Let the dialogue begin

Firelogue

D4.2: WORKSHOP CONCEPTS AND MATERIAL

Project: Cross-sector dialogue for Wildfire Risk Management

Acronym: Firelogue

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Glossary

AB	Advisory Board
AP	Associated Partner
BFSI	Banking, Financial Services and Insurance
CB	Communication Booster
EAB	Ethics Advisory Board
EWE	Extrema Wildfire Events
IA	Innovation Actions
GA	Grant Agreement
JT	Just Transition
RIA	Research and Innovation Action
TS	Thematic Strands
WFRM	Wildfire Risk Management
WGs	Working Groups
Consortium partners	
ADAI	Association for the Development of Industrial Aerodynamics
CMCC	Centro Euro-Mediterraneo sui Cambiamenti Climatici
CTFC	Consorci Centre de Ciència i Tecnologia Forestal de Catalunya
EDGE	EDGE in Earth Observation sciences Monoprosopi IKE
FhG	Fraunhofer Gesellschaft für Angewandte Forschung e.V. (FhG)
IIASA	International Institute of Applied System Analysis
INESTEC	Instituto de Engenharia de Sistemas e Computadores, Tecnologia e Ciência
KEMEA	Centre for Security Studies
NOA	National Observatory of Athens
PCF	Pau Costa Foundation
SAFE	SAFE Cluster
TIEMS	The International Emergency Management Society
TRI	Trilateral Research
UAH	Universidad de Alcalá
VOST	Virtual Operations Support Team from Portugal

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Executive Summary

The risk of forest fires and their management is characterised by complex interactions between human behaviour, socio-economic development, climate and vegetation resources, also known as "fuel load". The interests and activities of those involved can develop synergies, but also lead to contradictions or even conflicts. The respective interactions need to be considered from different perspectives to ensure that they are understood and integrated in a meaningful way. At the same time, the relevant preconditions and impacts from different WFRM perspectives need to be included in order to develop sustainable approaches. With this in mind, Firelogue assumes that it is crucial to bring together the multitude of different WFRM stakeholders to uncover their potential synergistic and conflicting interests, goals and means of achieving these interests in order to enable holistic planning. Consequently, Firelogue working groups aim to facilitate the cross-project integration of innovative technologies, policies, strategies and governance approaches into holistic recommendations in the above policy areas and the identification of their synergies and trade-offs among different sectors and stakeholders. The deliverable therefore presents a solution based on participatory theories, which makes it possible to bring together this multitude of different WFRM stakeholders and experts in five thematic working groups and to develop systematic proposals for dealing with injustices and compromise solutions via a set of interactive multi-stakeholder workshops. These workshops are designed to have two major rounds of discussions on, among other things, the implications and considerations of whose voices are missing or whose experiences are not represented in the WFRM discussion, as well as on perspectives that may emerge in terms of problem setting, goal setting and possible solutions or challenges with regard to a just transition in the field of WFRM measures. For the implementation, the deliverable sets out a rough guideline on which the further planning will be based.

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1 Introduction

This Deliverable details the concepts for the Working Group workshops within Firelogue and the material that will be used to implement them. It thereby draws on Deliverable 4.1 "Just Transition review and application for Firelogue" whilst relating the Just Transition (JT) to other relevant participatory concepts such as *System Thinking* and *Collaborative Governance* in Chapter 2. More specifically, JT is first introduced before it is integrated into WFRM (Chapter 2.1 and Chapter 2.2). These concepts set the grounds for the design of the participatory workshops and their implementation as specified in Chapter 3. The implementation thereby builds on initial thoughts presented in the project proposal and first work in the Working Groups, for example regarding potential topics to be addressed by them. In addition, Chapter 3 builds on the first insights on potential contributions by the Innovation Actions (IAs) and FirEUrisk as derived by the Firelogue survey under Task 1.1 "Survey across IAs". Beyond presenting the approach of the Firelogue Workshop, Chapter 3 is devoted to the objectives pursued and the integration of the theoretical basis presented in Chapter 2, before outlining the structure in terms of the role and composition of the working groups and thematic strands. Finally, chapter 3.4 deals with suggestions for the concrete preparation and implementation of the workshops. Finally, two different yet complementary types of documentation are presented, before Chapter 4 closes the deliverable with the conclusion.

2 Conceptual contexts and their meaning for the Firelogue workshop design

Firelogue builds on applying the *Just Transition* concept to the Wildfire Risk Management (WFRM) context. The benefits, challenges and potential topics have been described in D4.1 in more detail. WFRM is a multi-stakeholder setting with sometimes synergising but sometimes also conflicting interests and impacts. JT thus facilitates the uncovering and discussion of justice aspects in managing wildfire risk. It can hence be regarded as a means of identifying such synergies and conflicts that need to be addressed in order to design holistic strategies. It sets the scene for identifying the aspects that require for particular attention in managing wildfire risk, i.e. the *what*. The summary of initial thoughts in applying JT to the WFRM context are detailed in Section 2.1 below. However, *how* to structure such discussions also requires a theoretical grounding. We therefore detail *Systems Thinking* and *Collaborative Governance* approaches and their application in managing risk more generally and wildfire risk more specifically in Section 2.2. Figure 1 provides an overview of the five dimensions discussed and integrated below, which provide the theoretical input for the practical implementation outlined in Chapter 3.

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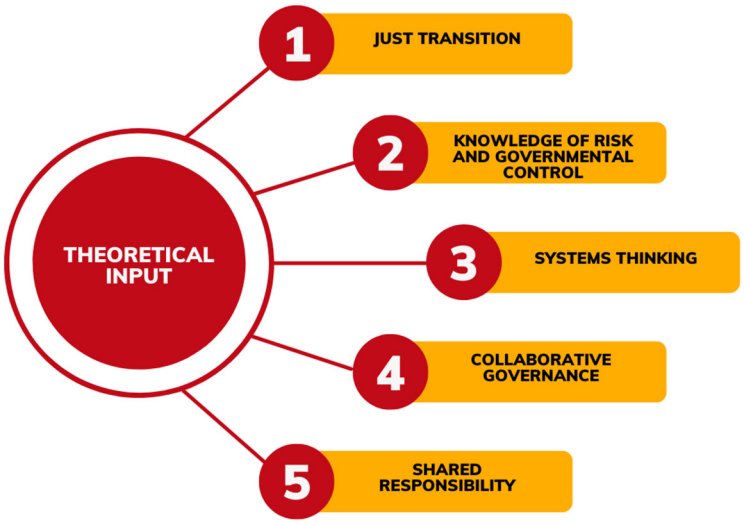

Figure 1: Five dimensions of theoretical input

2.1 The role of Just Transition in WFRM

The Just Transition concept is framed originally within the transition away from high-carbon business models to a net-zero greenhouse gas emissions economy. Yet, important conceptual cross-links may be established with integrated WFRM. The most obvious are those interlinkages under the scope of **climate change mitigation** and **adaptation** such as wildfire risk reduction and GHG emission reduction, the increase of carbon sinks/stocks by forest cover conservation and a nature-based circular bio-economy linked to biomass fuel management. Furthermore, the recognition of wildfire risk reduction actions related to ecosystem services, provisioned to adapting communities, infrastructures and business to climate related risks through nature-based solutions based on sustainable forestry and farming can play an important role.

Despite these content related dimensions, WFRM justice dimensions arise within the trade-offs across **actions** and **inactions** influencing the **hazard**, **exposures** and **vulnerabilities** along the risk creation/reduction process and the corresponding role of stakeholders (in terms of responsibility, conflicts and synergies). From a justice perspective, inconsistencies and inequalities resulting from the lack of mechanisms to compensate the risk reduction (for instance, valuing the contribution of rural development that provides less flammable and hazardous landscapes as a tool for civil protection) may serve to guide the dialogue with stakeholders about tools and policies towards integrated WFRM in a coherent and systemic way.

Building on initial reflections on JT aspects in the context of WFRM with the Firelogue thematic Working Groups addressing environment/ecology, societal, infrastructure, insurance and civil protection aspects of managing wildfire risk has resulted in a comprehensive list of salient questions in the domains of **distributional, restorative** and **procedural justice** (following thoughts by McCauley and Heffron 2018) for each step in the WFRM cycle (see Box 1 below). These issues need to be addressed in order to establish WFRM approaches that are perceived as fair by relevant stakeholders, thereby limiting potential conflicts and increasing political feasibility. In particular, in setting up the working groups and identifying topics for the workshops, WG leaders will make sure to bring to the fore and explicitly address the oftentimes implicit justice considerations along the WFRM cycle. The box below suggests aspects that will be addressed by the WGs in the context of their workshops:

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Box 1: Key justice issues within WFRM cycle

Think about *distributive*, *procedural* and *restorative* justice aspects that are related with their field of work (ecology/environment, society, insurance, infrastructure, civil protection). Potential aspects to be addressed in different phases of WFRM are listed below:

Prevention: Equal access to knowledge, resources and information needed to prevent wildfires, the distribution of costs and benefits of wildfire prevention across society, and the inclusive consideration of stakeholder interests in the policy process of shifting focus from wildfire suppression to prevention.

Preparedness: Comprising the inclusive involvement of societal stakeholders in the development of preparedness tools, the distribution of the capacity to act across society, and the distribution of (knowledge on) residual wildfire risk despite prevention and preparedness activities.

Response: Distribution of capacities to respond in case of emergency, the decision on where to put emphasize on in an emergency situation and where to accept residual risk, and the compensation for emerging residual damages.

Restoration and Adaptation: Distribution of benefits and costs of adaptation measures, the potential of individual adaptation action causing maladaptive outcomes at a societal level, the distribution of adaptive capacities across societies, and the role of insurance as a solidarity mechanism to provide restorative support.

2.2 Integrating JT into risk governance processes: a systems thinking perspective to WFRM

The suggested topics could build the first step in developing holistic and just WFRM strategies and policies. However, from a practical point of view, these aspects have to be integrated into governance processes. Governance can be thought of as the 'play of the game' and not merely the 'rules of the game' (Shepsle 2010) and is used here to refer to the regimes, arrangements, structures, strategies, and processes by which public policies (rules, regulations, laws, etc.) are made and implemented (Gatzweiler et al. 2022).

2.2.1 Systems thinking

Conventional risk governance approaches, including those for wildfire, have tended to be based on well-established cause-and-effect-relationships. In other words, authorities developed risk assessments including different types of hazards and related scenarios which built the basis for risk management measures including prevention, preparedness, response and recovery. By contrast, systemic risk governance tends to emphasize the complex causal structures related for example to climate change adaptation and mitigation, land-use changes, consumption patterns, etc. often with feedback mechanisms marked by uncertainties and including the potential for cascading or compounding events potentially leading to failure of the whole system. Barry Richmond already wrote in 1990 that the problems in the world are growing more intractable and are becoming increasingly resistant to unilateral solutions. He concluded that thinking in systems was an important part of an effective strategy for developing capacities for these challenges. Focusing on systemic risks, the 2019 Global Assessment Report (GAR) acknowledged that such risks also require for new forms of *systemic governance* considering "the interconnected elements and interdependencies among individual risks" (p.54) (United Nations 2019). System thinking hence requires us to see the bigger picture – from which one may identify multiple leverage points to support constructive change. It offers a pathway to identify improved policy solutions for complex and multi-objective policy issues.

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Box 2: Systems thinking considerations in the workshop design

The workshops aim to understand the (systemic) implications of WFRM measures, initially from a thematic (WG) perspective and in a second step from a cross-WG, hence-multi stakeholder perspective. The aim in this two-step process as described in section 3, is the identification of synergies or conflicting objectives WFRM measures may have from different perspectives. The enhanced understanding of such synergies or conflicts should build the basis for the development of more holistic strategies addressing wildfire risk systemically and consistently.

2.2.2 Collaborative governance

2.2.2.1 Scope and definition

More generally, systems thinking - to facilitate transformative change –needs to be translated into governance regimes to understand the drivers and interrelations of risks and to exploit systems methodologies in designing and implementing robust, holistic and transformative adaptation strategies (Thompson 2018). In other words, taking complexities and interrelations of managing wildfire risk into consideration, requires for specific policy processes, or risk governance. In contrast to conventional top-down approaches, policymaking (in the European Union) typically involves a broad network of government, market and civil society actors across sectors and scales. Polycentric government structures (i.e. novel arrangements across sectors and scales) as well as inclusive stakeholder collaboration – collaborative governance - are increasingly considered essential for co-designing and implementing robust and integrated risk management policies. Collaborative governance can be defined as

> *"The processes and structures of public policy decision making and management that engage people constructively across the boundaries of public agencies, levels of government, and/or the public, private and civic spheres in order to carry out a public purpose that could not otherwise be accomplished." (Emerson et al. 2012)*

Box 3: Collaborative governance in Firelogue

Applying collaborative governance thinking to the Firelogue project results in two main aspects for the Working Groups and their workshops:

First of all, the design of the WGs (see section 3.3.1) aims to be constructed in an inclusive manner trying to integrate the diversity of relevant WFRM stakeholders and their perspectives such as for instance, public investments (e.g., risk reduction infrastructure), regulations (e.g., land use) and public services (e.g. emergency response), with the inclusive involvement of public and private actors. Secondly, WFRM governance aspects including related good practices and challenges will be addressed in the workshop implementation. WGs should carefully think about the relevant stakeholders related to the questions under consideration, in terms of personal expertise but also in terms of organisational representation.

2.2.2.2 Challenges

Collaborative governance does not necessarily lead to full stakeholder agreement or consensus on a policy direction; indeed, many of today's risk governance issues can be described as 'wicked' problems characterized not only by 'deep uncertainty' but also by 'deep conflict', for which compromise instead of consensus is sought (Scolobig et al. 2016). This is also true for many wildfire risk policy issues, for instance:

- Can inclusive stakeholder processes lead to full agreement on land-use restrictions in wildfire risk areas or even requiring relocation of homes and assets out of risk areas, and what should be the compensatory arrangements?

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- Can stakeholders agree on definitions of the hazard and estimates of the risk underlying the policies?
- Do those who create exposures (e.g., new urban developments close to wooded lands) deal with the reduction of vulnerability? or is risk reduction shifted to public bodies?
- Is there consensus on who should pay for wildfire losses – individual responsibility or public solidarity – or who should pay for their prevention?
- Can we find consensus on conservation or nature-based solutions versus more traditional fire-prevention investments, or even on the benefits of public investments in risk reduction – is fire severity defined by asset value in the burnt area or does it include the ecological losses?
- Should limited firefighting resources be allocated only where they will be most effective at protecting lives or should resources be also allocated to property that cannot be defended safely?

These difficult choices can invoke conflicting ideas on the underlying science and on what is fair or equitable, which can lead to (sometimes intractable) debates grounded in interests, values and worldviews. However, there are ample examples of stakeholder co-production processes for managing disaster risk that involve participants with conflicting interests and worldviews, and that manage to reach compromise (not consensus) solutions (Scolobig et al. 2016; Linnerooth-Bayer et al. 2016).

Box 4: Compromise-driven approach of Firelogue

Firelogue follows a compromise-driven approach, meaning that it does not seek to reach agreement between the stakeholder in its workshop formats. The project is well aware of the WFRM challenges that will not fully be overcome. However, an important aim of the project is to make these challenges explicit and to develop suggestions for identifying and addressing them – for example through compensatory mechanisms. And finally, even if stakeholders cannot agree on a fair outcome, they may be able to agree on 'fair process' – on who makes the decisions and how.

2.2.3 Shared responsibility

The practical link in involving a multitude of stakeholders is rooted in the distributed and decentralised nature of wildfire risk. Much of the direct burden is borne by households and other landowners – in addition to corporate land holdings and infrastructure. The impacts of smoke are also widely distributed, although certain identifiable groups are far more vulnerable to its affects. In line with this burden, there is also much individuals can do to reduce accidental fire ignitions and to reduce property losses[1] and it is difficult to reduce the risk substantially without the cooperation of the affected public(s). This aspect is now often conceptualised as "**shared responsibility**" (Begg et al. in press) which we understand within Firelogue as a functional approach[2] for achieving a desired outcome, especially in terms of risk reduction and improved resilience[3] (McLennan and Handmer 2014; McLennan and Eburn 2015).

Shared responsibility has been promoted at many levels and sectors. For example, a UN report sees it as a global imperative for dealing with Covid (United Nations 2020) and in the UK it has been argued that "[P]rofessional dominance in health care often works against shared responsibility and is compounded by the shortage of time and resources to enable staff to work in partnership with

[1] This is also in line with the EU's 2030 goals for wildfire risk reduction.
[2] The concept can also be understood as part of the social contract between governments and their citizens (see Crosweller and Tschakert, 2021 for a recent study).
[3] Resilience is generally defined following the UNDRR definition.

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patients." (Ham et al. 2018). With respect to WFRM, the Australian National Strategy for Disaster Resilience (NSDR 2011) states that communities need to become "empowered to take shared responsibility for coping with disasters" (NSDR 2011 p. 2) and furthermore stresses that "political leaders, governments, businesses and community leaders, and the not-for profit sector" should all contribute to improved disaster resilience (NSDR 2011 p. 3). However, the "shared responsibility" approach is not without its critics and is also viewed as part of the neo-liberal agenda to outsource key government tasks (Crosweller and Tschakert 2021). Shared responsibility is hence closely linked to aspects of justice, responsibility and distribution of burdens.

Box 5: Responsibility aspects and workshop design

The matter of responsibility plays an important role in the implementation of the WG workshops. More specifically, the matter of shared responsibility will translate into questions on *who* should actually implement certain measures and *how* related resources can be allocated? Respective questions will be included in the workshop discussions.

2.2.4 Knowledge of risk and government control

Despite the general questions related to the actual sharing of WFRM responsibilities, the organisation of such responsibilities can largely differ. For instance, from a practical point of view, individuals may not be aware of their own risk, which makes it challenging to find adequate approaches that involve them. Research in high wildfire hazard areas in Australia suggests that some 20% of the population are unaware that they are in a wildfire zone, much less that they are personally at risk (Whittaker and Handmer 2010; McLennan 2015). Trying to increase risk reduction activities at individual and household level, much public engagement is based on the knowledge deficit paradigm which presupposes that if the correct information is provided, people will gain the knowledge as intended, and then take according actions intended by the authorities. Unfortunately, this linear process rarely holds true where natural hazards are concerned even though the ideas were widely adopted. Changes in behaviour are often due to other causes rather than the information provided (Boykoff 2009) and work with wildfires in Australia shows that traditional approaches to distributing public information alone are of limited value in changing behaviour (McLennan 2015; Whittaker and Handmer 2010) even where life-saving warnings and evacuations are concerned. Psychological variables, related to public beliefs and attitudes, appear to be the most significant factor of public policy support to wildfire management strategies (Absher and Vaske 2007). Some main factors affecting the ability to undertake an individual action can be summarized in the perceived effectiveness of actions to reduce the risk; confidence in the capacity to correctly carry out actions; the perceived responsibility for fire risk management; and trust and credibility to the institution promoting actions (Martin et al., 2007).

The distribution of information by public bodies can be interpreted as presuming that it is a higher authority, such as a government agency or large NGO, that initiates and manages any engagement. In short, the government defines the problems and then asks communities to help solve these government-defined problems. This is strong on citizen responsibilities but weak on their rights. This language seems to preclude communities initiating new ideas or taking full control, in that whatever they do is a function of the authorities. However, those in many rural, remote and alpine communities across Europe might disagree and argue that they have a significant degree of autonomy and do not always depend on higher authorities to take initiatives.

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Nevertheless, many wildfire engagement efforts are towards the one-way flow of information to the public end of the spectrum, despite a rhetoric of engagement. More bottom-up oriented and truly collaborative approaches to sharing responsibilities in managing wildfire risk seem to be more promising (see figure below). However, respective approaches can require far more resourcing and effort, especially as there are often multiple community views towards the authorities, wildfire risk, and on what should be done (Thaler et al. 2022). This is evident if we consider the effort of developing and distributing a uniform national information program through mass media, versus on-going discussions with numerous community groups each which their own priorities and interests.[4]

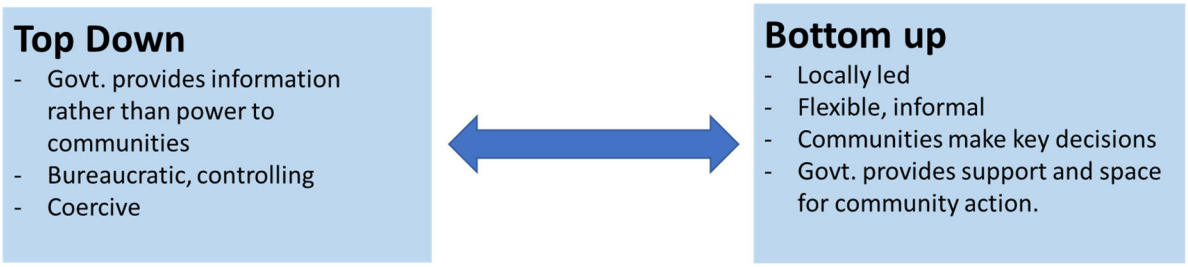

Figure 2: Community engagement can be thought of as occurring along a continuum from top-down, government controlled, to bottom up community led. Most efforts are mixed and towards the top-down government end. (Begg et al. 2015)

At the same time, there are many examples of attempts at greater community engagement and collaboration, often in an attempt to operationalise shared responsibility. These include agency programs, community driven initiatives but also larger more general approaches such as the "Firewise" program. The "Firewise" program originated in the US has been also adopted in Europe, for example in Spain[5]. In the US it is a national interagency program focused on reducing wildfire risk by working with communities and certifying successful communities. It provides a collaborative framework for communities to organise themselves and increase the ignition resistance of their homes and to reduce wildfire risks at the local level. "Any community that meets a set of voluntary criteria on an annual basis and retains an "In Good Standing Status" may identify itself as being a Firewise® Site.[6]

An example of an agency driven program is the "Safer Together Program", funded by the Victorian Government, Australia. It brings fire and land management agencies from across the state together with the aim of collectively managing bushfire risk through a shared responsibility approach. The program has a strong focus on building stronger interagency and community partnerships as well as embedding the latest science and technology to target bushfire risk reduction actions more effectively. It is understood that building strong relationships is the key to the success of the program. Safer Together employs a range of approaches to building these relationships between agencies and community members,

[4] The concept of "archetypes" has hence been developed to help agencies understand the distinct views within a community (or neighbourhood). An Australian study identified seven archetypes for wildfire safety including those who deny that there is a risk and those who believe that it is not their responsibility (Strahan et al. 2018). The practical value is that policies and practice can be specifically developed for each archetype to accommodate their diverse needs instead of incorrectly assuming that one approach will work for all.

[5] The initiatives has been implemented in Spain through a partnership between Firewise and the Pau Costa Foundation https://www.nfpa.org/News-and-Research/Publications-and-media/Blogs-Landing-Page/Fire-Break/Blog-Posts/2017/02/02/new-firewise-partnership-in-spain-to-advance-wildfire-preparedness

[6] See https://www.nfpa.org/Public-Education/Fire-causes-and-risks/Wildfire/Firewise-USA (10.05.2022).

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such as place-based planning and local government partnerships[7]. In a similar way, community-based cross-sector working is being implemented in United Kingdom, from the local wildfire groups putting in practice collaborative bottom-up solutions up to regional and national forums generating "communities and networks of practice" including coordination, lobbying for change, serving as centres for knowledge exchange and a point of consultation for government bodies. A collaborative approach by the Fire and Rescue Service is being implemented and they are required to work with their communities and a wide range of partners in wildfire groups and across Integrated Risk Management plans (Gazzard et al., 2016).

In Portugal, in 2017 was launched the "Safe Village" and "Safe People" Programs (https://aldeiasseguras.pt/), aimed at mobilising the local communities, identifying and preparing collective and individual players in the fields of prevention, risk awareness and response in case of wildfire. The programme is motivated by the National Authority for Emergency and Civil Protection and is supported by the figure of a Local Safety Officer sufficiently familiar with the existing geographical, human and structural realities at local level who can voluntarily liaise between the municipal/civil parish council and the rest of the community's residents in the implementation of the different measures and in the dissemination of information (ANEPC, 2018).

Box 6: Involving citizens, private actors and communities

Discussing the implications of WFRM measures in the workshops requires for a consideration of the above aspects, namely:

How can communities, individuals and private actors, be involved? Which measures (other than the distribution of information) are required to initiate change?

Which role do communities play? Are they regarded as rather "passive" recipients of government requests? Or do they play a pro-active role in managing wildfire risk? Which citizen initiatives do already exist and could play an important role?

Is the risk planning process used to generate awareness and community of risks? Have the tools for actively involving individuals and private actors to reduce risk been adapted locally? Is cooperation between agencies responsible for uses and land planning and emergency management promoted in the risk planning process?

Aspects of resources needed and facilitators such as the above-mentioned *archetypes* approach should be kept in mind when discussing community involvement.

[7] See Community engagement (safertogether.vic.gov.au) or https://youtu.be/IDmurPNaSTE (video about community based bushfire management) (03.05.2022).

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3 The Firelogue approach: Working Groups and Thematic Strands

3.1 Aim

The aim of the implementation of Working Groups (WGs) and Thematic Strands (TSs) in Firelogue is a detailed understanding of the implications of new WFRM measures from a multi-stakeholder perspective. More specifically, innovative approaches and measures as developed by the Innovation Actions (IAs) and FirEUrisk are systematically collected and summarised in a first step. In a second step, their implications are discussed *within* the relevant WGs and as well as *between* the WGs to identify their alignment or contradiction with different stakeholder objectives and resulting synergies or potential conflicts. Finally, these insights aim to build the basis for the development of consistent WFRM strategies that take different stakeholder perspectives into consideration, and align them to the extent possible while specifying potential conflicts that need to be overcome.
Overall, the analysis and findings translate into recommendations at EU and national level under WP5 "Evaluation and recommendations".

3.2 Applying JT and collaborative governance approaches

Navigating the complex stakeholder landscape and co-designing wildfire policy processes and solutions that are viewed as workable, robust, equitable, and even transformative are core aspirations of the Firelogue dialogues and workshops. At the core of the framework is an understanding of the seminal issues that underlie progress on reducing and sharing wildfire risks across Europe, and how different stakeholders (plurally) perceive the issues and their solutions. As illustrated in the figure below, conflicts may arise due to competing or conflicting objectives and worldviews as well as differences in stakeholder views of what is fair, i.e., distributive, restorative and procedural justice. The issues will be identified, explored and debated in five Working Groups: environmental/ecology, societal, infrastructure, insurance and civil protection. Options for their resolution will be proposed within the WGs, after which the options will be brought to the attention of the other WGs for the purpose of identifying additional challenges when taking a more holistic or integrated view. A final aim is to document the potential conflicts across the WG domains (with discourse analysis) and seek potential compromises. Throughout, the deliberations will be guided by the aims of the EU Just Transition.

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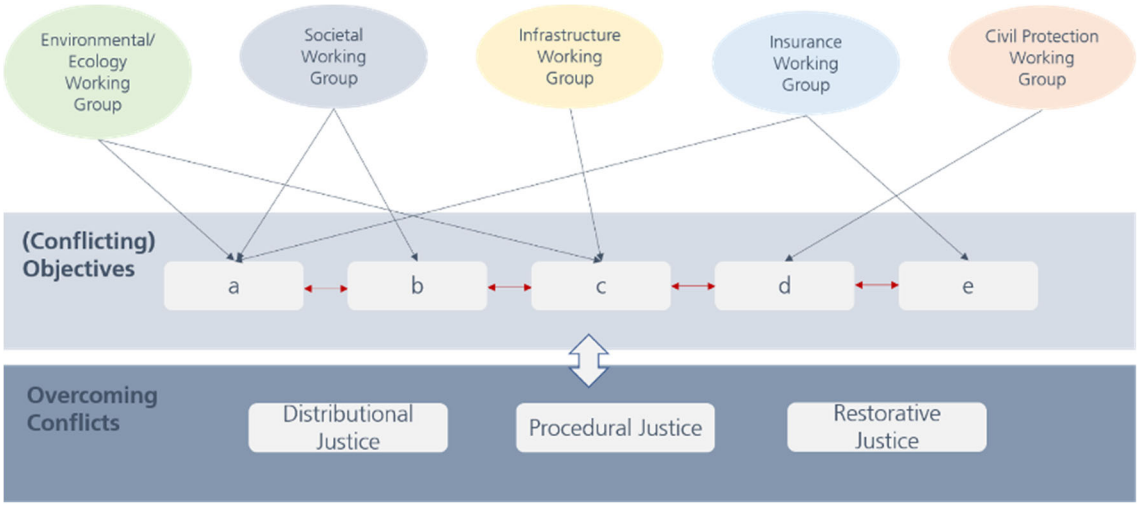

Figure 3: Firelogue approach to discussing justice implications of WFRM measures from different stakeholder perspectives.

3.3 Organisational structure

Firelogue is hence structured along these five Working Groups and four Thematic Strands as further detailed below which are organised in a matrix structure as the figure below shows.

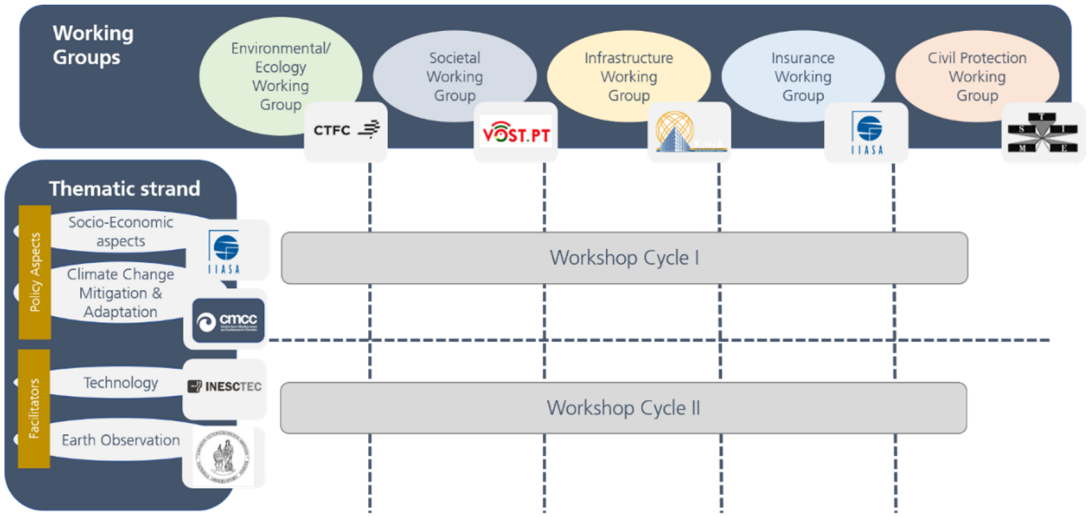

Figure 4: Firelogue Working Groups and Thematic Strands

The **Working Groups (WGs)** represent the main stakeholder groups playing a role in integrated wildfire risk management. "These sectors have been chosen as they reflect key stakeholder groups that are to be involved in holistic WFRM approaches.[8] These actors are also reflected in the envisaged impacts of the call text relating for example to 50% of Natura 2000 protected areas to be fire-resilient, 50% reduction in building losses, or 90% reduction of losses from wildfires insured. Each WG will consist of experts from science, policy and practice working in the field of WFRM. They will be "recruited" from

[8] The Project 4 Policy Report: Faivre, N. (Ed.) (2018): "Forest Fires – Sparking firesmart policies" by the European Commission (Directorate-General for Research and Innovation Climate Action and Resource Efficiency), for example mentions, p. 19f: "The challenge is to develop integrated solutions which take into account the objectives of forestry, urban and rural development, agricultural, climate and energy policies"; similarly, Paton et. al (2015): Ensuring That We Can See the Wood and the Trees: Growing the Capacity for Ecological wildfire Risk Management, in: Paton et al. (Eds.): Wildfire, Hazards, Risks, and Disasters, Amsterdam, Elsevier, p. 263ff.

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the IAs but also the wider network including the CLA-15 action (FirEUrisk) and other relevant projects. Some potential WG participants are already associated to FIRELOGUE (see letters of association). ”[9] The WGs will work along four horizontal Thematic Strands (TSs) to ensure parallel processes and to facilitate cross-working group exchange.

TSs represent innovation topics, i.e., socio-economic, climate policy (mitigation and adaptation), technology, and earth observation, that are addressed in the Innovation Actions (IAs)." “The TSs have been chosen to reflect main policy aspects (socio-economic aspects as well as aspects of climate policy) that are taken into consideration when designing WFRM strategies or approaches in and across the different WGs. In addition, facilitators of respective WFRM approaches such as technologies and earth observation have been selected. Again, this selection interlinks with the scope of the call, namely to integrate socio-economic and climate aspects[10] while new technologies and Earth Observation services are mentioned as main means to facilitate integrated WFRM approaches.”[11]

WGs and TSs will work together in an iterative manner, contributing to the discussions from different ends. More precisely, the WGs will recruit their participants from the IAs and FirEUrisk and suggest important multi-stakeholder WFRM topics based on their expertise.

3.3.1 Setting up the Working Groups

The Working Group leaders have developed an initial set of ideas for potential topics they could address as depicted in the table below. A Concept Note (see Annex I) has been developed in line with these potential topics to reach out to potential contributors from the IAs and FirEUrisk but also a broader set of stakeholders not directly involved in the projects. The list of potential topics will be refined in collaboration with the WG members as each WG is being set-up.

[9] See p. 13 f. of the Description of the Action Part B.
[10] Other requested aspects such as security and environment are already covered by specific FIRELOGUE Working Groups while climate and socio-economic aspects are cross-cutting issues.
[11] See p. 14f. of the Description of the Action Part B.

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Ecology WG:

• Cross-sectoral implications of increasing fire-prone environments, with special attention to the value chain of forest products, other landscape related economic activities incl. tourism, nature conservation and ecosystem services provision.
• End-user oriented needs and challenges (technical, financial, legal, etc.) to adapt and manage fire-resilient landscapes across the EU
• Cross-links between WFRM and:
  ○ Agroforestry-based circular bio-economy
  ○ Nature conservation
  ○ Forest protection function and multi-risk cascade effects
  ○ Fire-smart land use planning
  ○ Climate actions plans
• Framing smart and cost-efficient WFRM strategies addressing businesses (such as the tourist sector), communities and public bodies to drive climate adaptation
• Role of prescribed burns in WFRM strategies across EU landscapes

Societal WG
• Simplification of legal frameworks and communication of WFRM measures in a way that everyone understands • Design of flexible WFRM measures • Use of non-digital means of communication, and interaction with authorities; development of methods that are inclusive
Insurance WG:
• Subjects to insurance (Property, timber, crop, etc. • Types of insurances (indemnity based/parametric); public/private; public re-insurance • Relation between public and private product • Use of losses data base(s) • Technologies to support the design of innovative products • Forms of collaboration between governments and insurances in terms of incentivising, instructing, prescribing, and funding DRR activities
Infrastructure WG
• Wildfire prevention and response from infrastructure perspective • Impact of climate change, adaptation and risk reduction measures to be taken by infrastructure providers • Efficiency of early warning/alerting systems • Physical infrastructure vulnerabilities • Role of land use planning in determining risk of infrastructures to wildfires

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- Training of operators and infrastructure stakeholders

Civil Protection WG:

- At EU level:
  - Set-up of UCPM modules and their interoperability (with national systems)
  - Requirements for Knowledge Network/Knowledge development and sharing needs
- At the national level: Existing approaches/gaps and options for knowledge sharing
  - Interaction of responders with prevention activities
  - Protection of Critical Infrastructures
  - Aspects of evacuation & involving the public
- Overarching topics:
  - Investments challenges: response technology vs. forest management and prevention measures, in the context of benefits for various involved actors;
  - New and emerging approaches to assessing wildfire danger and risk and their implications, as well new and existing SOPs

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In addition to these preliminary thoughts, a survey was circulated to the IAs and FirEUrisk to better understand their interest in the working groups, potential topics they could contribute as well as relevant stakeholders involved in the projects. The following figure (Figure 5) is a summary of the WG related responses. More details can be found in D1.1 "Review report of IA case studies". The core findings are again included below:

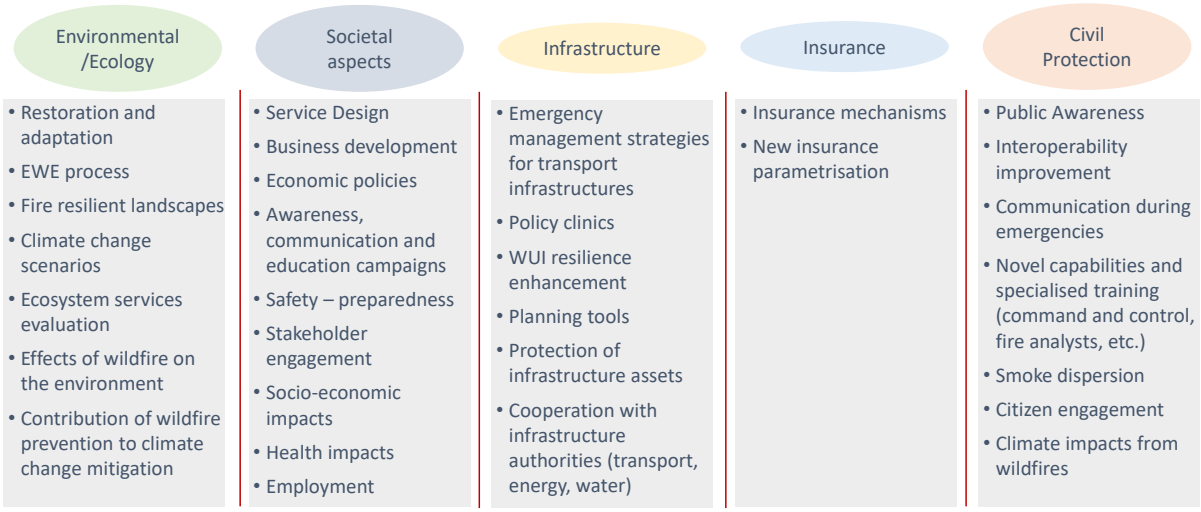

Figure 5. Working groups – Main topics proposed by the projects for each working group (WG).

"Contributions by the **environmental/ecology** WG projects are related to land planning and best management practices considering future climate and associated fire regime scenarios. Considering this, FIRE-RES focuses on gaining an understanding of the impacts of EWEs by conducting a holistic approach with an emphasis on studying ecosystem services. DRYADS is particularly interested in the analysis of post-fire scenarios, considering management practices based on the study of fire severity and soil and vegetation vulnerability. SILVANUS studies ecological processes within an operational framework given relevance to management aspects such as early detection or efficient and quick response.

In broad terms, contributions in the WG covering **social aspects** are associated with promoting socioeconomic and cultural transformations to build social resilience from wildfires. FIRE-RES focuses on communication, education, and outreach campaigns to improve the adaptive capacity of communities exposed to fire risk. Also, FIRE-RES is highly concerned with rural development measures focused on fire-smart bio economy value chains and new models for payment for ecosystem services. DRYADS aims to provide solutions to socioeconomic systems building strategies focused on service design and business models towards optimal sustainable business development. SILVANUS plans to contribute to health, employment, infrastructure, and natural and cultural heritage. Finally, FirEUrisk is specifically concerned about human ignition drivers.

Contributions in the WG covering **infrastructure** have to do with vulnerability assessment, operational procedures, and policies to better integrate fire risk into urban planning. FIRE-RES seeks to build coherent fire risk governance mechanisms and support wildfire risk integration into urban and spatial planning. DRYADS is especially concerned about transport infrastructure, and for that, they want to apply behaviour modelling approaches with the aid of evacuation simulation tools. SILVANUS

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investigates into quick and reliable exchange of on-site information to prevent wildfire from affecting infrastructure, water supply, or energy transmission. Finally, FirEUrisk contributes to this topic with exposure and vulnerability assessment.

Regarding the **insurance** WG, very few contributions from the project's target instruments were allocated to the risk transfer idea specifically for wildfires. FIRE-RES plans to develop novel parametric insurance products that leverage resources from capital markets. At the same time, DRYADS intends to develop an insurance assistant module to identify and evaluate different risk management approaches, as well as a mechanism to renegotiate the insurance coverage and premiums based on the wildfire readiness level.

Projects' contributions in the **civil protection** WG are targeted at improving safety during wildfire emergencies by strengthening the operational capacity of first responders and the communication with citizens at risk. FIRE-RES is intended to develop an evaluation tool to monitor the interoperability in case of international cooperation and a smoke modelling tool to monitor the smoke dispersal and fire personnel and citizen exposure to it. Regarding communication with citizens, FIRE-RES aims to conceptualize a communication structure focused on real-time information and warning messages. FirEUrisk expressed its willingness to develop training programs for the capacity building of first responders. DRYADS aims to create a multidisciplinary certification oriented to improve operational capacities, provide recommendations for adaptation of firefighting equipment and vehicles, and establish a fair assessment of operational and functional mechanisms for appropriate communication with governmental instances. Furthermore, DRYADS wants to develop communication and outreach activities to promote a risk-assessment culture. Finally, SILVANUS plans to develop a mobile application for citizen engagement."

The concrete topics to be discussed by each WG will be refined over the coming months, building on the tables above and initial discussions with potential WG contributors. The WG leads will thereby take the final decision, keeping the following aspects in mind:

- Innovativeness of WFRM measure under consideration
- Potential for synergies with different stakeholder groups and WFRM approaches
- Degree of controversy between stakeholders
- Potential for cross-WG discussions

In terms of potential WG contributors, the below Figure 6 extracted from D1.1 gives an overview on the types of stakeholder, the projects suggested. It is complemented with individuals who are proposed to contribute to the WGs (cf. Table 1).

Table 1: Individuals proposed for participation in the working groups.

WG	DRYADS	FIRE-RES	SILVANUS	FirEUrisk
Ecology / Environment	The University of Girona (UdG), Pere Pons	Susete Marques, ISA	Kostas Demestichas, AUA	Not yet specified

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Societal aspects:	CBS (Copenhagen Business School) Isabel Froes, Efthymios Altsitsiadis CBS will lead WP3 Organisational, Structural, and Sociotechnical Factors for DRYADS Ecosystem Building and modular approach	Elena Gorriz, CTFC, WP3 leader, Sven Wunder, European Forest Institute, WP3 partner	Lovorko Marić, Micro Digital Dissemination Coordinator	
Infrastructures:	Carmine Pascale STRESS – Pilot Manager	Inazio Martinez, EFI	Luísa Serra, EDP	
Insurance:	DTU (Technical University of Denmark) Martin Drews Governance and parametric Insurance Models and Guidelines	Frederic Azemar, MITIGA solutions Antoni Trasobares, CTFC	n.a.	
Civil Protection:	BFG (Professional fire brigade and civil protection department Graz), Heimo Krajnz Pompiers de l'Urgence Internationale (PUI), Iliana Korma	Mario Silvestre, ANEPC	Marino Spilotros, ASSET	

Overall, each WG should consist of about 15 core contributors and potential additional affiliated contributors (~10) that are more loosely related – for example for the review of recommendations. Contributors should be a good balance of experts (individuals) and relevant organisations in the field under consideration. The contributors should ideally stem from the IAs and FirEURisk but can be complemented by individuals and organisations not represented in the projects. It is thereby important to note that in particular cases, travel costs of experts can be covered. However, synergies with existing events and digital formats should be used to the extent possible since the overall budget of Firelogue as a CSA is comparatively small.

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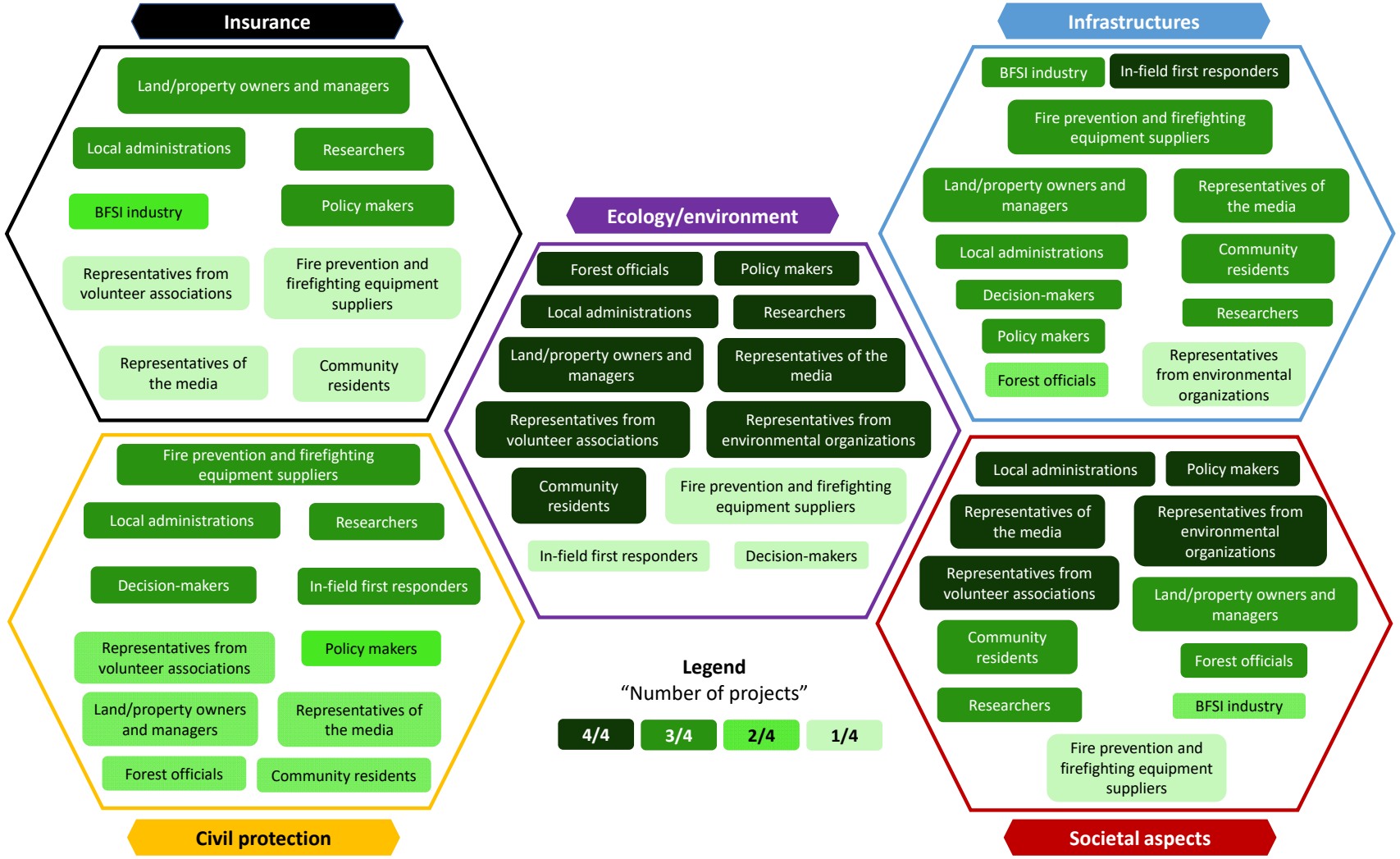

Figure 6. Working groups – Stakeholders involvement across the different Working Groups (WGs).

[Colour gradient indicates the number of projects (from 1 to 4) interested in involving each specific stakeholder group within each of the WGs, and stakeholder groups that are absent in a given WG indicates that none of the projects desires to involve them in it]

3.3.2 Work of the Thematic Strands

In parallel, the TSs will engage closely with the IAs and FirEUrisk to identify horizontal aspects and innovative WFRM measures that can be of relevance for the WGs. The TSs will thereby build in an initial step on the survey (for a more detailed account, see D1.1). The survey has identified the main topics to be discussed within the five sectoral working groups. As far as the **Environment and Ecology Working Group** is concerned, the topics to be addressed are primarily based on the study of future fire risk scenarios resulting from climate projections. The general topics related to **societal aspects (Social Aspects WG)** generally refer to the study of the impact of fires on socio-economic activities and human safety, as well as related preparedness strategies. The themes highlighted for the **Infrastructure Working Group** emphasise policy and planning tools to improve the protection of large infrastructure assets and collaboration with the various infrastructure agencies, including transport, energy and water. The **insurance Working Group** reported only a few contributions from the projects. Here, only insurance mechanisms and new insurance parameters were mentioned as relevant topics. Finally, the **Working Group on Disaster Management** wishes to address various aspects that it shares with other Working Groups, especially those related to social aspects but also issues related to effective emergency management.

In addition to this, specific reviews building on Tasks 1.1 (the above-mentioned survey), Task 1.2 (Knowledge Consolidation and Integration into FIRELOGUE platform), 1.3 (Maturity assessment and mapping of WFRM related technologies) are foreseen under Task 1.4. (WFRM (In-)Consistencies and relevance for European Level: Preparation of WG Workshops). The TS-focused reviews will translate into input for discussion for the workshops, making use of dedicated templates as specified in section 3.6 below.

3.4 Workshop implementation

Building on the suggested relevant multi-stakeholder topics per WG and the additional input from the TS, two workshop cycles will be implemented to facilitate the discussion of the innovative WFRM approaches and measures as well as the issues raised by WGs leaders and the IAs from different stakeholder perspectives. For the Firelogue lifetime, three implementation phases are envisaged as detailed in the figure (Figure 7) below.

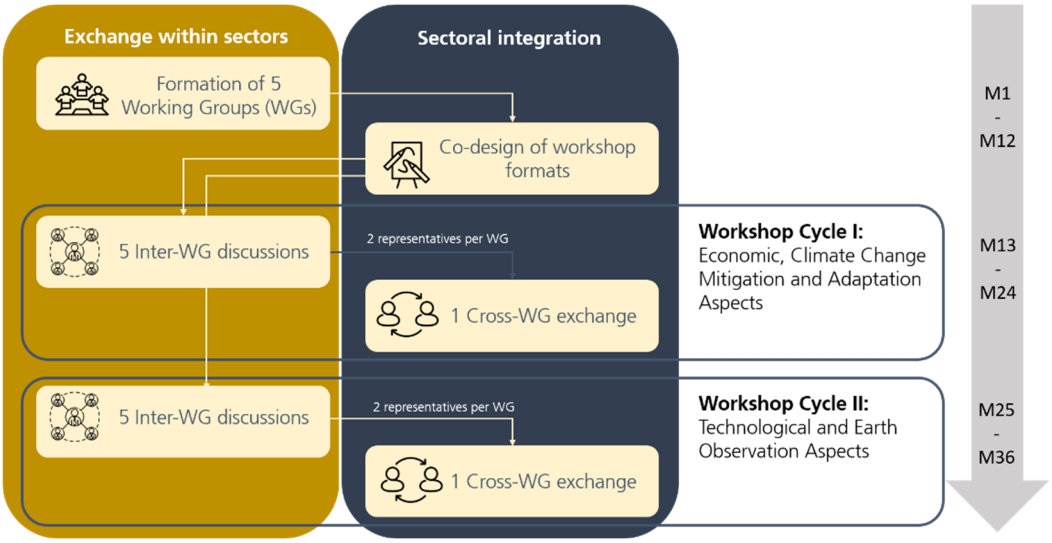

Figure 7: Implementation phases of the Firelogue WG workshops

During the first twelve months (Phase I) of the project, time will be dedicated to the curation of the WGs and the design of the workshop formats. In terms of the set-up of the working groups, the IAs and FirEUrisk have been asked to suggest contributors to each WG. These suggestions will now be reviewed by the WG leaders and complemented by additional parties, from the larger Firelogue, IA or FirEUrisk or WG-led networks. Regarding the workshop formats, this Deliverable is developed jointly with the WG and TS leads and provides a basis for further fleshing out the concepts and working material for the workshops being held from M13 (November 2022) onwards.[12]

Phase II and Phase III of the implementation are dedicated to two Workshop Cycles (I and II) to be implemented between M13 and M24 and M25 and M3 respectively. Each Workshop Cycle will focus on two dedicated TS topics as detailed in Figure 3 above.

In terms of implementing the workshops, their format can be physical, digital or hybrid. While hybrid formats bring specific challenges for the exchange of the participants, it is recommended to try to select either an entirely digital or entirely physical format, with the preference on the physical option, specifically during the forming phase of the WGs to familiarise the contributors with each other and to start the discussions. To avoid additional travel (and emission) and reduce the time-load for the contributors, physical workshops should be aligned to the extent possible back-to-back with other events and conferences. As a first step, WG leaders are hence asked to develop an overview over important events and conferences in their field that could serve as a match to start the planning process.

One day should be set aside for the duration of a physical workshop. This gives participants time for exchange beyond the workshop meeting. Whereas a virtual discussion should not exceed 3.5 hours to ensure a good level of concentration while still leaving some time for solving any technical problems. Care will be taken to ensure that the targeted use of different methods will maintain the participants' concentration, cater to their different learning styles and make the workshop interesting and engaging.

[12] For the purposes of this elaboration, it is considered necessary to align with the findings reported in WP1 "Consolidation of IA WFRM Knowledge" in order to prepare the material and "align" it with the issues raised by the Working Group Leaders.

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It is recommended that a series of preparatory meetings (potentially 2-3 per WG) be held before the official workshops begin. These meetings serve to sharpen the topics and to design the internal workshop structure and to align the participants and facilitate the networking among them, as well as to provide an overview on the topics of WGs. Especially as the time in which the workshops are held is quite limited, a precise elaboration can enable a speedy and targeted implementation on the day of the workshop.

The workshop pursues the following main goals: On the one hand, a sensitisation of the stakeholders for occurring injustices and compromise approaches, on the other hand, a methodological one, namely the evaluation of the presented multi-stakeholder workshop method with regard to its effectiveness. Once the methodological approach proves to be effective, the refined workshops can be recommended as a potential solution to follow-up projects or projects addressing a similar set of challenges. The expected outcomes are to increase participants' current knowledge of WFRM concepts, trade-offs in terms of justice, techniques and methods (new research, improvement of techniques, etc.). Ideally, there should be the development of new perspectives on known concepts through the critical discussions. Ultimately, recommendations will be developed for policy makers and the WFRM community, as this is one of the core objectives of Firelogue.

3.5 Facilitating material

3.5.1 Preparation

For the workshop preparation, inter-WG discussion and cross-WG workshops have to be differentiated as detailed below.

3.5.1.1 Inter-WG discussions

Inter-WG discussion will be prepared by the following main types of documents:

i. **Set-up of the working groups**: building on the initial work by the WGs and survey results, each working group will reach out to potential contributors suggested by the IAs as well as additional stakeholders with expertise matching the envisaged scope of the WGs as well as the strategic representation of organisations.

ii. A **Concept Note per WG** detailing the scope and envisaged discussion topics in terms of innovative WFRM approaches and measures and their meaning under present and future risk actors and contribution in the creation or reduction of risk (see figure below which was presented in D4.1 on applying the Just Transition concept to the WFRM context). The overall aim will be the identification of stakeholder interests and implications related to WFRM measures as suggested by the IAs.

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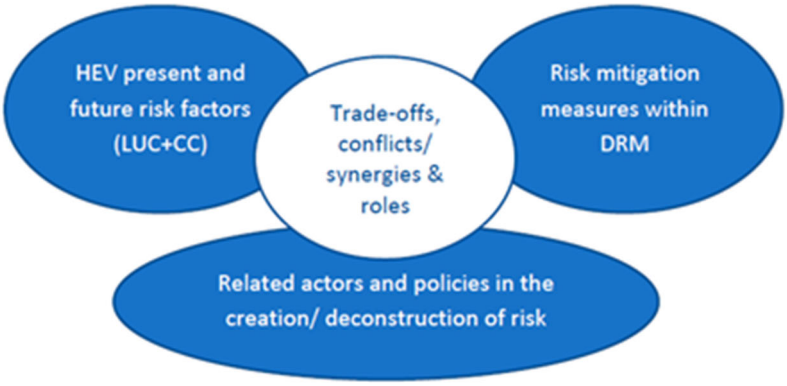

Figure 8: Comprehensive frame to guide dialogue on trade-offs across creation and deconstruction of risk

iii. This concept note builds on complementing **Fact Sheets** as developed by the TSs. Each measure or approach will be specified by a short overview including the following aspects:

a. Topic
b. WFRM Phase
c. Geographic applicability in terms of granularity (local, regional, national, EU) and climatic conditions
d. Short description
e. Opportunities and challenges of this measure/approach for holistic WFRM

These Fact Sheets can help the WGs to (pre-select) certain focus topics and to prepare the discussion in the WGs, especially with respect to the challenges and opportunities they bring along.

iv. **Responsibility chart**:

The WGs will be supported for the implementation of their workshops by the conceptual partners, mainly by FhG, TRI and IIASA, for example in moderation, note-taking and evaluation. To ensure that the roles are clear, each WG should assign the following roles in advance of the workshop:

- Overall organisation (logistics, invitations, venue, etc.)
- Moderation
- Note-taking and documentation

3.5.1.2 Cross-WG discussion

The cross-WG discussions will be facilitated by FhG/IIASA/TRI and build on the output of the Inter-WG discussions. These workshops will be attended by two representatives per WG that have been determined by the WG contributors as “spokesperson”.

The input will form the documentation of the Inter-WG discussions, namely the interests and implications related with WFRM measures as developed by the IAs and FirEUrisk. The organisers will bring together the collected input and develop a concise overview document which can be circulated in preparation of the discussion. In addition, these aspects will translate into whiteboards and/or flipcharts (online or digital) that will facilitate the discussion during the workshops. More precisely, implications are pre-processed to facilitate the discussion about

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i. synergies and conflicts between the WGs related with specific measures and
ii. potential compensatory mechanisms
iii. discourses used and perspectives expressed around problem framing, goal setting, and potential solutions
iv. themes, rationales, and challenges that emerge in relation to project identified key issues in Just Transition and WFRM, such as inequalities in risk burdens or fairness in access to resources
v. considerations of whose voices are missing or whose experiences are not represented within the discussions themselves, and on informing the discussions in general.

3.5.2 Implementation

In the following, it will be outlined how the workshops will be implemented in practical terms. As mentioned above, the overall structure of the Inter-WG discussion is geared towards generating output, which can be used as input in the cross-WG discussion. The selection of the main topics therefore plays a fundamental role. These are developed both on the basis of the working group's own interests and in combination with innovative WFRM measures originating from the TSs.

Table 2: Inter-WG discussion implementation agenda

Phase	Components
Preparation	- Setting up the WG - Briefing the workshop facilitators (train-the-trainer) ahead of the WS - Determination of responsibilities (roles are assigned: organisation, moderation, documentation) - Development of guiding questions/(fictional) case studies based on the envisaged (interest-based) discussion topics which are derived from the concept notes/factsheets
Working phase	- Round of introductions - Participants interact on their own terms with what is being presented - Impacts of innovative approaches and measures are discussed to determine whether they are consistent with or contradict the objectives of the various stakeholders - The resulting synergies and possible conflicts are subjected to critical discussion - The moderators' task is to involve all participants. If necessary, they steer the discussion with the help of a catalogue of questions derived from the guiding questions or which are referring to the case studies
Consolidation	- The results are transferred into a mode that allows them to be processed further (*digitised, notes on a template*) - Restate the main points covered in the workshop and revisiting the agenda to identify areas that were not addressed - Questions that serve to document the results could read as follows: - *What points did the workshop participants identify as the biggest challenges still to be solved in the thematic area of the workshop? What conflicts and potential synergies did they identify?*
Closure	- Selection of two spokespersons - they represent the panel in the cross-WG discussion

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Table 3: Cross-WG discussion implementation agenda

Phase	Components
Preparation	- Input: results of the Inter-WG discussions - Organisers provide a short overview document in preparation for the discussion - A well prepared (virtual/physical) whiteboard serves as the starting point for the discussion
Working phase	- Introduction by the FhG/IIASA/TR facilitator - The spokespersons interact with each other and link the results of their respective group's preliminary work with the new JT focus topics - Present and compare, discuss and merge, iterate and validate, test different scenarios within the ecosystem
Consolidation	- The prepared documentation templates are intended to provide a structure. However, priority must be given to the actual content and results of the discussion - Questions that serve to record the results may be formulated in this way: - *What instructions for action would you like to convey to the following addressees/stakeholders: Policymakers, administrators, practitioners etc.?*
Closure	- Drafting proposals for WFRM strategies to meaningfully deal with and integrate the different potential stakeholder perspectives and possible compromise solutions.

3.6 Documentation

This section is dedicated to a concise description of the envisaged working steps and tools. Two documentation approaches are discussed along with the aspects to be considered in each case.

3.6.1 "Refined" vs. "broad" approaches to documentation

Depending on the concrete design of the workshops, documentation of varying granularity is possible. For large groups, a rather broad documentation is sufficient, in which the core results (such as conflicts, responsibilities, observations, synergies, etc.) are transparently recorded on a board by the documenters. This way, all participants can see the results immediately and edit/correct them if necessary. Digital solutions such as MiroBoard and alternative online virtual collaboration boards (such as Lucidspark and MURAL) have proven themselves here. In physical meetings, the central results, decisions and keywords can for example be put on posters, flipcharts or whiteboards (s. above). These broad records are supplemented by minutes taken by the documenters. In the case of a small-scale workshop (which may be of particular significance due its controversial nature), this type of "broad" recording can be "refined", e.g. by adding an audio(visual) recording of individual workshop sequences. This ensures that the progression of the discourse is also recorded. In this way, analysts can see how the participants arrived at the results. Since such refinement is not only technically demanding and resource-intensive but requires a certain amount of expert knowledge, it should be thoroughly considered.

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3.6.2 “Refined” documentation and reprocessing for a discourse analysis

It is necessary to carefully document some parts of the Inter-WG discussions so that they can be coded, evaluated, analysed and compared in the next steps (cf. D4.3). Especially the last task requires a standardised form of recording. This allows the material to be organised later by theme or research question in order to gradually add new conclusions, theories and findings. Templates will therefore be prepared and made available for the selected documenters, which will provide a well-defined recording structure. The exact way in which the documentation will be conducted is the subject of a detailed consideration of the research needs, taking into account all the core factors such as the type of participants, their exact number, the premises and the methods chosen.

In principle, not every workshop sequence needs to be taken down in writing from beginning to end. During the discussion, it is best to make a brief note of approximately when important things were said (perhaps in the last 10 minutes or in the opening statement). Afterwards, the material is first screened, i.e. roughly listened through again, in order to be able to decide what should actually be transcribed. Occasionally, at the end of a conversation, it is only repeated what has already been said. It is therefore often sufficient to transcribe the better formulated part. Everything that is derived from the material should also be supported by a quotation from the transcript. Everything that is deduced from the material with regard to the research questions should ideally be substantiated with a quotation from a transcribed part of the discourse.

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4 Conclusion

The Deliverable presented here shows which theoretical approaches (i.e. the Just Transition concept with the participatory concepts of System Thinking and Collaborative Governance) are being pursued and how these can be practically translated into a workshop concept. The latter will be further methodologically sharpened in the coming months so that all the objectives listed above, especially the development of consistent WFRM strategies for dealing with and integrating the various potential stakeholder perspectives, are implemented in the best possible way. Up to this point, this document serves as the basis for critical discussions with the aim of setting concrete thematic priorities and of finding intersections between the focal points of the working groups.

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Annex I: WG Concept Note

Firelogue Working Group Concept Note

Firelogue in context

Research funding under the European Green Deal addressed several thematic areas including "Increasing climate ambition: cross sectoral challenges" under which the call to "Preventing and fighting extreme wildfires with the integration and demonstration of innovative means" was published. Three large research projects of about 20 Mio. € funding each (FIRE-RES[1], SILVANUS[2] and DRYADS[3]) are conducting research to develop solutions addressing wildfire risk management (WFRM) challenges over the next years. Firelogue has been funded to facilitate these three and other closely related research projects in the field, such as FirEUrisk[4], in integrating their findings and translating them into policy recommendations in a concerted manner, particularly at EU level. Relevant policy fields encompass for example:

- Common Agricultural Policy (CAP) (Farm to Fork)
- EU Forestry Strategy
- EU Bioeconomy Strategy
- Civil Protection Policy (rescEU, Sendai Framework)
- EU Cohesion Policy
- EU Climate Change Adaptation Strategy

Background

Wildfire risk and its management is characterised by **complex interdependencies** between human behaviour, socioeconomic development, climate, and the vegetation resources otherwise known as fuel (load).[5] These interdependencies are closely connected with interests and intentions of different stakeholders. These interests and activities can unfold synergies but may also be subject to contradictions or even conflict. For example, new and evolving approaches in agriculture and forestry, energy production related infrastructure systems or the construction sector moving towards wood panel building[6] carry great potential for climate change adaptation and mitigation strategies while simulatenously enhancing WFRM. However, respective interrelations needs to be understood and assessed from different perspectives to ensure that they are understood and integrated in a useful manner. Similarly, citizens' views need to be included in preventive measures such as cleaning permiteres or response activities such as evacuations to be effective. Land and forest owners have a stake when it comes to certain land planning and management strategies, just as infrastructure operators do. Finally, insurance schemes might be developed by private or public stakeholders and can for example be related with building or information requirements. However, the related pre-conditions and implications from different WFRM perspectives need to be included to develop sustainable approaches.

[1] Innovative technologies and socio-ecological-economic solutions for fire resilient territories in Europe. | FIRE-RES Project | Fact Sheet | H2020 | CORDIS | European Commission (europa.eu)
[2] Integrated Technological and Information Platform for wildfire Management | SILVANUS Project | Fact Sheet | H2020 | CORDIS | European Commission (europa.eu)
[3] A Holistic Fire Management Ecosystem for Prevention, Detection and Restoration of Environmental Disasters | DRYADS Project | Fact Sheet | H2020 | CORDIS | European Commission (europa.eu)
[4] fireurisk.eu
[5] Paton, D. et al (2014): Wildfires: International Perspectives on Their Social—Ecological Implications; in: Paton, D. (Ed.), Wildfire Hazards, Risks, and Disasters, pp. 1-14. European Science & Technology Advisory Group (E-STAG) (2020): Evolving Risk of Wildfires in Europe. The changing nature of wildfire risk calls for a shift in policy focus from suppression to prevention.
6 See for example Green Deal-bolstered New European Bauhaus strategy, also backed by the recent EU Forest Strategy.

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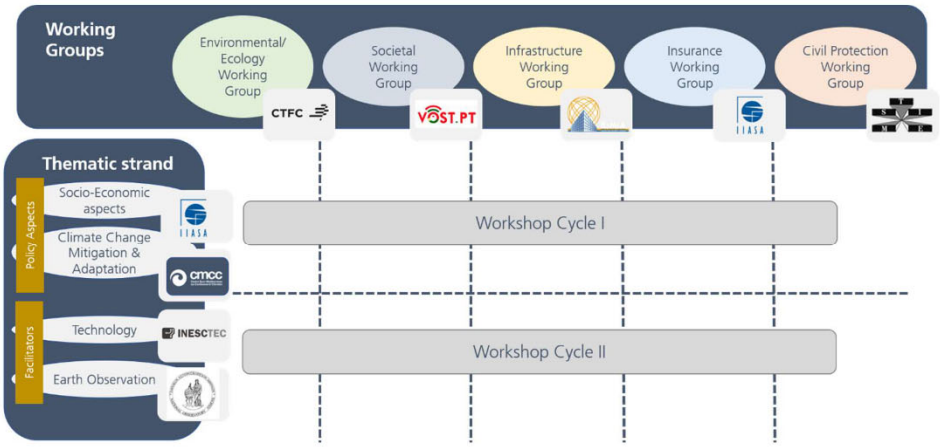
Purpose

Against this background, Firelogue presupposes that it is crucial to bring together the multitude of different WFRM stakeholders to uncover their potential synergistic and conflicting interests, aims and means to achieve those, in order to design holistically. Consequently, Firelogue Working Groups facilitate the **integration of innovative technologies, measures, strategies and governance approaches** across the projects **into holistic recommendations** in the above-mentioned policy fields and to identify their synergies and trade-offs across different sectors and stakeholder groups

Implementation: The Firelogue Working Group | Thematic Strand approach

In line with the sectors reflecting key stakeholder groups involved in holistic WFRM approaches, FIRELOGUE aims to establish five Sectoral Working Groups (WGs; environmental/ecology, societal, infrastructure, insurance, civil protection). Consisting of experts from science, policy and practice, each WG will review and analyse WFRM approaches suggested by the IAs and the WFRM community in transdisciplinary dialogue formats. To ensure structured discussions and facilitate cross-working group exchange, WGs will work along four horizontal thematic strands, reflecting the main policy aspects (socioeconomic aspects, climate change mitigation & adaptation) and facilitators (technology, earth observation) in WFRM. Based on the concept of *Just Transition,* each WG assesses suggested WFRM approaches and measures with respect to their impact and effect on different stakeholder groups, focusing on distributive, restorative and procedural aspects.

Firelogue therefore suggest clustering this multitude of different WFRM actors and will bring together experts in five thematic working groups. In order to structure the working group discussions in a comparable way, each working group will work along the following four thematic strands under which WFRM innovations can be grouped:



WGs will first discuss internally which goals they envision for WFRM, and which opportunities, strength, weaknesses and threats are linked with the measures identified under the thematic strands by the IAs. In a second step, cross-WG exchange on relevant measures and solutions is facilitated. Each WG will elect two members to represent them in the cross-WG exchanges based on their previously identified

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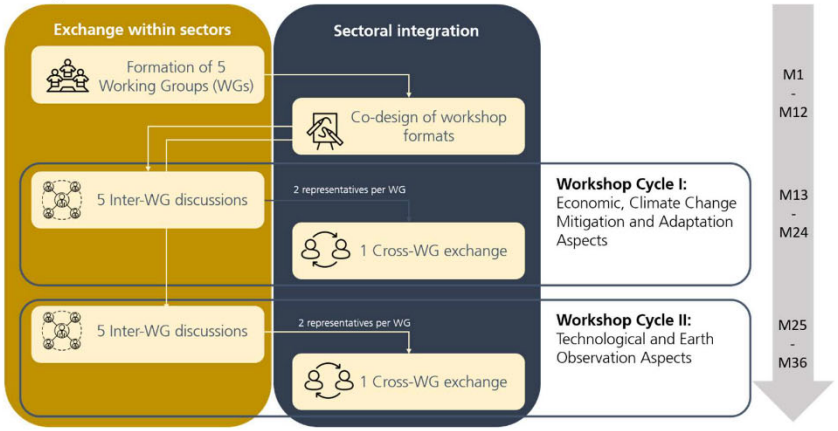
problem scope, defined goals and suggested solutions. This allows for an inclusive yet transparent cross-WG exchange and streamlined discussions.



Composition of the Working Groups (WGs)

The WGs will be composed of experts (scientists and practitioners) from different thematic fields as identified by the WG leads in collaboration with IA partners. They can be:

- Partners from the IAs and related projects
- Part of the of the broader stakeholder network

Why should I be part of it?

- Shaping policy development at EU level
- Networking and knowledge exchange from other WFRM dimensions and actors
- Learn about
  - Climatic and socio-economic drivers of risk and corresponding
  - WFRM innovations
- Critically reflect on the expected 2030 impacts mentioned in the EU work program
- Assess applicability and up-scaling potential of WFRM innovations
- Development of thematic WFRM European communities
- Develop new and revolutionary ideas through cooperative formats

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Potential high-level WG topics:

Ecology WG:

• Cross-sectoral implications of increasing fire-prone environments, with special attention to the value chain of forest products, other landscape related economic activities incl. tourism, nature conservation and ecosystem services provision.
• End-user oriented needs and challenges (technical, financial, legal, etc.) to adapt and manage fire-resilient landscapes across the EU
• Cross-links between WFRM and:
  ○ Agroforestry-based circular bio-economy
  ○ Nature conservation
  ○ Forest protection function and multi-risk cascade effects
  ○ Fire-smart land use planning
  ○ Climate actions plans
• Framing smart and cost-efficient WFRM strategies addressing businesses (such as the tourist sector), communities and public bodies to drive climate adaptation
• Role of prescribed burns in WFRM strategies across EU landscapes

Societal WG
• Simplification of legal frameworks and communication of WFRM measures in a way that everyone understands • Design of flexible WFRM measures • Use of non-digital means of communication, and interaction with authorities; development of methods that are inclusive
Insurance WG:
• Subjects to insurance (Property, timber, crop, etc. • Types of insurances (indemnity based/parametric); public/private; public re-insurance • Relation between public and private product • Use of losses data base(s) • Technologies to support the design of innovative products • Forms of collaboration between governments and insurances in terms of incentivising, instructing, prescribing, and funding DRR activities
Infrastructure WG
• Wildfire prevention and response from infrastructure perspective • Impact of climate change, adaptation and risk reduction measures to be taken by infrastructure providers • Efficiency of early warning/alerting systems

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• Physical infrastructure vulnerabilities • Role of land use planning in determining risk of infrastructures to wildfires • Training of operators and infrastructure stakeholders
Civil Protection WG:

• At EU level:
  ○ Set-up of UCPM modules and their interoperability (with national systems)
  ○ Requirements for Knowledge Network/Knowledge development and sharing needs
• At the national level: Existing approaches/gaps and options for knowledge sharing
  ○ Interaction of responders with prevention activities
  ○ Protection of Critical Infrastructures
  ○ Aspects of evacuation & involving the public
• Overarching topics:
  ○ Investments challenges: response technology vs. forest management and prevention measures, in the context of benefits for various involved actors;
  ○ New and emerging approaches to assessing wildfire danger and risk and their implications, as well new and existing SOPs

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Firelogue

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