



**International
Standard**

ISO 37116

**Sustainable cities and
communities — Disaster risk
finance — Principles and general
requirements for financing ex-ante
investment in risk reduction**

*Villes et communautés territoriales durables — Financement des
risques de catastrophe — Principes et exigences générales pour
le financement des investissements ex ante dans la réduction des
risques*

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Sample Document

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Foreword

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Any feedback or questions on this document should be directed to the user's national standards body. A complete listing of these bodies can be found at www.iso.org/members.html.

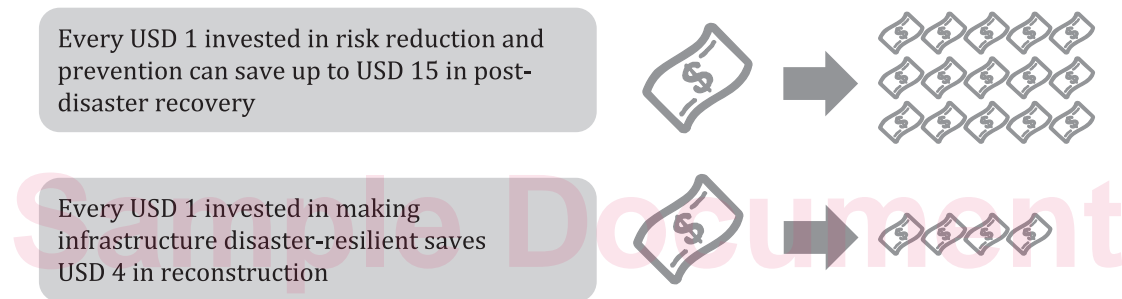
Introduction

0.1 General

Disaster risk reduction (DRR) is a systematic approach to identifying, assessing and reducing the risks of disaster. It aims to reduce socio-economic and environmental vulnerabilities to disasters as well as to deal with geophysical, hydrometeorological, environmental and other hazards that trigger them. This approach is essential for communities to adapt to climate change and become sustainable and resilient.

0.2 Cost-effectiveness of ex-ante investment in risk reduction

In reducing disaster risks, ex-ante investment in risk reduction before disasters occur is particularly important due to its cost-effectiveness relative to ex-post spending. As stated in the Guiding Principle (j) of the Sendai Framework for Disaster Risk Reduction 2015-2030 (SFDRR), “addressing underlying disaster risk factors through disaster risk-informed public and private investments is more cost-effective than primary reliance on post-disaster response and recovery”. Indeed, “every USD1 invested in risk reduction and prevention can save up to USD15 in post-disaster recovery”, as is pointed out by UNDRR (2021) “International Cooperation in Disaster Risk Reduction” [22] that is illustrated in [Figure 1](#). Similarly, proactive protection is needed when investing in infrastructure resilience to avoid massive downstream costs after a disaster.

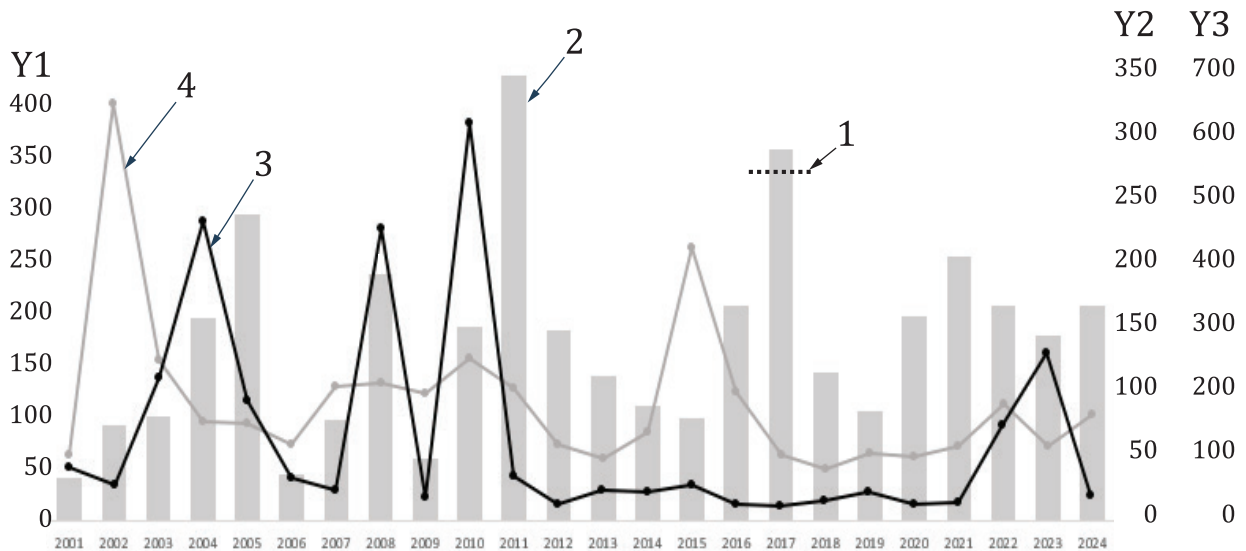


SOURCE: Created based on References [22] [23] from standards.iteh.ai

Figure 1 — Cost-effectiveness of ex-ante investment in disaster risk reduction

0.3 Increasing disasters and limited absorption capacity

Ex-ante investment in risk reduction is also important due to the limitation of absorption capacity. In the face of disasters increasing in intensity and frequency, economic losses from disasters have been increasing in the long term, while the capacity of the global reinsurance market to absorb economic losses from disasters is finite. [Figure 2](#) illustrates the situation.



Key

- Y1 economic losses (billion USD)
- Y2 total deaths (thousand)
- Y3 total affected (million)
- 1 global reinsurance market’s capacity in 2017 (USD 340 million)
- 2 economic losses
- 3 total deaths
- 4 total affected

SOURCE: Created based on References [17] [18] [20]

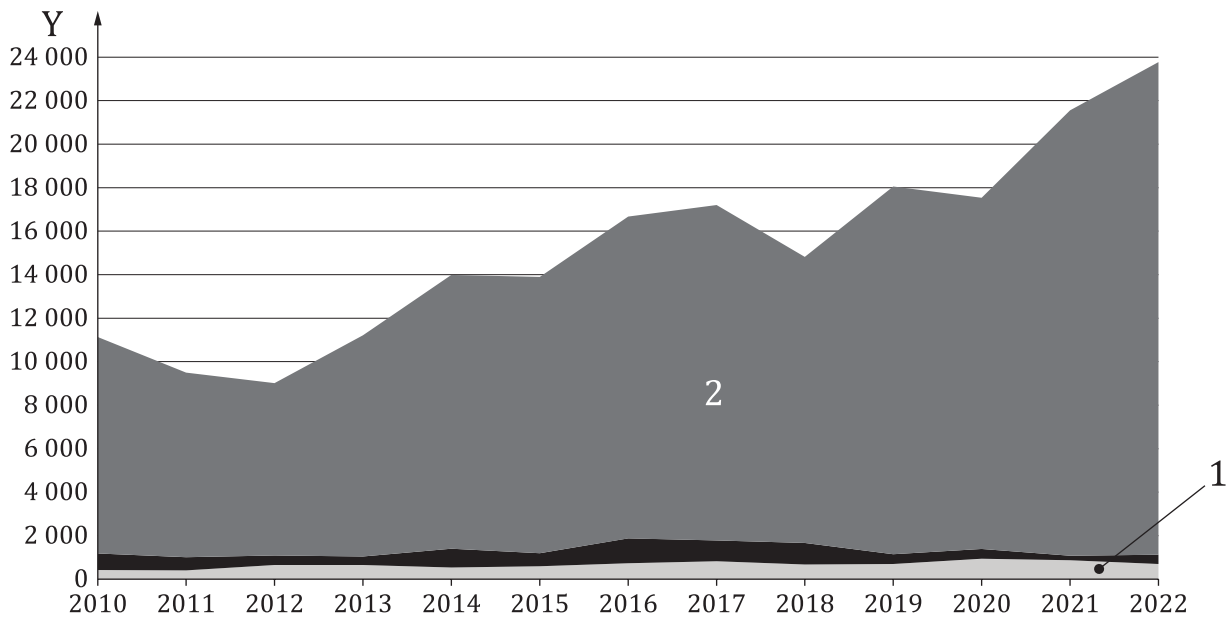
Figure 2 — Increasing disaster loss in contrast with limited absorption capacity

0.4 The ex-ante DRR finance

In this context, finance should play a key role in motivating ex-ante investment in risk reduction. This document provides a way of embodiment of “integration of disaster risk reduction considerations and measures in financial and fiscal instruments” (Priority 3, 30.(m) of [21]).

To this end, it is essential to provide principles and general requirements for such finance that motivates borrowers’ ex-ante investment in risk reduction.

The disaster related finance at the pre-disaster stage has not been active so far. For example, UNDRR’s report in 2021 [22] analysed OECD data [19] on disaster-related international funding worldwide between 2010 and 2019. According to the analysis, only 5 % of the total amount was allocated for the pre-disaster prevention and preparedness stage, while 95 % of the total amount was for the post-disaster stages. There is a significant potential to increase the volume of finance at the pre-disaster stage. Figure 3 shows the situation with updates.



Key

- Y million USD
- 1 finance for pre-disaster prevention & preparedness: only 5 %
- 2 finance at post-disaster stage: 95 %, increasing
- disaster prevention and preparedness
- reconstruction relief and rehabilitation
- emergency response

SOURCE: Created based on References [19] [22]

Figure 3 — The disaster-related finance in international development

Also, the ex-ante DRR finance explicitly involves “DRR solution” providers. They provide DRR solution products or services to any organization interested in making ex-ante investment in risk reduction. Promoting the development and utilization of “DRR solutions” through the finance can support societies’ moving forward to SFDRR and UN SDGs. [Figure 4](#) illustrates the concept by connecting to SFDRR and UN SDGs.

The ex-ante DRR finance in this document relates to debt instruments. The principles and general requirements in this document are not directly applicable to insurance or risk transfer instruments, although this document can be utilized with such instruments designed to motivate ex-ante investment in risk reduction.