Licentiate Thesis in Ethics in Civil Protection

Safe Enough?

Ethics and Sufficiency in Civil Protection

MATEUSZ SOSNOWSKI

KTH ROYAL INSTITUTE OF TECHNOLOGY



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Abstract

This thesis asks what civil protection owes people when the law promises "equivalent" and "satisfactory" protection but leaves the ethical justification of these standards open. Drawing on two papers, it argues that philosophy is not an external commentary on civil protection, but a necessary tool for understanding its purpose, how to judge it, and where responsibility lies. Paper A shows that fire risk management raises core normative questions: what should be protected, how to distribute limited resources, what counts as enough protection, who is responsible, and who should take part in decisions. Building on these questions, Paper B develops a sufficientarian framework of civil protection. It argues that every person should have access to a sufficient minimum of basic safety capabilities across prevention, response, and recovery. The framework distinguishes a basic minimum threshold of safety capabilities, $T_{MIN,}$ below which justice is not met, from sphere-specific standards of care, T_{SAT}, that express what satisfactory protection requires in context. The framework does not offer a finished operational standard. Instead, it provides a philosophical basis for practitioners, policymakers, and institutions to develop and justify context-specific standards for sufficient, satisfactory, and equivalent protection.

Keywords: Civil protection, engaged ethics, sufficientarianism, distributive justice, fire and rescue services, satisfactory, equivalent, capabilities, Swedish Civil Protection Act (LSO)

Sammanfattning

Denna avhandling undersöker vad skyddet mot olyckor innebär när lagen utlovar ”likvärdigt” och ”tillfredsställande” skydd men lämnar öppet hur dessa krav ska motiveras etiskt. Med utgångspunkt i två artiklar argumenterar den att filosofi inte är ett sidospår till civilt skydd, utan bidrar med en nödvändig del till att förstå vad och vem skyddet mot olyckor är till för, hur det bör bedömas och var ansvaret ligger. Artikel A visar att brandskydds- och riskhanteringsfrågor väcker en rad centrala normativa frågor om vad som bör skyddas, hur begränsade resurser bör fördelas, vilken skyddsnivå som räknas som tillräcklig, vem som bär ansvar och vem som bör delta i besluten. Med Artikel A som utgångspunkt utvecklar Artikel B ett sufficientarianistiskt ramverk för skydd mot olyckor i allmänhet och argumenterar för att utgångspunkten bör vara att varje person har tillgång till ett tillräckligt minimum av grundläggande säkerhetsförmågor inom sfärerna förebyggande, räddande och återhämtande. Artikel B skiljer mellan en grundläggande miniminivå, T_{MIN}, som fungerar som en nedre gräns för vad rättvisan kräver, och kontextspecifika standarder för tillfredsställande skydd, T_{SAT}, inom de olika skyddssfärerna.

Ramverket tar inte fram en färdig standard. Det ger i stället institutioner, beslutsfattare och praktiker en filosofiskt grundad struktur från vilken de kan utveckla, tillämpa och motivera kontextspecifika standarder för vad ett tillräckligt, tillfredsställande och likvärdigt skydd mot olyckor kräver i deras respektive sammanhang.

Nyckelord: Skydd mot olyckor, tillämpad etik, sufficientarianism, distributiv rättvisa, räddningstjänst, tillfredsställande, likvärdigt, förmågor, lag om skydd mot olyckor (LSO)

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I would like to thank everyone who has supported this project, especially my supervisors at KTH, Karin Edvardsson Björnberg and Per Wikman Svahn, my supervisor at SBFF, Anders Handell, and Mattias Delin, research director at Brandforsk. My heartfelt thanks go to my wife, Pia, for her patience, understanding, and support through long working days and evenings when I had little energy left.

List of publications

The following scientific papers form this thesis and are referred to by their letter designations in the text. In addition, several unpublished papers and shorter texts were written to support the thesis.

A. Sosnowski, M. and Björnberg, K. (2026) “Ethics in the Flames: Navigating Philosophical Questions in Fire Risk Management” [Unpublished Manuscript]

B. Sosnowski, M. (2026) “Sufficient and Satisfactory? A Sufficientarian Framework for Civil Protection” [Unpublished Manuscript]

Contents

Abstract i
Sammanfattning iii
Contents ix
1 Introduction: The Philosophical Problem of Civil Protection 1
1.1 A Normative Gap in Civil Protection 2
1.2 Towards a Philosophical Account 3
2 Background and Methodology 5
2.1 Civil Protection 5
2.2 Philosophical Framework 6
2.3 Methodology 7
3 Research Contributions: The Two Papers 9
3.1 Paper A: Ethics in the Flames 9
3.2 Paper B: Sufficient and Satisfactory? 10
4 Synthesis: Towards Equivalent and Satisfactory Civil Protection 13
4.1 Sufficient and Satisfactory Are Not the Same Standard 14
4.2 Thresholds Depend on Political Values 15
5 Unresolved Questions and Future Work 19
AI Declaration 23
References 25

Paper A Ethics in the Flames:
Navigating Philosophical Questions in Fire Risk Management

Paper B Sufficient and Satisfactory?
A Sufficientarian Framework for Civil Protection

1 Introduction: The Philosophical Problem of Civil Protection

The Storm Archipelago

The Storm Archipelago is governed from a mainland office where the sea appears only as blue lines on a risk map. From there, officials announce that all islands enjoy "equivalent and satisfactory civil protection", a phrase that fits neatly into national strategies and international frameworks. On the inner ring of islands and mainland, this sounds plausible. There are sirens, drills, dykes and shelters with generators that work.

Further out, villagers rely on a cracked church bell, a single boat that may already be out fishing, and informal promises that "someone will come" if the storm hits and water rises. Mara, the only midwife on one of these outer islands, has experienced emergency plans that look impressive on paper, dissolve in fog and delayed departures. She wonders how many differences in prevention, emergency response, and recovery can be accepted before words such as "satisfactory" lose their meaning.

The Storm Archipelago is fictional, but the evaluative problem it represents is not: a legal promise of equivalent protection can coexist with substantial differences in people's actual ability to avoid harm, receive help, and recover.

1.1 A Normative Gap in Civil Protection

This thesis takes its point of departure in the opening paragraph of the Swedish Civil Protection Act, stating that the purpose of the legislation is to ensure, throughout the country, "an equivalent and satisfactory protection against accidents, with consideration of local conditions" (SFS, 2003, para. 1). The legal language is not merely aspirational. Municipalities and fire and rescue services are expected to organise, justify, and assess their work in relation to these standards, even though their normative content remains unsettled (Abrahamsson et al., 2021; MSB, 2015). The term *satisfactory* has a longer history in Swedish law than the current Act, reaching back to provisions on fire brigades from 1923 (SFS, 1923, para. 2.5). The Act is not introducing a new ideal from nowhere. It is reformulating a longstanding expectation that protection should be assessed not only by whether it exists on paper, but also by whether it meets a reasonable standard of care and is justified in relation to local conditions and foreseeable risks. Paper B further develops this distinction by separating the minimum protection owed to individuals from the standard of care expected of institutions.

This gap between aspiration and normative content is not unique to Sweden. Standards such as satisfactory, equivalent, or comprehensive protection appear in national laws and international frameworks across jurisdictions (IFSS, 2020; Latvian Government, 2016). International policy agendas, including the Sendai Framework for Disaster Risk Reduction (UN, 2015a) and the 2030 Agenda for Sustainable Development, express a clear commitment to human-centred protection. The 2030 Agenda commits to "leave no one behind" and to endeavour to reach "those furthest behind first" (UN, 2015b, para. 4). Yet such commitments do not by themselves determine what level of protection persons and communities are owed, or when differences in protection between places remain justifiable. They state an aspiration of inclusive protection but leave open the normative benchmark by which protection should be assessed as sufficient, satisfactory, or equivalent in practice.

The same gap is visible in the academic literature. An initial scoping review conducted for this research retrieved 2,687 articles from the Web of Science database. After screening titles, abstracts, and full texts, 12 articles met the inclusion criteria concerning satisfactory or equivalent civil protection in the context of fire and rescue services. A second, broader review of the Scopus and PhilIndex databases yielded 1,660 publications. The abstracts of 212 of them were analysed. Both reviews showed that philosophical and ethical questions are

rarely treated as analytical focal points in research on fire risk management or civil protection. Instead, they mainly appear as framing devices used to justify attention to problems such as unequal response times or disproportionate risks for vulnerable groups, rather than as subjects of philosophical inquiry in their own right (Paper A, 2026). The ethical and moral dimensions of fire risk management and civil protection are therefore present in the literature, but they are rarely made explicit or examined systematically within a philosophical framework.

1.2 Towards a Philosophical Account

One particularly relevant contribution is Goldstein and Kennedy's (2022) mapping of the ethical landscape of wildland fire management. Working from a large set of practical dilemmas, they identify five ethical lenses – epistemologies and representation, values and priorities, risk and uncertainty, power, and metaethics – and argue that almost every fire management decision has substantial ethical dimensions that explicit philosophical inquiry must address. Their call for an applied ethics of wildland fire resonates strongly with the concerns motivating this thesis. This thesis does not address wildland fire management specifically. It extends the same kind of ethical inquiry to civil protection more broadly and develops analytical tools for examining the normative questions that arise in that field.

This thesis addresses two related questions: first, how should practitioners and policymakers determine whether civil protection is sufficient and satisfactory under differing local conditions? Second, what ethical principles should guide judgements about when forms of protection can be regarded as equivalent, despite differences in risks, resources, capabilities, and institutional arrangements?

The argument developed across the two papers is that practitioners and policymakers cannot interpret the aims and responsibilities of civil protection without examining the normative content of its legal goals. The golden thread is that civil protection is a matter of justice, not only administration.

Paper A shows where ethical questions arise in fire risk management and why technical expertise alone cannot settle them. Paper B takes up one of those questions: what level of protection should people receive? It proposes a sufficientarian framework that distinguishes between a basic minimum threshold of individual safety capabilities, T_{MIN}, and sphere-specific standards of care, T_{SAT}, across prevention, response, and recovery. The thesis therefore

moves from identifying the normative problem to proposing a preliminary structure for addressing it.

This is, however, a work in progress. The proposed framework developed in Paper B does not determine the full substantive content of every threshold in advance. Some elements are context-sensitive, while others provide firm normative constraints, especially the requirement that no person should remain below the basic minimum threshold. Both papers therefore remain open to further specification through ongoing dialogue between philosophical inquiry and civil protection practice.

The remaining sections are structured as follows: Section 2 sets out the conceptual and methodological groundwork. Section 3 summarises the contributions of the two papers. Section 4 synthesises their combined argument. Section 5 identifies remaining questions and directions for future work.

2 Background and Methodology

This section defines civil protection, introduces the sufficientarian framework used in Paper B, and explains the engaged-philosophy methodology that connects the two papers. It focuses on three elements: individual safety capabilities, the basic minimum threshold T_{MIN}, and the sphere-specific standards of care T_{SAT}. The section first clarifies how civil protection is understood in this thesis. It then explains why a sufficientarian approach is appropriate for evaluating what people are owed. Finally, it outlines the methodological approach used to connect philosophical analysis with civil protection practice.

2.1 Civil Protection

Civil protection is the wider social and legal project of safeguarding people and communities against harmful incidents. It consists of at least two intertwined layers: immediate emergency management and longer-term disaster risk governance. The former concerns whether people can be helped and survive with minimal harm when accidents occur; the latter concerns whether people are forced to live under systematically hazardous conditions in the first place. Civil protection is a multi-phase and temporally layered practice spanning prevention, planning, preparedness, response, and recovery. It involves public authorities and a wide range of other actors (EU, 2013, 2020; Milić, 2024; Tay et al., 2022). Paper B groups these functions into three evaluative spheres: prevention and recovery capture longer-term risk governance, while response captures the more acute emergency-management dimension. The spheres do not replace the full classification of civil protection functions; instead, they provide a structure for assessing safety capabilities and thresholds.

Because civil protection spans several phases and involves many actors, justice cannot be assessed at a single point or level. Each sphere must be examined separately, and adequate performance in one sphere cannot compensate for a serious shortfall in another. Paper A uses fire risk management as a focused entry point into this wider problem. Fire risk management is one important component of civil protection and provides a tractable case in which normative questions can be examined with some precision without losing sight of the wider context (Paper A, 2026). Its analysis carries over to civil protection as a whole, which Paper B examines through a sufficientarian framework.

2.2 Philosophical Framework

The main philosophical framework adopted in Paper B is a sufficientarian view on justice. Civil protection is fundamentally about what people are owed, not only about how efficiently a system performs. A justice-based view is appropriate because the legal language of satisfactory and equivalent protection implies normative demands about what institutions owe people. Paper B gives sufficient and satisfactory protection a more specific structure through T_{MIN} and T_{SAT}, while the question of equivalence remains connected to how these requirements are distributed and justified across groups of persons and different local conditions.

Sufficientarianism is a family of theories of distributive justice holding that what matters fundamentally is that everyone has enough of the relevant goods or advantages, rather than that everyone has the same or that overall benefits are maximised (Crisp, 2003; Fourie, 2016; Frankfurt, 1987; Nielsen, 2026). In this domain, the central problem is not primarily that some people are slightly safer than others, but that some individuals and communities may remain exposed to serious and foreseeable shortfalls in basic safety capabilities. A sufficientarian framework captures this concern by giving moral priority to bringing people above a threshold below which protection is no longer acceptable.

This also helps explain why sufficientarianism is preferable here to its main alternatives. Egalitarian views focus on equality, but civil protection cannot plausibly require identical levels of risk or identical protection in every setting, given differences in geography, settlement patterns, and individual choices. Prioritarian views give extra weight to the worse off, but without a clear threshold they risk treating all disadvantages along a continuous scale, which makes it harder to express the distinctive moral urgency of leaving some people below a basic floor of protection. Utilitarian views seek the greatest overall

benefit, but in this context, such approaches can justify leaving small or hard-to-reach communities under-protected if doing so improves aggregate outcomes elsewhere. A sufficientarian approach is better aligned with the legal and moral ambition of civil protection because it allows contextual variation above the threshold while insisting that there is a basic minimum that no one should fall below. Paper B adopts a pluralist, multi-threshold sufficientarian view in which the basic floor is supplemented by sphere-specific standards of care. These standards do not replace the minimum threshold or permit trade-offs below it; they govern the quality and institutional reasonableness of protection once the basic floor has been secured.

Using a threshold therefore makes the framework distinct not only in structure but also in normative purpose. Justice is characterised by a threshold level above which additional gains are less morally urgent, while falling below the threshold is a morally serious deficiency that demands corrective action. Sufficientarian views differ, however, on what should be distributed, or, in sufficientarian terms, what the relevant currency should be. The framework developed in this thesis uses individual safety capabilities as its evaluative currency. The central question is whether people have a real opportunity to live safely, receive help, and recover in their circumstances, rather than merely whether resources or formal arrangements exist on paper. Institutional arrangements count as successful only when they translate into real safety capabilities for those who depend on them.

2.3 Methodology

This thesis follows Wolff's (2019) model of engaged philosophy, as described and applied in Paper A. This means that the inquiry does not begin with a ready-made normative theory that is applied to civil protection from the outside. Instead, it begins with a real policy problem: how to understand sufficient, satisfactory, and equivalent protection in a way that is both philosophically defensible and useful for practice. Engaged philosophy is appropriate here because civil protection problems are irreducibly value-laden, and purely abstract philosophical approaches tend to miss the practical constraints and institutional realities that shape what is possible and what is at stake.

In practice, this means working iteratively across four connected sources of reflection: legal language, empirical findings reported in the civil protection literature, my engagement with civil protection practice, and philosophical principles. This process can be understood in terms of reflective equilibrium, in

the sense that provisional principles, practical judgements, and background assumptions were adjusted in relation to one another until the account became more coherent (Rawls, 1971). It also has a Popperian element, since proposed interpretations and theoretical claims are treated as open to criticism and revision if they do not fit the practical context or the available literature (Popper, 1985).

The scoping reviews described in Section 1 established the extent of the gap and helped identify the five thematic questions that structure Paper A. Discussions with professional peers at seminars and conferences helped test the analysis against operational experience and institutional concerns. The resulting framework therefore combines abstract analysis with an understanding of how civil protection works and how practitioners discuss it.

3 Research Contributions: The Two Papers

The two papers address the thesis question by moving in sequence from diagnosis to a preliminary normative framework. Paper A identifies the gap and maps the normative questions embedded in fire risk management. Paper B proposes a sufficientarian framework that gives those questions a more structured philosophical account in the broader context of civil protection. The two papers are summarised here in turn, before Section 4 draws out what becomes visible only when they are read together.

3.1 Paper A: Ethics in the Flames

Paper A explores what ethical questions are hidden inside fire risk management. Its main point is that this field is not only about safety planning, response systems, and technical standards. It is also about values, because every major decision in fire risk management involves judgements about what matters most, who should benefit, and who should carry responsibility (Goldstein & Kennedy, 2022). The paper's central contribution is therefore not only to list ethical questions, but to show that fire risk management cannot be understood as a value-neutral technical domain. What often appears as expert-led or purely operational judgement is already shaped by normative assumptions that need to be made visible and examined. Paper A does not attempt to resolve these questions. Its contribution is diagnostic and agenda-setting: it identifies recurring ethical challenges and gaps in existing analysis, thereby motivating further theoretical work and engagement with practitioners and affected communities.

The paper identifies and is built around five connected questions. The *first* asks which entities warrant protection in fire risk management, including human beings, property, animals, cultural heritage, and natural environments. That means asking whether fire risk management should focus only on human life, or how and why it should include property, animals, cultural heritage, or natural environments. This question is distinct from the further question of how these values should be prioritised when they conflict. The *second* concerns on what grounds fire risk resources, protections, risks, benefits, burdens, rights, and responsibilities should be distributed. Possible principles include equality, need, desert, utility, and context-sensitive combinations of these. The *third* asks what level of fire safety should count as sufficient and satisfactory. Paper A identifies this as a central unresolved issue, including questions about resource trade-offs, Vision Zero ambitions, and the distinction between minimum adequacy and contextual acceptability.

The *fourth* concerns where responsibility lies for achieving satisfactory fire risk management. It asks how responsibility should be distributed between individuals, communities, public authorities, fire and rescue services, and other relevant actors across the different stages of fire risk management. The *fifth* concerns who ought to participate in fire risk management decisions and how decision-making should incorporate professional expertise, local knowledge, public values, and the perspectives of affected communities. Paper A presents this as a question not only of representation but also of how ethical reflection and deliberation should be organised in practice.

These questions are not independent of each other. The choice about what to protect shapes what kinds of resources need to be distributed. The way resources are distributed affects what level of protection can realistically be called satisfactory. The expected level of protection shapes how responsibility is divided. And the way decisions are made affects whether the whole system is legitimate and responsive to those it is meant to serve. In this sense, Paper A shows that fire risk management is an ethical system throughout and not only at the moment a fire occurs.

3.2 Paper B: Sufficient and Satisfactory?

Paper B takes up the question that Paper A leaves open: what does it mean to say that civil protection is sufficient, satisfactory, or equivalent? To answer this question, it proposes a philosophically structured account in which civil protection is understood not only as a technical and administrative system, but

also as a distributive order. It allocates safety across persons, determines who bears which risks, and shapes how responsibility is shared between individuals, communities, and public institutions. Once understood in this way, the question of whether protection is good enough becomes, at its core, a question of justice.

This thesis argues for a sufficientarian account in which justice requires that no person falls below a basic minimum threshold of safety capabilities. This threshold functions as a moral floor rather than as a formal compliance target. The relevant evaluative currency is individual safety capabilities: what people are actually in a position to do and to be, given their personal characteristics, social position, and living conditions. This differs from relying on aggregate performance metrics or formal resource levels. The distinction matters because formal indicators can show compliance while identifiable individuals and communities remain structurally under-protected. A person with limited mobility, poor language access, or deteriorating housing may fall below T_{MIN} even when response-time statistics and other system-level indicators appear adequate.

The framework builds on Nielsen's (2026) "umbel view" of sufficientarianism, which combines a basic minimum threshold protected by lexical priority with additional, sphere-specific thresholds that branch from it. Paper B adopts and extends this architecture for civil protection by distinguishing between two forms of normative requirement. The basic minimum threshold, T_{MIN}, sets a floor of justice. The sphere-specific satisfactory standards of care, T_{SAT}, ask whether a competent and accountable institution provides what should reasonably be expected under local conditions and foreseeable risks. T_{SAT} is therefore not simply a higher individual threshold of the same kind as T_{MIN}. In the civil protection context, sufficiency must be assessed across three connected but incommensurable spheres: prevention, response, and recovery. *Prevention* concerns whether people are protected from systematic exposure to serious hazards before an incident occurs. *Response* concerns whether they can receive and act on warnings, obtain timely external assistance, and access emergency services when an event exceeds ordinary self-protection. *Recovery* concerns whether they can restore basic living conditions and avoid long-term deprivation after an incident. A civil protection system that performs well in one sphere but falls below the minimum threshold in another has not achieved justice overall. Strong performance in prevention, for example, cannot compensate for a failure to provide credible response or recovery capabilities. This structure is illustrated by Figure 1.

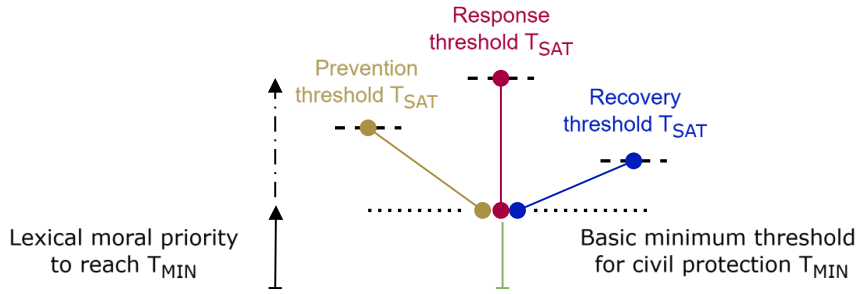


Figure 1 The umbel view applied to civil protection (Paper B). Each sphere (prevention, response, and recovery) must independently meet the basic minimum threshold (T_{MIN}, dotted line) and its sphere-specific satisfactory standard of care (T_{SAT}, dashed marker). Lexical priority applies to reaching T_{MIN}: sufficiency fails if any single sphere falls below it, regardless of performance in the others. Threshold levels are not equivalent across spheres; the figure illustrates structural relationships only, not comparative magnitudes.

Paper B also develops an account of institutional responsibility. The baseline duty to secure sufficient protection rests primarily with institutions because public authorities and other large collective actors control the structural conditions that shape individual safety capabilities. These conditions include building codes and their enforcement, spatial planning, emergency station placement, road and infrastructure networks, housing regulation, and recovery support. Individuals can and should take responsibility for aspects of their own safety, such as installing smoke alarms or following evacuation warnings. But this responsibility remains secondary, and its limits depend on the conditions institutions provide. Individuals cannot secure safe housing, ensure rescue capacity, or establish recovery systems to the same extent as institutions. The burden of protection therefore cannot simply be shifted onto individuals or private actors in the name of shared responsibility. Responsibility can be shared, but the baseline duty to make sufficient safety capabilities achievable remains primarily public and institutional (Atkinson & Curnin, 2020; Meriläinen et al., 2020).

4 Synthesis: Towards Equivalent and Satisfactory Civil Protection

Paper A shows where ethical questions arise in fire risk management. Paper B takes one of these questions into civil protection and develops a framework for judging whether protection is sufficient. This summary connects these arguments by asking how such judgements are made and how the thresholds they rely on can be justified in their institutional and political setting.

One central connection between the papers concerns the question of what level of protection should count as sufficient and satisfactory. Paper A identifies this as a fundamental but unresolved ethical issue in fire risk management. It shows that the issue cannot be settled by technical performance measures alone, because it involves judgements about acceptable risk, the distribution of limited resources, Vision Zero ambitions, the allocation of responsibility, and the relationship between minimum adequacy and context-sensitive acceptability. Paper B takes up this problem in the broader context of civil protection. It develops a sufficientarian response by distinguishing between a basic minimum threshold of individual safety capabilities, and sphere-specific satisfactory standards of care. Together, the papers therefore move from identifying the normative problem to proposing a preliminary structure through which unjustifiable deficiency and institutionally inadequate protection can be identified and assessed.

4.1 Sufficient and Satisfactory Are Not the Same Standard

Paper A and Paper B work at different levels, but they address a shared problem. Paper B sets out a framework in which civil protection is just when no person falls below a basic minimum threshold of safety capability, and when protection in each sphere meets a contextually appropriate standard of care. Paper A identifies the ethical questions and practical tensions that any such framework must address, while Paper B proposes the specific threshold structure through which those questions can be examined in civil protection settings.

In ordinary language, "sufficient" means meeting the needs of a situation or proposed end (Merriam-Webster, 2026b). In Paper B, sufficiency refers to more than a quantity of resources or a formal level of service. Sufficiency requires that each person has enough safety capability to avoid serious and ongoing safety-related duress. "Satisfactory", by contrast, concerns the standard of care that a reasonable and accountable institution should provide in a particular context (Merriam-Webster, 2026a). It concerns whether protection is adequate, reasonable, and fitting given local conditions and foreseeable risks.

Meeting T_{MIN} does not necessarily mean that protection is satisfactory. A system may keep people above that minimum yet fall short of T_{SAT} because communication, recovery support or decision-making is inadequate. Nor do satisfactory-looking figures show that everyone meets T_{MIN}. Overall results can conceal shortfalls among people who live far from emergency services, have limited mobility or face language barriers. These gaps may only become visible when an incident occurs.

The framework can be made more operational through four preliminary tests. The first three concern T_{MIN}; the fourth concerns T_{SAT}.

1) The *duress* test asks whether residents experience serious and ongoing safety-related pressure through recurring hazard exposure, known environmental dangers, or justified concern that help will not arrive in time.
2) The *capability-achievability* test asks whether a person taking ordinary care can realistically attain and maintain safety at or above T_{MIN}, given their housing, local environment, and available services. Where failure results from conditions controlled by public authorities or other collective actors, the shortfall is institutional rather than individual.
3) The *non-catastrophe* test asks whether an ordinary incident, such as a dwelling fire, major flood, or structural failure, produces long-term

deprivation through homelessness, unmanageable debt, or chronic health deterioration. If it does, recovery capability has fallen below T_{MIN}, regardless of average recovery outcomes.

4) The r*easonableness* test operates at T_{SAT}. It asks whether the protection delivered in a given sphere meets the standard that a competent and accountable institution should achieve under its actual operating conditions.

Together, these tests move the evaluative question away from whether a system looks acceptable in plans, regulations, or aggregate reporting. They ask instead whether it actually secures minimum safety capabilities for people in their particular circumstances. This is where Paper A contributes to the framework: it directs attention to the ethical and practical judgements involved in deciding whose risks count, which harms are treated as avoidable, and when a formal standard fails to secure real protection.

The implication for practice is that perceived acceptability and aggregate performance are not reliable measures of justice on their own. T_{SAT} remains a genuine normative requirement, but it cannot replace T_{MIN}. A system may be formally compliant and broadly accepted while still failing the people it is meant to protect. Civil protection evaluation therefore needs both standards, kept distinct and applied separately. A generally acceptable picture of performance cannot substitute for protection that is sufficient and just for each person.

4.2 Thresholds Depend on Political Values

The substantive content of the thresholds is not self-evident. T_{MIN} should be understood as a basic floor that protects people from serious and ongoing safety-related duress (Axelsen & Nielsen, 2015), although its practical indicators require contextual assessment. T_{SAT} requires a separate judgement about what a reasonable and accountable institution should provide under local conditions and foreseeable risks. The umbel structure adopted in Paper B clarifies the relationship between these requirements, but it does not eliminate the need for deliberate and justified choices about their content.

Because civil protection is predominantly institutional (Paper B, 2026), the specification and implementation of these standards are also political. Decisions about responsibility, the level of protection required, and the way protection is funded and organised reflect commitments about the relationship between the state, communities, and individuals. These commitments shape the content of T_{SAT} and the indicators used to assess T_{MIN}, but they do not make the basic floor

optional. A political decision to leave people in serious and foreseeable safety-related duress cannot be justified simply by treating the resulting shortfall as a preference. McLennan and Eburn (2015) show what is at stake through a four-quadrant model of wildfire-management responsibility. The model plots two value trade-offs: between government control and individual choice, and between public values and private interests (see Figure 2). Each quadrant rests on a different core value: social well-being, social liberty, individual well-being, or individual liberty. A model that prioritises control and public values may offer stronger protection overall, while a model that prioritises choice and private interests gives people greater freedom in how they prepare and respond but places more of the burden on their own resources and capabilities. The quadrants are hypothetical extremes. Real systems combine them, but they make the same trade-offs "in less extreme and, commonly, less explicit ways" (McLennan & Eburn, 2015, p. 168). The position of a civil protection system in this space is therefore a political and ethical choice, even when it is presented as an administrative arrangement.

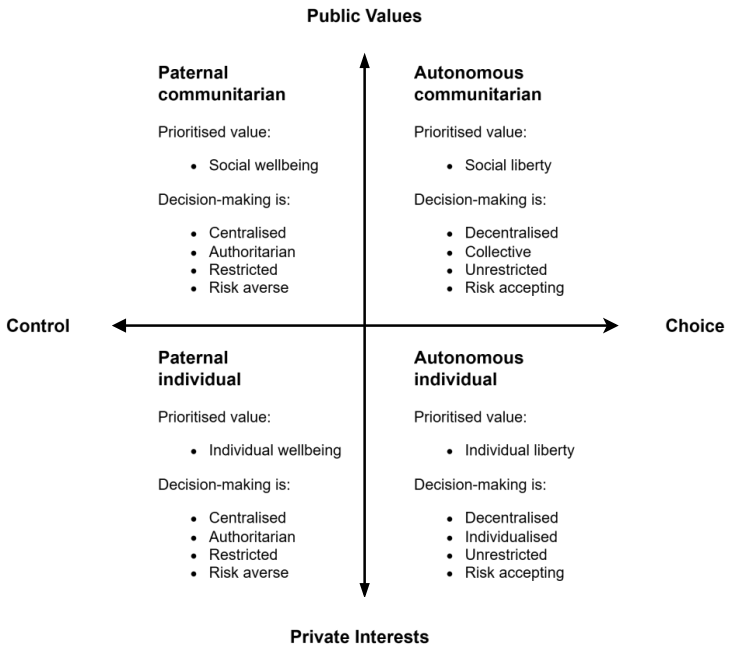


Figure 2 Four hypothetical extreme scenarios for sharing responsibility for wildfire management between governments and citizens. Redrawn from McLennan and Eburn (2015, p. 164, Fig. 1).

In the Swedish context that motivates this thesis, municipalities remain legally responsible for fire and rescue services but increasingly meet that responsibility jointly, through municipal associations and shared service agreements. Rescue services cannot be left to a private market as they are excluded from it by law (Hermelin, 2009; SFS, 2003, para. 3.7). What has been borrowed from the market is a way of governing with separate purchaser and provider roles and performance targets, a logic Hermelin describes as taken from markets where customers react to services but ill-suited to a public monopoly (Hermelin, 2009). In terms of Figure 2, this consolidation is not a movement out of the paternal-communitarian quadrant but further into it. Decisions move from the individual municipality to larger joint bodies, further from the communities whose risks and civil protection they concern. Hermelin argues that the municipality should consistently put "the customer at the centre" (2009), and larger units make that harder.

The movement is not normatively neutral. McLennan and Eburn note that a centralised approach "may fail to take into account local contexts and could therefore result in increased risk in some areas", and that the paternal-communitarian model, at its extreme, "could be blind as to distribution of costs and benefits within society" (2015, p. 166). The legal promise of a satisfactory and equivalent level of protection throughout the country remains too abstract to show whether protection in some areas is falling below the basic minimum threshold T_{MIN} while the system as a whole improves. Hermelin argues that protection against unwanted events "is best governed as processes and systems, in which one tries to understand the whole and the connections between the parts rather than breaking down and isolating the parts and govern them one by one" (2009, pp. 8, 27; my translation)[1]. Consolidations of just the rescue services in isolation sit uneasily with that ideal. Municipalities face a choice between merging their safety units to strengthen the whole within the municipality and forming an association to make operational rescue work more efficient. It is almost always the traditional fire brigade work that is consolidated and moved away, and the association often ends up distancing itself from its owner municipalities and its residents. Hermelin also notes that associations and clustering usually deliver better quality than the municipalities could manage

[1] "Skyddet mot oönskade händelser styrs bäst som processer och system, där man försöker förstå helhet och samband mellan delarna snarare än att bryta ner och isolera delarna och styra dem var för sig." (Hermelin, 2009, pp. 8, 27)

alone, especially the smaller ones. Consolidation can therefore raise protection in some places while weakening the local link in others.

Paper A asks, among other questions, what protection is sufficient and for whom. Paper B adds that the answer depends on prior commitments and views on freedom, solidarity, and the appropriate scope of institutional responsibility. Their combined argument is that these commitments must be made explicit, defended, and subject to public and professional debate rather than left to change gradually through piecemeal administrative reform.

5 Unresolved Questions and Future Work

The two papers represent a first step in a longer research trajectory; two sets of unresolved questions deserve particular attention.

First, the main justification for the sufficientarian framework developed in Paper B is that civil protection should be understood as a matter of justice owed to people. At this stage, the framework concentrates on individual human safety capabilities, particularly capabilities related to life and bodily health over prevention, response, and recovery. It therefore does not yet provide a complete account of the moral status of property or the natural environment, even though civil protection as legally defined also aims to protect them. This tension is examined in Paper A through the question of what entities ought to be protected, a question whose possible answers do not translate easily into the capability currency used by Paper B.

It is relatively uncontroversial to hold that all human lives should be valued equally, but views about property and the natural environment are more likely to diverge. The question that needs to be addressed is on what grounds values other than direct effects on human life and safety should matter morally. It is not obvious that the protection of animals or ecosystems should be understood in purely anthropocentric terms, meaning as valuable only because they contribute to human well-being. Even if one accepted that view, it would remain unclear how it connects to the framework's chosen evaluative currency of individual safety capabilities. Until this is clarified, the framework cannot be fully extended to property and environment in a philosophically consistent way.

This is a limitation rather than a flaw. If property, the natural environment, or animal life are to matter in their own right as objects of civil protection, the

framework may need either a broader evaluative currency or a layered account of value, in which human safety capabilities form one central but non-exhaustive component of what civil protection has reason to protect. Making these foundations explicit would strengthen the framework rather than weaken it, and it would better reflect the full scope of what civil protection is legally and socially expected to secure.

A second set of open questions concerns what the three safety spheres of prevention, response, and recovery actually contain in specific institutional contexts. Paper B introduces the spheres as a structure but deliberately does not specify their full content in detail, because their operational indicators and standards of care depend on the context, the level of governance, and the role of the actor involved. The underlying requirement remains directed at individual safety capabilities, while each actor must specify how its own decisions and services contribute to securing T_{MIN} and meeting T_{SAT} within its legal mandate and institutional capacity.

Within the human-safety domain, the framework could be developed as a compound structure in which each of the three spheres branches into smaller sub-spheres with more specific components (see Figure 3). These components would need their own justifications and, where appropriate, their own minimum requirements or standards of care. Some might be quantitative, others qualitative; some might be fixed, others context-sensitive. Each nested component must remain justifiable in terms of the overall framework. Concretely, this means showing how it contributes to individual safety capabilities within its sphere and how its effects are mediated by the personal, social, and environmental conversion factors presented in Paper B.

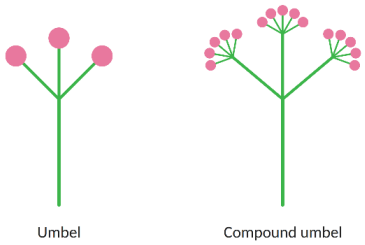


Figure 3 The extended compound umbel view on civil protection.

The compound structure may also suggest one possible direction for extending the framework beyond human safety capabilities. If civil protection is understood as concerned not only with human life and safety, but also with property, animals, cultural heritage, and the natural environment, these could be treated as distinct first-order spheres of value within a broader civil-protection framework. Each sphere would require an appropriate evaluative currency. Individual safety capabilities may remain the relevant currency for human protection, while other currencies may be needed to assess, for example, property security, animal welfare, cultural continuity, or environmental integrity.

On such an extended account, each first-order sphere could itself contain more specific sub-spheres and could be assessed through an analogous, sphere-relative threshold structure. A lower threshold would identify a level of deficiency that institutions have a stringent duty to prevent, while a higher, context-sensitive standard of care would express what responsible institutions should reasonably provide. Whether these spheres should be assessed independently, jointly, or through an explicit priority ordering remains an important question for future research. A broader framework of this kind would preserve the central sufficientarian concern with serious deficiency while allowing civil protection to reflect the plurality of values it is legally and socially expected to protect.

This continuation fits well with the next steps in Wolff's (2019) model of engaged philosophy: moving from broad conceptual framing towards more concrete and justified policy development, worked out in genuine collaboration between philosophical scholars and civil protection practitioners.

Revisiting the Storm Archipelago

When the story returns to the Storm Archipelago, the language has shifted. Rather than repeating that protection is the same everywhere, planners acknowledge that it cannot be identical and that this is not the real standard anyway. Together with residents from the inner and outer islands, Mara sketches a line that no community should fall below, no matter how remote its harbour. The line is not drawn in the sand. Rather, it is described in everyday terms: Do people here have a fair chance to hear a warning in time, to reach or receive help before the worst wave arrives, and to rebuild basic life conditions without permanent ruin?

Where the honest answer is no, the system can no longer hide behind aggregate indicators. Resources and responsibilities are directed to where they are needed, sometimes at the expense of comfort closer to the capital. The archipelago has not necessarily become safer in every respect. But the language of what counts as a satisfactory outcome has changed: from no major scandals or surprises after a storm to no knowingly tolerated islands of under-protection before the storm, across prevention, emergency response, and recovery.

In the archipelago, that commitment becomes concrete: no island is treated as an acceptable exception because its harbour is remote, its population is small, or its protection is difficult to provide. The minimum threshold expresses the protection below which no community should be allowed to fall, giving substance to leaving no one behind. The government and agencies on the mainland are now equipped with language and framework for identifying failures, assigning responsibility, and asking the further question: whether the protection provided in each sphere meets the context-sensitive standard of care required for it to count as genuinely satisfactory.

AI Declaration

In preparing this thesis, generative AI was, unless clearly stated otherwise in the papers, used for three limited purposes: identifying potentially relevant bibliographic sources subsequently verified independently by the author; generating counterargument prompts that the author evaluated and responded to; and flagging structural redundancy and prose clarity issues in draft passages. All philosophical argumentation, conceptual development, threshold distinctions, and normative conclusions are the author's own. The author assumes full responsibility for the integrity, accuracy, and intellectual authorship of the text.

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Paper A

Paper A

Ethics in the Flames: Navigating Philosophical Questions in Fire Risk Management

Unpublished Manuscript

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KARIN EDVARDSSON BJÖRNBERG

Abstract

Fires cause significant harm to human life, property, and ecosystems worldwide, yet the ethical dimensions of fire risk management have received comparatively limited scholarly attention relative to other domains of public health and safety. This article presents the results of a scoping review aimed at identifying the core ethical challenges inherent in fire risk management. Drawing on the existing academic literature addressing value-related issues in the field, five key ethical challenges are identified concerning (1) who is owed protection in fire risk management, (2) the allocation of fire risk management resources, (3) the definition of sufficient and satisfactory fire safety levels, (4) the distribution of responsibilities for fire risk management, and (5) the determination of who should participate in decision-making processes. For each of these challenges, important gaps in existing ethical analyses are identified. Addressing these gaps through further theoretical work, together with reflective and deliberative engagement involving decision-makers and practitioners, can support the development and adoption of effective, equitable, and ethically justified fire risk management strategies. Ultimately, this article seeks to stimulate deeper reflection on the values that shape fire risk management and to encourage dialogue among ethicists, fire safety professionals, policymakers, and affected communities, thereby contributing to more robust decision-making, policy development and societal resilience.

Keywords: Fire protection, fire risk management, ethics, resource allocation, justice, prioritisation of values

1 Introduction

Although fires can affect anyone in society, a disproportionate number of fatalities and injuries occur among vulnerable groups such as children, the elderly, and people with disabilities, although the most affected populations vary between countries. In the European Union alone, approximately 5,000 people die in residential fires each year, and the number of injuries may be up to ten times higher (Moniruzzaman, 2023; European Fire Safety Alliance, 2024). Animals and natural environments are also negatively affected by fires, although further research is needed to understand the direct impact of fires on animal mortality rates (Jolly et al., 2021). The direct and indirect costs of fires, including emergency response, fatalities, injuries, and environmental and property damage, are enormous. Conservative estimates suggest that in most developed countries, fire-related costs amount to at least one per cent of the Gross Domestic Product (McNamee et al., 2019), and there is reason to believe that the proportion is considerably higher in other parts of the world.

Despite the profound human, social, and economic consequences of fire incidents, there remains a noticeable lack of academic literature addressing the ethical challenges associated with fire risk management. Sandin and Wester (2010) observed that there was no substantial body of research or discussion on the ethics of fire safety in general, nor on specific issues such as the allocation of fire safety resources or responsibilities. This situation has changed slightly in recent years, with the emergence of the broader field of disaster ethics (Geale, 2012; O'Mathúna et al., 2018; Lukasiewicz & Baldwin, 2020; Jennings, 2022; Zack, 2023). Nevertheless, it remains fair to conclude that the ethics of fire risk management has received significantly less attention than comparable public

health and safety domains, such as road safety or pandemic response, where ethical issues have been vigorously debated among both scholars and practitioners.

Fire risk management raises a range of ethically complex questions, beginning with what goals should be pursued and how they should be achieved (Goldstein & Kennedy, 2022). It requires reflection on how to prioritise competing goals and values under various constraints, who ought to be involved in planning and decision-making, and what constitutes a fair distribution of responsibilities between private individuals and public institutions. These are not only pertinent issues for scholars of applied ethics (Sandin, 2009), but also for practitioners seeking to advance effective and cost-efficient fire risk management. As Goldstein and Kennedy (2022) argue in relation to wildfire planning: "If fire management is to respond effectively to ever-increasing pressures, scientific and technological innovation must be paired with commensurate attention to the ethical dimensions of wildfire management, to developing the tools and processes that can facilitate a more robust engagement of stakeholders around ethical issues, and to embracing the important role that value-based deliberation plays as part of fire research and fire planning and management" (p. 911).

To further complicate the issue, the ethical challenges associated with fire risk management occur within an exceptionally complex decision-making environment (Plantinga et al., 2022). Fires, especially wildfires and building and residential fires, affect, and are affected by, a wide range of private and public stakeholders. In many cases, particularly during the incident response phase, decisions must be made under pressure, where multiple societal values are at stake and time for systematic reflection and information gathering is limited. Furthermore, response operations typically evolve through distinct phases as situations develop, each requiring renewed judgement and action. Crucially, effective fire protection begins long before an incident occurs. Successful prevention efforts often manifest as the absence of visible emergencies, underscoring the often-invisible yet essential role of all parts of fire risk management in safeguarding society. This cross-temporal, multi-level, and sometimes urgent nature of fire risk management amplifies the ethical complexity.

This article follows Goldstein and Kennedy's (2022) call. It builds on the conviction that the fire safety and engineering-focused research agenda proposed by, for instance, the International Association of Fire Safety Science

(IAFSS) (McNamee, et al., 2019), should be complemented by research addressing the normative dimensions of fire risk management. Such efforts would not only help bridge the current gap within the expanding field of disaster ethics, where fire risk remains underexplored, but also contribute to strengthening fire and rescue systems, enrich public debate, and support more efficient, legitimate, and equitable fire safety outcomes.

Drawing on the existing academic literature, this article identifies five fundamental ethical challenges inherent in fire risk management – as well as important gaps in existing ethical analyses – that if addressed appropriately will equip practitioners and scholars with a deeper understanding of how to pursue the core objectives of fire safety while ensuring that implemented strategies are both effective and morally justifiable:

1) What entities warrant protection in fire risk management?
2) On what grounds should fire risk resources and protections be distributed?
3) What level of fire safety ought to be considered sufficient and satisfactory?
4) Where does responsibility lie for achieving satisfactory fire risk management?
5) Who ought to participate in fire risk management decisions?

Although these five questions represent the most fundamental ethical challenges in fire safety management, this article does not aim to address every aspect of them in full; such an endeavour would be far too extensive. Instead, the questions are deliberately broadly formulated to stimulate continued discussion. This study contributes by illuminating the need for ethical considerations in fire risk management, presenting the core questions jointly with examples of tensions that may arise, thereby inviting further inquiry within the field from both practical and theoretical perspectives, without claiming to represent definitive truths at this stage.

Section 2 outlines the methodology used in our scoping review, including problem framing, conceptual demarcations, data selection, and analytical framework used. Section 3 discusses the five ethical issues separately – the entities that should be protected (3.1), the equitable allocation of resources (3.2), sufficient and satisfactory fire safety levels (3.3), responsibility ascriptions (3.4), and the determination of decision-making participants (3.5) – focusing on the main aspects covered in the literature and existing research gaps. Section 4 discusses how the fields of philosophy and fire risk management can mutually

benefit from each other and provides examples of collaborative philosophical methods and tools that can be used in engagement with various stakeholder groups. Finally, Section 5 presents the main takeaways of the article.

2 Methodology

2.1 Framing and Conceptual Demarcations

The review was guided by two simple primary questions: (1) What ethical challenges are identified in the academic literature on fire risk management? and (2) What research gaps exist in current ethical analyses? A set of secondary questions was developed based on these two questions, focusing on what is argued, what ethical concepts are used, and what (if any) normative theories are applied or explicitly referred to.

Since both ethics and fire risk management are broad concepts, it is useful to briefly say something about how they are used in this article.

2.1.1 Ethics

Ethics is the branch of philosophy that investigates what ought to be done, that is, what is morally right or wrong and which principles or values should guide action or the development of moral character. Often, discussions are framed in terms of justification of individual or collective action by reference to concepts such as outcomes, utility, duties, obligations, or virtues. Ethical principles and values are distinct from legal principles and values, although both are normative standards in the sense that they say something about what should be done or how decisions ought to be made.

Many issues in fire risk management have both ethical and epistemological dimensions. Fire risk assessment provides one example. Although it is largely a technical practice that employs quantitative methods to estimate the likelihood

and consequences of fire events, fire risk assessment is not value-neutral. Because evidential inferences are necessarily fallible, methodological choices inevitably involve judgements about the acceptable risk of error (Douglas, 2009). The entanglement of ethical and legal, as well as ethical and epistemological, aspects in fire risk management poses a distinct demarcation challenge when conducting a scoping review. This overlapping nature complicates both the selection criteria and the subsequent analysis – something that readers should keep in mind when engaging with this article.

Another methodological challenge concerns the threshold of ethical contents required for a paper to be included in a scoping review. Specifically, a critical distinction must be drawn between papers featuring an explicit ethical framework or advancing a particular ethical argument and those reporting empirical results that merely carry ethical implications. Within the fire risk management literature, many studies address phenomena that are not inherently framed as ethical issues. For instance, research demonstrating that wildfire smoke disproportionately burdens marginalised social groups yields profound ethical implications. However, because such studies often omit explicit ethical concepts or theoretical frameworks, their inclusion in a review dedicated specifically to the ethical challenges of fire risk management remains contentious.

2.1.2 Fire Risk Management

Fire risk management is a systematic process aimed at reducing the likelihood and consequences of fire incidents through a coordinated set of measures. Achieving comprehensive fire protection requires decisions by a wide range of actors – including fire and rescue services, government policymakers, urban planning authorities, local community groups, and individuals – at different process (temporal) stages. The delineation of these stages varies in the literature; however, fire risk management typically includes risk assessment, prevention/mitigation, preparedness, response, and post-incident recovery (Bosher et al., 2021). Table 1 shows the key functional components of fire risk management.

Table 1 ***Simplified overview of the key components of fire risk management. The list is not exhaustive, as processes and components may overlap depending on the level of detail required or the actors involved. It is also worth noting that some stakeholders may participate in several – or even all – stages, such as fire and rescue services (depending on regulatory context and framework).***

Process Stage	Functional Component	Focus Area	Main Activities	Example Actors
Risk Assessment[1]	All	All	Hazard/ vulnerability assessment	Fire engineers, planners, communities, regulators
Prevention	Fire Prevention	Eliminating fire hazards	Hazard removal, regulations	Fire engineers, planners, communities, regulators
Protection	Fire Protection	Active/passive fire control	Install alarms, sprinklers, passive barriers	Fire engineers, facility owners
Preparedness	Fire Safety Management	Policy, procedures	Drills, education, planning, preparation	Government or local agencies, NGOs, businesses, fire service
Response	Incident management	Response/ recovery	Suppression, evacuation	Fire service, healthcare, experts
Recovery	Continuity	Post-incident continuity	Restoration, psychosocial support	Municipality, insurers, communities

[1] *Ideally, the process begins with a risk assessment that remains valid throughout the process. In practice, however, risk assessment is an ongoing activity that must be revisited at every stage, as the focus areas and associated risks vary in both nature and level of detail.*

In this article, "fire risk management" is intentionally used in a broad sense, encompassing the contributions of all relevant actors across all temporal stages of fire protection and fire safety. A more fine-grained examination might reveal that different distributive principles apply at different stages, or that planning and response call for distinct principles for allocating responsibilities. The analysis does not systematically distinguish these potentially significant ethical differences but uses more specific terms where needed to clarify particular arguments.

Fire risk management is often regarded as a subset of disaster risk management. In this article, we understand a disaster as an event that encompasses multiple incidents and/or affects several domains beyond fire, thereby placing significant strain on the community as a whole. Although the primary audience of this article comprises practitioners in the fire and rescue or fire protection sectors, the issues discussed are also relevant to a broader range of actors involved in disaster risk management.

2.2 Selection of Material/Data

The identification of key ethical issues was conducted iteratively over an extended period through a review of relevant literature, complemented by consultations with professional peers and discussions at academic seminars and conferences.[1] A preliminary list of ethical issues had been developed prior to the present study as part of an earlier funded research proposal. A scoping review resulted in 12 relevant articles out of 2,687 articles in total. The review showed that key normative terms used in fire risk management, such as "equivalent" and "satisfactory", were rarely treated as analytical focal points. Instead, they were typically used as framing devices to justify why particular problems, such as unequal response times or disproportionate distribution, deserve attention. This initial observation was repeatedly confirmed throughout the search process.

The preliminary list of ethical issues was subsequently refined through systematic engagement with literature and further discussions with researchers and practitioners. Both academic and grey literature (e.g., operational guidelines, governmental reports and preparatory works, and practitioner documents) were collected and analysed. Academic literature was identified through searches across the Scopus and PhilIndex databases, yielding a total of 1,660 publications. Following title and abstract screening by one of the authors, 212 publications were retained. A deeper screening conducted by both authors narrowed down the list to 52 articles that were then retrieved in full text. Purely technical or engineering studies and those unrelated to fire risk or fire safety were excluded.

[1] The authors have complementary backgrounds. One brings extensive experience in fire risk management, including policymaking and higher-level operational command; the other brings expertise in academic philosophy. Relevant peers therefore include fire safety engineers, policymakers, and philosophical scholars.

That fire risk management literature explicitly engaging with moral philosophy turned out to be limited was not an unexpected finding, considering that ethical inquiry into fire prevention, preparedness, response, and recovery remains relatively novel. Two additional search strategies were therefore employed to make sure the body of literature for this scoping review was as complete as possible. First, backward snowballing was used to identify relevant literature cited in the selected publications considered most relevant for the present review, including studies from the neighbouring field of disaster risk management. Second, targeted database searches were conducted for ethical themes that emerged during the initial search. For example, the effects of fire on animal welfare and wildlife were identified as recurring themes, prompting supplementary searches using the original search terms in combination with keywords such as animal, pet, livestock, cattle, and wildlife.

2.3 Analysis of Material/Data

The 52 articles that were retrieved in full text were analysed with the help of an AI language model (Claude Sonnet 5, Anthropic). The authors also read a subset of the full texts, but not in a fully structured way. The analysis was performed in two steps to identify potentially overlooked topics and to determine whether any adjustment to the study's scope was warranted. The first "blind" coding of the articles was performed based on dominant ethical themes, normative tensions, ethical concepts, fire specificity, and fire risk management stages as specified in Table 1. The results were compared with the preliminary list of ethical issues to enable identification of hitherto unnoticed issues. A second analysis mapped the articles directly onto the list of ethical issues. The authors' examination of the AI-assisted analysis found that the thematic questions and descriptive content were broadly supported, and that only minor adjustments were needed.

Throughout the process, the emerging set of ethical issues and identified research gaps were presented and discussed at academic conferences and seminars, as well as in meetings with fire risk management practitioners, primarily from Sweden. Further feedback was provided by academic and professional peers in Canada, Australia, and New Zealand. This feedback helped assess the practical relevance of the emerging themes, identify possible omissions, and clarify their formulation, thereby informing relevant refinement of the analysis.

3 Results

In this section, the five fundamental ethical issues are explored, acknowledging that a more detailed ethical examination will be necessary to derive concrete and legitimate ethical recommendation. Thus, the purpose here is not depth, but to emphasise the relevance of these issues for continued conceptual development and informed practical debate.

3.1 What Entities Warrant Protection in Fire Risk Management?

There appears to be broad agreement that human life and well-being are among the foremost values to be protected in fire risk management. The principal function of fire and rescue services in most, if not all, countries is thus to protect and save human lives (Winkler et al., 2026).[2] This priority is reflected, for example, in fire safety codes applicable to buildings, which predominantly focus on life safety (Garcia-Castillo et al., 2023; Boverket, 2007). Where occupants can be kept safe, there are generally no regulations preventing property owners from allowing a building to burn.

Normative justifications for protecting property can be derived from various ethical and political theories. Most such justifications are based on the view that property serves as a proxy for human needs or welfare: protecting property can prevent secondary harms to people, such as displacement, loss of livelihoods,

[2] Many fire and rescue services have an obligation to protect property and the environment as secondary and tertiary objectives.

and loss of financial security. Different normative frameworks may, however, yield different conclusions about which types of property should be prioritised in the event of fire. A utilitarian justification focused on maximising overall well-being could support prioritising of critical shared infrastructure over private property, as the former may have greater social value. A liberal, rights-based justification grounded in John Locke's (1690) theory of property rights might, by contrast, provide stronger reasons for protecting private property, insofar as property is understood as arising from individual labour and is therefore connected to personal autonomy and freedom. A communitarian argument, drawing on theories of collective memory and identity, might justify prioritising cultural heritage over other forms of property because it contributes to a sense of place and community continuity while also serving as a repository of artistic expression and historical understanding. The global response to the fire at Notre-Dame Cathedral in 2019 illustrates how particular buildings can transcend questions of ownership and come to be regarded as part of a shared human heritage (Hoffman et al., 2019).[3]

The questions of justification and priority-setting become still more complex in relation to animals and natural environments, whose moral standing within fire risk management remains contested (Woinarski et al., 2023). In many jurisdictions, domesticated animals such as companion animals and livestock are legally classified as property and consequently receive some degree of protection. The situation is less clear with respect to wild animals and natural environments (Best, 2021). Animal-welfare considerations are rarely incorporated into national or regional fire-risk-reduction plans and strategies, and non-domesticated animals are seldom prioritised – or even considered – during rescue operations. This omission raises important moral concerns, given that fires can have profound impacts on the health and well-being of animals and the integrity of their habitats (Redfearn & Morton, 2020; Woinarski et al., 2023).

Several moral justifications can be offered for including animals and natural environments within the scope of fire risk management. Some are anthropocentric, i.e., animals or ecosystems ought to be protected because they

[3] In a recent literature review, Garcia-Castillo et al. (2023) concluded that overall fire safety in heritage buildings remains alarming despite advances in research. Although this may appear to be primarily a technical challenge, systematic reflection on the underlying values is equally important to ensure that heritage protection is meaningfully incorporated into building codes and fire risk management frameworks.

contribute to human well-being. It is well established that the loss of animals can cause significant emotional and economic harm to humans. This is particularly evident in the case of companion animals and livestock, with whom people can either form strong emotional bonds (Hunt et al., 2008; Lowe et al., 2009) or whose loss can result in substantial economic harm (Smith et al., 2015; Travers et al., 2017). Moreover, human lives may themselves be placed at risk when animals are not adequately considered or prioritised in rescue and evacuation operations. Owners of companion animals are substantially less willing to evacuate if they cannot bring their pets with them (Chadwin, 2017; Day, 2017). Similarly, concern for livestock welfare may lead owners to remain on their properties and "stay and defend", even at considerable personal risk (Glassey & Wilson, 2011; Smith et al., 2015). In wildlife rescue, people with little or no training in handling animals may put themselves and the animals at great risk when attempting to conduct rescue operations (Cerda et al., 2026).

The inclusion of animals in fire risk management can also be justified on non-anthropocentric grounds. Most animal ethicists acknowledge that at least some animals are capable of experiencing pain or, more broadly, of having subjective experiences (Singer, 2009; Regan, 2004). Such capacities are commonly taken to ground moral considerability, implying that humans have a prima facie moral obligation not to harm these animals (Palmer, 2010). Applied to fire risk management, this would imply that humans have responsibilities to organise their activities and institutions in ways that minimise avoidable risks of harm to animals. Tethering or confining animals in ways that restrict their ability to escape in the event of a fire could constitute one example.

Beyond a general duty not to harm sentient animals, it may also be argued that humans have positive duties to assist and rescue animals in fire emergencies. Such special obligations may arise, it is argued, from the relationships between humans and animals, together with the broader social and institutional contexts in which those relationships exist (Palmer, 2010). For example, humans may have special obligations to assist animals in need where they have made those animals dependent on them, for example through domestication, or where human activities have caused prior harm to the animals (Palmer, 2018; McCumber & King, 2020). Because humans stand in different relationships to domesticated and wild animals, the nature and scope of the corresponding moral obligations may differ, with potentially important implications for how animals ought to be incorporated into fire risk management policy and practice.

More recently, political philosophers have extended animal rights theory to encompass political rights for animals (Donaldson & Kymlicka, 2011; Cochrane et al., 2018). This "political turn" in animal rights theory (Milligan, 2015; Cochrane, 2025) represents a departure from traditional approaches to animal ethics, which focus primarily on individual moral obligations, towards a concern with reforming the political communities and institutional arrangements through which humans and animals interact. A central ambition of this approach is to secure justice for animals through meaningful forms of representation and participation in political institutions. How such an ambition could be translated into the institutional and operational context of fire risk management, however, remains largely unexplored.

These considerations indicate a need for further research into both the justification and the practical implications of different normative approaches to determining what and whom fire risk management ought to protect. From an animal rights perspective, the distinction between "interventionist" and "anti-interventionist" positions warrants further attention, particularly in light of climate change and other anthropogenic socio-ecological changes that are altering fire regimes. Further research is also needed to clarify what the "political turn" in animal rights theory might imply for fire risk management, including how animals could be meaningfully included as political subjects in processes of planning and preparedness for fire emergencies.

Finally, if it is accepted that not only human lives but also property, animals, and natural environments merit consideration in fire risk management, further work is needed to assist policymakers and practitioners in determining how these values should be prioritised when they come into conflict. This issue was highlighted in the inquiry into the New South Wales Government's handling of the 2019/20 bushfires (Government of NSW, 2020), which recommended the development and application of a formal mechanism during the planning and preparedness stages to support prioritisation among values threatened by fire. Importantly, such mechanisms need to acknowledge that prioritisations must be made not only between human lives, property, animals, and natural environments, but also between different environmental values, such as individual animal welfare and conservation concerns.

3.2 On What Grounds Should Fire Risk Resources and Protection Be Distributed?

In terms of protecting life, fire risk management is a finite social good, in which key components (Table 1) must be distributed across a defined population, such as a neighbourhood, municipality, or city district, according to some normative principle. Various normative principles have been proposed to guide the distribution of finite social goods, including utility maximisation, cost-effectiveness, and justice. Here, it will be assumed that such distributions ought to adhere to the principle of justice – that is, that each member of society should be rendered their due (Miller, 2023). However, what rendering to each their due means in the context of a social good such as fire protection, or fire risk management, is far from straightforward. Although the core idea of distributive justice is well understood, its conceptualisations are numerous and sometimes inconsistent (Deutsch, 1975; Hay, 1995; Lamont & Favor, 2017). Thus, there are competing interpretations of what it means to render someone their due. Furthermore, different views exist on what should be distributed justly, or in terms of what people ought to be given their due. In fire risk management, as in disaster management generally, distribution could, for example, be defined in terms of rights and responsibilities, benefits or burdens, risks, or resources (Lukasiewicz, 2020). Below, three prominent conceptualisations of the concept of distributive justice are reviewed briefly – (I) egalitarian, (II) needs-based, and (III) desert-based distribution – and it is explained how they differ from distributions based on utility maximisation.

(I) Egalitarian distribution: Equal distribution is perhaps the most basic conceptualisation of distributive justice, holding that each member of a group should receive the same level or amount of the good being distributed. Strict egalitarianism aligns with the moral intuition that all individuals are equal and therefore deserve an equal share of social goods (Mas, 2023). However, it can be criticised on moral grounds. One principled objection is that individuals begin from very different starting points (Lamont & Favor, 2017). Moreover, ensuring that everyone receives an equal share of a social good overlooks differences in needs and in people's abilities to benefit from those goods.

(II) Needs-based distribution: Empirical research has consistently shown that fire risks are unevenly distributed across populations (Turner et al., 2017; Eriksen & Simon, 2017; Zabaniotou et al., 2021; Hirst & Underhill, 2025; Özbilgin et al., 2026). Multiple intersecting factors, including age, gender, disability, alcohol consumption, and household composition, contribute to

increased vulnerability to fire. For instance, the risk of dying in residential fires is significantly higher among the very old (over 85 years) and the very young (0–4 years) (Jonsson et al., 2023). Men face a higher risk of dying in residential fires in high-income countries, whereas women are overrepresented among fatalities in low-income countries (Andersson & Runefors, 2023). It may therefore be argued that a greater share of fire risk management resources should be directed towards those most at risk of death or serious injury. In philosophical terms, this position corresponds to prioritarianism – a needs-based principle of justice. Rawls' (1971) difference principle exemplifies this view, asserting that departures from strict equality can be morally justified only if they benefit those who are worst off.

(III) Desert-based distribution: Other justifications for diverging from strict equality focus on what individuals deserve. According to this view, a greater share of a social good should be allocated to those who merit it, not because of greater need, but due to their contributions, such as efforts, labour, or tax payments. If an individual attains an advantaged position through their own efforts, this should arguably be recognised when determining the allocation of a social good. This contrasts with both strict egalitarianism and Rawlsian prioritarianism, since neither considers how individuals came to be advantaged or disadvantaged (Lamont & Favor, 2017).

All three of the above distributive principles are justice-based, insofar as they articulate what it means to render individuals their due. They are normative in the sense that they prescribe how social goods ought to be distributed. However, justice is not the only possible basis for distribution. Utilitarianism, for example, requires that social goods be distributed to maximise overall utility – typically understood as pleasure, happiness, preference satisfaction, or welfare. The utilitarian focus is not on the distribution of material resources themselves but on the aggregated utility they produce. Utilitarian approaches are often criticised for being insensitive to individual rights, given their exclusive concern with aggregate utility maximisation, and for their demanding informational requirements when applied to real-world decision-making (Lamont & Favor, 2017).

It is plausible that different distributive principles may be applicable at different stages of the fire risk management process, from prevention and planning to response and recovery (see Table 1). Van Wee and Roeser (2013), in the context of transport policymaking, have argued for context-sensitive approaches. That is, instead of *a priori* deciding on a single distributive principle for all transport-

relevant policy choices, a multitude of morally relevant factors – such as utility, vulnerability, need, and personal responsibility – may legitimately come into play when deciding on how a social good, such as mobility or accessibility, ought to be distributed. In fire risk management, it has been suggested that utility maximisation, or a combination of utility and needs-based allocation, may be most defensible in the response phase, when allocation decisions must be made under duress (cf. medical triage), while egalitarianism may be more justifiable in the prevention and planning phases (Zack, 2023).

Unlike medical triage, prioritisation in firefighting involves a broader array of values, including not only human life and well-being but also animal welfare, environmental and property values, as noted above. Despite this value complexity, the theorisation of triage in the context of fire risk management remains surprisingly underdeveloped. Further research is needed to assist decision-makers by making their normative commitments explicit and revealing implicit hierarchies of value. One promising avenue for further exploration is "threshold deontology" (Alexander, 2000) – that is, the view that morality in ordinary circumstances is governed by absolute duties and prohibitions (deontology), but that when consequences become extreme, actions producing the best overall outcomes may justifiably override these duties. Threshold-based models for balancing moral costs have recently been applied in contexts such as the COVID-19 pandemic (Holzer et al., 2025), yet their potential relevance to fire-related emergencies remains largely unexplored.

Further analysis is also needed to assess the reasonableness of different distributive principles across the various phases of fire risk management and to clarify how they should guide specific preparedness and response strategies. Such analysis should ideally occur not only in academic research but also within the operational components of fire risk management and through inclusive public deliberation.

3.3 What Level of Fire Safety Ought to Be Considered Sufficient and Satisfactory?

As already discussed, the primary aim of fire risk management is to ensure that no one dies or suffers serious injury as a result of fire. In this sense, fire and rescue services – and fire risk management more broadly – are ultimately guided by a Vision Zero for fire safety, although this vision is seldom made explicit in national legislation (Andersson & Gell, 2023; see also MSB, 2011). Empirical data show that this vision remains far from realised; thus, from a

Vision Zero perspective, the present level of fire safety is clearly insufficient. This raises two fundamental ethical questions. First, how much of society's limited resources should be allocated to fire risk management relative to other life- and property-saving measures? Second, what level of protection should be considered sufficient and satisfactory?

Decisions about how societal resources are distributed among safety domains should ultimately be made by elected governments at different administrative levels, rather than by fire and rescue service organisations acting as first responders responsible for implementing given objectives. It should be noted that a related debate exists in the context of road safety. Critics argue that the lexicographic prioritisation of road traffic safety under Vision Zero is unwise, since it diverts resources from other health and safety areas where they might yield greater benefit (Elvik, 1999; cf. Rosencrantz et al., 2007). A more reasonable approach, it is argued, would involve making explicit trade-offs and then adopting a safety target that is both realistic and compatible with other social goals.

A similar reasoning could be applied to fire risk management and its components (see Table 1). When determining what level of fire safety should be considered sufficient, one should first assess the necessary trade-offs and compromises with other societal goals, and then set a realistic target based on those considerations. However, Vision Zero policies have also been defended. Abebe et al. (2023), for example, argue that concerns about Vision Zero crowding out other social objectives are overstated, and that in the context of policies aimed at saving lives, any number above zero fatalities is ethically indefensible. Adopting such policies, they contend, does not imply that fatality avoidance can never be subject to trade-offs; rather, it signals that any trade-offs made are to be treated as "temporary and unsatisfactory concessions" (p. 121). This reasoning could similarly support a Vision Zero approach to fire safety.

Within a sufficientarian framework, Vision Zero can be understood as a policy articulation of the negative thesis: no one ought to fall below a basic threshold of protection against fatal or severely injurious fires. This does not entail that every additional fatality reduction is equally required by justice; rather, once the basic threshold is secured for all, further improvements become matters of efficiency, preference, or other moral considerations.

A related issue concerns the terminology used in evaluating levels of protection. A distinction between "sufficient" and "satisfactory" is particularly relevant to interpreting goal-oriented legal and policy frameworks for fire risk

management. The former denotes a minimally acceptable level of protection needed to prevent intolerable harm – a calculable, or threshold-based, "floor". The latter, by contrast, entails a qualitative and contextual judgment that considers fairness, reasonableness, and proportionality within resource constraints. Put simply, sufficient refers to absolute adequacy, while satisfactory reflects contextual acceptability.

For a more structured understanding, one may, as already mentioned, turn to sufficientarianism, a branch of distributive ethics that offers a framework for determining when individuals or societies have enough of a morally relevant good. Whereas utilitarianism seeks to maximise aggregate welfare, sufficientarianism focuses on ensuring that everyone reaches a threshold of adequacy. Beyond this threshold, further distribution is no longer a matter of justice but of preference or efficiency (Herlitz, 2018; Huseby, 2020). Within this literature, the "sufficient" level of protection corresponds to the negative thesis (no one should fall below a critical threshold), whereas "satisfactory" protection maps onto the positive thesis (once everyone is above the threshold, further distribution is shaped by other values such as efficiency or political compromise). Huseby (2020) notes that sufficiency thresholds hinge on both objective and subjective components, and that determining such thresholds is fraught with ambiguity, as it seems impossible to treat conditions just below or above as morally distinct (also known as the threshold problem). The difficulty likely extends to the notion of satisfactory thresholds as well. Recent refinements of sufficientarianism address this vagueness by introducing the idea of sufficiency intervals rather than single, sharp thresholds (Cato, 2024). Different thresholds within the interval can rank the same well-being distributions differently. Where these rankings conflict, Cato's approach leaves the distributions unranked rather than selecting one threshold to settle the comparison. Regardless, this notion maps well onto practical fire risk management, where protection is not binary but exists on a continuum between minimally acceptable and fully satisfactory levels, which in turn highlights that evaluations of safety policy most likely must tolerate a degree of moral and technical indeterminacy. A sufficientarian analysis of fire safety is more plausibly understood as involving multiple thresholds across different spheres of value (e.g. life and health, housing, social participation), rather than a single aggregate fatality target. This aligns with recent multiple-threshold and "umbel" views in sufficientarian theory, which distinguish a basic needs threshold from higher, sphere-specific thresholds (cf. Nielsen, 2026).

Knight (2025) provides a bridge between ethical theories and fire safety, aligning with the human-rights perspective reflected in the 2030 Agenda and the Sendai disaster risk reduction framework (UN, 2015; UNDRR, 2015). Both frameworks have been adopted by all UN member states, demonstrating commitment at international and national levels – a commitment that should be actively reflected in legislation and policy, including in fire and disaster risk management. Knight (2025) defines sufficiency in terms of the satisfaction of basic needs such as shelter, health, and physical security, and argues that these needs are not valuable in themselves but instrumentally insofar as they enable autonomy and social functioning. If framed this way, sufficient fire safety and protection could be seen as the assurance that preventable fires do not jeopardise individuals' basic needs, and that the fire risk management system, as such, should help protect people's ability to act autonomously and participate in society. In the aftermath of the Grenfell Tower disaster in London in 2017, where 72 people lost their lives in a single fire, Bright and Maxwell (2019) argued that the continued exposure of residents to unsafe housing could constitute an ongoing violation of their human rights. Given this, we, in our turn, propose that sufficient protection and fire risk management ought to take into account people's fundamental rights to life, health, and security. Determining what qualifies as sufficient or satisfactory protection within fire risk management is therefore far from straightforward. The Swedish Civil Protection Act[4] (SFS 2003:778, para. 1) stipulates that the aim is to "provide equivalent and satisfactory protection". In a complex system such as fire risk management, the use of satisfactory – rather than sufficient – shifts the focus towards a qualitative and subjective evaluation framework, raising several questions that merit further exploration.

First, what qualitative aspects should be considered when evaluating the level of fire protection? While this article touches on some of these aspects, a deeper examination would likely reveal additional considerations. Second, evaluating satisfactory protection introduces subjectivity: Who determines whether protection levels are sufficient, and from what perspective? For example, if a national target specifies no more than 100 fatalities per year, one might argue that protection levels are satisfactory as long as this number is not exceeded. Yet

[4] This is the official English translation of the Act. However, the Act has a focus on fire safety and incident management. It is similar in its structure and scope to other countries' "fire and emergency acts".

if all fatalities occur within a single city or disproportionately affect vulnerable groups, the outcome would likely be viewed as unsatisfactory from a community perspective.

With several actors and stakeholders working within their respective areas of fire risk management, the interpretation of what constitutes sufficient and satisfactory protection becomes crucial. Different groups or communities will be exposed to different levels of risk; however, as they may at the same time have different levels of risk acceptance it is challenging to determine whether fire protection levels are sufficient and satisfactory. This also presupposes an adequate level of knowledge and understanding of the risk exposure, introducing the last two related themes posed in this article, namely, who holds responsibility for achieving satisfactory fire safety and who should participate in fire risk management.

3.4 Where Does Responsibility Lie for Achieving Satisfactory Fire Risk Management?

In many countries, disaster risk management is carried out based on the principle of shared responsibility (Lukasiewicz et al., 2017). This aligns with the United Nations Sendai Framework for Disaster Risk Reduction, which states that "[w]hile states have the overall responsibility for reducing disaster risk, it is a shared responsibility between Governments and relevant stakeholders" (UNDRR, 2015, para. 35). The non-government stakeholders identified in the Sendai Framework include volunteers, community-based organisations, individuals, academia and research networks, businesses, professional associations, private financial institutions, philanthropic foundations, and the media. The concept of shared responsibility brings to the fore the question of where to draw the line between the services that government actors – including fire and rescue services – ought to provide and those preparedness, prevention, and response responsibilities that can legitimately be assigned to the private actors recognised in the Sendai Framework. Although the balance may differ between large-scale disasters and smaller incidents such as residential fires, the issue remains ethically and practically significant.

As Lukasiewicz et al. (2017) note, there is no clear demarcation between the responsibilities of private and public actors. Based on a literature review and analysis of the Australian National Strategy for Disaster Resilience (NSDR) (COAG, 2011), they nevertheless identify a set of responsibilities that can be assigned to individuals, businesses, and communities. For individuals and

households, the primary responsibility is to identify potential risks and prepare for them. However, this is also where some of the greatest challenges arise (Kristiansen & Andersson, 2023). Although households and individuals are arguably the most crucial non-governmental actors in disaster risk management, they are also highly unpredictable in their approaches to risk reduction (Dovers, 2020). Individuals are well prepared to take responsibility only when they have adequate knowledge about the risks, an understanding of how to mitigate them, and the capacity to act. Yet knowledge and capacity vary greatly among individuals for numerous reasons. This presents a moral challenge when shifting responsibility from government actors to households and individuals, as some individuals lack the informational and practical abilities required to act responsibly. The challenge is especially pronounced in societies marked by socioeconomic disparities or shifting demographics, including ageing populations and migrants living under segregated and underprivileged conditions.

A further moral complication arises when individuals who possess sufficient knowledge and capacity nevertheless choose to expose themselves to higher levels of risk – for instance, by settling in buildings or locations that make fire prevention and rescue operations more difficult. The question then becomes whether such individuals should be assigned greater responsibility for their own fire safety – and, if so, whether it would be ethically acceptable for local or national governments to lower the standard of protection they are obliged to provide to the citizens and communities.

As Dovers (2020) observes, perspectives on the appropriate roles of individuals, communities, and the state in disaster risk management vary widely. In the context of wildfire management, McLennan and Eburn (2015) developed a framework that clarifies these differing positions and the political values underlying decisions about the allocation of responsibility – values that are rarely discussed openly or systematically. The framework, which can also be applied to residential fire risk management, identifies two key value trade-offs: one between government control and individual choice, and another between public values and private interests. When the two value trade-offs are plotted on horizontal and vertical axes, four hypothetical scenarios for the division of responsibilities between governments and citizens emerge: “paternal communitarian”, “paternal individual”, “autonomous communitarian”, and “autonomous individual” (see Figure 1).

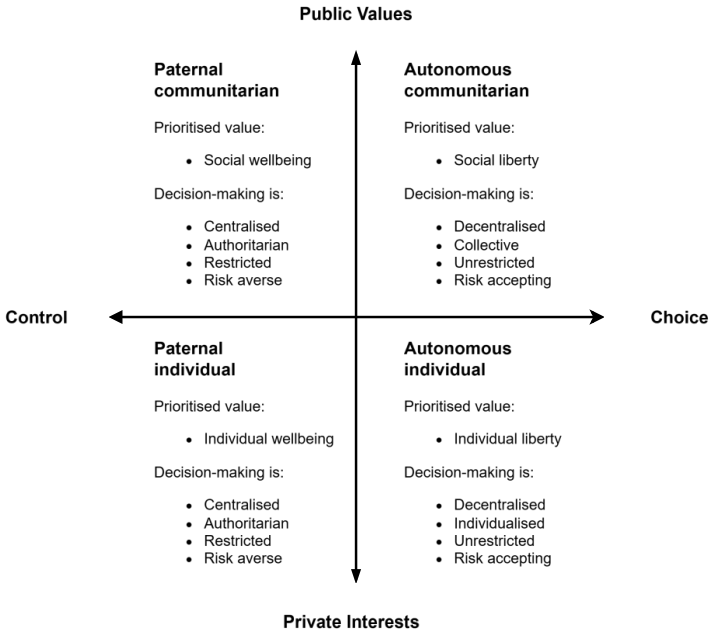


Figure 1 Four hypothetical extreme scenarios for sharing responsibility for wildfire management between governments and citizens. Redrawn from McLennan and Eburn (2015, p. 164, Fig. 1).

The scenarios are hypothetical in the sense that none would be fully adopted in the real world. Instead, the authors argue that "[i]n 'real world' wildfire management, responsibilities need to be shared through some form of hybrid system in which control, choice, public values and private interests would all be prioritised and traded-off in different ways in different parts of the system and management cycle" (p. 168). For example, governments could reasonably be assigned greater responsibility during the fire response phase, as they are uniquely equipped to coordinate large-scale operations. State institutions also bear primary responsibility for establishing the legal frameworks that, in practice, partially allocate fire safety responsibilities among different actors. McLennan and Eburn's framework does not offer a definitive answer to the question of how responsibilities should be divided among actors in the fire risk management process. Rather, its purpose is to encourage recognition and open discussion of the underlying value trade-offs, to ensure that fire risk management arrangements are both effective and socially and politically acceptable within a given context.

3.5 Who Ought to Participate in Fire Risk Management?

A final issue concerns who should participate in the various stages and components of fire risk management, and under what conditions. The concept of shared responsibility, as articulated in the Sendai Framework (UNDRR, 2015) and reflected in many national legislations, requires the involvement of a wide range of actors in disaster (including fire) risk management. According to the Framework's guiding principles, engagement and partnership across society presuppose "[e]mpowerment and inclusive, accessible and non discriminatory participation, paying special attention to people disproportionally affected by disasters, especially the poorest" (para. 19(d)).

Active participation and inclusion of diverse stakeholders – particularly local actors – can be justified on two main grounds (Goldstein & Kennedy, 2022). Firstly, there is a strong epistemic rationale for including local expertise in fire risk management. Local communities often possess crucial knowledge about, for example, patterns of land and building use, local species and ecosystems, the likely impacts of fires on people and places, and what solutions could work for "people on the ground". Incorporating such knowledge can improve both the effectiveness and legitimacy of decisions, leading to outcomes that are more cost-efficient, socially just, and widely accepted. Law and Spinardi (2021), in their study of the regulatory aftermath of the Grenfell Tower fire, demonstrated how competing forms of expertise interact in fire risk management, specifically how preparedness, prevention, and response measures build on three forms of expertise: the firefighters' expertise gained through professional experience, the expertise of scientists and engineers acquired through experimentation, and the expertise of lawmakers and others working in the regulatory field. The authors also identify a fourth type of expertise that is central to fire risk management, namely the local expertise of residents and building users "[w]ho have direct and sustained empirical experience of the built environment" (p. 524). Similarly, Goldstein and Kennedy (2022) argued for the inclusion of local groups, including indigenous and traditional communities, in wildfire management, as they hold vital knowledge about wildlife, habitats, and fire behaviour across landscapes (see also Paveglio & Edgeley, 2017). Thus, establishing participatory governance structures locally is essential for creating fire-resilient communities (Baldwin, 2020).

Secondly, participation and inclusion of local actors in fire risk management can be justified on moral, rights-based, grounds. Recognising the knowledge and expertise of stakeholders beyond firefighters, engineers, and regulators aligns

with the principles of procedural and recognition justice (Schlosberg, 2004; Lukasiewicz, 2020). Yet this recognition may at times conflict with the government's overarching responsibility to reduce fire risks and coordinate responses (Lukasiewicz et al., 2017). Historically, fire preparedness, prevention, and response – like disaster management more broadly – have been shaped by a command-and-control logic rooted in military practice (Krolik, 2013). To some extent, this approach is justified, since successful disaster management requires effective coordination, especially during emergency response. However, such coordination should not occur in isolation from affected communities. As Krolik (2013) argues, participation should be encouraged not only for epistemic reasons but also because people have a right to shape their own communities – "[t]o be actively involved in analysing their own situation and developing solutions based on needs and desires identified by community" (p. 45).

Fulfilling both the epistemic and moral aims of participation in fire risk management places significant demands on the decision-making process. The decision process should ensure participation beyond consultation, involving stakeholders in all phases of the decision process from problem identification and option assessment to priority setting; be culturally sensitive, recognise traditional and indigenous knowledge systems as valuable sources of information; and uphold a high degree of transparency, both in the risk information provided by experts and in the goals and outcomes sought by government agencies. Moreover, when decision-support tools, including AI-based systems, are employed, they too must be designed to meet the participatory and ethical requirements.

Although there is a growing body of literature advocating decolonised, pluralistic, and participatory approaches to fire risk management (e.g., Adams, 2024; Cuartas et al., 2025; Rodríguez et al., 2023), further research is needed to identify how traditionally marginalised perspectives can be meaningfully incorporated throughout the fire risk management cycle. Crucially, this requires recognising that the goals pursued by policymakers and practitioners, including fire and rescue services, may differ significantly from those of local and indigenous communities. This is illustrated, for example, by documented tensions between indigenous fire management and dominant approaches to wildfire management in Australia (Atkinson & Montiel-Molina, 2023; Malone, 2025; Stith, 2025). Indigenous fire-management practices, including cultural burning, are often described as place-based and relational, linking people, fire, country, and other-than-human beings. Fire is regarded not primarily as a

hazard to be controlled, but also as a process that can contribute to landscape renewal, support biodiversity, and strengthen community ties. Yet, these practices are often sidelined by technocratic fire suppression focused on fuel loads and infrastructure. Adopting hybrid fire management models that prioritise indigenous leadership could ensure that fire risk management honours diverse values, respects local knowledge, and enhances outcomes for vulnerable groups (Bowman et al., 2004; Stith, 2025; Yibarbuk et al., 2001).

4 Discussion

The previous section has shown that several research gaps remain concerning the ethical dimensions of fire risk management. These gaps can be synthesised into two overarching research needs, each with corresponding practical outcomes. First, the abstract normative theories of justice, sufficientarian thresholds, and human rights commitments need to be translated into clear and practically applicable decision rules that are coherent across, or at least align with, the different stages of fire risk management. Such decision rules need to specify how human life, property, animals and natural environment ought to be balanced; how different distributive principles and threshold-based approaches should be applied across prevention, preparedness, response and recovery; and how sufficient and satisfactory levels of protection should be determined under real-world constraints and conditions of uncertainty, unequal risk exposure and vulnerability.

Secondly, there is a need for a more fine-grained analysis of responsibilities and participation that moves beyond high-level concepts of shared responsibility and stakeholder engagement to examine how these principles can be translated into concrete institutional arrangements, governance practices, and policies. This includes examining what constitutes a fair distribution and division of responsibilities among public and private actors, communities, and individuals in specific fire risk management contexts; how responsibilities should be allocated when people knowingly choose to live or operate under higher-risk conditions; and how participatory structures can be designed to ensure that local and indigenous actors have meaningful influence over priorities, decision-support systems, and the scope and objectives of fire risk management.

Importantly, the values, considerations, and motivations embedded in frameworks, institutional agreements, practices, and policies need to be explicitly articulated and labelled, so that users can understand and apply them consistently and evaluate their effects over time.

Our findings indicate that collaboration with philosophers can play an important role in enhancing fire risk management at multiple levels. First and foremost, philosophers can contribute to the development of fire safety policies by clarifying core concepts, critically examining entrenched assumptions, and identifying underlying values and arguments. Philosophers are particularly well placed to assist policymakers in deliberating about the ends and means of policy for the common good – that is, clarifying why certain policies are or ought to be adopted (the ends they serve) and identifying appropriate instruments for achieving those ends (Howard, 2018). By exposing underlying values and assumptions and revealing argumentative fallacies, philosophers can help enhance public scrutiny, democratic debate, and ultimately the quality of policy outcomes (Boston et al., 2010; Goldstein & Kennedy, 2022).

Wolff's (2019) method of engaged philosophy provides a structured, step-by-step approach to employing philosophical analysis in policy evaluation. Unlike traditional philosophical approaches, in which policy problems are typically addressed by applying some moral or political theory, engaged philosophy begins with problems as experienced and understood by practitioners and experts. This orientation is particularly relevant to fields such as fire risk management, where policy and practice intersect with complex social values, historical precedents, and competing stakeholder interests. Although the ultimate aim of engaged philosophy is distinctly normative – namely, to evaluate identified policy options and contribute to the formulation of policy recommendations – the analysis begins by examining the policy context, relevant empirical facts, and existing regulations; identifying the arguments and values that shape current debates; and exploring how the issue has been approached across different temporal and geographical settings. The present scoping review provides empirical input for examining the policy context of fire risk management and identifying the ethical issues that warrant further philosophical analysis.

Wolff (2019) does not claim that philosophers should act alone in policy analysis; rather, he argues that their distinctive strength lies in their sustained engagement with questions of value and their structured approach to ethical and conceptual dilemmas. From a policy standpoint, philosophers are part of a

broader interdisciplinary effort, which should also include experts from fields such as history and the social sciences. This point can be illustrated by the complex and value-laden issue of wildfire management. As Goldstein and Kennedy (2022) noted, almost every decision within wildfire management carries an ethical dimension. To provide sound policy advice, it is essential to understand in what sense wildfires constitute a problem, what perspectives, arguments and values are present in public debates about wildfire management, and how policies have evolved across different geographical and temporal contexts, including how current approaches came into being. To grasp the ethical issues at stake, philosophers must work closely with other academic disciplines as well as with practitioners such as policymakers, fire and rescue services and local communities, who possess valuable knowledge of first responder practices and local conditions.

There are numerous tools in the philosophical toolbox that can facilitate moral deliberation and analysis, including conceptual analysis and a range of methods for examining values, assumptions, and arguments. Many of these tools lend themselves well to participatory settings that foster inclusive, reasoned dialogue among policymakers, stakeholders, and citizens. In participatory workshops, for instance, the meanings of key concepts, such as "risk", "safety", "just distribution", "satisfactory safety level", and "equivalent protection" can be collectively explored across agencies and stakeholder groups. Moreover, arguments and underlying assumptions embedded in policy documents can be made explicit and subjected to critical scrutiny for validity and soundness through, for instance, value mapping techniques. The ethical implications of alternative policy options and potential value conflicts can also be explored using scenario-based techniques and case-based reasoning (Wedin & Wikman-Svahn, 2021).

Secondly, philosophers' expertise in analysing values, value conflicts, and moral dilemmas can also contribute meaningfully to the academisation of the fire and rescue services – that is, the integration of deeper theoretical reflection and academic discourse into professional practice (Goldstein & Kennedy, 2022). At the operational level, this may involve supporting fire and rescue services in reasoning about value conflicts and goal prioritisation in triage-like situations, where an order of priority for intervention must be established. Here promising work is being done by Martinsson et al. (forthcoming) through their project Saving of Swedovia. They examine prioritisations and dilemmas in firefighting at different operational levels, during a large-scale wildfire: what level of risk

firefighters ought to be willing to accept, whether desert and how prioritisation should distinguish between those who complied with and those who disregarded official instructions, and on what grounds scarce resources should be distributed when needs exceed capacity. The project's scenarios are constructed to make such trade-offs explicit and to compare how practitioners and citizens reason about them.

Finally, incorporating philosophy and philosophical reflection into fire risk management benefits not only policymaking and the public debate but also philosophy itself. Engaging with real-world policy issues allows philosophers to refine and challenge their moral theories and normative claims. Reflecting on the treatment of animals and the natural environment in fire risk management – specifically on how the values of animal life and ecosystem health should be weighed against human well-being and property loss – can yield new insights into the nature of moral standing and what it means to belong to a moral community. As with disasters more generally, fires and fire incidents are characterised by high stakes, uncertainty, and contextual complexity involving numerous stakeholders. Partly because of this, they offer a fertile testing ground for normative theory (Dovers, 2020).

4.1 Limitations

The identification of key ethical issues in this article was based on a review of existing literature and consultations with academic philosophers and fire risk management practitioners. However, more extensive practitioner-oriented consultations, such as structured interviews, focus groups, or surveys, could have revealed additional or more context-specific ethical challenges. One particularly topical issue not addressed in this article concerns AI-assisted fire risk management and the ethical challenges it may introduce. Furthermore, as the first draft of this article was being finalised, large-scale fires were unfolding in Los Angeles (January 2025), raising pressing ethical questions about the protection of wildlife and the moral legitimacy of the ultra-wealthy employing private firefighting services to defend their properties. This event underscores the continuing need for critical reflection on fire safety policies and response mechanisms, as well as on the ethical foundations that underpin them.

5 Conclusion

Through engagement with the literature and with practitioners in fire risk management, we have shown that the field involves distinctive value conflicts, vulnerable groups, and diverse stakeholders, and that it requires ethical frameworks addressing human safety alongside property, cultural heritage, animals, and environmental sustainability. At the same time, the literature and targeted discussions remain limited in scope and context, and for the most part only frame or motivate specific inquiries. When the literature does engage with ethical issues, it tends to focus on large fire incidents, such as wildfires or events at the intersection with disaster risk management, where ethical impacts and tensions are more visible. We have structured the discussion around five distinct questions concluding that ethical considerations must be examined more systematically and in greater depth, so that coherent principles can guide all key functional components of fire risk management, including smaller "everyday" incidents. Engaged philosophy can support this work by clarifying values, identifying conflicts, and strengthening deliberation among practitioners, policymakers, communities, and other actors. At the same time, it feeds back into pure philosophical scholarship by highlighting issues of interest that arise in practice. Since responsibility for fire protection is shared across actors, effective and legitimate practices require cross-disciplinary and cross-sectoral collaboration. Ethical considerations should therefore be integrated into policies and best practices from the outset, ensuring that fire risk management remains fair, transparent, inclusive, and responsive to society's diverse needs.

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AI Declaration

During the preparation of this work, the authors used ChatGPT or Perplexity to check grammar, spelling and flow of language. After using this tool/service, the authors reviewed and edited the content as needed and take full responsibility for the content of the published article. Generative AI was also used for limited supportive analysis, as specified in Sections 2.2 and 2.3.

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Paper B

Paper B

Sufficient and Satisfactory? A Sufficientarian Framework for Civil Protection

Unpublished Manuscript

MATEUSZ SOSNOWSKI

Abstract

Civil protection legislation invokes “satisfactory” and “equivalent” protection as fundamental standards but offers little guidance on what these principles require: what moral obligations they entail, and how responsibilities should be distributed between individuals and public institutions. This paper offers a normative framework that gives these terms coherent content through a sufficientarian account in which civil protection is just when every person has access to a sufficient minimum of basic safety capabilities across prevention, response, and recovery. Drawing on Nielsen’s (2026) umbel view, the paper adapts sufficientarianism to civil protection. It combines a lexically prior basic minimum threshold of safety capability with sphere-specific standards of care, the latter an adaptation of Nielsen’s sphere-specific thresholds to an institutional setting. It evaluates protection in terms of individual safety capabilities and assigns the main duty of securing them to public institutions. On the proposed account, sufficiency requires everyone to reach a basic minimum of safety capability and satisfactoriness requires protection to meet the relevant standard of care in each sphere.

Keywords: Sufficientarianism, civil protection, threshold justice, safety capabilities, distributive justice, institutional responsibility, disaster risk management, satisfactory, sufficient, standard of care, satisfactoriness

1 Introduction

Civil protection legislation across jurisdictions makes a promise it cannot fully explain. It often refers to “satisfactory”, “equivalent”, or “comprehensive” protection, but leaves the ethical justification of these standards open. The terms appear in national laws and international frameworks (Abrahamsson et al., 2021; IFSS, 2020; Latvian Government, 2016; SFS, 2003). What these standards leave open is the level of protection people are owed, who must receive it, and how responsibilities should be divided between individuals, communities, and public institutions.

The problem is more than a matter of wording or technical performance. A society can meet its response-time targets, comply with building codes, and report adequate coverage while some people remain exposed to serious risks and lack realistic prospects for recovery (Abrahamsson et al., 2021; Larsson et al., 2012). Compliance with formal standards does not therefore guarantee adequate protection. What is missing is a clear account of when a difference in protection is acceptable and when it amounts to an injustice. Civil protection should therefore be examined as a problem of distributive justice. What is distributed is not only material aid, but also protection from threats, access to preventive measures, emergency help, and the conditions for recovery. Responsibilities are distributed as well. Individuals, communities, and public institutions may all bear duties, yet technical standards cannot by themselves explain why those duties arise or how far they extend. Recent work has begun to examine these questions, but the concepts of sufficiency, equivalence, and fair responsibility remain underdeveloped philosophically (Smith, 2025).

Sufficiency theories hold that justice should secure an adequate minimum for everyone rather than require strict equality or maximise aggregate welfare.

Their central concern is that some people may have too little. Assisting those below a relevant threshold therefore has moral priority, while differences above it become less urgent (Crisp, 2003; Fourie, 2016; Frankfurt, 1987; Nielsen, 2026). This is relevant in civil protection because unequal protection is not always unjust. Risks and vulnerabilities differ, but such differences are unacceptable when they leave some people without the minimum safety they are owed.

The sufficientarian claim developed in this paper is that civil protection is just only when two conditions are met. No person may fall below a basic minimum of safety capability in any sphere, and protection must also meet the relevant standard of care in each sphere. This does not reduce sufficiency to counting how many people cross a threshold, nor does it make all other distributive concerns irrelevant once the threshold has been reached. It gives priority to eliminating serious deficiencies while leaving room for further considerations when more than one distribution secures the minimum.

This framework is based on Nielsen's (2026) "umbel view" of a pluralist sufficientarianism. The view gives lexical priority to a basic needs threshold and adds separate thresholds for different spheres. Applied to civil protection, it captures both a shared minimum and the differences between prevention, response, and recovery. It therefore does not assume that all forms of safety can be placed on one and the same scale. The account seeks to clarify what "satisfactory" and "equivalent" protection should require. These standards concern whether people receive the basic safety capabilities owed to them, not only whether institutions meet formal performance targets, allowing us to ask who remains under-protected and which institutions should respond when protection differs between communities. These sufficientarian features are relevant both to civil protection policy and to philosophical work on justice in civil protection, disaster risk reduction, and disaster ethics.

The paper is a work of normative political philosophy. It reads civil protection legislation and policy documents alongside debates in sufficientarian theory. Following Wolff's (2019) account of engaged philosophy, the paper starts from the open-ended standards used in civil protection practice, rather than from abstract examples. It then returns to civil protection law and policy and asks how obligations of sufficiency should be understood and distributed across levels of governance. The aim is to clarify the moral structure that should guide judgements about adequate protection, not to set one operational threshold for every context.

Section 2 sets the paper in context by outlining civil protection, introducing the sufficientarian threshold structure, and explaining the choice of individual safety capabilities as the evaluative currency. Section 3 develops the framework further by addressing justice, institutional responsibility, and the relationship between the two thresholds. Section 4 discusses the implications for the civil protection context, adding two failure modes, four diagnostic tests, and an account of the distribution of responsibility across levels of governance. The section ends by stating the framework's main limitations, and Section 5 concludes.

2 Conceptual Groundwork

Before developing the normative framework, three concepts need to be clarified and discussed. This section defines civil protection as an institutional domain, introduces sufficientarianism and Nielsen's (2026) umbel view and explains why individual safety capabilities are the appropriate currency for evaluating civil protection.

2.1 What Civil Protection Entails

Among the various definitions collected in the Needs Glossary[1] (NEEDS, 2023), the Latvian Civil Protection and Disaster Management Law serves as this paper's point of departure, understood here as a multi-layered institutional domain in which sufficiency is to be assessed:

> *[C]ivil protection – a set of organisational, engineering, economic, financial, social, educational and scientific measures implemented by the State and local government authorities and the society to ensure the safety of people, the environment and property, and also implement corresponding actions in case of a disaster or threats thereof;* (Latvian Government, 2016, para. 1.1)

Although definitions of civil protection differ slightly, the Latvian definition is useful here for two reasons. It includes organisational, financial, social, and

[1] The NEEDS Glossary of Terms in Societal Security Education is funded by the European Union in collaboration with several civil protection agencies and universities across Europe which together compile a range of definitions.

scientific measures alongside technical measures, so civil protection cannot be understood only in terms of operations and response times. It also covers people, the environment, and property, which matches the legal scope of civil protection. The framework developed in this paper is narrower: it assesses justice in terms of human safety capabilities and does not yet extend to the environment or property in their own right. This is returned to as a limitation in Section 4.4. Finally, it assigns responsibilities to state and local authorities and to society more broadly. This allows the paper to examine both public duties towards citizens and collective duties within society.

Here, civil protection refers both to emergency management and to longer-term disaster risk governance. Emergency management concerns whether people can be helped and survive with limited harm when an event occurs; disaster risk governance concerns whether people are forced to live under hazardous conditions before an event occurs. The literature attaches several temporal nodes to civil protection (EU, 2013, 2020; Milić, 2024; Tay et al., 2022). This paper groups the relevant functions into three spheres: prevention, response, and recovery[2]. In broad terms, prevention and recovery concern longer-term risk management, while response concerns the immediate emergency phase. These spheres are distinct for the purposes of assessment: meeting the threshold in one does not compensate for falling below it in another.

2.2 What Sufficiency Means

Sufficientarianism is a family of theories of distributive justice holding that what matters is that everyone has enough, not that everyone has the same or that aggregate welfare is maximised (Crisp, 2003; Fourie, 2016; Frankfurt, 1987; Nielsen, 2026). These theories use a threshold to mark the point at which a person has enough. Benefits to people below the threshold have greater moral urgency than benefits to those above it. Sufficientarian theories differ over what should count as the relevant currency, how the threshold should be justified, and what should matter once it has been reached (Nielsen, 2026).

[2] Mitigation, resilience, and preparedness are functions frequently discussed in the disaster-management literature and fall within these spheres, though their precise placement varies according to context. This variation does not affect the framework proposed in this paper, which does not depend on the exact definitions of the spheres.

On the view adopted here, bringing everyone to at least a minimum threshold (T) is a requirement of justice in its own right. It is not merely a means of increasing welfare or maintaining social order. In civil protection, this rules out trade-offs that leave some communities predictably unsafe in order to produce gains elsewhere. A system fails this requirement if it accepts unsafe housing, weak enforcement, or understaffed rescue stations because these conditions improve aggregate indicators in other areas. Persistent shortfalls are primarily institutional failures. They should be addressed through planning, regulation, and public services rather than treated as reasons to blame individuals.

The difference between sufficientarianism and other views matters in civil protection. Egalitarian theories of justice treat inequality as a continuing concern, including inequalities between people who are already above T – a threshold that egalitarian theories themselves normally do not define. In its strictest form, this concern permits levelling down: if inequality as such is the problem, it can in principle be reduced by lowering the protection of the better-off rather than raising that of the worse off. In civil protection, this would mean objecting to a well-protected municipality not because anyone there is unsafe, but simply because protection elsewhere is weaker. Sufficientarianism does not have this implication. Inequalities above T are not in themselves injustices, while a serious shortfall below T remains a priority. Prioritarianism gives greater weight to benefits for people who are worse off, but it does not draw the same sharp line at T. Because the weights decline gradually with no discontinuity at the threshold, benefits to a large group of people just below adequate protection can, in some settings, outweigh the claims of a much smaller group far below it (Lamont & Favor, 2017). A sufficientarian threshold rules out both implications. It rejects levelling down because lowering someone's protection above T has no value unless it improves someone else's position below T (Fourie, 2016; Nielsen, 2026) and it rejects the aggregation because shortfalls below T cannot be outweighed by improvements for those who already have enough. This does not shield protection above T. When resources are needed to bring others up to T, the framework can require losses above it, but it never counts the reduced inequality as a reason for them (see Section 3.4).

A single threshold may treat different domains as if they were the same. A multiple-threshold view avoids that problem but needs a clear connection between the thresholds to prevent them from becoming unrelated benchmarks (Fourie & Rid, 2017; Nielsen, 2026). Nielsen's umbel view provides the missing

structure: a basic threshold with lexical priority, combined with additional thresholds in distinct value spheres. Figure 1 illustrates the model.

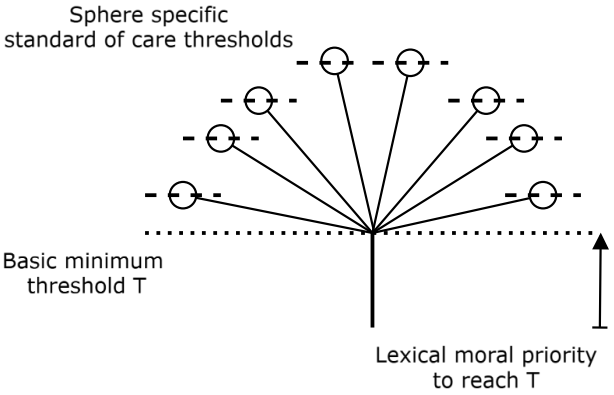


Figure 1 The sufficientarian umbel view, adapted from Nielsen (2026, Figure 3.3). The figure represents a basic threshold connected to several sphere-specific thresholds; these are not labelled here because their application to civil protection is developed in Section 3 and Figure 2.

This paper uses Nielsen's structure but gives the two threshold types different roles. The basic minimum threshold asks whether each person has the safety capabilities that basic needs require: whether the conditions they live in, and the protection available to them, keep the threat of death, serious injury, or loss of shelter from foreseeable hazards below the level at which a human life is put at risk (Nielsen, 2026). The sphere-specific thresholds ask whether protection meets the relevant standard of care. In legal and professional settings, this standard concerns the level of conduct expected of a reasonably prudent actor in comparable circumstances (Cooke et al., 2017). The paper applies this idea to civil protection by treating satisfactoriness as a separate threshold. The basic minimum sets the floor at T_{MIN}; T_{SAT} concerns the standard of care that protection should meet. Section 3.4 develops this distinction further.

This structured pluralism anchors the framework developed here: a multi-spheric, dual-threshold view that combines a strict justice floor with sphere-specific standards of care. Reaching the basic floor has priority over the sphere-specific thresholds, and different spheres cannot be straightforwardly traded off against one another.

2.3 Capability as Currency

A sufficiency principle must specify what people must have enough of. In sufficientarian theory, "currency" refers to the measure used to assess whether someone has enough; it does not refer to a medium of exchange. It is the measure of advantage or status that matters for justice (Axelsen & Nielsen, 2015; Fourie, 2016). The main candidates are needs, welfare, and capabilities (Fourie & Rid, 2017). A needs-based view holds that sufficiency is reached when a person's basic needs are met. A welfarist view holds that sufficiency is reached when a person's well-being reaches the relevant threshold. A capability-based view instead asks whether people have adequate opportunities to achieve valuable functionings, drawing on the work of Sen and Nussbaum (Nussbaum, 2003; Sen, 1979; Wells, 2026).

The choice among these currencies remains contested in the sufficientarian literature (Fourie & Rid, 2017). This paper does not offer a complete philosophical defence of capabilities over needs or welfare. The choice is made for reasons specific to civil protection. The central question here is not only whether formal safety measures or resources exist, but whether people can use them to achieve safety in practice, given their personal characteristics, social position, and built environment.

Civil protection policy usually speaks of the capabilities of organisations and systems. It assesses, for example, whether a fire service can respond within an acceptable time, whether a municipality can evacuate residents, and whether agencies can coordinate across jurisdictions (Lindblom, 2020; Schmertzing, 2020). These measures concern collective readiness. The capability approach used in this paper focuses instead on individuals and asks what they are actually able to do and be (Fourie, 2016; Nielsen, 2026; Sen, 1992). Having access to secure shelter and being able to move safely are examples of such real capabilities for safety in the event of an accident.

Nussbaum (2003) develops the capability approach through a list of central human capabilities that a minimally just society should protect. Following Robeyns &and Byskov (2025), this paper treats the content of capabilities as context-dependent rather than applying a general list without modification. The relevant capabilities here are those connected to civil protection. The paper therefore identifies a smaller set of safety capabilities, guided by Nielsen's,Nielsen's (2026) umbel view and by Nussbaum's (2003) discussion of life and bodily health.

Civil protection practice usually measures what organisations and systems can do. The paper must therefore ask how this capacity translates to what individuals can actually do. Robeyns &and Byskov (2025) distinguish personal, social, and environmental conversion factors. Personal factors such as disability, age, and health can affect how a person uses a service. Social factors, including public policies, legal rules, and social hierarchies, can restrict or improve access. Environmental factors such as geography, infrastructure, and housing can also change how well formal protection works at the individual level. Organisational capacity therefore does not automatically equal individual safety capability.

The distinction between formal provision and individual capability can be seen in fire safety for New Zealand retirement villages. The relevant building standards required compliance when the buildings were constructed (DBH, 2010; MBIE, 2008). Robbins (2011) reports, however, that the egress design was based on the general adult population, although older residents fall in the lower percentiles for mobility, sensory response, and cognitive response in an emergency. As people age, the building may remain formally compliant while providing less actual safety for its residents. The institutional arrangement is unchanged; what has changed is the individual capability to make use of the safety it provides. This example shows why a system can meet an institutional standard while failing to provide sufficient individual safety capability.

3 The Sufficientarian Framework in Context

The previous section identified individual safety capability as the relevant currency for evaluating civil protection. This section asks why civil protection is a matter of justice, which institutions bear the primary duty to secure its minimum conditions, and how the two threshold levels function.

3.1 Civil Protection Seen Through the Lens of Justice

Technical, administrative, and economic analyses of civil protection often focus on response times, formal compliance, or the cost-effectiveness of different measures. These assessments leave open a basic question of justice: whether every person has access to sufficient prevention, timely assistance, and the conditions needed for recovery. Aggregate performance indicators may look acceptable while particular communities remain exposed to persistent and foreseeable higher risks. In such cases, the problem is not simply poor performance; it is an injustice. T_{MIN} marks the minimum level of safety that people are owed. Falling below it requires correction, regardless of how well other indicators perform. The following three questions examine whether this minimum is secured in a given civil protection context. Section 4.2 develops them into practical diagnostic tests for planners, inspectors, and policymakers.

1) *Can a person live, move, and dwell in their community without being under constant or recurrent serious accident risk?*

Consider a municipal housing block where a known fire-safety problem has remained unresolved for years. The residents face an ongoing risk regardless of whether a fire has occurred. Their situation results from a failure to enforce the

relevant safety requirements, not from their individual choices (cfcf. Inquiry Grenfell Tower, 2024).

2) *Can people obtain, or be credibly guaranteed, access to timely external help when ordinary self-protection fails?*

A rescue service may meet its statutory response-time target at district level while a resident lives 35 minutes from the nearest station because of decisions to consolidate stations. The district-level indicator therefore hides the resident's lack of reliable access to help. Hassler et al. (2024) document a similar divergence across Swedish rescue services. Actual response times exceed planned times in most incidents, with the largest gaps occurring in rural and peri-urban communities that have fewer ways to compensate.

3) *If individuals or communities are struck by a serious accident, can they recover without losing the basic conditions of a minimally decent safe life?*

A flood, for example, can cause homelessness or the loss of a livelihood. These outcomes are not always unavoidable misfortunes. When uninsured tenants have no municipal recovery scheme and households lack the savings to absorb the loss, the path from a single event to long-term deprivation is foreseeable and produced by institutional arrangements, not by the event itself (Collier & Kousky, 2024). Recovery cannot be left to individual means when the institutional conditions for meeting it have not been put in place.

A system falls below T_{MIN} when the answer to any of these questions is no and the shortfall is caused by institutional arrangements rather than by individual choices. Good performance elsewhere does not change that result. If institutions must choose between marginal improvements for already secure areas and the removal of serious shortfalls, they should address the shortfalls first. The minimum safety represented by T_{MIN} is owed to people as a matter of justice. This means that institutions cannot leave people in predictably unsafe conditions simply because correction is costly or politically difficult.

3.2 Safety Capabilities as the Currency

Axelsen and Nielsen's (2015) account of sufficiency as freedom from duress provides a useful starting point. On their view, justice requires people to be free from duress – significant pressure in central areas of human life. A shortfall in one area cannot simply be compensated for by having more in another. Applied to civil protection, this means assessing individual safety capabilities across

prevention, response, and recovery. These spheres correspond to different forms of duress: unsafe living conditions before an event, helplessness and injury during an emergency, and prolonged deprivation afterwards.

The sphere of *prevention* concerns how homes, infrastructure, and public spaces shape the conditions in which people live and move, and whether those conditions support their safety. The built environment should not trap people in hazardous conditions. Building codes, land-use planning, and flood-zone regulation matter because they affect whether people can live safely. The sphere of *response* concerns whether people can receive warnings, act on them, be rescued when self-protection is not enough, and be reached by emergency services in time to preserve life and limb. The sphere of *recovery* concerns whether people can restore basic living conditions, repair or replace damaged property, and obtain medical and financial support without falling below the minimum threshold.

Statutory response times, building-code enforcement rates, and the availability of recovery funds are not themselves the currency of justice. They are indicators of whether people can achieve sufficient safety capability in practice (cf. Robeyns and& Byskov, 2025). A system can perform well on these measures and still fail people who have mobility impairments, face language barriers, or live in neglected housing stock. Individual capability therefore provides a way to assess formal compliance by asking what protection delivers for people in their actual circumstances.

3.3 Why Institutions Bear the Baseline Duty

The baseline duty rests primarily with institutions for two reasons. First, institutions control most of the conditions that shape individual safety capabilities. Public authorities and other collective actors make decisions about zoning, building codes and their enforcement, emergency-station locations, roads, infrastructure, and housing regulation. Residents can install smoke alarms or follow evacuation warnings, but they cannot decide whether their buildings have safe exits, whether nearby hydrants are working, or whether a rescue appliance arrives in five minutes or fifty. Institutions therefore determine what is realistically possible for people exercising ordinary care. Individual responsibility is secondary and bounded by these conditions.

Second, emergency assistance has a special character. Needing rescue during a fire, flood, or serious accident is not normally a sign of individual failure, since an accident can exceed any reasonable capacity for self-protection. Timely

rescue, fire suppression, and emergency care are shared public goods provided through organised services. Credible access to these services is therefore part of what the minimum threshold requires, and if institutions fail to provide it, people may fall below it through no fault of their own.

These two points support assigning the baseline duty mainly to institutions. They also fit the definition of civil protection in Section 2.1, which assigns responsibility to the state, local authorities, and society.

3.4 Civil Protection Thresholds and the Umbel View

The moral structure of the framework builds on a discontinuity at T_{MIN}. Unlike continuous weighting schemes, the sufficientarian approach gives a distinct moral status to shortfalls below T_{MIN}. They have a stronger and different kind of urgency than benefits above the threshold. Two principles guide prioritisation within this structure. First, the more severe and persistent a shortfall below T_{MIN}, the stronger the claim for improvements to remedy it (Hirose, 2016). Preventing recurrent fire displacement in ageing low-income apartment blocks can therefore take priority over improving an otherwise well-resourced suburban response service after an isolated delay. A suburban incident may still demand more urgent action at the time; the comparison concerns which shortfalls most urgently require lasting improvements. Second, claims below T_{MIN} have lexical priority (Fourie, 2016). Benefits to those already above T_{MIN} cannot justify leaving serious shortfalls below T_{MIN} unaddressed. A system-wide upgrade in already well-protected urban areas cannot compensate for chronic under-protection at the periphery.

Above T_{MIN}, the position changes. Once everyone has reached the threshold, further gains lose urgency, and inequalities above T_{MIN} are not in themselves injustices. A household that buys additional protection for itself, such as a private shelter or a monitored alarm, does not act unjustly, and the state does not act unjustly by allowing such premium upgrades, as long as they do not come at the cost of others' basic protection (Davies, 2023). Limited aggregation above T_{MIN} is therefore acceptable, and a cost-effective technology upgrade that mainly benefits people already above T_{MIN} can be justified, provided it leaves no one below T_{MIN}.

The same priority also works in the other direction, and here it is more demanding. Lexical priority ranks not only new gains above T_{MIN} but also the retention of existing protection. Where resources that now sustain protection above T_{MIN} could instead bring people up to it, the framework requires

redirecting them, even if protection for the already well-protected then deteriorates. This is the familiar price of absolute priority (Huseby, 2020; Nielsen, 2026). It is not levelling down. The loss is justified only by what it secures for those below the floor, never by the reduction in inequality. A cut in protection that improves no one's safety capabilities has no value on this view.

Nielsen's (2026, pp. 88–90) umbel view provides the general structure for the framework developed here. It combines a basic needs floor with further thresholds in separate spheres of value. The basic threshold is set at the level of basic needs fulfilment. Nielsen's reason is that below this level a person's life is not only going badly; the possibility of leading a human life at all is threatened. The basic threshold has what Nielsen calls absolute priority (2026, pp. 89, 93), referred to here as lexical priority (cf. Fourie, 2016, p. 22). Addressing a deficiency below it takes precedence over the interests of those already above it, whether in further gains or in keeping protection beyond what sustains their own position at the threshold.

Above the basic threshold, the umbel view turns to separate spheres of value. Nielsen proposes eight: basic needs, health, education, meaningful work, political equality, community, social status, and reasonable autonomy. His account draws on Nussbaum's capability approach (Nussbaum, 2003). Deficiency consists in insufficient capability, or effective freedom to function, in a relevant sphere (Nielsen, 2026, pp. 65–66). Because deficiencies take different forms across spheres, the sphere-specific thresholds are horizontally incommensurable: an excess in one sphere cannot simply compensate for a shortfall in another. Which spheres are relevant, what they contain, and where their thresholds lie cannot be settled from the philosophical armchair. Nielsen holds that these questions require empirical inquiry and that the framework must be specified in light of the context in which it is applied (Nielsen, 2026, pp. 90, 178–179).

The framework presented in this paper retains these two features but applies them to civil protection. T_{MIN} represents the basic minimum of safety capability. A failure to reach it in prevention, response, or recovery cannot be offset by stronger performance in another sphere. Effective flood prevention, for example, does not compensate for inadequate emergency response or recovery support. However, applying the framework to civil protection requires some adaptation of the sphere-specific thresholds. In Nielsen's account, these thresholds are formulated in terms of whether individuals have sufficient opportunities within particular spheres of value. In civil protection, this

question must be recast in institutional terms. I therefore use T_{SAT} to refer to a sphere-specific standard of institutional care. It asks whether public authorities and other relevant duty-bearers provide protection at the level that a competent and accountable institution could reasonably be expected to provide under the relevant conditions. This modification follows from the institutional character of civil protection where individual safety capabilities depend on regulatory systems, infrastructure, emergency services, warning arrangements, and recovery institutions. An assessment of civil protection must therefore consider both the capabilities people possess and the institutional arrangements on which those capabilities depend. This paper keeps Nielsen's umbel structure but gives its sphere-specific thresholds an institutional interpretation suited to civil protection.

The basic minimum threshold T_{MIN} is a floor in the strict sufficientarian sense. It is a non-comparative, bottom-up standard: it does not depend on how others fare, and it is assessed from each person's own condition. A shortfall below it matters because the person's condition is bad, not because others are better protected (Frankfurt, 1987). T_{MIN} follows Nielsen's (2026) basic threshold in being set at the level of basic needs, applied here to safety. Falling below T_{MIN} is a failure of institutional justice that requires correction as a matter of right. T_{MIN} is mainly static and ex ante. Its breach can be identified through inspection or audit as a gap in resources, capabilities, or institutional provision. The sphere-specific satisfactory threshold T_{SAT} is different. It is not simply a higher floor assessed through the same bottom-up audit logic as T_{MIN}. Rather, it is a top-down, context-sensitive standard of institutional care within each sphere. The idea of a standard of care concerns the level of conduct that can reasonably be expected from an accountable institution under the circumstances (Cooke et al., 2017). In this paper, T_{SAT} asks what satisfactory, rather than merely sufficient, protection requires in prevention, response, and recovery. The question is whether protection meets the standard that a reasonable institution should provide under local conditions and foreseeable risks. This is how the demand for satisfactory protection in the Swedish Civil Protection Act (SFS, 2003) is best understood: not only that minimum conditions are met, but also that the protection provided meets the quality expectations of the population and is equivalent across localities. T_{SAT} is therefore dynamic and often assessed ex post. A breach is not only a resource deficit; it can also be a legitimacy deficit: a failure to meet the standard of care on which the institution's authority depends. The appropriate response may include accountability, corrective action, or institutional reform.

Nielsen's thresholds are concerned with individual deficiency within different spheres. T_{MIN} maps directly onto his basic threshold, whereas T_{SAT} is a domain-motivated substitution rather than a reproduction of Nielsen's sphere-specific thresholds. It changes the question from whether an individual has enough within a sphere to whether the responsible institution has provided what it should. This follows from the institutional setting of civil protection and is also consistent with Nielsen's distinction between the philosophical justification of thresholds and the empirical work needed to identify their substantive content. Nielsen argues that philosophy can explain why thresholds matter and how a sufficientarian structure should be organised, but that determining the content and location of thresholds requires further empirical inquiry and interdisciplinary work (Nielsen, 2026, pp. 116–128).

The umbel structure brings these threshold levels and spheres together. The vertical stalk represents T_{MIN} and its lexical priority: a deficiency below T_{MIN} in any sphere must be addressed before concerns above can be weighed. From this stalk, three branches extend to the sphere-specific satisfactory standards of care for prevention, response, and recovery, as shown in Figure 2.

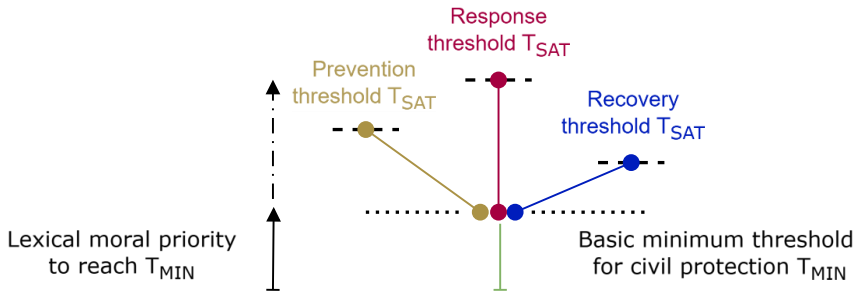


Figure 2 The umbel view applied to civil protection. Each sphere (prevention, response, and recovery) must independently meet both a basic minimum threshold (T_{MIN}, dotted line) and a sphere-specific standard of care (Satisfactoriness T_{SAT}, dashed marker). Lexical priority applies up to T_{MIN} and sufficiency fails if any single sphere falls below it, regardless of performance in the others. Threshold levels are not equivalent across spheres; the figure illustrates structural relationships only, not comparative magnitudes.

The branches are horizontally incommensurable. A shortfall in one sphere cannot simply be offset by a surplus in another, since each sphere requires its own assessment (Axelsen & Nielsen, 2015; Nussbaum, 2003). Below T_{MIN},

incommensurability is strict. Above T_{MIN}, institutions still have to make allocation decisions across the spheres because resources are limited. The framework does not rule out such decisions, however they do require that any reallocations of resources do not push any sphere below T_{MIN} and that they remain accountable to the relevant T_{SAT} standard of care.

Dutch dykes provide a simple example: they can prevent many floods, but they cannot prevent every event. Strong flood prevention therefore does not remove the need for adequate response and recovery capabilities. Each sphere must independently meet T_{MIN}. Above that level, allocation across the spheres is possible, but it remains limited by the relevant standards of care.

4 Implications

Section 3 distinguished the minimum justice threshold from the sphere-specific standards of care. This section considers what follows from that distinction. It identifies two kinds of failure, presents four diagnostic tests, and examines how responsibility is distributed across levels of governance. Section 4.4 states the current limitations of the framework.

4.1 Two Asymmetric Failure Modes

The dual-threshold approach generates two structurally distinct failure modes, both of which are observable in real civil protection systems.

Latent failure: *socially satisfactory but technically insufficient*. Here, protection appears adequate and produces no major political reaction, but inspection reveals a capacity or planning gap falling below T_{MIN}. The gap may remain hidden because the system has so far faced only events within its existing capacity. An event of greater severity or a different type may expose it. Because T_{MIN} is observer-independent and assessed ex ante, this failure can be identified before public dissatisfaction appears.

Surface failure: technically sufficient but socially unsatisfactory. Here, formal capacity requirements are met: statutory response times are satisfied, building codes are in place, and coverage ratios appear adequate. However, the protection provided still falls short of what affected communities or evaluators should reasonably expect. T_{MIN} has been met, but T_{SAT} has not. The problem therefore concerns the standard of care – the quality and accountability of the institution – rather than a failure to meet the basic minimum.

A single-threshold framework may miss this distinction. Latent failure calls for enforcement and structural correction. Surface failure calls for accountability, institutional reform, and improvement in service quality.

4.2 Four Diagnostic Tests

Aggregate indicators show how a system performs on average, but not whether particular people remain under-protected. The four tests below are designed to identify shortfalls that ordinary compliance reporting may miss. The first three tests assess whether people meet T_{MIN} and the fourth assesses whether protection meets the standard of satisfactoriness at T_{SAT}. The first three tests are ex ante instruments, designed to detect capability duress before an incident makes the problem visible (Axelsen & Nielsen, 2015). The questions in Section 3.1 identify what justice requires; the tests provide a way for inspectors, planners, and policymakers to assess whether those requirements are being met.

A *duress test* asks whether typical residents experience continuing pressure from recurring hazards, known environmental dangers, or justified concerns about emergency response times, even when formal standards are satisfied. A *capability-achievability test* asks whether a typical resident exercising ordinary care can reach or maintain safety at or above T_{MIN} in the actual built environment and with the available services. A shortfall here indicates institutional rather than individual failure because public authorities control most of the relevant conditions (Section 3.3). A *non-catastrophe test* asks whether ordinary accidents can lead to homelessness, unmanageable debt, or lasting health deterioration, causing recovery capabilities to fall below T_{MIN} even when prevention and response appear adequate. The fourth test operates at T_{SAT}. The *reasonableness test* asks whether protection within a sphere meets the standard that a reasonable institution, accountable to those it serves, should achieve under its actual operating conditions. Unlike the first three tests, it is mainly ex post and evaluative. A failure generates accountability and pressure for institutional reform rather than direct enforcement action.

These tests do not produce mechanical results. What T_{MIN} requires must be assessed in relation to the setting, scale, and risk profile. Sufficient fire protection in a dense urban high-rise differs from what is needed in a rural community. Flood preparedness on a coastal plain differs from what is needed inland. The framework must recognise these differences rather than hide them behind uniform indicators.

4.3 Multi-Level Application

Responsibility for achieving T_{MIN} and T_{SAT} is shared across the institutional system. Building owners, employers, and residents make decisions at the local level that affect people's safety capabilities most directly. Municipal and regional authorities control many of the conditions that shape those capabilities: land use, risk mapping, local emergency services, and the assessment of prevention, response, and recovery. National legislatures and regulatory agencies set the wider standards within which those capabilities are secured, while cross-border bodies coordinate protection across jurisdictions.

No single level can secure the thresholds by itself. Each level must therefore understand its responsibilities in relation to the effects of its decisions on individual safety capabilities.

4.4 Limitations

The framework proposed in this paper is a first step, and its limits should be stated openly. Three limitations deserve particular attention. The first concerns what the framework protects. It concentrates on individual human safety capabilities, in particular capabilities related to life and bodily health across prevention, response, and recovery. Therefore it does not yet provide an account of the moral status of property or the natural environment, even though civil protection as legally defined also aims to protect them (Section 2.1). This is a limitation rather than a flaw. If property, the natural environment, or animal life are to matter in their own right as components of civil protection, the framework may need either a broader evaluative currency or a layered account of value, in which human safety capabilities form one central but non-exhaustive component of what civil protection ought to protect. Making these foundations explicit would strengthen the framework.

The second limitation concerns the content of the thresholds. The paper introduces T_{MIN} and T_{SAT} as a structure but deliberately does not specify their full content, because their operational indicators and standards of care depend on the context, the level of governance, and the role of the actor involved (Nielsen, 2026). This abstention has a cost. The framework cannot by itself prevent a T_{MIN} from being set too low, or a T_{SAT} from being invoked too easily. Assessing capabilities is also demanding in practice. Authorities plan with aggregate indicators, such as average response times and coverage ratios, but the framework asks what particular people can actually do. The four tests

indicate the direction of assessment, but they do not yet provide measured thresholds.

The third limitation concerns the price of lexical priority. The framework requires serious shortfalls below T_{MIN} to be addressed before improvements above it, and before the retention of existing protection above it where the two compete. In some cases this means correcting a small shortfall just below the floor instead of funding a larger improvement higher up. In others it means that protection in already well-protected areas deteriorates because resources are redirected. When several spheres fall below T_{MIN} at once, the framework offers no complete ordering among them beyond the severity and persistence of the shortfalls (Hirose, 2016). These are genuine costs and the framework accepts them as the consequence of treating the basic minimum as a matter of justice rather than as one consideration among many, but they should be stated as such rather than explained away.

None of these limitations dilutes the central claim of this paper. They mark the work that remains: to extend the account of value beyond human safety, to develop the substantive content of the thresholds with practitioners and affected communities, and to clarify how priority operates when the floor is breached in several places at once.

5 Conclusion

This paper started from a simple observation: civil protection laws promise "satisfactory" and "equivalent" protection, but they do not explain what these standards require ethically. The framework proposed here gives them structure. Civil protection is sufficient when no person falls below a basic minimum of safety capability in prevention, response, or recovery. It is satisfactory when protection in each sphere meets the standard of care that a reasonable institution should provide under local conditions. A system that fails the first condition is insufficient. A system that meets the first but fails the second is unsatisfactory. Both failures matter, but they call for different responses: enforcement and correction below the basic minimum, accountability and reform above it.

The paper makes three contributions. First, it gives the legal standards of satisfactory and equivalent protection a clear moral reading: they concern people's actual safety capabilities, not only whether institutions meet formal targets. Second, it places the main duty of securing T_{MIN} on public institutions, because individuals cannot create safe buildings, rescue services, or recovery schemes on their own, and because needing rescue in an emergency is not a mark of individual failure. Third, it turns these ideas into four tests – duress, capability-achievability, non-catastrophe, and reasonableness – that planners, inspectors, and policymakers can use to find the people that aggregate indicators miss.

The questions that remain are practical rather than philosophical. What exactly counts as sufficient in each sphere and its context, must be settled tighter with practitioners and affected communities, not by philosophical armchair

argument alone. The interaction between the spheres and the practical use of the tests are also tasks for further development.

The framework however does settle the underlying claim: civil protection is owed to people as a matter of justice, not granted as a benefit they must earn.

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AI Declaration

In preparing this paper, generative AI was used for three limited purposes: identifying potentially relevant bibliographic sources subsequently verified independently by the author; generating counterargument prompts that the author evaluated and responded to; and flagging structural redundancy and prose clarity issues in draft passages. All philosophical argumentation, conceptual development, threshold distinctions, and normative conclusions are the author's own. The author assumes full responsibility for the integrity, accuracy, and intellectual authorship of the text.

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