprehensive fire data collection and reporting systems.

Kosovo's agricultural lands vary significantly in terms of crop types, farming practices, and terrain. These differences make it more challenging to consistently track fire incidents across the region, particularly when the data collection methods are not adapted to account for such diversity.

Also fires in rural agricultural areas may go unnoticed or unreported, particularly if they occur in remote, hard-to-reach locations. This makes it difficult to gather accurate fire statistics, especially if there is no clear infrastructure for reporting in these regions.

In addition, there is insufficient recognition of the impact of fires on agriculture, including crop loss, soil degradation, and environmental damage, the importance of tracking these incidents is not fully appreciated.

Addressing these potential causes requires a systemic approach that includes improved coordination between institutions, enhanced data collection tools, increased awareness of the importance of fire statistics, and sufficient investment in fire management infrastructure and research.

Desired state:

A well-established, comprehensive, and systematically collected set of fire statistics specific to agricultural areas has been achieved. By achieving this, Kosovo has gained a clear, accurate, and continuously updated understanding of fire risks in agricultural lands, enabling more effective prevention, mitigation, and response strategies. This has contributed toward better protection of agricultural productivity and rural communities.

NON-INCLUSION OF PRIVATE FOREST OWNERS IN LFM PLANNING

The Republic of Kosovo has about 38% of the total area under private forests. Although with administrative instructions, private forest owners are obligated to prepare the annual forest fire protection plan.

Including private forest owners in Landscape Fire Management (LFM) planning is crucial because private forests make up a significant portion of a country's total forested area, and their management can directly influence the overall effectiveness of wildfire prevention and response. Private forest owners often control large, valuable land areas that are at risk of wildfires, and their involvement ensures that fire management strategies are comprehensive and inclusive. When private owners are integrated into the planning process, they can contribute valuable local knowledge, help implement preventive measures (such as firebreaks or controlled burns), and cooperate with public authorities in emergency response efforts.

1.4 Not including private forest owners in Landscape Fire Planning reduces the overall effectiveness of fire management strategies, increases fire risks, and undermines the resilience of landscapes. Their inclusion ensures a more holistic, collaborative, and effective approach to managing fire risks, benefiting both private and public landowners and the communities that depend on these landscapes.

Desired state:

Active participation and integration of private forest owners into national and regional landscape fire management strategies has been achieved. This inclusion ensures that fire management efforts are holistic, encompassing both public and private lands, and fostering collaboration between all relevant stakeholders. Attitudes toward fire management have changed: Through education, outreach, and collaboration, private forest owners have developed a greater sense of responsibility for fire management on their lands. A culture of shared responsibility and proactive fire management has been cultivated, strengthening fire prevention efforts across the region.

INSUFFICIENT INCLUSION OF LANDSCAPE FIRE MANAGEMENT IN THE EDUCATIONAL PROGRAM

Incorporating sufficient knowledge about Landscape Fire Management (LFM) into educational programmes is crucial for building a skilled and informed workforce capable of addressing fire risks in an effective and proactive manner. By educating future generations—particularly in fields such as forestry, environmental science, agriculture, and public policy—about fire prevention, preparedness, response, and recovery, educational programmes play a vital role in fostering a culture of fire safety and resilience. Well-informed professionals can contribute to better decision-making in both public and private sectors, ensuring that fire management practices align with best practices, regulatory standards, and climate change adaptation strategies.

Education programmes that emphasize LFM also enhance public awareness and community engagement. As future leaders, workers, and citizens are equipped with a deep understanding of fire risks, they are more likely to adopt and promote fire-resistant practices in their personal and professional lives, benefiting entire communities. Furthermore, integrating LFM into education ensures the development of innovative solutions to the evolving challenges of wildfire management, contributing to the resilience of landscapes, ecosystems, and communities.

Due to climate changes, LF has become even more frequent and the introduction of subjects for environmental issues, such as the protection of nature and the environment, are of immediate importance in the curricula of pre-primary, primary and secondary education.

The insufficient knowledge about landscape fire management in educational programmes can be attributed to several potential causes, such as the lack of LFM integration into educational curricula and limited coverage in related fields. Even when fire management topics are covered, they are introduced only briefly in broader courses related to environmental management, forestry, or disaster risk reduction. This limits the depth of knowledge students acquire about specific challenges and strategies related to landscape fire management.

Another cause of this gap is the lack of expertise among educators. Teachers and professors in educational institutions may lack specialized training and expertise in landscape fire management. Without instructors who are well-versed in this area, it is difficult for students to gain a thorough understanding of fire management principles, risks, and strategies.

1.5 The existing educational programmes focus more on theoretical aspects of environmental management and less on practical, hands-on training in fire management. Landscape fire management requires real-world knowledge, including the use of technology (e.g., GIS, satellite monitoring), fieldwork, and direct experience in fire prevention and suppression, which may not be adequately addressed in traditional academic settings.

Opportunities for students to engage in field-based learning, internships, or work with fire management agencies are limited. Practical exposure to fire management activities—such as firebreak creation, wildfire response, and controlled burns—helps students connect theoretical knowledge with real-world fire challenges.

There is also limited awareness of the importance of Landscape Fire Management. Educational policymakers and institutions may not fully recognize the importance of incorporating landscape fire management into educational programmes.

Additionally, there is limited collaboration between academia and fire management authorities. Educational institutions do not have strong partnerships with relevant government bodies, fire management agencies, or non-governmental organizations involved in landscape fire management. Collaboration between academia and fire management professionals is essential for ensuring that the latest research, strategies, and practical experiences are incorporated into educational programmes.

Landscape fire management requires an interdisciplinary approach, integrating fields such as ecology, geography, meteorology, and public policy. Educational programmes that fail to adopt this holistic perspective allow students to leave school with a limited understanding of the complex, interconnected nature of fire management.

Addressing the gap of insufficient knowledge about landscape fire management in educational programmes requires a multi-faceted approach, including curriculum reform, improved coordination between educational institutions and fire management agencies, increased funding for research and training, and enhanced public awareness of fire risks. By integrating fire management principles into the broader educational system, Kosovo can ensure that future generations are better equipped to manage landscape fire risks effectively.

Desired state:

Comprehensive integration of LFM principles across relevant educational curricula has been achieved, ensuring that students at various levels of education have gained the knowledge, skills, and practical experience needed to effectively manage and mitigate landscape fire risks. With the introduction of subjects for environmental issues in educational programmes, the new generations are well-informed and know how to approach those natural disasters.

NON-MAINTENANCE OF EXISTING FIREBREAKS AND FUEL BREAKS AND CREATION OF NEW ONES AGAINST LF

.6

By maintaining existing firebreaks (corridors) and opening new ones, landscape fire prevention can be significantly improved. This approach has proven to be one of the most effective preventive measures in Kosovo.

Firebreaks serve as crucial tools not only in extinguishing fires but also in the prevention and preparedness phases, helping to slow or stop the spread of fires across landscapes. Their efficiency in reducing fire intensity and providing safer zones for firefighting efforts has been well-documented, making them an indispensable component of our fire management strategy.

The non-maintenance of existing firebreaks (belts/corridors) and the failure to open new ones against landscape fires is mainly result of lack of funding and resource allocation, since it requires significant funding for manpower, equipment, and materials. Budgetary constraints within government bodies or local authorities may lead to the underfunding of fire prevention measures, including the construction and upkeep of firebreaks.

Also, firebreak maintenance has not been seen as a high priority compared to other immediate needs (such as firefighting efforts during fire seasons). As a result, resources are often diverted proactive fire prevention measures like firebreak maintenance in favour of short-term, reactive actions.

Decision-makers, who often operate within short-term governance cycles, are less inclined to invest in long-term fire prevention infrastructure like firebreaks, which require sustained effort and long-term planning.

Moreover, the value of maintaining and expanding firebreaks is often not fully understood by local authorities, landowners, and communities. Without a clear understanding of how firebreaks reduce fire risks and protect valuable land, stakeholders may not prioritize their maintenance.

Many firebreaks cross private lands, and landowners may be reluctant to allow for their establishment or maintenance due to concerns over property rights, land-use restrictions, or potential loss of productive land. Negotiating with multiple landowners and coordinating their efforts to create or maintain firebreaks is a significant challenge.

Addressing the gap of non-maintenance of existing firebreaks and the failure to open new ones requires a combination of increased funding, better coordination among agencies, public awareness, and a long-term commitment to fire prevention.

Desired state:

Firebreaks and fuel breaks have been strategically placed and continuously maintained, supported by a coordinated approach between public and private sectors, well-funded initiatives, and strong community involvement.

LACK OF NATIONAL FUEL CLASSIFICATION

The lack of classification of BURNING materials at the national level is a significant gap in LF management, which plays an important role in all phases such as prevention, preparation, suppression, and post-fire management.

The lack of classification of burning materials according to fire hazard classification has been caused by several factors.

For example, there may be no existing legal or policy framework that mandates the classification of materials based on their fire hazard potential. Without clear guidelines or regulations, authorities overlook this aspect of fire management, leading to inconsistent practices and lack of classification.

There is also lack of standards or guidelines for classifying burning materials as well as no clear methodology for assessing and classifying fire hazards in the landscape. This lack of a formalized system leads to confusion or inaction in classifying materials properly.

In addition, there is a lack of recognition of the importance of classifying burning materials by their fire hazard levels. Decision-makers, forest managers, or policymakers do not understand the value of such classification in managing fire risks effectively, this could lead to its neglect.

Without proper education and awareness about the need for a structured classification system, key stakeholders such as landowners, forestry workers, or fire management agencies do not prioritize or implement fire hazard classification protocols.

1.7 Developing a classification system for burning materials requires specialized knowledge in fire science, materials science, and environmental management. The shortage of trained professionals or experts, who can accurately assess the fire hazards of varied materials, prevents the establishment of such a system.

Also, proper fire hazard classification system requires data on the flammability and combustion characteristics of different materials (e.g., vegetation types, organic matter, and built environments). The absence of this data or insufficient research into the behaviour of various materials in fire conditions hinder the development of an effective classification system.

Cultural and behavioural factors also contribute toward this gap. In Kosovo traditional land management practices do not include fire hazard classification, and people rely on historical methods for managing fires without considering modern scientific approaches. This can hinder the adoption of systematic, standardized fire hazard classification practices.

Fire management in Kosovo is more reactive (focused on firefighting during active fire events) rather than proactive (focused on fire prevention and preparedness), thus the systematic classification of materials based on fire hazard is overlooked. A lack of long-term fire risk management planning result in the absence of structured classification systems for materials.

By overcoming these barriers, Kosovo can develop a systematic and effective fire hazard classification system, contributing to improved fire prevention and management strategies.

Desired state:

A comprehensive, standardized, and widely accepted fuel classification system and characterization of fuels has been established. This system has enhanced landscape fire management efforts, hence improving the country's resilience to landscape fires.

1.2 PREPAREDNESS

Preparedness focuses on ensuring that all stakeholders involved in LFM are ready to respond effectively to fires. This includes the following key components:

Actions and measures:

- Information dissemination: Ensuring the timely and effective communication of critical fire-related information.
- Logistics and transportation: Organizing transportation for firefighters and equipment to the fire site.
- Procurement of tools and equipment: Acquiring the necessary tools and equipment for firefighting efforts.
- Recruitment and training: Recruiting and training firefighters and volunteers to ensure they are well-prepared to handle fire emergencies.
- Fuel management: Implementing fuel classification, mapping, and the creation of fuel breaks to manage fire risks effectively.
- Fire danger rating: Developing a fire danger rating system to assess and communicate the severity of fire risks.
- Forest fire operational plans: Preparing detailed operational plans for managing forest fires.
- Forest management for fire protection: Ensuring that overall forest management strategies are aligned with fire protection efforts.

Training and capacity building: Assessment of adequate training programmes for firefighters, Professional Fire and Rescue Unit (PFRU) as well as addressing gaps in the availability of necessary firefighting equipment for staff.

Planning and Coordination: Assessing the effectiveness of emergency response plans, coordination mechanisms between agencies and organizations, and the integration of technology for the early detection of fires including executive systems used by agencies responsible for LFM.

Community engagement: Engaging the community in fire preparedness activities, initially through various trainings for landscape fire firefighting activities.

Identifying gaps during the preparedness phase leads to recommendations aimed at improving training programmes, updating response plans, enhancing coordination mechanisms, and increasing community involvement. These measures would significantly strengthen overall landscape fire preparedness.

Table 2. *Identification of gaps in the readiness phase of the current LFM system*

No.	Identification of gaps in the readiness phase of the current LFM system
	LACK OF TRAINED FIREFIGHTERS FOR LFM
	This gap refers to the insufficient number of firefighters who are both specialized and properly trained in the specific skills required for managing landscape fires. It underscores the need for targeted training programmes to ensure that firefighters are equipped with the expertise to handle the unique challenges posed by landscape fire management. Adequate, specialized training for landscape firefighters is essential because wildfires present unique challenges that require specific knowledge, skills, and techniques. Landscape firefighters need to be trained not only in standard firefighting methods but also in the complexities of managing wildfires in diverse landscapes, such as forests, grasslands, and agricultural areas. Specialized training ensures that firefighters are equipped with expertise to assess fire behaviour, identify risks, and implement appropriate strategies for wildfire suppression, evacuation procedures, and safety measures for both them and the affected communities. Furthermore, specialized training helps firefighters understand the broader context of landscape fire management, including prevention tactics, post-fire recovery, and coordination with other agencies. Without adequate, specialized training for landscape firefighters, fire suppression efforts would be less effective, increasing risks to both firefighters and the public. This would lead to slower responses, higher levels of destruction, and greater difficulty in recovering from wildfires. Also, for the purpose of exchanging knowledge with the states of the region, it is necessary to create agreements of understanding, which is also needed for the management of regional situations. Main cause for this gap is limited financial allocation. Providing specialized training for LF firefighters requires significant financial resources to cover training materials, instructors, travel, and facility costs. Budget constraints at the national, regional, or local levels may lead to the underfunding of fire management programmes, including the training of firefighters.
2.1	Besides, responsible institutions for LFM often prioritize immediate firefighting efforts or other urgent needs, such as infrastructure development or disaster recovery, over the long-term investment in specialized training for LF firefighters. Landscape fires are often viewed as secondary or less urgent compared to other types of fire emergencies (e.g., structural fires). This leads to a lack of recognition of the need for specialized training specifically designed for LF firefighters, with more general firefighting training being considered sufficient. There is also a lack of understanding of the complexities of landscape fires. Fire management in landscapes such as forests, grasslands, and rural areas presents unique challenges, including the behaviour of fires in different fuel types, terrain, and weather conditions. Since these specific risks are not well understood by policymakers or decision-makers, the need for specialized training is overlooked. Another cause of this gap is the shortage of qualified trainers. Developing and delivering specialized training programmes require experts in landscape fire management, fire behaviour, and firefighting techniques. A lack of trained and experienced instructors with expertise in these areas prevents the establishment of quality training programmes for LF firefighters. Resistance to change prevents introducing adequate training as well. Firefighters and agencies accustomed to traditional firefighting methods resist new approaches to landscape fire management. Cultural resistance to adopting specialized techniques for landscape fires hinders the development and implementation of targeted training programmes. Desired state: *Well-trained LF-fighters, efficient fire extinguishing, and decreased burnt area and damages have been achieved. A comprehensive, coordinated, and sustainable training framework that equips LF firefighters with the specialized knowledge, skills, and tools necessary to manage landscape fires effectively has been established. This has led to improved fire prevention, quicker response times, and better protection of both natural and human resources from landscape fires. Specialized training enhances the overall resilience of the landscapes to fire-related challenges, ensuring that firefighters are well-prepared for contemporary and future fire risks.*

THERE IS AN INADEQUATE FOREST GUARD SERVICE

Having an adequate number of forest guards is crucial for effective landscape fire management, biodiversity conservation, and the sustainable management of forest resources. Forest guards play a vital role in monitoring and protecting forests from illegal activities such as poaching, logging, and land encroachment, which can contribute to increased fire risks. They also assist in early detection of fires, help implement fire prevention measures, and coordinate fire suppression efforts. A sufficient number of guards ensure that forest areas are adequately covered and that response times are minimized during fire outbreaks or other environmental threats.

Having enough forest guards is essential for effective fire prevention, early detection, and rapid response. Without an adequate number, the risks of uncontrolled fires, illegal activities, and significant environmental and economic damage increase. Ensuring sufficient forest guard coverage is fundamental to maintaining the health of forest ecosystems and reducing the impacts of wildfires on communities and the environment.

In Kosovo, there is insufficient coverage of forest areas by forest guards. Although the legal requirement is one guard for every 3,500 hectares, currently there is one for every 5,000 hectares.

This gap can be attributed to several potential causes, including insufficient funding and budget constraints. The lack of sufficient funding for forest management services, including the hiring and retaining of forest guards, is one of the key reasons for the gap. Budget cuts or competing priorities result in a reduced workforce for forest guard services, despite legal requirements.

Forest protection may not be prioritized by policymakers, particularly if there are other pressing issues or if there is insufficient awareness about the importance of adequate forest guard services. The lack of political will to ensure compliance with legal standards for staffing results in inadequate resources allocated for the service.

2.2 Kosovo's forests include remote or difficult-to-access areas, making it challenging for forest guards to patrol and monitor effectively. Large and rugged terrain requires more staff, vehicles, and technological support (e.g., drones, GPS systems) that are not currently available.

Another potential cause might be that there may be a lack of understanding of the scale of the forest protection needs, especially in the face of growing environmental threats such as deforestation, illegal logging, and climate change. Without a clear understanding of these threats, the need for sufficient forest guards cannot be fully recognized.

Forest guard positions experience high rates of attrition, with workers leaving due to low pay, challenging working conditions, lack of career advancement, or unsafe working environments. This turnover contributes to the overall shortage of guards, especially in remote areas. Without effective retention strategies, such as competitive salaries, career development opportunities, or incentives for staying in the profession, maintaining a stable and sufficient workforce of forest guards can be difficult.

The current forest guards are often overburdened with responsibilities, which leads to inefficiencies in monitoring and enforcement. Overworked guards are often not able to effectively patrol large areas or address illegal activities in a timely manner, further exacerbating the problem of under-protection.

Strengthening the forest guard service would ensure better monitoring and enforcement of forest regulations, contributing to the long-term conservation and sustainable management of Kosovo's Forest resources.

Desired state:

An increased number of forest guards in the forest management units ***has been achieved****, leading to a well-resourced, efficiently staffed, and highly coordinated forest guard service capable of effectively protecting forest resources, enforcing regulations, and ensuring sustainable forest management. This leads to stronger forest conservation, better enforcement of environmental laws, and greater overall resilience in the face of threats like illegal logging, fire risks, and climate change. This also fosters stronger community involvement, awareness, and support for forest protection and fire prevention efforts.*

LACK OF LANDSCAPE FIRE MANAGEMENT KNOWLEDGE AMONG FARMERS

Farmers play a critical role in landscape fire management due to their direct involvement in land use and agricultural practices, which can either contribute to or help mitigate fire risks. Possessing knowledge of landscape fire management among farmers is essential for promoting fire-safe practices, reducing fire hazards, and fostering community-wide resilience against wildfires. Farmers are often the first to observe changes in vegetation, weather conditions, or early signs of fire, and with the right knowledge, they can take proactive steps to prevent or control fires on their properties.

Educating farmers about fire risk factors—such as how dry conditions, the type of crops grown, and the management of crop residues can increase fire risks—helps them implement preventive measures like creating firebreaks, proper disposal of waste, and safe burning practices. Additionally, farmers with knowledge of fire management can participate in community-wide prevention efforts, ensuring that their activities are aligned with broader fire management strategies. This shared responsibility enhances the overall effectiveness of fire prevention and response efforts.

Without this knowledge, fire risks increase, fire management efforts become disjointed, and the safety of communities and ecosystems is compromised.

In order to better manage LF, it is necessary to develop a training programme to improve the LF knowledge among farmers. It is necessary to cooperate with advisory services in order to increase knowledge about the management of agricultural lands, which had a positive impact on reducing the risk of LF coming from agricultural lands.

In Kosovo, farmers do not have access to formal education or training programmes that specifically address landscape fire management. Since these programmes are not offered by agricultural advisory services or local agricultural organizations, farmers remain unaware of the risks and best practices related to fire management.

2.3

Advisory services, which traditionally serve as a bridge between farmers and scientific knowledge, are underdeveloped or lacking in rural areas. These services do not include fire management as part of their offerings, so farmers do not receive critical information about fire risks, prevention strategies, and fire-safe land management practices.

Agricultural advisors or experts do not have the necessary training or capacity to advise farmers on landscape fire management effectively. The extension workers are not equipped with the knowledge or resources to provide fire-specific guidance, which leads to an increasing gap in knowledge.

Moreover, fire management is not sufficiently integrated into broader agricultural management programmes, meaning farmers are not encouraged or taught to consider fire risks as part of their farming practices. If fire management is treated as a separate issue or is not recognized as a critical part of sustainable farming, farmers may not take the necessary precautions.

Farmers often prioritize immediate agricultural needs (e.g., crop production, market demands) over long-term fire risk management. Without an understanding of the long-term benefits of fire prevention, such as reduced loss of crops and land, farmers do not view fire management as essential to their operations.

Most farmers rely on traditional methods of land clearing, burning, and crop management that may inadvertently increase fire risks. Since these traditional practices have been passed down through generations, farmers are not open enough to modern fire management techniques or see the need for change. They are accustomed to using fire for land clearing and pest control and resist adopting new fire management practices, especially when they perceive these methods as unfamiliar, costly, or disruptive to their existing ways of farming.

Addressing these issues requires targeted education, collaboration, incentives, and accessible resources to ensure farmers are equipped to manage fire risks effectively and adopt sustainable fire prevention practices.

Desired state:

A well-informed, proactive farming community has been established with the knowledge, tools, and resources needed to manage fire risks effectively. This has led to safer, more sustainable agricultural practices, reduced fire-related losses, and stronger community involvement in fire management and prevention efforts.

ABSENCE OF A 10-YEAR LANDSCAPE FIRE MANAGEMENT PLAN

2.4

As per legal infrastructure that obligates all municipalities of the Republic of Kosovo to draw up 10-year plans for the protection of forests from LF, the LFMWB project, through meetings with stakeholders, must raise the issue of this gap, to prepare the 10-year plans.

The absence of 10-year landscape fire management plans can be attributed to several potential causes.

Political leaders and decision-makers may prioritize short-term issues and immediate challenges over long-term planning. Landscape fire management often requires foresight and commitment to long-term strategies, which may not align with political cycles that focus on immediate, visible outcomes.

Lack of political will might be another cause for this gap. Since landscape fire management is not seen as a pressing issue by policymakers or the public, it does not receive the necessary attention, funding, or support to develop a comprehensive 10-year plan. The lack of understanding of the long-term risks of fires and the benefits of proactive management leads to neglect.

Developing a comprehensive 10-year fire management plan requires significant investment in research, planning, personnel, and infrastructure. Economic challenges, austerity measures, or competing budget priorities lead to cuts in funding for fire management efforts. This hinders the development and implementation of long-term planning frameworks for landscape fire management.

Different stakeholders have competing priorities and often do not see the importance of a unified approach to landscape fire management. This results in a lack of coordination in developing a comprehensive plan that spans multiple sectors, such as agriculture, forestry, and local development.

A 10-year fire management plan requires detailed data on fire risks, historical fire incidents, fuel models, weather patterns, and climate change projections. Without comprehensive data collection and analysis, it is difficult to develop an informed, long-term strategy for fire management.

If fire-related policies or regulations are not effectively enforced, there may be little incentive to develop comprehensive long-term plans. Fire management efforts are often more focused on immediate firefighting needs rather than proactive, long-term fire prevention and preparedness.

Some institutions or stakeholders may prefer immediate or short-term solutions and may resist the idea of a 10-year plan, especially if it requires significant changes to existing practices or resource allocation. Resistance to change can hinder the adoption of a long-term fire management strategy.

Developing a comprehensive, long-term fire management strategy would help Kosovo prepare for and mitigate the risks of landscape fires, ensuring that the country is resilient to future fire threats and capable of protecting its environment, economy, and communities.

Desired state:

A comprehensive, integrated, 10-year landscape fire management plan has been developed and implemented. This plan has provided a clear framework for reducing fire risks, enhancing preparedness, and ensuring sustainable forest and landscape management. The 10-year plan has provided clear direction, prioritized fire prevention and preparedness, and ensured long-term sustainability in LF management practices.

LACK OF CROSS – BORDER COOPERATION AND COORDINATION

The gap is the lack of cross-border cooperation and coordination in training programmes for landscape fire management (LFM) with neighbouring countries. This gap in collaboration leads to missed opportunities for sharing knowledge, resources, and best practices in fire prevention, detection, and response across borders. As landscape fires often affect large, interconnected areas that span national borders, effective firefighting and prevention strategies require a coordinated, regional approach.

There are various root causes for this gap.

Political differences, national interests, or bureaucratic obstacles hinder the establishment of collaborative efforts for fire management training. These barriers prevent countries from coordinating training programmes and aligning their fire management strategies.

Differences in firefighting methodologies, fire management priorities, and organizational structures can create challenges in aligning training programmes between neighbouring countries. These disparities can prevent the creation of standardized, joint training initiatives that would address common fire risks effectively.

Without a common database or shared knowledge base on fire risks, past incidents, and effective fire management strategies, neighbouring countries are not able to create a unified approach to LFM training. This lack of information sharing results in duplicative efforts or inefficiencies in fire management education.

2.5 Often, financial and human resources are insufficient to support joint training programmes. Also historical tensions, mistrust, or limited communication between neighbouring countries can prevent collaboration in fire management training. Without trust and open communication channels, it is challenging to build effective joint training initiatives.

If the governments or fire management authorities in neighbouring countries do not fully recognize the importance of cross-border collaboration in fire management, the need for joint training may not be a priority.

Neighbouring countries may perceive fire risks differently based on their own national experiences. If fire risks are considered less urgent or different in scale across borders, countries may not feel the need to collaborate on training, leading to isolated national efforts.

By addressing these root causes, neighbouring countries could work together to develop effective cross-border landscape fire management training programmes, enhancing their collective ability to manage fire risks and respond to landscape fire incidents.

Desired state:

An increased number of cross-border trainings has been achieved, which has contributed toward increased national and regional preparedness. A well-coordinated, regional approach to fire management that fosters collaboration, knowledge sharing, and resource pooling among neighbouring countries has resulted in a unified and efficient system for preventing, detecting, and responding to landscape fires across borders.

INSUFFICIENT NUMBER OF WATER RESERVOIRS FOR LF SUPPRESSION

Having sufficient water reservoirs is crucial for effective fire suppression. During wildfire events, access to reliable and readily available water sources is vital for controlling the fire's spread and preventing further damage. Water reservoirs are especially important in remote or fire-prone areas where other water sources may be scarce or difficult to reach. Without an adequate distribution of reservoirs, firefighting teams are forced to rely on limited resources, which can slow down their ability to contain fires, increase the risk of fire escalation, and result in greater destruction.

Moreover, establishing additional reservoirs in underserved areas requires significant financial investment, which can be a challenge. However, investing in a comprehensive network of water reserves is essential for ensuring that every region of Kosovo has the necessary infrastructure to manage landscape fires effectively and protect the environment and communities from the devastating impacts of wildfires.

Locations of water reservoirs for fire suppression are unevenly distributed across the territory of the Republic of Kosovo, and there are insufficient reserves to cover the entire country. Central Kosovo is only partially covered, and critical areas such as the Bjeshket e Memuna and Sharri Mountains lack adequate water reserves. Additionally, there is a significant gap in the availability of detailed reservoir maps, which are essential for efficient fire suppression. These maps would enable fire departments to quickly identify and access the nearest water sources, allowing them to respond to fires more effectively and reduce response times.

This gap is caused by several factors.

2.6 There may be insufficient financial allocation for developing and maintaining water reservoirs dedicated to fire suppression.

Fire suppression infrastructure may not be integrated into long-term fire management strategies. Without long-term vision, resources like water reservoirs are not considered essential, leading to their lack of development.

In mountainous or remote regions, building and maintaining water reservoirs is technically challenging and expensive. This makes it difficult to establish reservoirs in key locations where they are most needed. Some areas may lack natural water sources or access to sufficient water for the construction of reliable reservoirs. In arid or drought-prone regions, water scarcity further limits the ability to create and maintain reservoirs.

Furthermore, lengthy and complicated approval processes for building new water reservoirs can delay their construction. Local or national regulations may hinder the timely development of fire suppression infrastructure.

By expanding the reservoir network and developing detailed maps of their locations, Kosovo can improve its fire management strategy, increase the speed of firefighting response, and better safeguard both the population and the natural landscape.

Desired state:

A well-distributed, adequately sized network of water reservoirs has been established that ensures comprehensive coverage of the entire country, including remote and fire-prone areas. This system has enabled fast, effective responses to landscape fires and has contributed to more resilient fire management infrastructure.

2.7	**INSUFFICIENT USE OF THE EXISTING EARLY WARNING SYSTEMS FOR LANDSCAPE FIRES** The efficient use of early warning systems for landscape fires is crucial for minimizing the impact of fires on landscapes, communities, ecosystems, and the overall economy. While early warning systems **are in place** in Kosovo, **they are not being sufficiently utilized by competent and responsible entities and institutions**, and they might not be effectively integrated with fire management operations. Different governmental bodies and agencies often have overlapping responsibilities for fire management, and a lack of collaboration results in inefficiencies. For example, local governments, national disaster agencies, and environmental protection agencies may not be coordinated, leading to delays or gaps in the implementation of timely decisions regarding the early warnings from these support systems such as the NFFIS. By addressing these potential causes, early warning systems can become more reliable, responsive, and effective in mitigating fire risks across landscapes. Desired state: *The efficient use of an early warning system for LF has resulted in the reduction of burnt area and damages. A fully integrated, efficient, and reliable early warning system that enables quick, coordinated, and informed responses to landscape fire risks has been established. This has enhanced preparedness, reduced response times, and improved overall fire management efforts. Such a system has fostered a more resilient and fire-prepared society, with stakeholders at all levels actively engaged in fire risk management and response efforts.*

1.3 SUPPRESSION

In the **suppression phase,** which focuses on localizing and extinguishing fires**,** the primary goal is to control the fire and minimize its harmful impact. This involves deploying ground and aerial resources to establish containment lines, conduct controlled counterfires, and provide assistance to the affected communities. Effective coordination and quick action are essential for controlling a fire and mitigating its consequences.

Responsive actions – are actions that address the immediate and direct effects of an incident. These include activities are aimed at preserving life, property, and the environment, ensuring basic human needs are met, and maintaining the social, economic, and political stability of the affected community.

Response actions also encompass law enforcement, firefighting, efforts, ambulances and emergency medical services, emergency flood control; evacuations, emergency public information dissemination, and measures to reduce additional damage.

Fire extinguishing techniques – *in Kosovo, various fire extinguishing methods have been employed, ranging from traditional approaches to more advanced techniques. These include opening belts to prevent the fire's spread, using backpacks for small fires, implementing fire-against-fire method, and utilizing KFOR's assistance, such as extinguishing fires by deploying water via helicopters.*

Coordination – The Prime Minister plays a critical role in leading the country's response, ensuring that necessary resources are mobilized quickly and effectively for incidents of national importance. Inter-institutional meetings are organized as needed to coordinate policy issues and action strategies. For ongoing or potential incidents of national significance, all central incident management activities are coordinated through the Ministry of Internal Affairs. Other ministries and government agencies act within this framework, carrying out their specific roles and responsibilities for incident management and emergency response.

The suppression phase is a crucial point where the success of the entire fire management process, including prevention and preparedness efforts, is measured. Without prior planning, prevention, and preparatory

measures, the suppression phase would not be successful.

After evaluating the strengths and weaknesses, the following deficiencies and gaps in the suppression phase of Kosovo's landscape fire management system have been defined.

Identified gaps in the suppressive phase.

Table 3. Identification of gaps in the suppressive phase of the current LFM system

No.	Identification of gaps in the suppressive phase of the current LFM system
3.1	**LACK OF SPECIALIZED VEHICLES FOR LF SUPPRESSION** Inadequate equipment is critical gap identified in the suppression phase of landscape firefighting. This gap significantly hampers the effectiveness, efficiency, and safety of firefighting operations. The consequences of using outdated and inadequate firefighting equipment in the landscape are significant and numerous. They affect firefighter safety, the efficiency of firefighting operations, public safety, and the environment. The lack of specialized vehicles for landscape fire (LF) suppression can be attributed to several potential causes. Specialized vehicles, such as fire engines designed for rough terrain, firefighting helicopters, or all-terrain vehicles, require significant investment. If fire management services are underfunded, the necessary resources for acquiring and maintaining these vehicles may not be available. Firefighting agencies often focus more on immediate, short-term responses (e.g., deploying available resources) rather than long-term investments in specialized vehicles and infrastructure. Without long-term planning, the procurement of advanced firefighting vehicles may not be prioritized. When specialized vehicles are procured by individual fire departments or agencies without a centralized, coordinated purchasing strategy, the acquisition process is inefficient or leads to mismatches in the types of vehicles needed for specific fire suppression tasks. There may be a lack of understanding of the full scope and complexity of landscape fires, which require specialized vehicles for effective suppression in diverse environments. Specialized fire suppression vehicles, particularly those designed for difficult terrains or for large-scale fires, can be expensive to purchase and maintain. This high cost can be a significant barrier, particularly in situations of constrained budget. Beyond the initial purchase, specialized vehicles often come with high ongoing maintenance costs. By securing adequate funding, fostering coordination between agencies, ensuring the availability of specialized vehicles, and providing proper training, Kosovo's fire management capabilities can be significantly enhanced, leading to more effective fire suppression and reduced risks. Desired state: *A well-equipped, modern firefighting fleet capable of effectively responding to landscape fires across diverse terrains and environments has been established. Specialized vehicles have been integrated into a comprehensive fire management strategy that involves all relevant stakeholders, ensuring the protection of communities, the environment, and natural resources from the devastating effects of landscape fires.*

LACK OF AERIAL FIREFIGHTING RESOURCES

The gap refers to the insufficient availability or deployment of aerial firefighting resources, such as firefighting helicopters, planes, or drones, to support landscape fire suppression efforts. Aerial firefighting resources play a critical role in rapid fire containment, especially in hard-to-reach areas, and can significantly enhance the overall effectiveness of fire suppression efforts by delivering water, retardants, or conducting fire spotting from the air. The absence of these resources can hinder the ability to control fires quickly and mitigate their damage.

The Republic of Kosovo does not have any helicopters, which makes it impossible to intervene in time through inaccessible terrain, in high-level fires, also during the fire season, where at the same time there are large fires, where air support plays an essential role in suppression.

Main root cause for this gap is lack of financial resources. Aerial firefighting resources require significant initial investment for procurement, as well as ongoing maintenance costs to ensure operational readiness. If budgets for fire management are limited, investments in aerial firefighting technology may be deprioritized.

If fire management authorities fail to plan for the gradual acquisition and integration of aerial firefighting capabilities, they may find themselves without the necessary resources when a fire emergency occurs.

There may be limited suppliers or manufacturers that provide the necessary aerial firefighting resources, particularly for smaller or less developed regions. This can make it difficult to acquire aircraft or drones suited to the specific fire risks faced by the country.

3.2 Aerial firefighting requires specialized pilots, ground crews, and maintenance staff. The absence of trained personnel capable of operating and maintaining aerial firefighting resources hinders their integration into fire management strategies. Also, fire management agencies may not have access to specialized training programmes for aerial firefighting or may lack the resources to invest in such programmes for their staff.

There may be regulatory or legal barriers to acquiring or using aerial firefighting resources. For example, regulations related to airspace usage, aircraft certification, or environmental considerations may make it more difficult to deploy aerial resources for fire suppression.

In addition, bureaucratic hurdles in procurement processes, such as long approval timelines or complex tendering procedures, delay the acquisition of necessary firefighting equipment.

The absence of suitable infrastructure, such as helipads or refuelling stations, can make it difficult to deploy and maintain aerial firefighting resources. Without proper infrastructure in place, even if aerial resources are acquired, they may not be fully utilized.

By addressing these root causes, Kosovo can strengthen its fire management capabilities and improve its ability to effectively respond to large-scale landscape fires.

Desired state:

A fully integrated, well-equipped, and responsive aerial firefighting capability has been established that enhances landscape fire suppression efforts. This ensures quick, effective, and coordinated responses to fires, particularly in challenging terrain, while minimizing the overall impact on communities and the environment. The integration of specialized aerial resources has strengthened the overall fire management framework, ensuring rapid response, effective suppression, and reduced fire-related damage across the country.

3.3	**LACK OF A CENTRALIZED INCIDENT COMMAND SYSTEM FOR LANDSCAPE FIRE SUPPRESSION** Without a unified Incident Command Centre, the response to landscape fires is fragmented, inefficient, and lacks clear leadership and coordination. This can lead to delays in decision-making, confusion in resource deployment, and difficulty in managing large-scale fires that require collaboration across multiple agencies and regions. Main root cause for this gap is fragmented institutional responsibilities and multiple agencies with overlapping roles. Without a centralized command centre, agencies struggle to coordinate their actions effectively, with unclear leadership and decision-making authority during fire events. This results in inefficiencies, confusion, and delayed responses. There is also a lack of strategic vision. Without a long-term strategic vision for national fire management, the establishment of a centralized command structure is not recognized as a necessary step for effective landscape fire management. Establishing and maintaining an Incident Command Centre requires significant investment in infrastructure, technology, personnel, and training. Limited fire management budgets affect creating a centralized coordination hub. There are no formal structures or frameworks in place to ensure that all relevant agencies collaborate effectively during fire incidents. A lack of established coordination mechanisms prevents the creation of a unified command centre and leads to a disjointed response during fires. Effective landscape fire management requires cooperation across multiple sectors, including agriculture, forestry, local government, and emergency services. If these sectors are not well-integrated, the establishment of a centralized command centre may be overlooked or resisted. Inadequate communication infrastructure, including data networks and emergency response systems, hinders the creation and functioning of a centralized incident command centre. Without reliable communication channels, effective coordination during fire events is compromised. There is also limited expertise and lack of personnel with the required knowledge and experience in establishing and managing an Incident Command Centre. The complexity of managing large-scale fire incidents requires trained professionals with expertise in incident management, coordination, and decision-making under pressure. Some agencies may resist a centralized command structure, preferring to maintain control over their own operations during fire incidents. This resistance to centralization delays the establishment of a unified command system and undermines the effectiveness of fire management efforts. By addressing these root causes, Kosovo can establish a unified, efficient system for managing landscape fire incidents, improving response times, reducing damage, and ensuring better resource allocation during fire emergencies. Desired state: *With the creation of this incident command centre, there has been a faster response and dissemination of incident information across all platforms. A fully integrated, efficient, and coordinated national incident command system that enables fast, unified, and effective responses to landscape fire incidents has been established. This has ensured that fire management efforts are well-organized, resources are efficiently allocated, and all stakeholders—at local, regional, and national levels—work in harmony during fire emergencies.*

1.4 POST-FIRE MANAGEMENT

Post-fire management refers to the activities and strategies implemented after fire localization and suppression to address its impacts and support the rapid recovery of ecosystems. Post-fire operations include processes that take place following the fire. This phase is crucial for investigating the causes of wildfire, repairing the damage caused by fire suppression efforts, restoring the land, and supporting the recovery of communities. It also includes identifying lessons-learned, improving practices that

work well, and incorporating knowledge from all sectors, both public and private. Post-fire actions offer a unique opportunity to create resilient landscapes and communities, while reducing future disaster risks and advancing the goals of this framework.

Forest restoration: On areas affected by fire, the first step is to clean the surface by removing the burned remnants of wood to prevent the spread of diseases and pests that could find shelter in the charred remains. These pests and diseases could develop and became a source of infection for the vital part of the forest.

Environment rehabilitation: The rehabilitation plan is essential, including the introduction of fire-resistant species through afforestation projects. Priority would be given to autochthonous species to create a forest stand resilient to fires, which can more easily adapt to natural conditions.

Community support: Communities in fire affected areas play a critical role in the recovery process. They are involved in the initial cleanup of burned material and in afforestation and reforestation projects. Their active participation ensures that the recovery process is community-driven and sustainable.

As found in this section, there is currently a lack of an early fire prevention system, a database for assessing fire-related damage, and detailed plans for managing areas after landscape fires. Based on past practices, there needs to be a greater focus on managing post-fire areas to effectively restore and mitigate future fire risks.

Table 4. Identification of gaps in the post-fire management phase in the current LFM system

No.	Identification of gaps in the post-fire management phase in the current LFM system
4.1	LACK OF PRINCIPLES AND BASIC STEPS IN POST-FIRE MANAGEMENT Principles and basic steps in post-fire management are critically important for ensuring that recovery and restoration efforts are organized, effective, and sustainable With the creation of adequate guidelines and basic steps of post-fire management comes the adequate management of post-fire situations. The lack of principles and basic steps in post-fire management stem from several potential causes. The first one is the absence of a national strategy or framework. When there is no national strategy or framework for post-fire management, fire management agencies do not have clear principles or standardized steps to follow. This lack of formalized guidance leads to fragmented or inconsistent post-fire responses. The absence of a cohesive plan between different agencies and stakeholders (e.g., government bodies, local authorities, NGOs) results in disjointed efforts after fires, with no clear, agreed-upon steps for recovery and restoration. There is an insufficient legal and regulatory framework as well. The lack of legal pressure results in reactive, ad-hoc responses rather than planned, proactive recovery. Even if some regulations exist, they may not be enforced effectively, leading to the lack of consistency and adherence to post-fire management principles. This gap is also influenced by insufficient institutional knowledge. When there is a lack of institutional knowledge or documented experience in post-fire management, there may be no clear framework or understanding of what needs to be done after a fire to ensure effective recovery. The lack of coordination and collaboration between responsible institutions hampers the introduction of the principles and basic steps in post-fire management. By overcoming the root causes listed above, Kosovo can establish a well-organized post-fire management system that ensures effective recovery, restoration, and resilience-building after landscape fires. Desired state: *Guidelines, principles, and steps for proper post-fire management have been established. A comprehensive, structured, and well-coordinated post-fire management system that is built on clear principles and standardized recovery steps has been established. This enables quick and effective restoration of ecosystems, communities, and landscapes impacted by fire, with an emphasis on long-term resilience and sustainability. This involves tracking the restoration of ecosystems, the recovery of affected communities, and the effectiveness of interventions. The system involves all relevant stakeholders, ensuring that the country is better prepared for future fire events and that the ecological and social impacts of fires are minimized.*

NON-IMPLEMENTATION OF EXISTING REGULATIONS AND MEASURES

This gap refers to the lack of effective implementation of established fire management regulations and measures, resulting in the failure to carry out the necessary actions that have been legally or strategically outlined to prevent, manage, and recover from landscape fires. Despite having regulations in place, these measures are not consistently or efficiently put into practice, undermining the effectiveness of fire management efforts.

Fire management and the enforcement of related regulations may not be seen as a priority by political leaders, leading to insufficient action or resources being allocated to their implementation.

Regulatory bodies may lack the necessary financial resources to implement and enforce regulations effectively, including hiring adequate staff, purchasing equipment, or conducting necessary activities.

Insufficient enforcement of penalties or a lack of monitoring systems make it difficult to ensure compliance with fire management regulations. When the penalties for violating fire management measures are too weak or inconsistently applied, stakeholders are less motivated to adhere to regulations.

The processes for implementing and enforcing fire management regulations is often bogged down by bureaucratic delays, inefficiencies, or red tape, which prevents timely action.

4.2 Additionally, complex and outdated procedures prevent the quick adoption and execution of necessary measures, slowing down the overall response to fire risks.

Farmers, landowners, and local communities often resist compliance with fire management regulations since they view them as inconvenient, costly, or impractical, leading to insufficient enforcement on the ground.

Differences in how regulations are applied across regions or jurisdictions can result in uneven enforcement and gaps in the implementation of fire management measures.

In some cases, corruption within regulatory bodies or fire management agencies can lead to the non-implementation of fire management measures. Resources allocated for fire management may be misused or redirected, undermining the effectiveness of regulations.

By addressing these challenges, Kosovo can ensure the more consistent and effective implementation of fire management regulations, ultimately reducing fire risks and improving overall fire resilience.

Desired state:

A consistently enforced framework which ensures all fire management regulations and measures are implemented effectively across all levels of government and society has been established. This system has reduced fire risks, improved preparedness, and ensured quick and coordinated responses during fire events.

INSUFFICIENT SCIENTIFIC RESEARCH ON POST-FIRE MANAGEMENT

Scientific research on post-fire management is crucial for providing evidence-based insights that improve recovery efforts, enhance resilience, and ensure sustainable land and ecosystem management after fire events. Scientific research helps us understand the specific ecological impacts of fires, such as how different plant species, soil types, and animal habitats are affected by fire. This knowledge is vital for developing effective restoration techniques that promote the recovery of biodiversity and ecosystem services.

Main cause of this gap is underfunding of research initiatives**.** Scientific research, especially in the context of post-fire management, often requires significant financial investment for data collection, field studies, and long-term monitoring. If funding is insufficient, research efforts is limited, and critical studies on post-fire recovery and management will not be conducted.

Some governmental bodies, local authorities, or agencies do not prioritize scientific research in post-fire management, focusing instead on immediate fire suppression efforts or recovery operations. Without institutional support or a dedicated focus on research, progress in understanding post-fire recovery can be slow.

Scientific research in post-fire management requires specialized knowledge in areas such as ecology, soil science, hydrology, and land restoration. In Kosovo there is a shortage of experts in these fields, limiting the capacity for in-depth studies on post-fire recovery. Also, effective post-fire management research
4.3 requires collaboration between various scientific disciplines (e.g., environmental science, public health, economics). A lack of interdisciplinary cooperation hinders the depth and scope of post-fire research.

Historically, fire management In Kosovo has focused more on fire prevention and suppression rather than recovery and restoration. As a result, scientific research has often been concentrated on immediate firefighting measures rather than on understanding and improving post-fire recovery processes.

In many regions, private landowners or businesses are not actively involved in post-fire recovery or research, either due to a lack of awareness or interest. Without engagement of these sectors, the scope of research is restricted, and post-fire recovery efforts may not be as comprehensive.

Post-fire areas can be challenging to study due to difficult access, especially in remote or mountainous regions. Logistical issues, such as limited transportation infrastructure, weather conditions, or ongoing hazards from unstable landscapes (e.g., landslides, floods), prevent comprehensive scientific research.

Overcoming these barriers requires a coordinated effort from governments, research institutions, and the private sector to prioritize, fund, and support long-term studies on post-fire recovery. By investing in research, Kosovo can develop more effective, evidence-based strategies for managing post-fire landscapes and ensuring that ecosystems and communities can recover and thrive after fire events.

Desired state:

A comprehensive, well-funded, and integrated research framework has been created that provides critical insights into the most effective post-fire management solutions. This framework has ensured that all aspects of post-fire management are being implemented and supported by scientific data and evidence.

IMPLEMENTATION FRAMEWORK

An action plan is a document that outlines specific steps, tasks, and activities to achieve certain goals or objectives. An effective action plan serves as a management tool for guiding an organization's initiatives toward achieving its desired outcomes.

The development of the action plan for Landscape Fire Management (LFM) in the Republic of Kosovo is based on the gap analysis that identifies the weaknesses of the current landscape fire management system. This analysis compares the current state of the LFM system with the desired future state, identifying the gaps that need to be addressed. This document serves as a guide to direct efforts toward solving these identified deficiencies, offering a series of steps and activities to improve the LFM system in Kosovo.

The structure of the Action Plan emphasizes an integrated approach that covers prevention, preparedness, suppression and post-fire management. Each component is specifically tailored to address the gaps within the LFM system, clearly defining the responsibilities and roles of all institutions involved. Additionally, the plan highlights the importance of collaboration between stakeholders at the national level, focusing on strengthening capacities for more effective environmental and community management.

2. IMPLEMENTATION FRAMEWORK



Priority I - green

Priority II - orange

Priority III - blue

No.	IDENTIFIED GAP	MEASURES/ACTIONS TO BE TAKEN	PERIOD OF IMPLEMENTATION	RESPONSIBLE INSTITUTIONS	FORESEEN BUDGET (EUR)
1		PREVENTION			
1.1	LACK OF PUBLIC AWARENESS ON LFM	1.1.1 Organizing proper fire prevention campaigns	Up to 1 year	MAFRD, EMA, MESPI, NGO, MEDIA, KFA	30,000 €
				MAFRD, MEST, MESPI, EMA, KFA	20,000 €
1.2	LACK OF A NATIONAL LANDSCAPE FIRE RISK MAP	1.2.1 Adopting of a National methodology for the creation of LF risk map 1.2.2 Creation of a national LF risk map	Up to 1 year	Research institutions and universities; government, ministries, agencies	30.000 300, 000 €
1.3	LACK OF LANDSCAPE FIRE STATISTICS IN AGRICULTURAL LANDS	1.3.1 Creation of methodology for LF statistics on agricultural land	Up to 1 year	Government, ministries, agencies, municipalities	30,000 €
		1.3.2 Training of stakeholders responsible for conducting fire statistics		Ministries, agencies, municipalities, APFOK	10,000 €
		1.3.3 Creating. Centralized Database for Fire Risk Management, where all fire-related data would be stored in a central database, accessible to relevant government agencies, researchers, and decision-makers.	Up to 1 year	Ministries, agencies, municipalities, APFOK	
		1.3.4 Improving Institutional coordination and collaboration	Up to 1 year	Ministries, agencies, municipalities, APFOK	

		1.3.5 Organizing public awareness and engagement for increasing community participation in fire reporting	Up to 1 year	Ministries, agencies, municipalities, APFOK	
1.4	NON-INCLUSION OF PRIVATE FOREST OWNERS IN LF PLANNING	1.5.1 Assessment of the capacities of the responsible inspectorate, and their needs for enforcing the annual forest protection plan prepared by the private forest owners.	Up to 5 years	Ministries, NGO, KFA, municipalities, APFOK	10,000
		1.5.2 Training of the private forest owners in preparing forest protection plans		Ministries, NGO, KFA, municipalities, APFOK	10,000
1.5	INSUFFICIENT INCLUSION OF LANDSCAPE FIRE MANAGEMENT IN THE EDUCATIONAL PROGRAM	1.6.1 Integrate LFM principles into the curricula of pre-primary, primary and secondary education, etc.	Up to 5 years	Government, MES, MAFRD, MESPI, MIA	30,000
		1.6.2 Capacity building for educators	Up to 1 year	Government, MES, MAFRD, MESPI, MIA	
1.6	NON-MAINTENANCE OF EXISTING FUEL BREAKS AND CREATION OF NEW ONES AGAINST LF	1.7.1 Capacity assessment of the inspectorate and revision of the legal framework	Up to 1 year	Ministries, NGO, KFA, municipalities, APFOK	50,000 €
1.7	LACK OF NATIONAL FUEL CLASSIFICATION	1.8.1 Adopting a national fuel classification 1.8.2 Adopting of methodology for conducting the classification of fuels 1.8.3 Creation of fuel maps	Up to 1 year Up to 1 year Up to 5 years	Ministries, NGO, KFA, municipalities, APFOK, universities	30,000 30,000 500,000
2		PREPAREDNESS			
2.1	LACK OF SPECIALIZED, TRAINED FIREFIGHTERS FOR LFM	2.1.1 Creation of centre for LF-fighting training	Up to 1 year	Government, MIA, MAFRD, MESPI, KFA, EMA, DAP, municipalities, donations	1,000,000 €
		2.1.2 Developing a programme for LF-fighters training		Government, MIA, MAFRD, MESPI, KFA, EMA, DAP, municipalities, donations	30,000 €

2.2	THERE IS AN INADEQUATE FOREST GUARD SERVICE	2.2.1 Conducting an assessment study for the condition of the forest guards service, including guidelines and recommendations.	Up to 1 year	MAFRD, KFA, municipalities	10,000 €
2.3	LACK OF LANDSCAPE FIRE MANAGEMENT KNOWLEDGE AMONG FARMERS	2.3.1 Analysis of current legislature and reasons for the state of insufficient coordination between institutions, with recommendations and steps for overcoming it.	Up to 1 year	MAFRD donations, municipalities, APFOK	10,000 €
		2.3.2 Public awareness campaigns that would target not just farmers, but also rural communities, educating them about the risks and management strategies for landscape fires.	Up to 1 year	MAFRD donations, municipalities, APFOK	50,000
2.4	ABSENCE OF 10-YEAR LANDSCAPE FIRE MANAGEMENT PLANS	2.4.1 Adoption of legal regulations that binds the state in creation of 10-year fire protection plans.	Up to 1 year	According to 2.5.1. (defined in the legislature)	
		2.4.2 Creation of 10-year fire protection plans (ensure that all governmental and non-governmental stakeholders are included)		Government, ministries, agencies, APFOK, NGOs	50,000 €
2.5	LACK OF CROSS – BORDER COOPERATION AND COORDINATION	2.5.1 Signing bilateral/ multilateral cooperation agreements with neighbouring countries.	IN CONTINUATION	Government, agencies, ministries, donors, international agencies	
		2.5.2 Organization of meetings and joint trainings for the LFM			
2.6	INSUFFICIENT NUMBER OF WATER RESERVOIRS FOR LF SUPPRESSION	2.6.1 Analysis of the current state and drafting of a plan for the network of water reservoirs for LF suppression.	Up to 5 years	Government, MESPI, MAFRD, RWC, municipalities	15,000
2.7	INSUFICCIENT USE OF THE EXISTING EARLY WARNING SYSTEMS FOR LANDSCAPE FIRES	2.7.1 Developing legal framework for proper usage of the early warning system	Up to 1 year	MAFRD, MIA, KFA, EMA	

3	SUPRESSION				
3.1	LACK OF SPECIALIZED VEHICLES FOR LF SUPPRESSION	3.1.1 Analysis of the current state and needs	Up to 5 years	Government, ministries, donations	50,000
		3.1.2 Procurement of specialized LF suppression vehicles		Government, ministries, donations	In accordance with 3.1.1.
		3.1.3 Organizing training for operating the equipment (according to 1.1.1; 1.1.2)		Government, ministries, donations	In accordance with 3.1.1.
3.2	LACK OF AERIAL FIREFIGHTING RESOURCES	3.2.1 Conducting a study of the current state and needs	Up to 5 years	Government, ministries, donations	50,000
		3.2.2 Procurement of aerial firefighting means			According to 3.2.1
		3.2.3 Organizing training for operating aerial firefighting means			According to 3.2.1
3.3	LACK OF A CENTRALIZED INCIDENT COMMAND SYSTEM FOR LANDSCAPE FIRE SUPPRESSION	3.3.1 Establish legal framework for introduction of Incident Command System for Landscape Fire Suppression	Up to 5 years	Government, donations, ministries	1.5 mil
		3.3.2 Comprehensive training for incident command personnel, including all levels from central to local			
		3.3.3 Connecting the incident command system platform to all other relevant national platforms			
4	POST FIRE MANAGEMENT				
4.1	LACK OF PRINCIPLES AND BASIC STEPS IN POST-FIRE MANAGEMENT	4.1.1 Funding projects for establishing guidelines for principles and basic steps in post-fire management	Up to 1 year	Ministries, agencies, municipalities	300,000 €
		4.1.2 Establishing adequate legislature for implementing the guidelines, principles, and basic steps in post-fire management			
4.2	NON-IMPLEMENTATION OF EXISTING REGULATIONS AND MEASURES	4.2.1 Assessment of the inspection service capacities responsible for enforcing the current LF regulations and laws	Up to 1 year	Ministries, government, agencies	10,000
4.3	INSUFFICIENT SCIENTIFIC RESEARCH ON POST-FIRE MANAGEMENT	4.4.1 Increasing the budget for management the burnt areas	Up to 5 years	Government, ministries	300,000

3. MONITORING AND EVALUATION

Monitoring the implementation of the findings from the gap analysis is conducted by the Department of Forestry within the Ministry of Agriculture, Forestry, and Rural Development (MAFRD) of the Republic of Kosovo. The monitoring process involves assessing the progress of implementation of activities for each deficiency identified in the GAP Analysis Document, relying on the implementation plan.

As outlined in the action plan, data will be collected from the responsible institutions regarding the level of implementation of each planned action. This data will be used to evaluate the identified gaps based on the achievements reported by the responsible institutions for each activity.

After collecting the reports from the designated institutions and actors, a comprehensive report on the level of implementation will be prepared. This report will present the data in both narrative and tabular formats. It will also include an assessment, justification and an evaluation of the implementation level for each planned action.

The report will feature a narrative analysis of the entire monitoring process, including the assessment of the results achieved as well as an explanation for any failure to meet the obligations of the actors responsible.

The monitoring report will be drafted annually by the Ministry of Agriculture, Forestry and Rural Development, with contributions from all identified actors, in accordance with standard procedures. The draft report will be circulated to all actors for feedback and necessary revisions.