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Security and resilience — Urban resilience — Framework and principles

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National foreword

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Foreword

ISO (the International Organization for Standardization) is a worldwide federation of national standards bodies (ISO member bodies). The work of preparing International Standards is normally carried out through ISO technical committees. Each member body interested in a subject for which a technical committee has been established has the right to be represented on that committee. International organizations, governmental and non-governmental, in liaison with ISO, also take part in the work. ISO collaborates closely with the International Electrotechnical Commission (IEC) on all matters of electrotechnical standardization.

The procedures used to develop this document and those intended for its further maintenance are described in the ISO/IEC Directives, Part 1. In particular, the different approval criteria needed for the different types of ISO documents should be noted. This document was drafted in accordance with the editorial rules of the ISO/IEC Directives, Part 2 (see www.iso.org/directives).

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For an explanation of the voluntary nature of standards, the meaning of ISO specific terms and expressions related to conformity assessment, as well as information about ISO's adherence to the World Trade Organization (WTO) principles in the Technical Barriers to Trade (TBT) see www.iso.org/iso/foreword.html.

This document was prepared by Technical Committee ISO/TC 292, *Security and resilience*.

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

The justification for a global set of standards for achieving urban resilience is clear: urban areas, the engines of economic growth, are projected to provide the living and work environment for two-thirds of the global population of close to 10 billion by 2050. Urban disasters have an increasingly costly local, regional, national and global socio-economic impact. For example, disaster events in the past decade alone have claimed over a million lives, affected more than 2,5 billion people and caused over $1 trillion in economic loss.

By engaging all stakeholders in resilience efforts, urban areas have the ability to harness transformational change and improve the lives of their inhabitants. This has been acknowledged by the global community as an essential aspect of the United Nations (UN) 2030 Agenda for Sustainable Development[1)] through agreements such as the Sustainable Development Goals (SDGs), New Urban Agenda[2)], Paris Agreement[3)] and Sendai[4)] Framework. However, urban areas tend to lack the capacity to operationalize these alone and fully harness change. One approach to addressing this and ensuring implementation of the 2030 Agenda is through holistic and multi-stakeholder resilience-building.

Resilience offers a crucial meeting point among different yet essentially similar paradigms in urban development. Enhancing resilience can reduce risks by increasing capacities, and addressing vulnerabilities, thereby supporting effective and forward-thinking responses. Building urban resilience seeks the betterment of people, specifically those in vulnerable situations in urban areas.

The proposed framework for urban resilience presented in this document was developed in response to demand arising from urban areas in all parts of the world for support to make them safer and more resilient to all manner of hazards, risks, weaknesses and vulnerabilities. It was developed to provide local governments and relevant stakeholders with analytical tools to measure urban resilience and develop relevant actions.

The framework aims to transform urban areas into better places to live by improving capacities to prepare, respond and recover from all potential shocks, stresses and challenges, leading the area towards resilience. The framework views urban resilience as a hub for transversal aspects including risk reduction, sustainability, development and governance. It achieves this by understanding and measuring resilience, in any human settlement in any circumstance or context. Furthermore, the framework provides an approach for building resilience baselines (or "profiles"), prepares guidelines in the use of the diagnostic and action planning tools, and advises on constant real-time monitoring.

The early stages of development of this framework involved extensive testing and modelling in urban areas all over the world, and the refinement and improvement of data acquisition, use and application. The approach is to establish a building resilience baseline (or profile), based on metrics that can evaluate the various dimensions of urban resilience and capture the system's weaknesses, vulnerabilities and strengths. Then to develop concrete and prioritized actions to address risk and build-in resilience. The framework follows a multi-sectorial, multi-shocks and stresses, and multi-scales approach, built on the understanding that urban areas function as urban systems, integrated and interdependent, regardless of their size, culture, location, economy and/or political environment.

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1) In 2015, countries adopted the 2030 Agenda for Sustainable Development and its 17 Sustainable Development Goals (SDGs).

2) The New Urban Agenda was adopted at the United Nations Conference on Housing and Sustainable Urban Development (Habitat III) in Quito, Ecuador, on 20 October 2016. It was endorsed by the United Nations General Assembly at its sixty-eighth plenary meeting of the seventy-first session on 23 December 2016. The New Urban Agenda represents a shared vision for a better and more sustainable future. If well-planned and well-managed, urbanization can be a powerful tool for sustainable development for both developing and developed countries.

3) The Paris Agreement is a global landmark agreement, signed in December 2015, for combating climate change effects. Its central aim is to strengthen the global response to the threat of climate change.

4) The Sendai Framework was adopted by UN Member States on 18 March 2015 at the Third UN World Conference on Disaster Risk Reduction in Sendai City, Miyagi Prefecture, Japan. The framework for 2015–2030 was developed to better assist governments, at the national and local levels, in addressing disaster risk reduction and resilience-building.

The implementation process for the framework is shown in Figure 1.

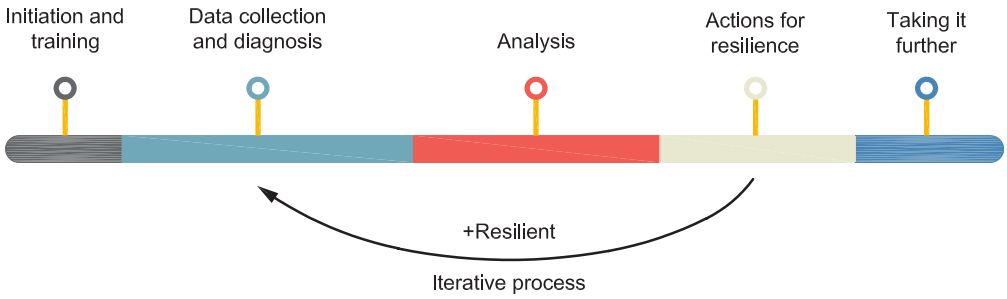

Figure 1 — Implementation process

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Security and resilience — Urban resilience — Framework and principles

1 Scope

This document describes a framework and principles that are coherent with the 2030 Agenda for Sustainable Development, including the New Urban Agenda, Paris Agreement and Sendai Framework, that can be applied to enhance urban resilience. This document proposes the use of metrics and models as the framework upon which to structure urban resilience to assist local authorities and their urban stakeholder's efforts to build more resilient human settlements.

This document is primarily intended for use by organizations with responsibility for urban governance. However, it is equally applicable to all types and sizes of organizations that represent the community of stakeholders noted above, and in particular those organizations that have a role in urban planning, development and management processes in urban areas around the world.

2 Normative references

The following documents are referred to in the text in such a way that some or all of their content constitutes requirements of this document. For dated references, only the edition cited applies. For undated references, the latest edition of the referenced document (including any amendments) applies.

ISO 22300, *Security and resilience — Vocabulary*

3 Terms and definitions

For the purposes of this document, the terms and definitions given in ISO 22300 and the following apply.

ISO and IEC maintain terminological databases for use in standardization at the following addresses:

— ISO Online browsing platform: available at https://www.iso.org/obp

— IEC Electropedia: available at http://www.electropedia.org/

3.1
access
ability of the rights-holders to use or benefit of a certain service or product

Note 1 to entry: Restrictions can be caused by distance to the source (e.g. water supply network does not reach a certain neighbourhood) or unaffordability (e.g. service is too costly for a certain household or group of people), among other reasons.

3.2
basic social services
set of services delivered in education, health and social areas, as a means to fulfil basic needs

3.3
biodiversity
variability among living organisms from all sources including, land, marine and other aquatic *ecosystems* (3.13) and the ecological complexes of which the organisms are part

Note 1 to entry: This includes diversity within species, between species and of ecosystems. Biodiversity is thus not only the sum of all ecosystems, species and genetic material, but rather represents the variability within and among them.