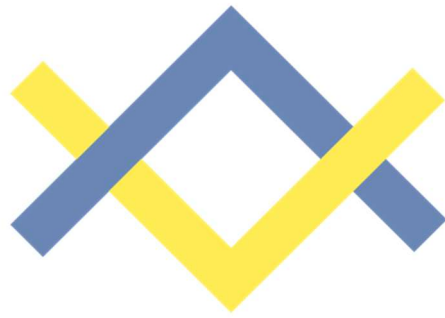




The HuT

Play wisely, beat the odds
and keep your city safe

‘The HuT for Me and You’
Narrative

DEMONSTRATOR 3
Lattari mountains
(Italy)

AUTHORS

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Intro

Games may be powerful tools to increase risk awareness. “**Safe Haven – Landslides**” is a board game designed to be played with high school students (and playful adults) to address, by means of playing, issues related to landslides, to the risk they pose and to the many important factors than need to be considered to manage landslide risk (<https://zenodo.org/records/17169844>).

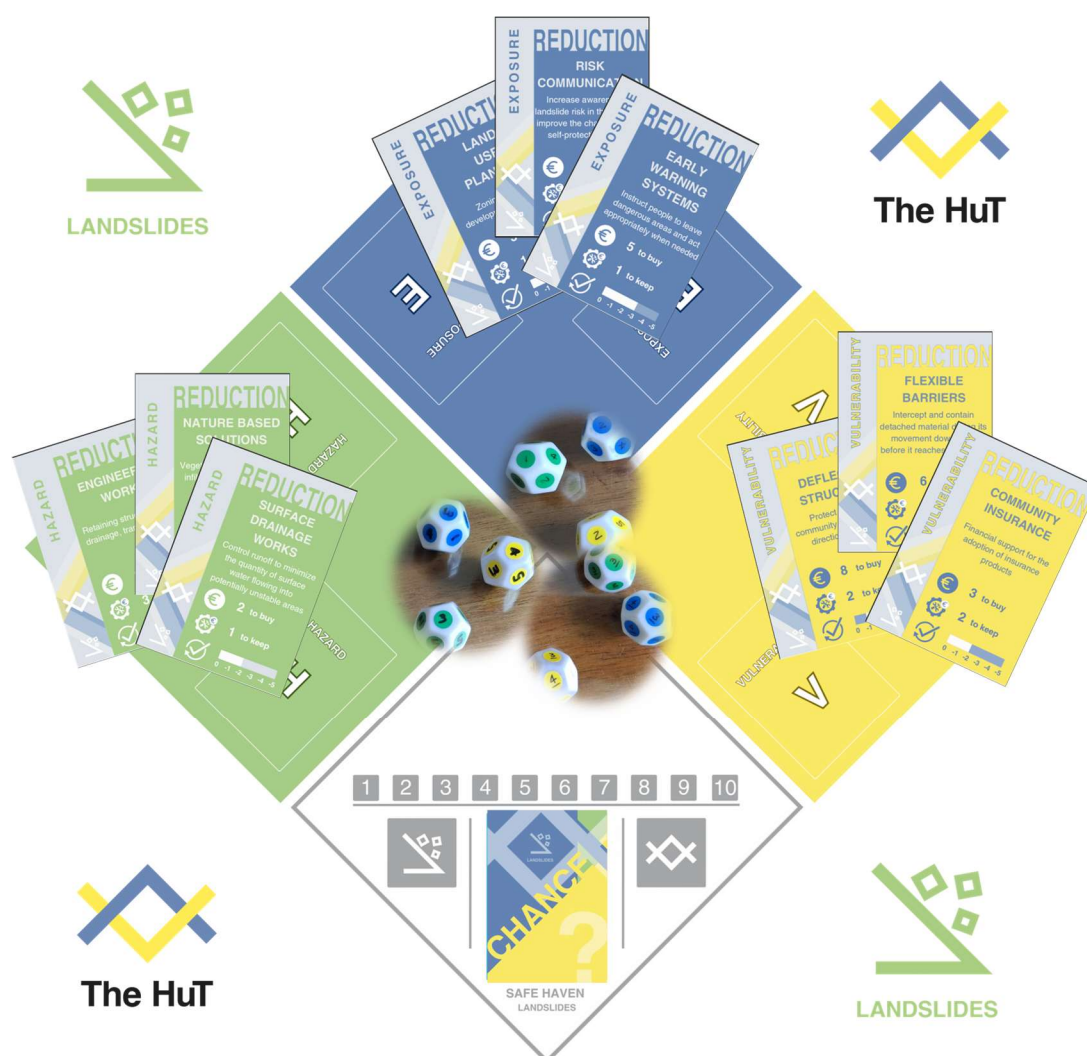
Within the philosophy of The HuT project, which promotes a systemic and non-siloed approach to Disaster Risk Reduction (DRR), the development of Safe Haven – Landslides emerged as a collaborative output of DEM3. The game reflects the project's commitment to enhancing resilience by integrating diverse and complementary actions. While not limited to specific DEM3 areas, this activity contributes to the broader objective of increasing risk awareness among secondary school students, with a particular focus on landslide hazards—one of the most relevant risks for the territories involved. In parallel with this educational initiative, several targeted actions are ongoing within the municipalities of the DEM3 area, including the enhancement of in situ monitoring networks to complement official systems, the development of a decision-support platform for local authorities during preparedness and emergency phases, and capacity-building programmes. Safe Haven – Landslides complements these efforts by providing a spatially broad, accessible tool for introducing the core concepts of risk and fostering informed engagement with hazard mitigation strategies. Safe Haven – Landslides also serves the broader purpose of supporting the improvement of disaster risk literacy—defined as “the ability of an individual to access, read, understand, and use the information necessary to make informed decisions and follow instructions in the context of mitigation, preparation, response, and recovery during a disaster.” In this sense, while the game's format and mechanics are primarily designed for high-school students, Safe Haven – Landslides can be effectively played and tested in a wide range of settings. Workshops involving citizens and decision-makers—such as those organised within The HuT framework—offer valuable opportunities for collective learning, awareness raising, and cross-sectoral dialogue on risk reduction practices. The game thus acts as both an educational tool and a platform for engagement among different stakeholders.

Are you interested in the game? Do you want to know what ingredients have been used to devise it? What concepts are you being exposed to, while playing? The following short story, composed of a preface, 6 chapters and a closing act in the form of a [hypertext](#) (as once we would have called it), has been created exactly to answer those questions. Read on continuously until the end or click on the links that most appeal to you, if you are curious and want to learn more on any specific topic. Either way, enjoy the narrative!



Preface. Rules of the game

You are a decision-maker in a municipality that faces ongoing challenges due to weather and climate-induced hazards. In Safe Haven – Landslides, as the name implies, we will address the risk posed by landslide events. Year after year, your goal is to prevent a landslide disaster in your city. You must carefully allocate your financial resources to ensure that landslide risk remains below an acceptable threshold. However, the game is not that simple—climate change, urbanization, and aging infrastructure may increase your city's vulnerability over time. Can you survive 10 rounds of this challenge?



"Safe Haven – Landslides": (serious) board game.

Each round, you will roll the dice to determine your city's hazard, exposure, and vulnerability levels, ranging from 1 (lowest level) to 5 (highest level). It's the product of these three terms that will make up the risk you will be facing at each round.



"Safe Haven – Landslides": dice and point markers used to determine, at each round, your city's hazard, exposure, and vulnerability levels.

You will have the opportunity to invest in risk reduction strategies, but these come at a cost. You must balance your resources wisely, as the future holds unexpected turns. And anyway, beware that the efficacy of your hazard, vulnerability and exposure reduction measures is not totally under control.

EXPOSURE REDUCTION EARLY WARNING SYSTEMS Instruct people to leave dangerous areas and act appropriately when needed € 5 to buy ⚙️ 1 to keep 0 -1 -2 -3 -4 -5	VULNERABILITY REDUCTION DEFLECTION STRUCTURES Protect structures by changing the direction of landslide € 8 to buy ⚙️ 3 to keep 0 -1 -2 -3 -4 -5	HAZARD REDUCTION LARGE DIAMETER WELLS Modify the groundwater regime by draining water out of the slope: suitable for large and deep landslides € 8 to buy ⚙️ 3 to keep 0 -1 -2 -3 -4 -5
EXPOSURE EARLY WARNING SYSTEMS The warning model is well calibrated, people are aware of the risk and follow the evacuation plan EFFICACY from 5 to 2 from 4 to 2 from 3 to 1 from 2 to 1	VULNERABILITY DEFLECTION STRUCTURES Embankment carefully designed and constructed EFFICACY from 5 to 2 from 4 to 2 from 3 to 1 from 2 to 1	HAZARD LARGE DIAMETER WELLS Well designed and constructed EFFICACY from 5 to 1 from 4 to 1 from 3 to 1 from 2 to 1

"Safe Haven – Landslides": risk reduction cards.

Chance cards may alter the outcome, bringing unexpected benefits or added difficulties. In the end, only well-planned cities will thrive. Others may not withstand the test of time.



"Safe Haven – Landslides": the chance cards.

With that in mind, let's begin our journey into understanding the risks we face and how we can prepare for them.

Chapter 1. The odds

We are dealing with [natural hazards](#), frequencies and [probabilities](#) (e.g., [Estimating the likelihood of incidents](#)). Consequences may ([or may not](#)) be there.

[Risk is never a certainty](#); it is a probability shaped by multiple factors. In the case of landslides, like for many other risks, this probability depends on three key components: Hazard (H), Exposure (E), and Vulnerability (V). These three elements interact in a conceptually simple equation: [Risk = H x E x V](#).

A high hazard means that the likelihood of a landslide occurring is significant. High exposure means that people, buildings, and infrastructure are in harm's way. High vulnerability means that these

elements are not prepared to withstand the event. The interplay between these factors determines the severity of the consequences.

What does it mean? If a [landslide occurs in a sparsely inhabited area](#), the exposure is low, and the overall risk is limited. If it occurs in a densely populated city with fragile infrastructure, [the damage could be catastrophic](#). But what if we could alter these factors? What if we could reduce the hazard through engineering solutions, decrease exposure by careful urban planning, or strengthen infrastructure to minimize vulnerability? These are the questions that decision-makers must ask themselves.

As we move forward, we will explore the nature of landslides, the strategies available to reduce the risk, and the consequences of our choices. Will you be able to beat the odds?

Chapter 2. What are we facing?

[Landslides are not all the same](#). They come in different forms, speeds, and intensities. Some are slow-moving, creeping over time, while others are sudden and devastating. They can be triggered by [heavy rainfall](#), [earthquakes](#) or [human activity](#) (e.g., in Italy [IFFI database](#), [FranelItalia catalog](#), [e-ITALICA catalog](#)). In regions like Campania, Italy, the steep slopes and geological conditions make landslides a recurring threat (e.g., [1998 catastrophic flowslides](#), [Ischia island 2022](#)).

Imagine waking up to the sound of a distant rumble. You look outside and see a section of a hillside collapsing, dragging trees, rocks, and debris down into the valley. Roads are cut off, homes are buried, and emergency services rush to respond. The damage is done—but could it have been prevented?

[Understanding the science behind landslides](#) is the first step in reducing their impact. Predicting where and when they might occur requires constant monitoring, geological assessments, and community awareness. This knowledge allows [municipalities to make informed decisions](#), investing in protective measures before disaster strikes.

Now that we understand what we are up against, let's explore the tools at our disposal to reduce the risks.

Chapter 3. How can we reduce the risk? And how much does it cost?

Prevention is expensive. But [disasters](#)? Those costs lives. Municipalities must act. Technicians propose retaining walls, improved drainage systems, and reforestation projects. Politicians debate the budget. Citizens demand protection but hesitate at the price.

Should we invest now or gamble on tomorrow? [Mitigation comes with a cost](#), but so does inaction.

[Reducing landslide risk](#) requires a combination of structural and non-structural measures. Structural measures include retaining walls, [drainage systems](#), and nature-based solutions projects to stabilize slopes. Non-structural measures involve land-use planning, public education, and [early warning systems](#).

Each of these solutions comes with a price tag. Municipalities must allocate their limited budgets wisely. [Investing in prevention is often more cost-effective than dealing with the aftermath of a disaster](#). However, decision-makers face difficult choices: Should they strengthen critical



infrastructure or expand early warning systems? Should they invest in immediate fixes or long-term strategies?

In the game, you will encounter similar dilemmas. With limited financial resources, you must decide which risk reduction cards to play. Each card represents an investment in safety, but you must balance your spending against your available funds. Will you prioritize protection now, or take a gamble and hope that disaster does not strike too soon? And then, are we sure the intended efficacy will effectively come into play?

Chapter 4. The role of “chance”

Even when you've invested in protecting your assets and your community, chance still plays a key role.

Think about the timing of the event. Landslides in the summer might have limited consequences if the town has emptied out for the holidays, but it might be far more disruptive than usual if it occurs in a tourist destination at its seasonal peak. An event in the dead of night might mean fewer people on the streets, but also fewer people that are alert and ready to take protective action.

The role of local authorities is to invest in smart risk reduction measures — actions that can soften the blow of such unpredictable variables and make the difference when it truly counts.

Chapter 5. Strategic planning is needed

A single investment is not enough. [Risk evolves, and so must the strategy](#).

A good plan accounts for more than today's threats. [Climate patterns shift](#), [populations grow](#), and [infrastructure ages](#). Strategic planning considers maintenance over time, balancing upfront costs with long-term benefits.

Every choice echoes into the future. [Are we thinking ahead?](#)

Mitigation is not just about immediate solutions—it requires long-term vision. Risk management must consider future trends: climate change may increase the frequency and intensity of extreme weather events; urbanization may place more people in harm's way; aging infrastructure may become more vulnerable over time.

Strategic planning involves balancing short-term and long-term investments. While upfront costs for mitigation measures may seem high, they are often lower than the costs of continuous recovery efforts. Investing in maintenance ensures that protective measures remain effective over time.

This is where planning becomes crucial. Will you take a proactive approach, ensuring that your city is resilient for the future? Or will you risk falling behind, hoping that you can respond when the time comes?

Chapter 6. Let's play... year after year

A disaster hit me once, but [my city is resilient](#). Where is the money gone? We must consider the [acceptability criteria](#). Some municipalities did not survive, but others did! The first landslide struck without warning. Some cities had defences in place. Others did not.



Year after year, players navigate new challenges: budget constraints, political pressure, public trust. One disaster may hit hard, but true resilience is tested over time. In fact, the first few years may seem manageable, but as time progresses, challenges increase. Climate change is making extreme weather events more frequent. Urbanization is expanding into hazard-prone areas. Financial resources are stretched thin. Year after year, your ability to plan ahead will be tested.

Disaster may strike—how well did your city prepare? If you invested wisely, your city may recover, but if you neglected essential mitigation measures, the consequences will be severe. Some municipalities will thrive; others will collapse under the weight of poor planning.

As you play through the rounds, you will see how past decisions influence future outcomes. Those who take a proactive approach will find themselves in a stronger position. Those who rely too much on luck may not survive the full ten rounds.

Closing act. Did we beat the odds?

The game is over. Some municipalities have survived. Others have not.

Some will have fallen due to a series of unfortunate events—but was it truly bad luck, or was it poor planning? Others will have navigated the challenges successfully—but was it due to strategic thinking, or were they simply lucky?

In the real world, resilience is not a game. It is a responsibility. As decision-makers, we must anticipate risks, invest in safety, and ensure that our cities remain secure for future generations.

In the end, the lesson is clear: risk cannot be eliminated, but with foresight, strategy, and investment, it can be managed. So, as the game comes to an end, take a moment to reflect: Did you beat the odds? How well did you play the game? And how well are we playing it in the real world?

Welcome to Safe Haven—where planning makes the difference between survival and disaster.

