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**LANDSCAPE FIRE
MANAGEMENT**

IN THE WESTERN BALKANS

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Landscape Fire Management Gap Analysis in Albania



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The Landscape Fire Management Gap Analysis in Albania is prepared within the Landscape Fire Management in the Western Balkans (LFMWB) Programme financed by the Swiss Agency for Development and Cooperation (SDC) and coordinated by Farmahem - Skopje with backstopping support of Helvetas Swiss Intercooperation. The process for preparation of the gap analysis was coordinated by the Ministry of Environment of Albania with the support of the Regional Fire Monitoring Center (RFMC) as partners of the LFMWB Programme.

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LIST OF INSTITUTIONS AND EXPERTS INVOLVED IN THE PREPARATION OF THE LFM GAP ANALYSIS FOR ALBANIA

Agency for the Support of Local Self-Government

Faculty of Forestry Sciences

General Directorate of Fire Protection and Rescue

Institute for Municipalities of Albania

Institute of Geosciences

Livestock Entrepreneurs Association of Albania

Ministry of Environment

National Agency of Protected Areas

National Civil Protection Agency

National Forest Agency

Prefectures of Berat, Durrës, Fier, Gjirokastër, Kukës, Lezhë, Shkodër, and Tiranë

Strong Municipalities Project / Helvetas

LIST OF ACRONYMS

BAER	Burned Area Emergency Response
CSSA	Civil Society Support Agency
DRR	Disaster Risk Reduction
EFFIS	European Forest Fire Information System
FFS	Faculty of Forestry Sciences
ICS	Incident Command System
IGEO	Institute of Geosciences
LFM	Landscape Fire Management
MARD	Ministry of Agriculture and Rural Development
MHEWS	Multi-Hazard Early Warning System
MoE	Ministry of Environment
MoU	Memorandum of Understanding
NAPA	National Agency of Protected Areas
NCPA	National Civil Protection Agency
NFA	National Forest Agency
PFOs	Private Forest Owners
PPE	Personal Protective Equipment
SOPs	Standard Operating Procedures
WUI	Wildland-Urban Interface

EXECUTIVE SUMMARY

Albania is entering a period in which landscape fires can no longer be treated as an occasional seasonal disturbance. They are becoming a structural risk with the power to affect public safety, ecosystems, protected areas, tourism assets, rural livelihoods, and the long-term productivity of land. This risk is being reinforced by hotter and longer dry periods, more frequent heatwaves, stronger weather variability, land abandonment, shrub encroachment, and the gradual expansion of settlements and infrastructure into fire-prone areas that often lack defensible space.

The analysis shows that the principal weaknesses are not concentrated in one single element such as equipment or staffing, although both matter. The deeper issue is fragmentation: fragmented data, fragmented responsibilities, fragmented planning cycles, and fragmented procedures when incidents move beyond routine municipal response. In practice, this means prevention measures that remain sporadic, early warning that does not always trigger action, uneven readiness among municipalities, suppression capacity constrained by logistics and infrastructure gaps, and post-fire management that remains only partially institutionalized.

A second pattern is the mismatch between where landscape fire risk is greatest and where operational capacity is strongest. High-risk landscapes often coincide with limited municipal budgets, constrained staffing, and uneven technical support. During periods of extreme fire weather, concurrent ignitions can quickly overwhelm local structures and force the system into improvisation, late resource shifts, and inconsistent command arrangements. In those moments, responder safety is exposed, public communication becomes less coherent, and the overall cost of response increases while effectiveness declines.

The report also points to a persistent science-policy-practice gap. Albania has capable institutions and knowledgeable professionals, yet technical knowledge is not always converted into routine operational products and decisions. Risk information, fuel-related analysis, warning thresholds, incident data, and investment priorities are still not integrated in a sufficiently consistent way. Where tools exist, they are not always used systematically. Where mandates exist, they may overlap or leave uncertainty, especially during major multi-agency incidents.

This document proposes a practical way forward through a staged reform and investment agenda over a five-year horizon. It treats prevention as the primary risk-reduction pillar, preparedness as the set of conditions that enable rapid and coordinated action, suppression as a safety-first operational system with clear command, logistics, and tactics, and post-fire management as an integral capability that must include damage assessment, stabilization, recovery, and learning. The Implementation Framework translates each identified gap into concrete actions, responsible institutions, indicative timeframes, and realistic cost estimates.

If implemented consistently and reviewed annually, the proposed measures can help shift Albania from a predominantly reactive model toward a prevention-oriented, climate-informed, and operationally coherent landscape fire management system. Such a system will not eliminate landscape fires, and no modern European country can promise that. What it can do is reduce the number of catastrophic events, protect lives and critical assets, and prevent the accumulation of long-term losses such as erosion, biodiversity decline, degraded watersheds, and repeated burning.

INTRODUCTION

Landscape Fire Management is primarily about prevention and risk reduction, not only about suppressing flames once they appear. It combines governance, planning, science, community engagement, operational readiness, suppression capacity, and post-fire recovery into one connected system whose purpose is to reduce the probability, intensity, and consequences of damaging landscape fires.

Albania's terrain and land-use patterns make this challenge particularly complex. Steep slopes restrict access and can accelerate uphill runs. Forests, shrublands, abandoned agricultural land, and mixed rural landscapes create fuel mosaics that can support rapid fire propagation. At the same time, settlements, roads, tourism infrastructure, and other assets are expanding into exposed areas, which increases both the social and economic consequences of severe fire seasons.

The country also has important strengths on which to build. Albania has municipal firefighting structures, a national civil protection framework, environmental and land-management institutions, technical expertise, and growing awareness that landscape fires must be addressed more systematically. These strengths provide a foundation, but the current system still requires clearer roles, better-connected planning, stronger prevention tools, more consistent readiness, and a more formal post-fire management capability.

A gap analysis serves exactly this purpose. It compares the current situation, as it functions in practice and not only on paper, with a realistic desired state that can be pursued over the next one to five years. In doing so, it helps distinguish between symptoms and underlying causes, and it creates a basis for prioritizing reforms, investments, and coordination measures.

This Albanian gap analysis builds on two main foundations. First, it draws on the national baseline and recommendations already assembled in the Albania LFM Country Report, which describes the principal risk drivers, institutional setting, and system performance. Second, it reflects the results of stakeholder consultation and validation, which helped identify the most relevant gaps across the four pillars of Landscape Fire Management: prevention, preparedness, suppression, and post-fire management.

The report also treats cost realism as part of credibility. Fire-related strategies often fail not because the ideas are wrong, but because budgets are abstract, optimistic, or disconnected from the institutions expected to implement them. For that reason, the Implementation Framework uses indicative but grounded cost assumptions so that the proposed pathway remains operationally and financially plausible.

OBJECTIVES OF THE GAP ANALYSIS

1. Identify the main gaps that limit the effectiveness of Albania's LFM system across the four pillars - prevention, preparedness, suppression, and post-fire management.
2. Explain the root causes of those gaps in operational, institutional, legal, technical, and financing terms.
3. Define a realistic desired state, over a one- to five-year period, for each identified gap.
4. Translate the gaps into an actionable Implementation Framework with measures, responsibilities, priorities, timeframes, and indicative budgets.
5. Provide a monitoring and evaluation approach that can be used to track annual progress, identify bottlenecks, and adjust measures as conditions evolve.

SCOPE AND APPROACH

The scope covers both national and local dimensions of Landscape Fire Management, recognizing that fires may start locally but can quickly generate national consequences. The approach combines:

- Review of baseline information, legislation, institutional arrangements, and system performance relevant to landscape fire management in Albania.
- Structured stakeholder consultation across the four LFM pillars, followed by consolidation and validation of the identified gaps.
- Translation of agreed gaps into prioritized actions with indicative budgets, responsible institutions, and implementation periods.
- A one- to five-year planning horizon focused on measures that are realistic, monitorable, and aligned with institutional mandates.

1. GAP IDENTIFICATION ON LANDSCAPE FIRE MANAGEMENT IN ALBANIA

The gap identification for Landscape Fire Management in Albania reveals a system that remains overly weighted toward reactive suppression, while prevention, preparedness, and post-fire management are still not developed to the level necessary in light of current and emerging risk. The sections below describe the most important gaps identified through the national process and explain why each one matters for the overall performance, coherence, and resilience of the system.

How to read each gap?

Each gap is presented through a common structure:

1. Gap formulation.
2. Detailed explanation of the gap and its root causes.
3. Desired state (1-5 years).

1.1. PREVENTION

Prevention consists of the measures that reduce the probability of fire occurrence and limit the chance that a fire will develop into a damaging landscape event. In Albania, prevention is still too often understood as a secondary activity rather than as a core public-safety and land-management function. Yet the most affordable and lasting gains in Landscape Fire Management usually come from prevention, because they reduce both the number of ignitions and the severity of the incidents that do occur.

The gap list below reflects the consolidated stakeholder output of the national network process and the subsequent validation discussion.

Table 1. Identification of gaps in the prevention phase of the current LFM system (Albania)

No.	Identified gap (Prevention)
1.1.1	Limited fuel management programmes
1.1.2	Insufficient capacity at local level for landscape fire prevention
1.1.3	Weak community engagement, awareness, behaviour change, and gender-responsive outreach
1.1.4	Limited science-based information translated into prevention decisions
1.1.5	Lack of peer-to-peer learning for prevention practice
1.1.6	Limited fire-tailored weather, hydrological, and climate services for prevention planning
1.1.7	Lack of a landscape fire early warning system and clear prevention triggers
1.1.8	Weak integration of landscape fire risk into climate adaptation and local planning
1.1.9	Lack of national user-facing landscape fire information portal linked to early warning
1.1.10	Weak maintenance of strategic preventive corridors and fuel breaks
1.1.11	Incomplete framework for landscape fire specialization, safety standards, and seasonal workforce arrangements
1.1.12	Weak control of risky activities, including agricultural residues burning, and insufficient temporary restrictions on high-danger days

1.1.1. Limited fuel management programmes

Gap formulation. Fuel reduction and maintenance of fuel breaks are not implemented at the scale, continuity, or prioritization level required by current landscape fire risk.

Root causes and explanation. Fuel management is labour- and planning-intensive task. It requires clear land-management authority, national fuel classification, mapping and prioritization, recurring budgets, environmental safeguards, and field implementation capacity. In Albania, these conditions are only partially in place. As a result, treatment remains patchy, often project-based, and insufficiently linked to where risk to people, assets, and ecosystems is greatest.

Desired state (1-5 years). A national fuel classification and fuel-management methodology are established, priority landscapes are identified, and annual treatment targets are financed and monitored so that fuel reduction becomes a routine component of prevention.

1.1.2. Insufficient capacity at local level for landscape fire prevention

Gap formulation. Municipalities often lack staff, technical skills, and dedicated budgets to plan and implement prevention measures consistently.

Root causes and explanation. Effective prevention depends on local planning that identifies major fire causes, hotspot areas, and vulnerable assets, while also organizing seasonal patrols, community outreach, safe vegetation management, and local enforcement support. In many municipalities, these functions are dispersed, under-resourced, or not treated as a defined responsibility, which weakens continuity from one season to the next.

Desired state (1-5 years). High-risk municipalities have designated and trained landscape fire prevention focal points, supported by clear terms of reference, minimum operating budgets, and practical guidance from national institutions.

1.1.3. Weak community engagement, awareness, behaviour change, and gender-responsive outreach

Gap formulation. Community engagement on landscape fire prevention is not sufficiently systematic, targeted, behaviour-oriented, or gender-responsive, which limits the effectiveness, inclusiveness, and local uptake of preventive measures.

Root causes and explanation. A large share of landscape fires is linked to human activity, and general awareness campaigns are not sufficient when they are not connected to concrete local practices and the different roles of women and men in rural life. Rural communities, land users, and households need practical guidance on safer alternatives to open burning, temporary restrictions on high-danger days, defensible space around homes and farm buildings, and simple ways to report risks and incidents. At the same time, prevention outreach is often designed in a generic manner and may not adequately reflect differences in daily responsibilities, exposure patterns, access to information, and participation in decision-making between women and men. As a result, prevention messages do not always reach all relevant groups equally, and valuable local knowledge and experience may remain insufficiently used.

Desired state (1-5 years). Communities in high-risk areas receive practical, repeated, and gender-responsive prevention guidance through communication and engagement approaches that effectively reach both women and men. Seasonal restrictions are clearly communicated and applied, safer alternatives to risky burning practices are promoted, and local prevention efforts are strengthened through more inclusive participation, better-informed behaviour, and stronger community ownership of fire risk reduction.

1.1.4. Limited science-based information translated into prevention decisions

Gap formulation. Scientific and technical information exists, but it is not consistently converted into routine prevention decisions, local priorities, and budget choices.

Root causes and explanation. Prevention planning benefits from risk mapping, drought and fire-danger indicators, ignition pattern analysis, and the identification of vulnerable assets. These products have limited value if they remain too technical, too dispersed, or too detached from municipal decision cycles. In Albania, the challenge is less the absence of expertise and more the limited translation of that expertise into practical planning tools and decisions.

Desired state (1-5 years). A national technical support function produces standardized, municipality-friendly prevention products - including priority maps, seasonal bulletins, and planning guidance - that are routinely used to direct local prevention measures and spending.

1.1.5. Lack of peer-to-peer learning for prevention practice

Gap formulation. Municipalities and field services have limited structured mechanisms through which to learn from each other's prevention experience.

Root causes and explanation. Good practice exists locally, but without systematic exchange it rarely spreads. Lessons from one season often remain informal rather than becoming part of institutional learning. Over time, this leads to repeated mistakes, duplication of effort, and slow uptake of practical solutions that could be shared across municipalities and agencies.

Desired state (1-5 years). A structured annual exchange mechanism is institutionalized through after-action reviews, regional learning forums, and a digital library of practical prevention tools and lessons.

1.1.6. Limited fire-tailored weather, hydrological, and climate services for prevention planning

Gap formulation. Forecasting and climate services are not yet sufficiently tailored to prevention decision-making for landscape fires.

Root causes and explanation. Prevention decisions require more than general weather forecasts. Institutions need drought indicators, wind and heat thresholds, seasonal outlooks, and locally relevant interpretations that can support restrictions, patrols, public messaging, and preventive maintenance. The information base exists only in part, and it is not yet operationalized in a consistent prevention-oriented service chain.

Desired state (1-5 years). Fire-tailored weather, hydrological, and climate information is routinely produced and interpreted for prevention planning, with clear thresholds that support timely action by national and local institutions.

1.1.7. Lack of landscape fire early warning system and clear prevention triggers

Gap formulation. There is no fully operational landscape fire early warning system that connects forecasting, warning, public messaging, and predefined prevention actions.

Root causes and explanation. An early warning system is not only a technical platform. It is a governance and procedure chain that defines danger levels, assigns institutional responsibilities, and links warning

outputs to practical action. In Albania, the main gap is the absence of one clearly hosted and operation-alized landscape fire warning chain with agreed triggers, standard messages, and pre-defined prevention measures for different danger levels.

Desired state (1-5 years). A national landscape fire early warning system is in place, with clear trigger thresholds, standard public messages, and linked prevention actions for institutions and the public at each danger level.

1.1.8. Weak integration of landscape fire risk into climate adaptation and local planning

Gap formulation. Landscape fire risk is not consistently embedded into adaptation planning, land-use decisions, and local investment priorities.

Root causes and explanation. If local adaptation plans and development decisions do not account for fire, municipalities may continue to invest in assets and services that become increasingly exposed over time. This includes tourism facilities, roads, rural infrastructure, and settlement expansion in fire-prone areas. The issue is not the absence of planning documents, but the limited integration of landscape fire risk into those documents.

Desired state (1-5 years). High-risk municipalities integrate landscape fire risk into adaptation and local planning documents, supported by national guidance, practical templates, and updated risk information.

1.1.9. Lack of national user-facing landscape fire information portal linked to early warning

Gap formulation. There is no single, widely used national platform through which institutions and the public can access consistent landscape fire risk information, alerts, and prevention guidance.

Root causes and explanation. Fragmented information weakens situational awareness and public compliance. A user-facing portal should not replace institutional tools; it should make risk levels, alerts, prevention messages, and basic incident information accessible in one trusted place. At present, this type of consolidated interface is missing.

Desired state (1-5 years). A national landscape fire information portal operates as part of the early warning system, providing risk levels, alerts, prevention guidance, and municipality-level views where appropriate.

1.1.10. Weak maintenance of strategic preventive corridors and fuel breaks

Gap formulation. Prevention is undermined by insufficient maintenance of priority preventive corridors, fuel breaks, and other strategic vegetation-management lines in high-risk areas.

Root causes and explanation. Strategic preventive corridors require annual planning, clear assignment of responsibility, and routine field maintenance. Where this is absent, vegetation regrows quickly, access deteriorates, and the preventive value of previous work is lost. In Albania, this issue is closely linked to fragmented responsibility, limited funding continuity, and inconsistent local implementation.

Desired state (1-5 years). A prioritized network of preventive corridors and fuel breaks is mapped, assigned to competent institutions, and maintained annually in high-risk landscapes.

1.1.11. Incomplete framework for landscape fire specialization, safety standards, and seasonal workforce arrangements

Gap formulation. Legal and policy arrangements do not yet fully institutionalize the specialization, safety standards, and seasonal workforce arrangements needed for effective landscape fire management.

Root causes and explanation. Landscape fire management requires specific competencies, safety procedures, role definitions, and staffing models that go beyond general firefighting or routine land-management practice. Where these are not formally recognized, institutions tend to rely on ad hoc arrangements, uneven training, and insufficient protection standards.

Desired state (1-5 years). A national framework defines minimum competencies, safety standards, specialization pathways, and seasonal staffing arrangements relevant to landscape fire management.

1.1.12. Weak control of risky activities, including agricultural residues burning, and insufficient temporary restrictions on high-danger days

Gap formulation. On days of elevated fire danger, temporary restrictions and field-control measures for risky activities, including the open burning of agricultural residues, are not consistently activated, communicated, or enforced. As a result, the system remains weak in preventing avoidable human-caused ignitions precisely at the times when fire risk is highest and the likelihood of rapid-fire spread is greatest.

Root causes and explanation. This is fundamentally a prevention gap, even though its implementation depends partly on operational readiness arrangements. The core weakness lies in the absence of a clear and jointly applied protocol that links fire danger levels to temporary restrictions, supervision measures, public communication, and proportionate enforcement for risky practices such as agricultural residues burning, vegetation clearing by fire, and other open-flame activities in rural landscapes. At the same time, agricultural burning continues to be used in many areas as a low-cost and rapid land-management practice, while practical guidance, local control, and safer alternatives remain limited. Without a coherent framework that combines warning information, seasonal restrictions, local field control, and awareness-raising, institutions tend to act unevenly, and the preventive value of danger information is substantially reduced.

Desired state (1-5 years). A jointly endorsed and operationalized protocol links fire danger levels to temporary restrictions, field-control measures, targeted public communication, and proportionate enforcement for risky activities, including agricultural residues burning. Farmers, land users, municipalities, and relevant institutions clearly understand when such practices are prohibited, restricted, or conditionally permitted, and safer alternatives are promoted in parallel. In this way, avoidable human-caused ignitions are reduced, and prevention measures become more consistent and effective during high-danger periods.

1.2. PREPAREDNESS

Preparedness is the set of conditions that enables a quick, coordinated, and safe response when a landscape fire occurs. It becomes most visible during severe seasons, but it is built before those seasons begin – through risk assessment, early warning, contingency planning, operational procedures, regular exercises, inter-institutional coordination, public communication, and the pre-positioning of human and technical resources. In this sense, preparedness is not limited to response capacity alone. It is the link between prevention and intervention, because it ensures that information, planning, and coordination are translated into action before and during periods of elevated fire danger.

In Albania, preparedness has a particularly important role because landscape fire risk is influenced by prolonged hot and dry periods, mountainous terrain, scattered rural settlements, agricultural burning practices, and overlapping institutional responsibilities. These conditions require strong coordination between central and local institutions, protected area administrations, forest and pasture authorities, civil protection structures, and fire protection services. In the Albanian context, preparedness therefore means having clear mandates, practical procedures, trained personnel, functioning communication and warning systems, and seasonally adjusted readiness measures that can reduce confusion, shorten reaction time, and better protect people, livelihoods, ecosystems, and public assets.

Table 2. Identification of gaps in the preparedness phase of the current LFM system (Albania)

No.	Identified gap (Preparedness)
1.2.1	Limited translation of early warning into readiness actions
1.2.2	Insufficient localized fire-weather decision support for preparedness
1.2.3	Uneven application of standardized training modules for local authorities and responders
1.2.4	Lack of standardized vehicles, equipment, and tools for readiness
1.2.5	Landscape fire risk assessment and risk maps are not consistently used for readiness planning
1.2.6	Lack of municipal risk assessment, DRR strategy, and action plan for landscape fire preparedness
1.2.7	Unclear command chain for escalating landscape fire incidents
1.2.8	Unclear institutional roles and responsibilities during major landscape fire incidents
1.2.9	Overlapping legislation affecting preparedness and response

1.2.1. Limited translation of early warning into readiness actions

Gap formulation. Early warning exists in principle, but it does not consistently trigger concrete readiness actions at municipal and national levels.

Root causes and explanation. In many systems, warnings remain information products rather than decision products. The missing link is usually not the forecast itself, but the absence of agreed readiness actions linked to risk levels – such as staffing increases, patrol activation, equipment checks, pre-positioning, or temporary restrictions. This remains a significant weakness in Albania.

Desired state (1-5 years). Landscape fire warning levels are formally linked to readiness measures at both national and local levels, and institutions act on them through pre-defined procedures before conditions deteriorate further.

1.2.2. Insufficient localized fire-weather decision support for preparedness

Gap formulation. Preparedness arrangements are not supported by sufficiently localized and operationally interpreted meteorological information for readiness planning and short-term decision-making.

Root causes and explanation. This gap does not primarily concern the absence of general weather information, nor does it imply the immediate need for a full fire behaviour model. Rather, the weakness lies in the limited availability and operational use of localized fire-weather information, such as wind, temperature, humidity, and short-term danger-relevant conditions, in support of staffing, pre-positioning, patrol

planning, and readiness decisions. As a result, preparedness measures are not always adjusted in time to changing local conditions.

Desired state (1-5 years). During the fire season, preparedness actors routinely receive localized fire-weather information in a format that supports daily readiness planning and short-term operational decisions. This information is clearly interpreted for operational use and is integrated into regular planning and coordination processes.

1.2.3. Uneven application of standardized training modules for local authorities and responders

Gap formulation. Training coverage and quality are uneven, and competency standards are not applied consistently across institutions and territories.

Root causes and explanation. Landscape fire management requires specific tactics, safety rules, and operational discipline that differ from structural firefighting. Albania already has elements of a national training framework, but coverage, consistency, refresher practice, and role-specific application remain uneven. This affects both frontline responders and the authorities who must support coordination and readiness.

Desired state (1-5 years). The existing national training framework is strengthened, expanded, and applied consistently, with defined levels, regular refreshers, and clear links between competence, function, and deployment.

1.2.4. Lack of standardized vehicles, equipment, and tools for readiness

Gap formulation. Readiness is constrained by aging or mismatched vehicles, limited specialized equipment, and insufficiently standardized tools and personal protective equipment.

Root causes and explanation. Preparedness is not only about having equipment, but about having the right equipment in the right place, in working condition, and according to a common standard. In Albania, vehicle types, tools, PPE, and readiness packages are not yet sufficiently standardized, which creates uneven operational capability and complicates maintenance, procurement, and interoperability.

Desired state (1-5 years). Standardized readiness packages are defined for high-risk territories, including vehicle types, essential tools, communications, and personal protective equipment, together with maintenance and replacement schedules.

1.2.5. Landscape fire risk assessment and risk maps are not consistently used for readiness planning

Gap formulation. Risk assessment products exist in part, but they are not consistently used to guide municipal decisions, investments, and readiness planning.

Root causes and explanation. Risk maps often fail when they are either too technical or too detached from decision cycles. If a map does not directly answer what should be protected, where pre-positioning is needed, or which areas require stronger seasonal readiness, it remains under-used. In Albania, the challenge is both methodological and institutional.

Desired state (1-5 years). A shared national methodology is used to produce and update readiness-oriented risk maps, and these products directly inform local planning, seasonal prioritization, and resource allocation.

1.2.6. Lack of municipal risk assessment, DRR strategy, and action plan for landscape fire preparedness

Gap formulation. A significant number of municipalities do not yet have their own local risk assessment, DRR strategy, and action plan that adequately incorporate landscape fire preparedness and align with national priorities and guidance.

Root causes and explanation. Municipalities often lack their own local planning instruments that translate risk information and national guidance into concrete local arrangements. In the absence of a municipal risk assessment, a DRR strategy, and an action plan that explicitly address landscape fire, preparedness remains weakly structured, responsibilities are not always clearly assigned, and actions tend to be reactive rather than planned. Budgeting, coordination, and seasonal readiness measures therefore remain inconsistent across municipalities.

Desired state (1-5 years). High-risk municipalities develop, adopt, and regularly update their own local risk assessment, DRR strategy, and action plan, with landscape fire preparedness fully integrated and aligned with national guidance. These instruments define local priorities, responsibilities, coordination arrangements, budget needs, and readiness measures, and are regularly updated to support more systematic preparedness.

1.2.7. Unclear command chain for escalating landscape fire incidents

Gap formulation. When incidents escalate, command roles and authority can become unclear, slowing decisions and weakening coordination.

Root causes and explanation. Landscape fire escalation is dynamic. If command arrangements are not clear before the season, they will not become clear during a crisis. Common failures include delayed transfer of command, parallel requests for resources, uncertain thresholds for escalation, and weak communication between local, regional, and national structures.

Desired state (1-5 years). Escalation levels and command roles are formally defined from local to national level, tested through exercises, and understood by all institutions involved in major landscape fire response.

1.2.8. Unclear institutional roles and responsibilities during major landscape fire incidents

Gap formulation. Institutional responsibilities overlap or leave gaps, particularly between land-management agencies, municipalities, and civil protection structures.

Root causes and explanation. A landscape fire is simultaneously a land-management issue and a civil protection emergency. If institutional roles are not clarified in advance, prevention tasks may be neglected, readiness measures may be duplicated, and major incidents may suffer from gaps in support functions, planning, information sharing, or logistics.

Desired state (1-5 years). Institutional roles are clarified through role matrices, formal agreements, and operational procedures that reduce duplication, close gaps, and strengthen coordinated action during major incidents.

1.2.9. Overlapping legislation affecting preparedness and response

Gap formulation. Legal overlaps and inconsistencies complicate preparedness planning and incident coordination.

Root causes and explanation. Even a capable operational system can underperform if legal frameworks create ambiguity about authority, mandates, terminology, and resource mobilization. Overlaps typically emerge in coordination responsibilities, incident declaration thresholds, and the interaction between sectoral and civil-protection legislation. The result is slower decision-making and a tendency to avoid responsibility during complex incidents.

Desired state (1-5 years). The legal framework relevant to preparedness and response is harmonized, with clear mandates, consistent terminology, and no contradictory provisions that would obstruct coordinated action.

1.3. SUPPRESSION

Suppression is the most visible pillar and often the one that receives attention after damaging fires, yet it is also the pillar where money can be spent without improving outcomes if governance and doctrine are unclear. In Albania, the combination of steep terrain, dispersed settlements, and constrained access creates a suppression environment in which early containment is critical and extended incidents rapidly become resource-intensive. Suppression effectiveness depends less on heroic effort and more on organization: clear incident command arrangements, standardized tactics and safety rules, and logistics that allow crews to stay effective over multiple operational periods. The key capability gap is not only vehicles or equipment; it is the ability to scale from routine incidents to complex ones with unified command, defined roles, and common operating procedures. This includes decision-making discipline – when to shift from direct attack to indirect tactics, when to prioritize structure protection and evacuation support, and how to manage responder safety during wind shifts or crown-fire potential. Logistics and water supply are equally decisive. In many landscapes, the practical constraint is not the number of firefighters, but whether they can reach the fire edge, communicate, and sustain operations with reliable water sources and refuelling/maintenance capacity. Technology can provide major gains if integrated properly: shared incident reporting, simple situational awareness tools, and mapping support can improve prioritization and reduce wasted effort. Finally, suppression must be aligned with prevention and preparedness: when fuels are unmanaged, access is poor, and the public is unprepared, suppression will always be forced into expensive, high-risk operations with limited strategic advantage.

Table 3. Identification of gaps in the suppression phase of the current LFM system (Albania)

No.	Identified gap (Suppression)
1.3.1	Lack of a clear incident command system for large landscape fires
1.3.2	Lack of tactical Standard Operating Procedures (SOPs) for complex incidents
1.3.3	Lack of organizational setup, logistics, and infrastructure for large-scale suppression
1.3.4	Insufficient use of trained human resources and new technologies
1.3.5	Inadequate maintenance of operational access corridors and related land management
1.3.6	Lack of water supply system and infrastructure for suppression operations
1.3.7	Lack of national tactical doctrine for landscape fire suppression
1.3.8	Lack of aerial firefighting capacity and framework contracts

1.3.1. Lack of a clear incident command system for large landscape fires

Gap formulation. Large or multi-municipal landscape fires are not yet managed through a fully established official incident command system with nationally recognized roles and procedures.

Root causes and explanation. In large incidents, success depends on unified coordination, common objectives, shared priorities, and synchronized resource deployment. When there is no established incident command system, agencies may act in parallel, municipal requests for reinforcement may be delayed or fragmented, and national support can arrive without being fully integrated into one operational picture. This reduces efficiency, complicates safety management, and weakens accountability. Desired state (1-5 years). An official national incident command system for large landscape fires is established, adopted, and routinely tested through exercises and real-incident learning.

1.3.2. Lack of tactical Standard Operating Procedures (SOP) for complex incidents

Gap formulation. Tactical SOPs are incomplete or uneven, especially for extended attack, responder safety, evacuations, and wildland-urban interface protection during complex incidents.

Root causes and explanation. Tactical SOPs are the operational muscle memory of a fire system. Without them, each incident requires unnecessary improvisation. Complex events demand common briefing formats, sector organization, safety zones and escape-route logic, decision triggers, and communications discipline. Where those procedures are absent or inconsistent, tactics vary unnecessarily and risk increases. Desired state (1-5 years). A complete suite of tactical SOPs is adopted and applied across competent institutions, supported by training, drills, supervision, and after-action review.

1.3.3. Lack of organizational setup, logistics, and infrastructure for large-scale suppression

Gap formulation. Large-scale suppression is constrained by insufficient organizational support, staging arrangements, maintenance capacity, supply systems, and interoperable communications.

Root causes and explanation. Even skilled crews cannot perform effectively if operations lack fuel, spare parts, maintenance support, food, rest planning, and reliable communications. In prolonged or multi-area incidents, logistics is what sustains operations. In Albania, rugged terrain and fragmented infrastructure magnify this problem, making organizational support a decisive factor for containment. Desired state (1-5 years). Large incidents are supported by an established logistics function, predefined staging arrangements, basic caches, maintenance capacity, and interoperable communications procedures.

1.3.4. Insufficient use of trained human resources and new technologies

Gap formulation. Contemporary tools for mapping, situational awareness, incident reporting, and decision support are not consistently combined with trained personnel who can use them operationally.

Root causes and explanation. Technology on its own does not improve response. It must be embedded in procedures, dedicated roles, and practical training. Without incident-support staff who can manage mapping, planning, communications, or information flow, even useful technologies remain underused and fail to improve the operational picture.

Desired state (1-5 years). Contemporary technologies are integrated into incident management through trained support personnel, simple operating procedures, and a shared situational-awareness approach for major landscape fire incidents in accordance with the LFM system.

1.3.5. Inadequate maintenance of operational access corridors and related land management

Gap formulation. Access conditions and surrounding land management often make suppression harder and more dangerous than necessary.

Root causes and explanation. When operational access corridors are poorly maintained and fuels accumulate near routes and assets, suppression becomes slower, less flexible, and more hazardous. This is also where the link between suppression and prevention becomes clear: land-management choices made long before a fire can directly determine whether an incident can be attacked safely and effectively.

Desired state (1-5 years). Adopted budget programme and operational access corridors are prioritized, maintained, and linked to land-management decisions so that suppression can be faster, safer, and more effective in high-risk areas.

1.3.6. Lack of water supply system and infrastructure for suppression operations

Gap formulation. Water availability, transfer, and delivery infrastructure are insufficient in many high-risk areas, limiting effective suppression and prolonging incidents.

Root causes and explanation. In remote and mountainous areas, suppression is often limited by constraints along the water supply chain, from available water resources, reservoirs, drafting points, storage, transfer and delivery routes to operational use at the fire line. Water sources may be limited or seasonal, difficult to access or poorly equipped for firefighting. Long re-fill cycles affect continuity and effectiveness of operations. Therefore, intensity and sustainability of suppression efforts is compromised, especially in difficult terrain.

Desired state (1-5 years). A functional water-supply system for landscape fire suppression is established through mapped sources, improved drafting points, storage options, and operational planning for high-risk areas.

1.3.7. Lack of national tactical doctrine for landscape fire suppression

Gap formulation. There is no single nationally endorsed tactical doctrine that defines the main techniques, decision principles, and safety logic for landscape fire suppression in Albania.

Root causes and explanation. Crews need more than equipment. They need a common tactical language that fits local terrain, fuels, and operational realities. Without doctrine, techniques may vary excessively between municipalities, mixed teams may struggle to work cohesively, and supervision becomes more difficult.

Desired state (1-5 years). National tactical guidance is officially adopted, aligned with terrain realities, safety requirements, and the wider LFM system, and embedded in training and supervision.

1.3.8. Lack of aerial firefighting capacity and framework contracts

Gap formulation. Aerial support is not institutionalized through reliable access mechanisms, surge planning, and contractual frameworks.

Root causes and explanation. Aerial assets can be valuable, but only when they are integrated into strategy and coordinated with ground operations. They should be treated as a planned surge capability with clear activation thresholds, dispatch procedures, and cost control, not merely as an emergency reaction. Without framework arrangements, mobilization can be slow, expensive, and poorly synchronized with field needs. Desired state (1-5 years). Appropriate types and numbers of aerial assets are available or contractable for peak periods and fully integrated into incident command, tactical planning, and ground operations for landscape fires suppression.

1.4. POST-FIRE MANAGEMENT

Post-fire management is often treated as an afterthought, yet it determines whether a burned landscape becomes safer and more resilient, or the starting point for future disasters such as erosion, landslides, invasive species, and repeated burning. Albania's terrain makes post-fire management especially important because steep slopes, fragile soils, and intense rainfall events can quickly convert burned areas into erosion hotspots, threatening infrastructure, water quality, and downstream communities. A functional post-fire system begins with rapid, standardized damage assessment that identifies priority zones for stabilization, not only based on ecological value but also on risk to people and assets. It then applies a graduated recovery approach: immediate stabilization where needed (runoff control, sediment traps, hazardous tree management), followed by ecological recovery pathways that favour cost-effective methods like assisted natural regeneration where appropriate, combined with targeted planting only where natural recovery will be too slow or where key habitats require intervention. Post-fire governance is also about preventing harmful land-use change after fire, including illegal conversion pressures and uncontrolled salvage activities that can worsen soil damage. A national recovery strategy and a dedicated financing window are therefore not bureaucratic luxuries; they are essential tools to ensure that recovery is planned, prioritized, and funded in time to be effective. Without a centralized burned-area and damage database, Albania will continue to lose institutional memory after each season, making it difficult to evaluate what worked, what failed, and where investment should concentrate next year.

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

No.	Identified gap (Post-Fire Management)
1.4.1	Lack of financial mechanism dedicated to post fire management
1.4.2	Lack of BAER approach and post-fire restoration guidelines
1.4.3	Mismanagement of burned biomass in forest lands
1.4.4	Limited trained human capacities in municipalities for post-fire management
1.4.5	Lack of official procedures and programmatic framework for post-fire management
1.4.6	Lack of a centralized burned-area assessment and post-fire impact database

1.4.1. Lack of financial mechanism dedicated to post fire management

Gap formulation. Recovery and rehabilitation are underfunded, leaving burned landscapes vulnerable to erosion, degradation, and repeated burning.

Root causes and explanation. Post-fire recovery is often treated as discretionary spending that competes with urgent municipal needs and response costs. Yet delayed stabilization and recovery can generate damage trajectories that become more expensive than the fire itself. Without a predictable financing window, interventions are late, fragmented, and vulnerable to shifting annual priorities.

Desired state (1-5 years). Dedicated and predictable financing mechanisms exist for post-fire assessment, emergency stabilization, and medium-term recovery in priority burned areas.

1.4.2. Lack of BAER approach and post-fire restoration guidelines

Gap formulation. There is no consistently applied Burned Area Emergency Response (BAER) approach or national guidance defining how to assess damage and select restoration measures appropriate to different ecosystems and terrains.

Root causes and explanation. Post-fire action ranges from immediate stabilization to longer-term ecological restoration. Without BAER principles and technical guidance, decisions can become arbitrary, delayed, or poorly matched to local conditions. Some areas require urgent erosion control and protection of infrastructure, while others need assisted natural recovery or targeted restoration. The current framework does not yet provide that differentiation.

Desired state (1-5 years). A BAER approach is established and supported by national post-fire restoration guidelines that distinguish emergency stabilization from longer-term ecological recovery and define how to prioritize interventions.

1.4.3. Mismanagement of burned biomass in forest lands

Gap formulation. Burned biomass in forest lands is not consistently assessed and managed in a way that reduces safety risks, limits secondary damage, and supports ecological recovery.

Root causes and explanation. After fire, burned timber and other biomass can create multiple and sometimes competing management challenges. If left entirely unmanaged in sensitive locations, it may increase falling hazards near roads, settlements, trails, and infrastructure, contribute to pest outbreaks, or add to fuel accumulation in priority areas. At the same time, if it is removed without clear technical criteria and ecological safeguards, salvage operations may damage soils, disturb regeneration, increase erosion, and undermine natural recovery processes. The main weakness, therefore, is not simply the presence of burned biomass, but the absence of clear rules on where material should be retained, where it should be removed, how it should be handled, and under what environmental and operational conditions.

Desired state (1-5 years). Clear technical protocols dictate the management of burned biomass in forest lands, specifying when, where, and how to remove, retain or treat it, balancing safety, soil protection, ecological recovery and operational feasibility.

1.4.4. Limited trained human capacities in municipalities for post-fire management

Gap formulation. A number of municipalities often lack trained staff and procedures to conduct post-fire assessments, stabilization works, and recovery coordination.

Root causes and explanation. Post-fire work requires specific skills, including rapid damage assessment, mapping, stabilization planning, procurement management, and coordination with land-management institutions and communities. Municipalities are often exhausted after suppression operations and may not have the technical support needed to move quickly into recovery.

Desired state (1-5 years). Municipal post-fire teams are trained and supported by a national technical unit. Standard templates and rapid assessment methods are used, and priority stabilization actions can be launched quickly.

1.4.5. Lack of official procedures and programmatic framework for post-fire management

Gap formulation. Post-fire management is not yet supported by a sufficiently clear set of official procedures and operational arrangements that define priorities, roles, financing triggers, and implementation steps within the broader LFM system.

Root causes and explanation. Practical procedures and an operational framework to guide post-fire action in a consistent way are lacking. Although post-fire management may already be recognized within the wider LFM framework, the rules and arrangements needed to translate that recognition into action remain insufficiently defined. As a result, activities such as assessment, stabilization, recovery planning, financing, and institutional coordination are often addressed on an ad hoc basis, with limited continuity between the different stages of post-fire management.

Desired state (1-5 years). The national LFM system adopts and integrates official procedures and an operational framework for post-fire management. This provides clear guidance on priorities, institutional responsibilities, financing triggers and implementation steps from assessment to recovery.

1.4.6. Lack of a centralized burned area assessment and post-fire impact database

Gap formulation. Post-fire impacts and recovery actions are not systematically captured in a single, centralized system that can support learning, prioritization, and institutional accountability over time.

Root causes and explanation. When information on burned area, fire severity, damages, erosion risk, and recovery results is recorded inconsistently or remains scattered across different institutions, important knowledge is lost from one fire season to the next. This weakens the system's ability to build institutional memory, to consistently understand post-fire needs, and to direct resources where they are needed most. It also impedes budget justification, evaluation of effectiveness of recovery measures and inter-institutional coordination.

Desired state (1-5 years). A centralized burned-area assessment and post-fire impacts system is established and operational. It is linked to incident reporting and is used on a regular basis to inform recovery priorities, support funding decisions and track recovery outcomes over time.

2. IMPLEMENTATION FRAMEWORK (ACTION PLAN)

The Implementation Framework is where the gap analysis becomes operational. Its credibility rests on sequencing: Albania cannot fix everything at once, so the action plan must focus first on measures that unlock system performance and reduce catastrophic risk quickly. In practical terms, Year 1 should prioritize “system enablers” that create immediate leverage – standardized SOPs, command and escalation arrangements, early warning triggers linked to municipal actions, and a national mechanism for risk communication and information sharing. These measures do not require massive infrastructure budgets, but they transform how the system behaves under pressure. Years 2–3 should then scale the investments that directly reduce risk on the ground: fuel management pilots expanded into a national programme, priority corridor maintenance, water point development, equipment modernization, and structured training rollouts. By Years 4–5, the focus shifts toward consolidation and institutionalization: sustaining financing streams, embedding wildfire risk into municipal planning and adaptation investments, and formalizing post-fire recovery as a permanent capability rather than an emergency improvisation.

Costing, in this context, is not simply a numbers exercise; it is a management instrument. Realistic costs signal what can truly be delivered, and they make it possible to align donor support, national budgets, and municipal contributions. The most effective action plans also specify the delivery model: whether an action is best implemented centrally (e.g., national SOPs, data systems, training curricula) or locally (e.g., community programmes, corridor maintenance, fuel treatment), and how coordination will work between the two. If the action plan is implemented as written, Albania gains a coherent path from fragmented efforts to a programme-based system where prevention and preparedness reduce the operational burden on suppression, and post-fire management prevents landscapes from degrading into chronic risk zones.

Priority levels

- Priority I: urgent actions that reduce catastrophic risk and enable core system functioning.
- Priority II: important actions that improve performance, consistency, and institutional maturity.
- Priority III: enabling actions with longer timelines, consolidation needs, or lower immediate risk-reduction effect.

2.1. Prevention - Implementation Framework

No.	Identified gap	Measures/actions to be taken	Period	Responsible institutions	Priority	Foreseen budget (EUR)
2.1.1	Limited fuel management programmes	2.1.1.1 Establish national fuel classification and fuel-management methodology (prioritization, treatment types, reporting)	Up to 1 year	MoE, NFA, NAPA, IGEO, FFS	I	120,000
		2.1.1.2 Pilot treatments in 10 high-risk municipalities (mechanical clearing, strategic fuel breaks)	Up to 3 years	Municipalities, NFA, NCPA	I	900,000
		2.1.1.3 Scale fuel management to ~1,000 ha/year in priority landscapes	Up to 3 years	MoE, NFA, municipalities, donors	I	4,000,000
2.1.2	Insufficient capacity at the local level for landscape fire prevention	2.1.2.1 Create municipal wildfire prevention focal points (job descriptions + ToR)	Up to 1 year	MoE, NCPA, municipalities, NFA, NAPA	I	180,000
		2.1.2.2 Annual micro-grants programme for local prevention packages (patrols, signage, outreach, small works)	Up to 5 years	MoE, donors, municipalities	II	1,250,000
2.1.3	Weak community engagement, awareness, behaviour change, and gender-responsive outreach	2.1.3.1 Community prevention communication package with gender-responsive outreach (national seasonal prevention campaign through TV/radio/social, targeted messages, WUI focus)	Up to 1 year	MoE, NCPA, NAPA, NFA, prefectures, municipalities, media, NGOs	I	250,000
		2.1.3.2 Community preparedness toolkit (checklists, defensible space guidance, reporting pathways) + local rollouts (local prevention campaigns and outreach in selected high-risk municipalities and protected areas, with gender-responsive communication, awareness activities, safer-practice promotion and where feasible, sex-disaggregated monitoring)	Up to 3 years	Municipalities, MoE, NCPA, NAPA, Ministry of Education, NGOs	I	300,000
2.1.4	Limited science-based information translated into prevention decisions	2.1.4.1 Produce municipality-friendly risk bulletins and priority maps (standard format)	Up to 1 year	IGEO, MoE, NCPA	II	160,000
		2.1.4.2 Annual prevention planning support cycle (pre-season technical clinics (training) for municipalities)	Up to 5 years	MoE, IGEO, universities	II	500,000
2.1.5	Lack of peer-to-peer learning for prevention practice	2.1.5.1 Institutionalize annual after-action reviews + regional learning forums	Up to 3 years	MoE, NCPA, municipalities	III	210,000
2.1.6	Limited fire-tailored weather, hydrological, and climate services for prevention planning	2.1.6.1 Fire-tailored forecasting products (wind/heat triggers, drought signals, operational thresholds)	Up to 3 years	IGEO, NCPA	I	450,000
2.1.7	Lack of a landscape fire early warning system and clear prevention triggers	2.1.7.1 Define trigger thresholds and SOPs linking warning levels to prevention action	Up to 1 year	NCPA, MoE, IGEO	I	90,000
		2.1.7.2 Implement national landscape fire alert dissemination package (templates, SMS/app integration, municipal workflows)	Up to 3 years	NCPA, MoE, Telecom partners, donors	I	650,000

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2.1.8	Weak integration of landscape fire risk into climate adaptation and local planning	2.1.8.1 Guidance note and template module for municipalities to embed landscape fire risk into adaptation and land-use decisions	Up to 1 year	MoE, NCPA, municipalities, FFS, NFA	II	120,000
		2.1.8.2 Support 15 high-risk municipalities to produce landscape fire-relevant adaptation action modules	Up to 1 year	MoE, municipalities, CSSA, NCPA	II	375,000
2.1.9	Lack of a national user-facing landscape fire information portal linked to early warning	2.1.9.1 Build a national landscape fire information portal (risk levels, alerts, guidance, seasonal summaries)	Up to 1 year	NCPA, MoE, IGEO, ASIG	II	350,000
		2.1.9.2 Maintain and enhance portal (hosting, updates, UX improvements, training)	Up to 5 years	NCPA, MoE, IGEO, ASIG	III	250,000
2.1.10	Weak maintenance of strategic preventive corridors and fuel breaks	2.1.10.1 Priority mapping of access corridors + annual maintenance plan	Up to 1 year	NFA, municipalities, NAPA, PFOs	I	150,000
		2.1.10.2 Maintain/rehabilitate ~200 km of priority forest-rural corridors	Up to 5 years	MoE, NFA, municipalities, PFOs	I	8,000,000
2.1.11	Incomplete framework for landscape fire specialization, safety standards, and seasonal workforce arrangements	2.1.11.1 Develop national competency and safety standards for landscape fire management	Up to 1 year	NCPA, MoE, Training centres, municipalities	II	140,000
		2.1.11.2 Create specialization pathway (certification, annual refreshers, safety audits)	Up to 5 years	NCPA, NFA, municipalities	II	600,000
2.1.12	Weak control of risky activities, including agricultural residues burning, and insufficient temporary restrictions on high-danger days	2.1.12.1 Develop and adopt a joint protocol that links fire danger levels to temporary restrictions, field-control measures, public communication, and proportionate enforcement for risky activities during high-danger periods	Up to 1 year	MoE, NCPA, MARD, municipalities, Fire Protection and Rescue Service, NAPA	I	160,000
		2.1.12.2 Pilot and progressively roll out the implementation of the protocol in 15 selected high-risk municipalities and rural areas through local awareness campaigns, communication materials for farmers and land users, training of relevant local authorities and inspectors, field-control measures during high-danger periods, and promotion of practical alternatives to open burning of agricultural residues.	Up to 3 years	Municipalities, MoE, MARD, NCPA, Fire Protection and Rescue Service, NAPA, NGOs	I	300,000

Cost calculation note: Budgets are derived from indicative unit-cost assumptions typical for the region and for Albania's terrain. These include fuel-treatment pilots, municipal micro-grants, communication campaigns, technical product development, corridor maintenance planning, and competency-framework design. The figures are intended to show order of magnitude and implementation logic rather than exact procurement prices: (a) fuel treatment pilots assumed ~1,000 ha at ~€900/ha including labour, small machinery, transport, supervision; (b) scaled programme assumes ~1,000 ha/year over 5 years at ~€800/ha (mix of clearing, maintenance, and targeted fuel breaks); (c) corridor rehabilitation assumes ~200 km at ~€40,000/km including drainage and basic resurfacing in difficult terrain; (d) national portal build assumes a small professional development team (product owner + developer + GIS + UX) for ~6–8 months plus hosting and training; (e) training and institutionalization costs are estimated per cohort and per annual cycle (venues, trainers, materials, travel). These are planning figures to be refined during technical design and procurement.

2.2. Preparedness - Implementation Framework

No.	Identified gap	Measures/actions to be taken	Period	Responsible institutions	Priority	Foreseen budget (EUR)
2.2.1	Limited translation of early warning into readiness actions	2.2.1.1 Pre-season readiness protocol: warning triggers -> staffing -> patrols -> checks -> pre-positioning	Up to 1 year	NCPA, municipalities	I	120,000
2.2.2	Insufficient meteorological decision-support tools for preparedness	2.2.2.1 Develop a localized meteorological decision-support package for preparedness and fire-condition anticipation	Up to 3 years	IGEO, NCPA, universities	II	280,000
2.2.3	Uneven application of standardized training modules for local authorities and responders	2.2.3.1 Strengthen and standardize the national landscape fire curriculum (operational, command, and support roles)	Up to 1 year	NCPA, Training centres	I	200,000
		2.2.3.2 Train approximately 1,200 responders over 3 years (courses and refreshers)	Up to 3 years	NCPA, municipalities	I	900,000
2.2.4	Lack of standardized vehicles, equipment, and tools for readiness	2.2.4.1 Procure 10 modern 4x4 wildland engines for high-risk municipalities	Up to 3 years	Municipalities, NCPA, donors	I	1,800,000
		2.2.4.2 Procure PPE sets for ~1,500 responders (wildland standard)	Up to 1 year	NCPA, municipalities, donors	I	1,200,000
2.2.5	Landscape fire risk assessment and risk maps are not consistently used for readiness planning	2.2.5.1 National methodology and municipal package for landscape fire risk mapping	Up to 1 year	IGEO, NCPA, MoE	II	180,000
		2.2.5.2 Produce/upgrade risk maps for 20 priority municipalities	Up to 3 years	IGEO, municipalities	II	600,000
2.2.6	Lack of municipal risk assessment, DRR strategy, and action plan for landscape fire preparedness	2.2.6.1 Technical assistance "bundle" to deliver the 3 documents in 15 municipalities	Up to 3 years	NCPA, municipalities, donors	II	750,000
2.2.7	Unclear command chain for escalating landscape fire incidents	2.2.7.1 Define escalation levels and command roles from local to national	Up to 1 year	NCPA, MoE, municipalities	I	110,000
2.2.8	Unclear institutional roles and responsibilities during major landscape fire incidents	2.2.8.1 Role-clarity matrix and inter-agency agreements for major landscape fire incidents	Up to 1 year	NCPA, MoE, NFA, NAPA	I	90,000
2.2.9	Overlapping legislation affecting preparedness and response	2.2.9.1 Legal harmonization review + proposed amendments/secondary acts	Up to 3 years	MoE, NCPA, justice/legal units	II	250,000

Cost calculation note: Budgets assume: (a) curriculum development uses a small national expert team and 3–4 workshops; (b) training roll-out costs average ~€750 per participant including trainer time, materials, venue, and travel; (c) 4x4 wildland engines estimated at ~€180,000 each with basic fittings; (d) PPE estimated at ~€800 per set including helmet, goggles, gloves, boots, wildland clothing, and fire shelter where applicable; (e) municipal risk-mapping costs assume ~€30,000 per municipality including GIS work, local validation, and delivery of simplified products.

2.3. Suppression - Implementation Framework

No.	Identified gap	Measures/actions to be taken	Period	Responsible institutions	Priority	Foreseen budget (EUR)
2.3.1	Lack of a clear incident command system for large landscape fires	2.3.1.1 Establish an official national and/or regional incident command system for large landscape fires (activation, escalation, liaison roles)	Up to 1 year	NCPA, MoE, IGEO, municipalities	I	140,000
2.3.2	Lack of tactical Standard Operating Procedures for complex incidents	2.3.2.1 Develop tactical SOPs for initial attack, extended attack, safety, evacuations, and WUI protection	Up to 1 year	NCPA, municipalities	I	180,000
2.3.3	Lack of organizational setup, logistics, and infrastructure for large-scale suppression	2.3.3.1 Establish regional staging, logistics, maintenance, and communications support arrangements for large incidents	Up to 3 years	NCPA, Qarks, prefectures, municipalities	I	1,200,000
2.3.4	Insufficient use of trained human resources and new technologies	2.3.4.1 Implement a shared incident reporting and situational-awareness tool (mobile and dashboard)	Up to 3 years	NCPA, MoE	II	650,000
		2.3.4.2 Train incident-support staff (GIS, communications, planning, intelligence)	Up to 3 years	NCPA, IGEO	II	300,000
2.3.5	Inadequate maintenance of operational access corridors and related land management	2.3.5.1 Operational access-improvement programme linked to suppression priorities (interface strips, access clearance)	Up to 3 years	Municipalities, NFA, NAPA	II	2,000,000
2.3.6	Lack of water supply system and infrastructure during operations	2.3.6.1 Build or rehabilitate 60 water points (tanks, reservoirs, drafting sites) in high-risk zones	Up to 3 years	Municipalities, NCPA	I	1,500,000
2.3.7	Lack of national tactical doctrine for landscape fire suppression	2.3.7.1 Issue national tactical guidance aligned with terrain realities, responder safety, and the wider LFM system	Up to 1 year	NCPA, Training centres	II	120,000
2.3.8	Lack of aerial firefighting capacity and framework contracts	2.3.8.1 Needs assessment + framework contracting model for seasonal aerial support	Up to 1 year	NCPA, MoD, MoE	I	80,000
		2.3.8.2 Seasonal leasing/surge contracts for 1 helicopter package during peak 60-day season (4 years)	Up to 5 years	NCPA, Government, donors	I	4,400,000

Cost calculation note: Budgets assume: (a) SOP/doctrine development requires expert drafting + field validation exercises; (b) logistics hubs cost ~€300,000 each (basic facility upgrades, tools cache, pumps, hoses, maintenance equipment); (c) 60 water points average ~€25,000 each (site prep, tank/civil works, fittings); (d) aerial package assumes ~€15,000/day for 60 days plus support costs (~€200,000/season), implemented over 4 peak seasons after the first year framework design.

2.4. Post-Fire Management - Implementation Framework

No.	Identified gap	Measure/actions to be taken	Period	Responsible institutions	Priority	Foreseen budget (EUR)
2.4.1	Insufficient funds for burned area recovery	2.4.1.1 Establish a dedicated post-fire rehabilitation financing mechanism window (fund or budget line)	Up to 1 year	MoE, Ministry of Finance, donors	I	100,000
		2.4.1.2 Capitalize and operationalize the post-fire rehabilitation financing window for priority burned areas, based on damage assessment and prioritization criteria, covering stabilization, erosion control, restoration planning, ecological recovery, and monitoring	Up to 5 years	MoE, Ministry of Finance, donors, municipalities, NFA, NAPA	I	6,000,000
2.4.2	Lack of BAER approach and post-fire restoration guidelines	2.4.2.1 Produce national BAER and post-fire restoration guidelines (damage assessment, stabilization, restoration pathways)	Up to 1 year	MoE, NFA, NAPA, FFS	I	220,000
2.4.3	Mismanagement of burned biomass	2.4.3.1 Develop protocol for burned-biomass handling (safety, erosion risk, pest prevention, ecological safeguards)	Up to 1 year	NFA, municipalities	II	120,000
		2.4.3.2 Pilot biomass handling in 3 affected landscapes	Up to 3 years	NFA, municipalities	II	450,000
2.4.4	Limited trained human capacities in municipalities for post-fire management	2.4.4.1 Train municipal teams in post-fire assessment and stabilization	Up to 3 years	MoE, NCPA, FFS, municipalities	II	300,000
2.4.5	Lack of official procedures and a programmatic framework for post-fire management	2.4.5.1 Adopt official post-fire procedures and a programmatic framework (prioritization, governance, financing triggers)	Up to 1 year	MoE, NCPA	I	150,000
2.4.6	Lack of a centralized burned-area assessment and post-fire impact database	2.4.6.1 Build a burned-area registry and post-fire impact database integrated with incident data	Up to 3 years	NCPA, MoE, IGEO	I	500,000
		2.4.6.2 Annual monitoring of recovery outcomes (erosion, regeneration, invasives) in priority sites	Up to 5 years	IGEO, universities, NAPA	II	450,000

Budgets assume: (a) rehabilitation programme capitalization uses a planning envelope based on restoring ~400–500 ha of priority sites using a mix of assisted natural regeneration, erosion control, and targeted planting; (b) typical restoration in Albania can reach €10,000–15,000/ha for traditional reforestation, so the programme prioritizes mixed, cost-effective approaches rather than full planting everywhere; (c) database costs include platform development, integrations, and training; (d) monitoring budget assumes annual field campaigns + remote sensing checks for a defined set of priority polygons.

3. MONITORING AND EVALUATION

Monitoring is what turns this gap analysis from a document into a practical reform tool. The recommended model is a national coordination lead supported by annual reporting and review. The aim is not simply to record whether activities took place, but to assess whether the identified gaps are genuinely narrowing and whether implementation is improving the system's performance over time.

3.1. Institutional arrangement

A practical arrangement for Albania is:

- Lead coordinator: the national LFM focal structure within the Ministry of Environment, in close operational partnership with the National Civil Protection Agency, given its role in civil-protection coordination and incident management.
- Contributing institutions: municipalities, including fire brigades and local risk-management units; NFA; NAPA; IGEO; training institutions; law-enforcement bodies; and other relevant sector institutions.

This arrangement is realistic because prevention and post-fire recovery sit strongly within land and environment governance, while preparedness and suppression coordination depend on civil-protection functions. The coordination model should therefore be collaborative, clearly mandated, and supported by annual reporting obligations.

3.2. Monitoring process (annual cycle)

1. Data collection (end of fire season): each responsible institution reports progress against the action-plan measures relevant to it, using a standardized template and basic evidence requirements.
2. Verification and synthesis: the coordinator verifies delivery evidence such as procurements completed, trainings delivered, hectares treated, corridors maintained, SOPs adopted, systems launched, and rehabilitation activities undertaken.
3. Evaluation: progress is assessed against the desired state for each gap. Where delivery is partial or delayed, the report explains the reason – for example budget constraints, procurement problems, staffing shortages, legal delays, or coordination failures.
4. Adaptive update: priorities and sequencing are reviewed in light of seasonal outcomes. If certain weaknesses repeatedly expose the system, they can be elevated in priority in the following cycle.
5. Publication and feedback: the annual report is shared with all participating institutions for review and feedback, then finalized to support accountability, learning, and planning for the next season.

3.3. Reporting outputs

- Annual LFM Implementation Report (narrative and tabular), including:
 - Status by gap and by action (Not started / In progress / Delivered / Delayed)
 - Budget execution versus plan
 - Quantitative indicators and qualitative lessons learned
 - Recommendations for next year's priorities
- Season-readiness briefing before each fire season, confirming what has been implemented and what remains at risk.

3.4. Suggested core indicators

- Prevention: hectares treated; kilometres of corridors maintained; number of community activities; seasonal restrictions activated; enforcement operations conducted
- Preparedness: responders trained; municipalities with updated risk maps; local DRR documents adopted or updated; readiness measures triggered by warning levels
- Suppression: incident-command arrangements adopted; SOPs applied; water points operational; logistics arrangements functioning; average response times in priority areas
- Post-fire: burned-area registry coverage; priority sites stabilized; hectares under recovery monitoring; restoration financing deployed; post-fire procedures applied

4. CONCLUSION

The LFM Gap Analysis for Albania shows that landscape fire risk is increasingly structural – shaped by fuel accumulation, land-use change, climate pressure, and expanding exposure – while the current system remains too dependent on reactive suppression and is still weakened by fragmented responsibilities, uneven local capacity, incomplete warning-to-action arrangements, inconsistent command and procedural frameworks, and underdeveloped post-fire management. The most effective way forward is practical and achievable within five years: treat prevention as public-safety infrastructure, strengthen preparedness through readiness systems and standardization, improve suppression through command, tactics, logistics, and safety, and institutionalize post-fire management so that burned landscapes recover in ways that reduce future risk rather than deepen it. In other words, the country does not need a collection of isolated measures, but a more coherent system in which law, planning, institutions, finance, and operations reinforce one another.



