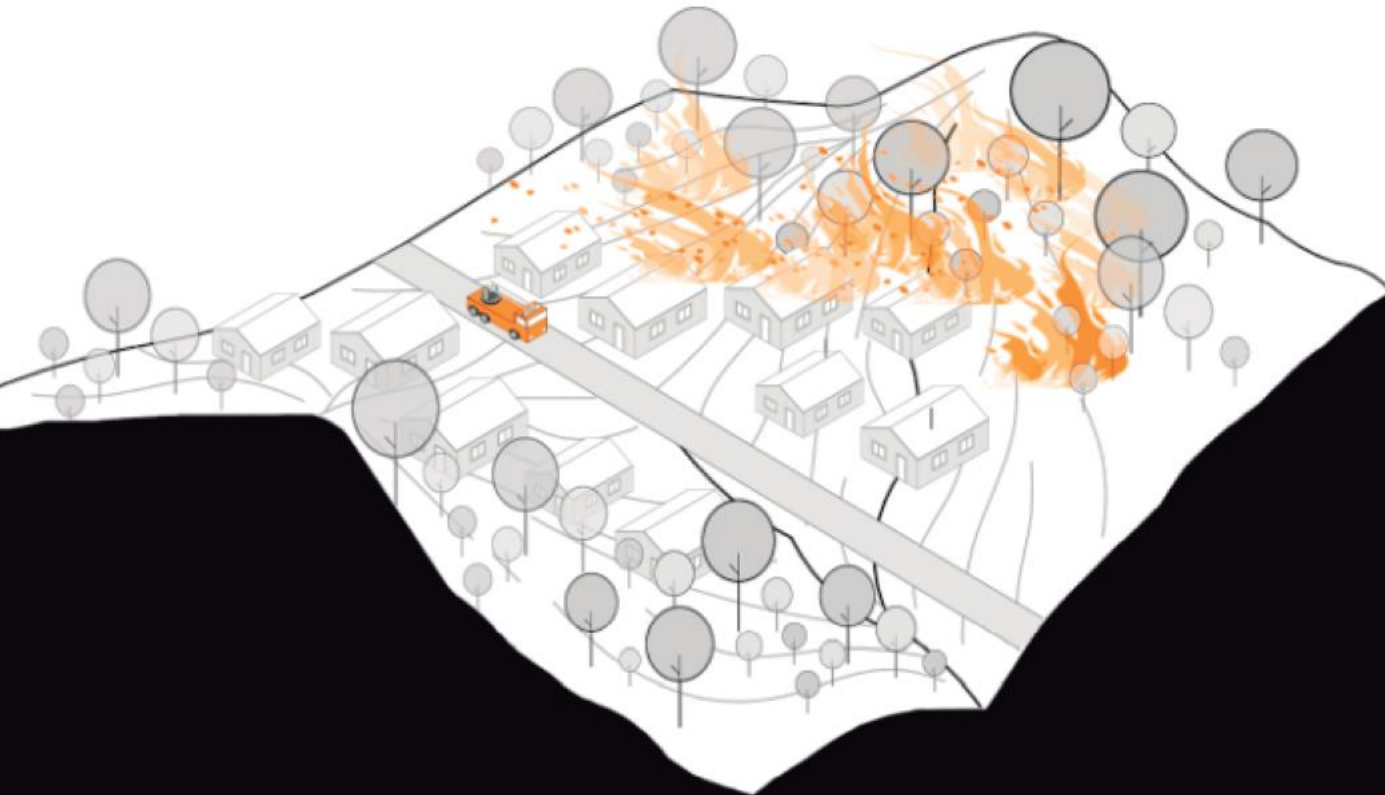


DEVELOPING GUIDELINES FOR INCREASING RESILIENCE OF INFORMAL SETTLEMENTS EXPOSED TO WILDFIRE RISK



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TODAY'S TALK

1. Context – Wildfire prone urban-rural interfaces and informality
2. Method – Participatory action research in Agüita de la Perdiz Chile
3. Results – Report with guidelines and key actions
4. Discussion – Contribution to improve resilience to wildfires ex-post
5. Conclusion – Blend of physical and social systems

Contribute to the exploration of practical ways that promote the development of resilience to wildfires for communities living in informal settlements exposed to wildfire risk.

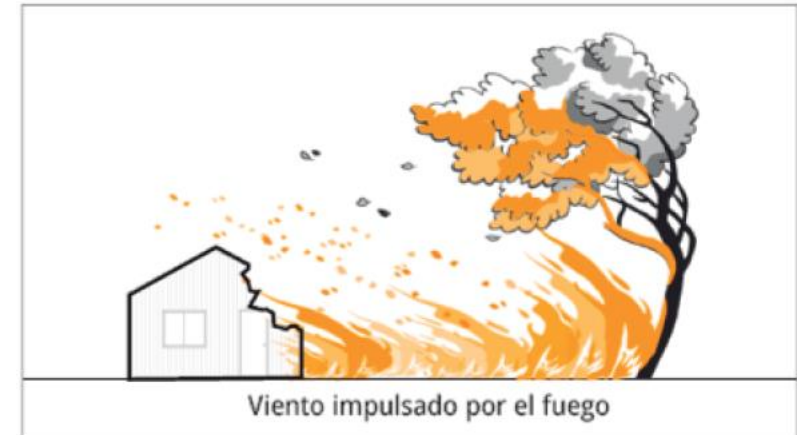
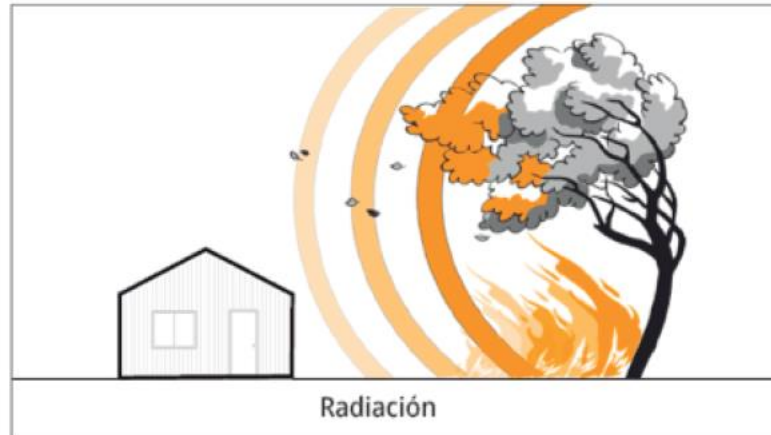
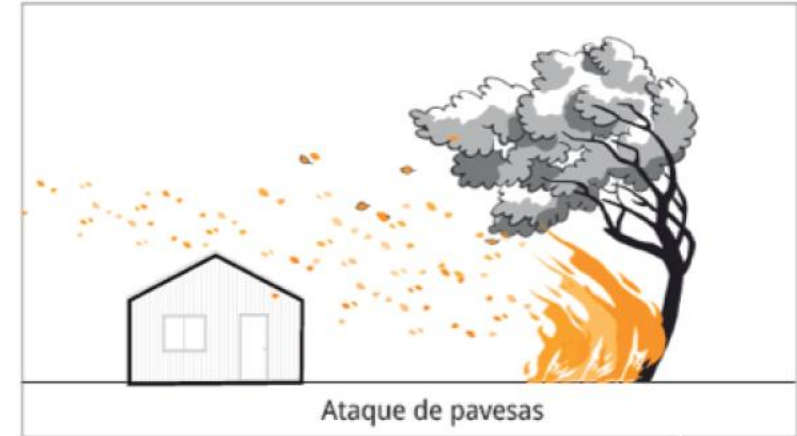
1 CONTEXT

Disasters number and impact increase

Wildfire hazard

Greater disaster risk at the urban-rural interface

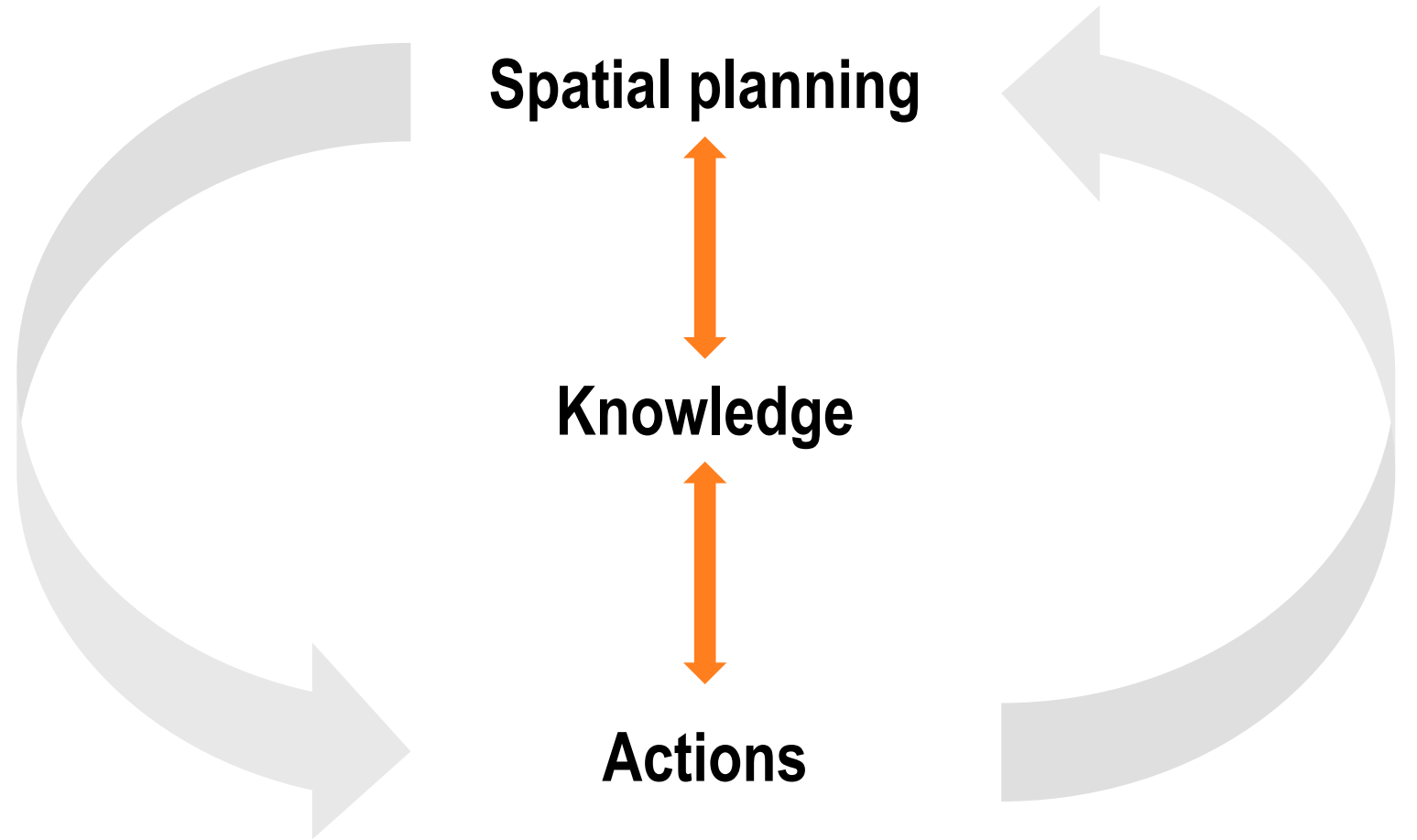
Wildfire risk and consequence greater in informal settlements



1 CONTEXT

Consensus about spatial planning's capacity to integrate wildfire risk management

However, its implementation is challenging for spatial planning



1 CONTEXT

Existing settlements constrained to provide separation from fire source

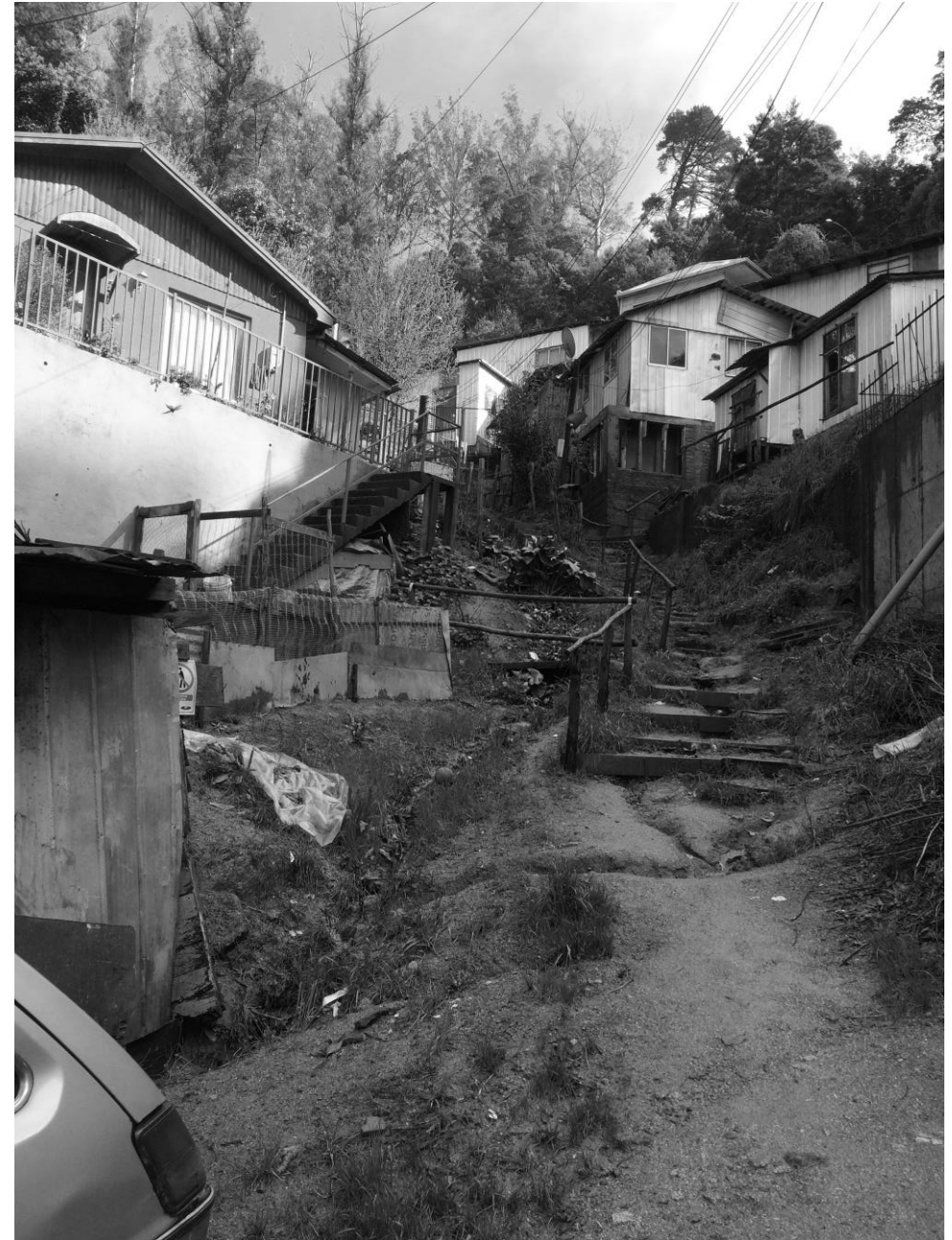
Retrofitting measures to modify fuel levels or increase buildings' resistance

Informality adds complexity

Additional challenges and possibilities

Need to explore practical ways for developing resilience to wildfires in informal settlements

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1 CONTEXT

Report on the production of guidelines

Risk-based procedural approach informed by evidence-based and risk-based planning

Practical ways that promote the development of resilience to wildfires for communities living in informal settlements

Evidence-based planning procedure	Risk-based planning procedure
Analysis of the circumstances and problem/opportunity identification	Establishing the context
Identification of goals and objectives	Risk assessment – identification
Design of alternatives	Risk assessment – analysis
Evaluation and selection of goals	Risk assessment – evaluation
Implementation	Risk treatment
Monitoring effects and adjusting.	Communication and consultation & Monitoring and review (to take place during all previous stages)

Table 1: Evidence-based and risk-based planning procedures parallels
(based on ISO 31000, 2009; March, Kornakova, & Handmer, 2017)

2 METHOD

Participatory action research

Seminar 'Prevention of Forest Fire Risks in Urban Settlements and Buildings: A Planning and Design Approach'

Participants from diverse backgrounds



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2 METHOD

Study case is Agüita de la Perdiz
in Concepcion Chile

1958 commenced as an illegal
settlement

Enclosed gully and significant
physical challenges to manage
wildfire risk

Community's self-organizing
capacity



2 METHOD

Three-day workshop and a visit to the study site

Activities were developed using a **risk-based approach**, informed by evidence-based planning and risk-based planning

A protocol of three stages was used

1 Context

Establishing circumstances and problem

2 Assessment

Identifying the risk, objectives and design alternatives

3 Specification

Selecting the actions to implement for treating risk

2 METHOD

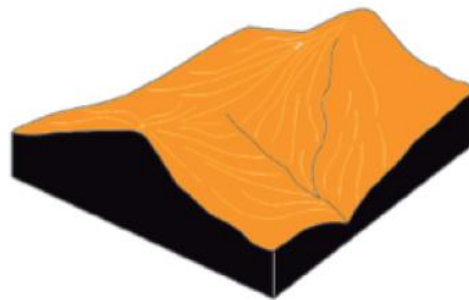
Context

Built environment resilience

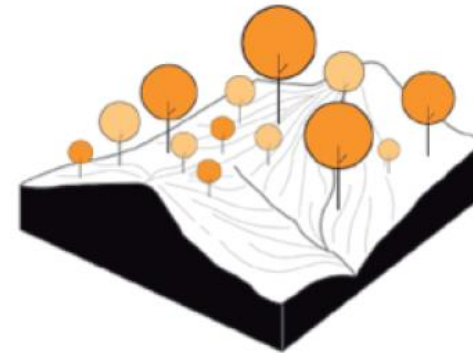
Wildfire, landscape and weather

Interaction with settlements

Initiation and fire progression on structures



a) Topografía



b) Vegetación o combustible disponible



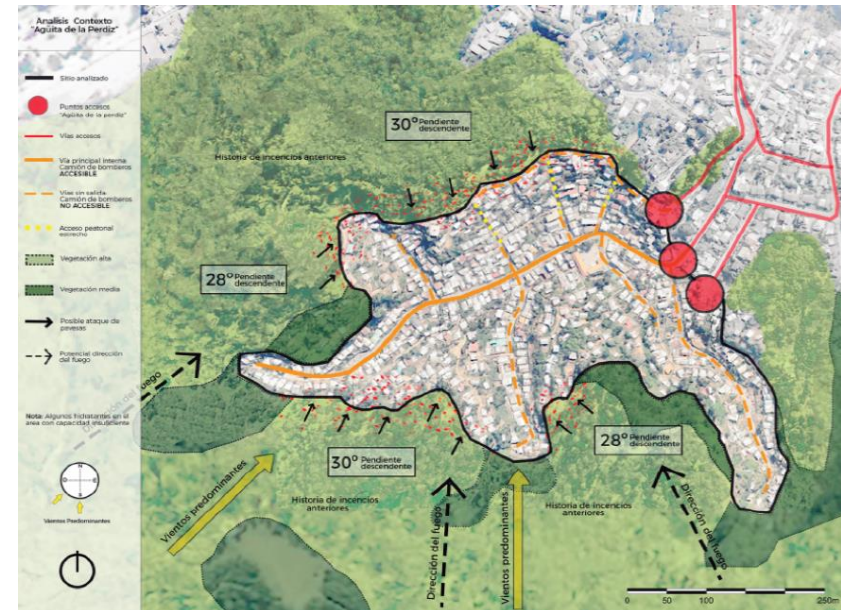
c) Condiciones meteorológicas

2 METHOD

Assessment

Site visit guided by a community representative and supported by local officials

Workshop and SWOT analysis of the site applying principles of fire behaviour and house destruction



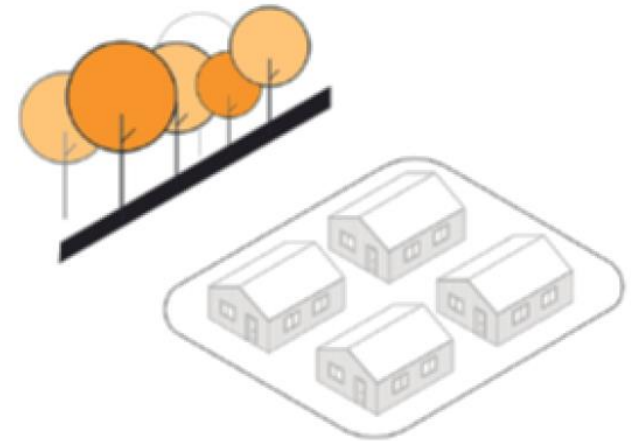
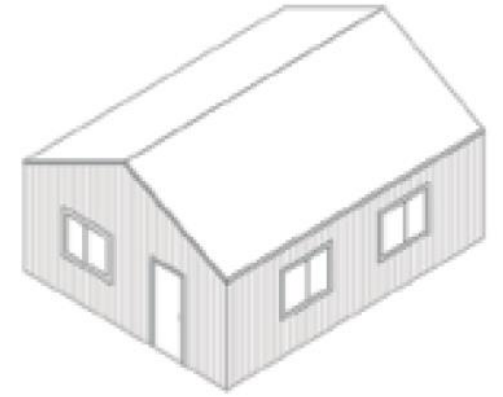
2 METHOD

Specification

Site improvement

Settlement improvement

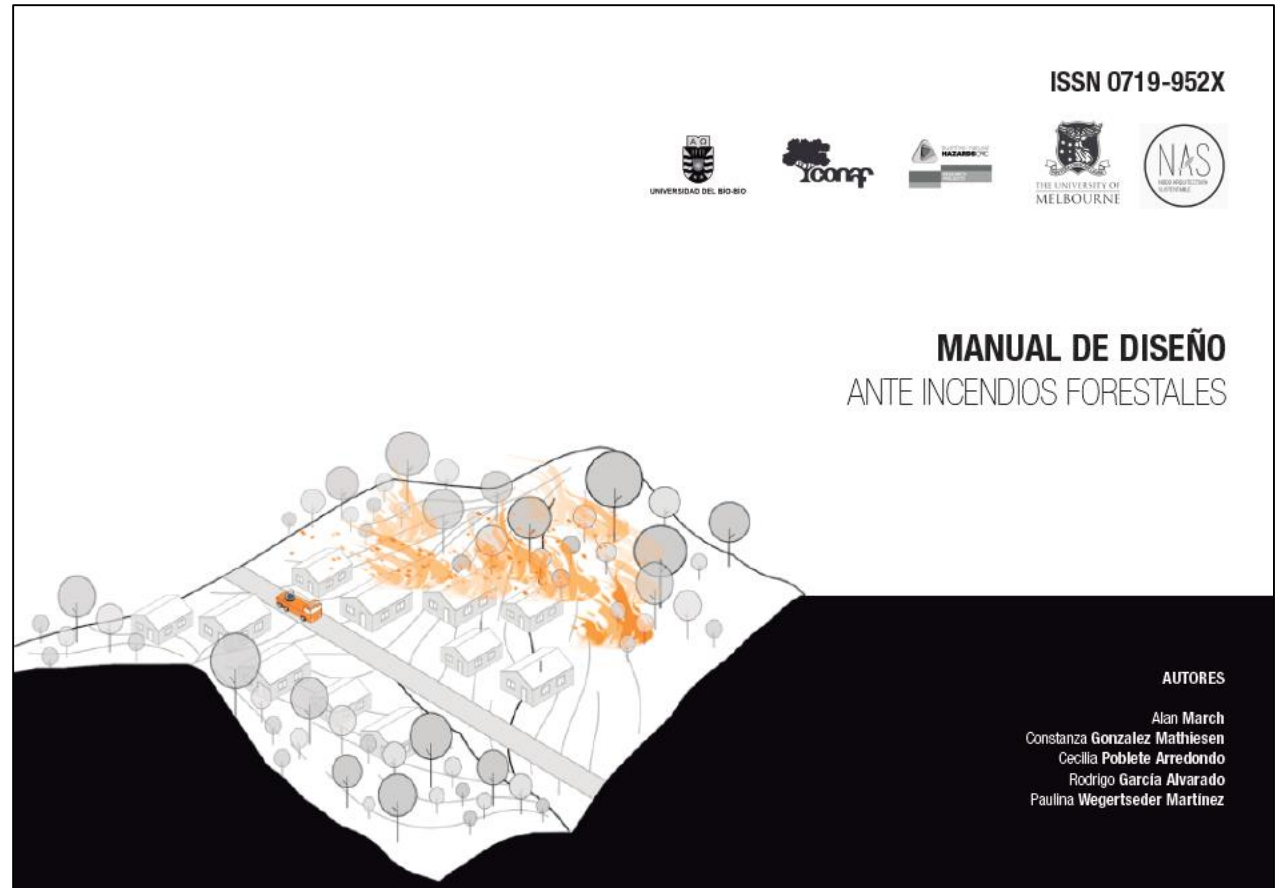
Community development



3 RESULTS

Report

- (1) general principles that influence the behaviour of fire and house destruction
- (2) applying the principles by analysing wildfire risk and developing a design response



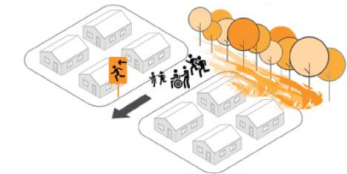
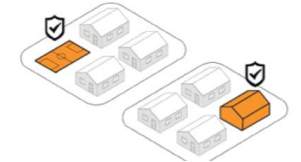
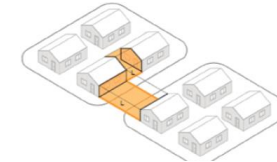
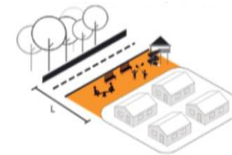
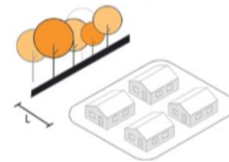
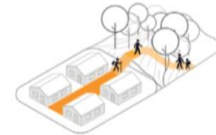
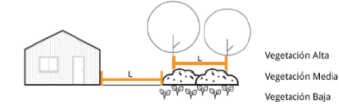
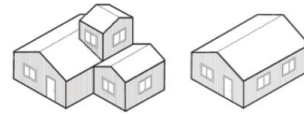
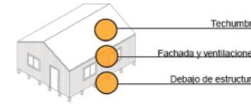
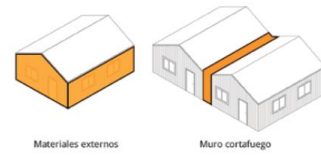
3 RESULTS

Key actions for:

House and site improvement

Settlement improvement

Community development



4 DISCUSSION

Guidelines contribute to improve the resilience to wildfires ex-post

Process contributes to the dissemination of wildfire risk management knowledge and to building local capacities

Replication of the process can address context-specific issues in other places

Approached in a **comprehensive manner**

No "complete" failsafe mechanisms

Untreated weak points can lead to catastrophic outcomes

Community leaders with experience in fighting fires, along with sympathetic **local government and other agencies** provided a strong base for initial action

5 CONCLUSION

Expected to contribute to the exploration of practical ways that promote the development of resilience

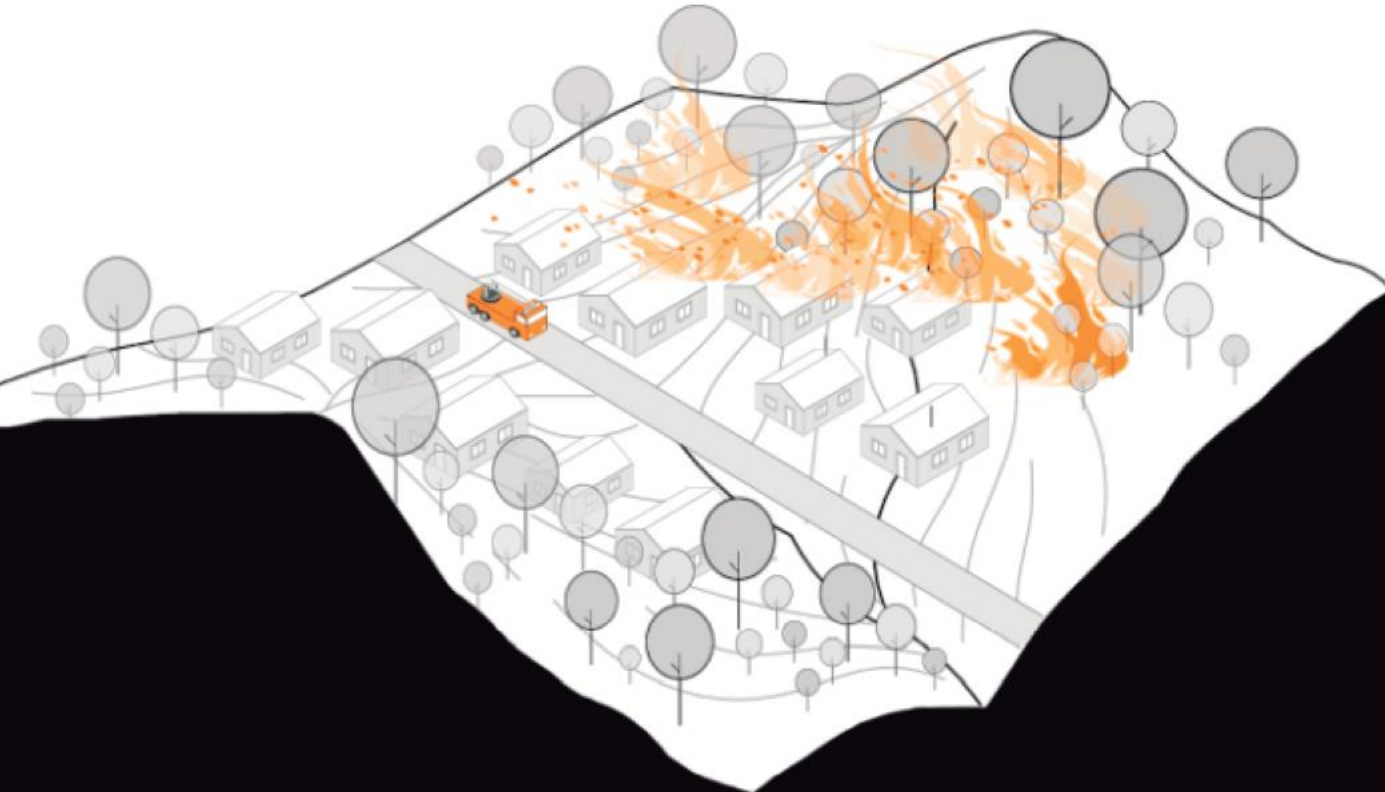
Highlights the challenges faced in informal settlements:

location, morphology, design materiality

Wildfire risks are typically ignored in the process of settlement establishment and incremental growth based on self-organisation and autonomy.

Introduction of risk reduction actions is a blend of **self-organisation and acceptance of external inputs**, that may eventually lead to a level of formalisation while loosing some autonomy

Blend of physical and social systems



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