



# The New ISO Standard for Resilient Cities Indicators: Opportunities for City and Expert Input

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Resilient Cities 2018

April 27<sup>th</sup> 2018

Bonn, Germany

# Session Overview

1. Introduction to the ISO City Indicator Standards
2. UNISDR: the importance of ISO standardized indicators to support local implementation of the Sendai Framework
3. Key Perspectives:
  - ICLEI
  - City of Copenhagen
  - RMS
4. Questions & discussion
5. Session wrap up and next steps



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# Consultation Objective

To seek the detailed input from cities and experts on the draft ISO 37123 Standard to further enhance the effectiveness and practicality of the standard to support collaboration, action and investment to reduce risks and promote resilience in cities globally.



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## ISO 37120 & THE WORLD COUNCIL ON CITY DATA



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The **first** ISO standard  
for cities.



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# 17 themes



Economy



Education



Energy



Environment



Finance



Governance



Health



Recreation



Safety



Shelter



Solid Waste



Telecommunications



Transportation



Urban Planning



Wastewater



Water & Sanitation



Fire & Emergency  
Response



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# WCCD CERTIFICATION LEVELS

**ISO 37120**



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**ISO 37120**



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**ISO 37120**



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ASPIRATIONAL	BRONZE	SILVER	GOLD	PLATINUM
30-45 Core Indicators	46-59 Indicators  46 Core + 0-13 Supporting	60-75 Indicators  46 Core + 14-29 Supporting	76-90 Indicators  46 Core + 30-44 Supporting	91-100 Indicators  46 Core + 45-54 Supporting



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@wccitydata

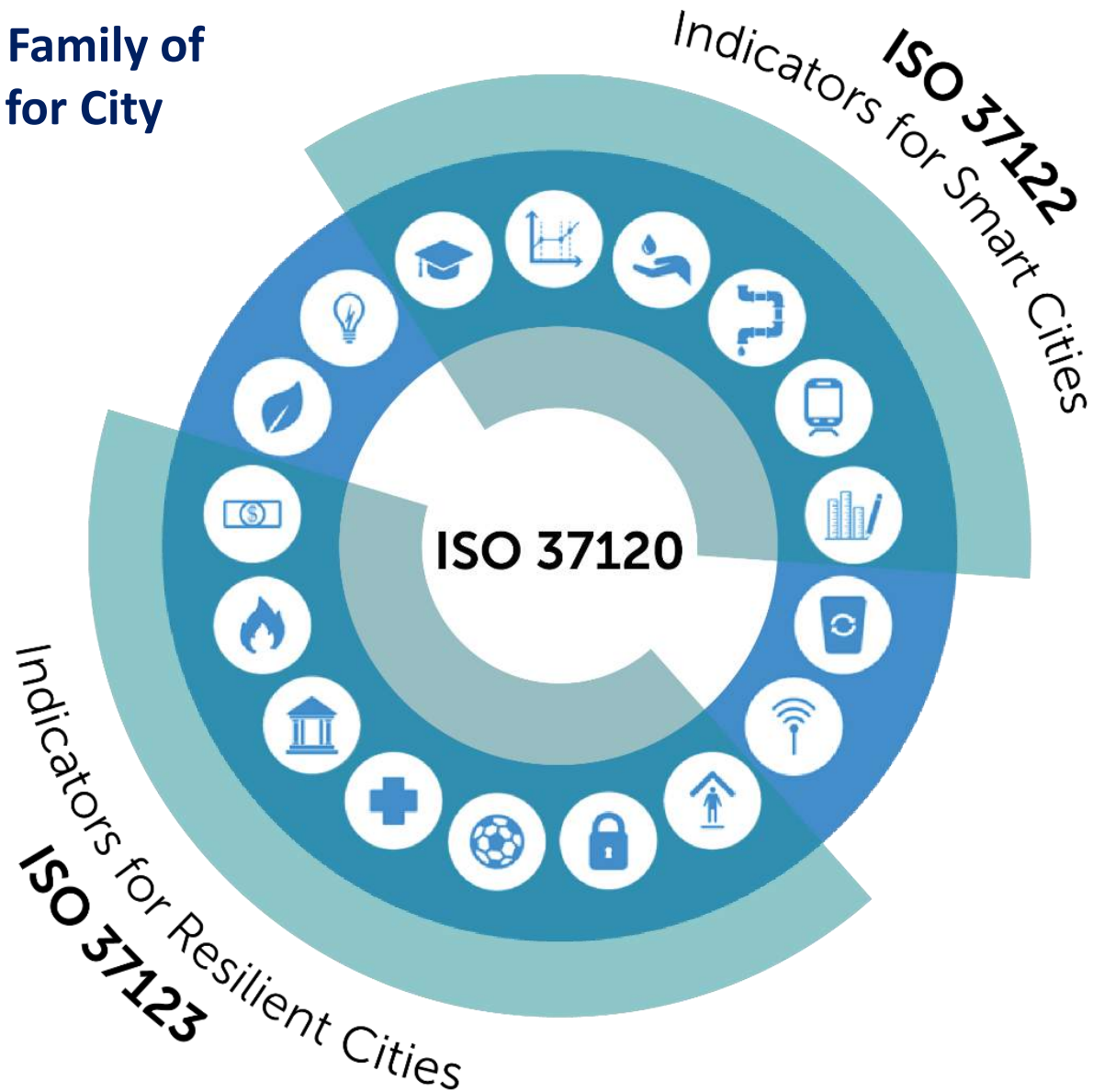


# WCCD ISO 37120 CERTIFIED CITIES





# Creating a Family of Standards for City Data



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## ISO 37123: THE DEVELOPMENT OF A NEW INTERNATIONAL STANDARD FOR INDICATORS FOR RESILIENT CITIES



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# Sustainable Development of Communities: City Indicators – Family of Standards

SUSTAINABLE DEVELOPMENT OF COMMUNITIES

ISO 37120

Indicators for City Services & Quality of Life

ISO 37122

Indicators for Smart  
Cities

ISO 37123

Indicators for  
Resilient Cities

# Complete Indicators for Resilient Cities

SUSTAINABLE DEVELOPMENT OF COMMUNITIES

ISO 37120  
Indicators for City Services & Quality of Life

ISO 37122  
Indicators for Smart  
Cities

ISO 37123  
Indicators for  
Resilient Cities

# ISO 37120 – Resilience Baseline



ISO 37120 includes more than 60 indicators relevant to a cities resilience planning and baseline measurement



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# ISO 37120 – Resilience Baseline

Dimension of resilience	Example indicators (ISO 37120)
<b>Community Vulnerability</b>	Percentage of city population living in poverty Number of homeless per 100 000 population Percentage of population that are senior citizens (65+) Percentage of students completing secondary education
<b>Environmental Quality</b>	Fine Particulate Matter (PM2.5) concentration Sulphur dioxide (SO2) concentration Nitrogen dioxide (NO2 ) concentration
<b>Resource Use</b>	Total residential electrical energy use per capita (kWh/year) Percentage of total energy derived from renewable sources, as a share of the city's total energy consumption Total water consumption per capita (litres/day) Percentage of water loss (unaccounted for water)
<b>Quality of Infrastructure Services</b>	Average number of electrical interruptions per customer per year Percentage of population with access to improved sanitation Percentage of commuters using a travel mode other than a personal vehicle Kilometres of high capacity public transport system per 100 000 population Kilometres of light passenger public transport system per 100 000 population Transportation fatalities per 100 000 population



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# ISO 37120 – Resilience Baseline

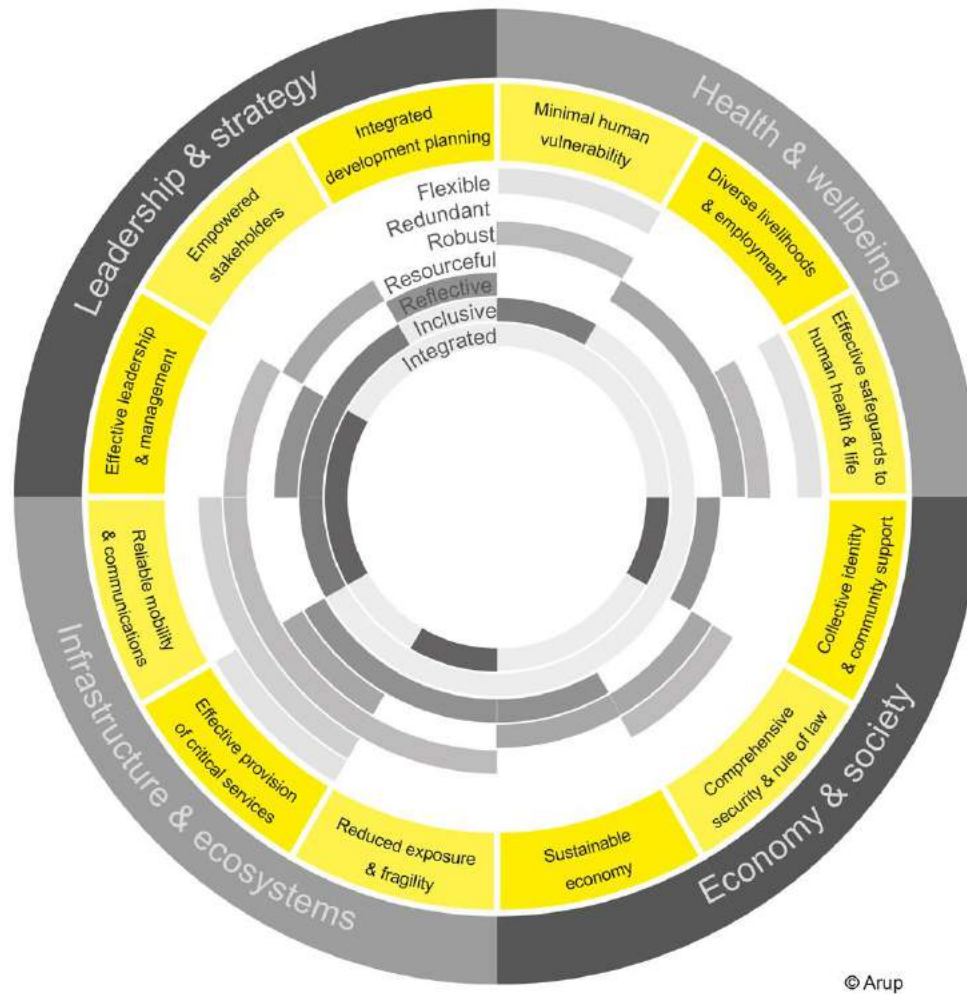
Dimension of resilience	Example indicators (ISO 37120)
<b>Municipal Capacity &amp; Governance</b>	Debt service ratio (debt service expenditure as a percentage of a municipality's own-source revenue) Own-source revenue as a percentage of total revenues Voter participation in last municipal election (as a percentage of eligible voters)
<b>Healthcare Systems</b>	Number of physicians per 100 000 population Number of mental health practitioners per 100 000 population Number of in-patient hospital beds per 100 000 population Number of nursing and midwifery personnel per 100 000 population
<b>Emergency Response Capabilities</b>	Number of firefighters per 100 000 population Number of police officers per 100 000 population Response time for emergency response services from initial call
<b>Outcomes &amp; Impacts</b>	Average life expectancy Number of natural disaster related deaths per 100 000 population Crimes against property per 100 000



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# City Resilience Index



# ISO 37123 – Key principles of development

- Supports local level measurement of progress towards the Sustainable Development Goals and the Sendai Framework for Disaster Risk Reduction Global Targets
- Provides standardized metrics to support major global City Resilience Frameworks (e.g. Disaster Resilience Scorecard for Cities, Rockefeller Foundation City Resilience Index)
- Provides metrics that can support and incentivize real action to reduce risk and enhance resilience
- Input, development and testing by cities around the world



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## ISO 37123: KEY ELEMENTS & INDICATORS



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# What is a Resilient City?

## **Sendai Framework:**

“The ability of a city exposed to hazards to resist, absorb, accommodate to and recover from the effects of a hazard in a timely and efficient manner, including through the preservation and restoration of its essential basic structures and functions”

## **City Resilience Framework (Rockefeller):**

“The capacity of individuals, communities, institutions, businesses, and systems within a city to survive, adapt, and grow no matter what kinds of chronic stresses and acute shocks they experience”

# Scope/Focus of the Standard

- The standard has a major focus on disaster risk management and reduction as this a major priority with respect to resilience for cities globally.
- However, the definition includes a wider framing of resilience (including stresses) e.g.:
  - Economic shocks
  - Environmental stresses
  - Resource scarcity



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# ISO Family of City Indicators: Indicator Characteristics & Selection

- The most important metrics (KPIs)
- Globally applicable
- Measurable by all cities
- Quantitative
- Objectively measured



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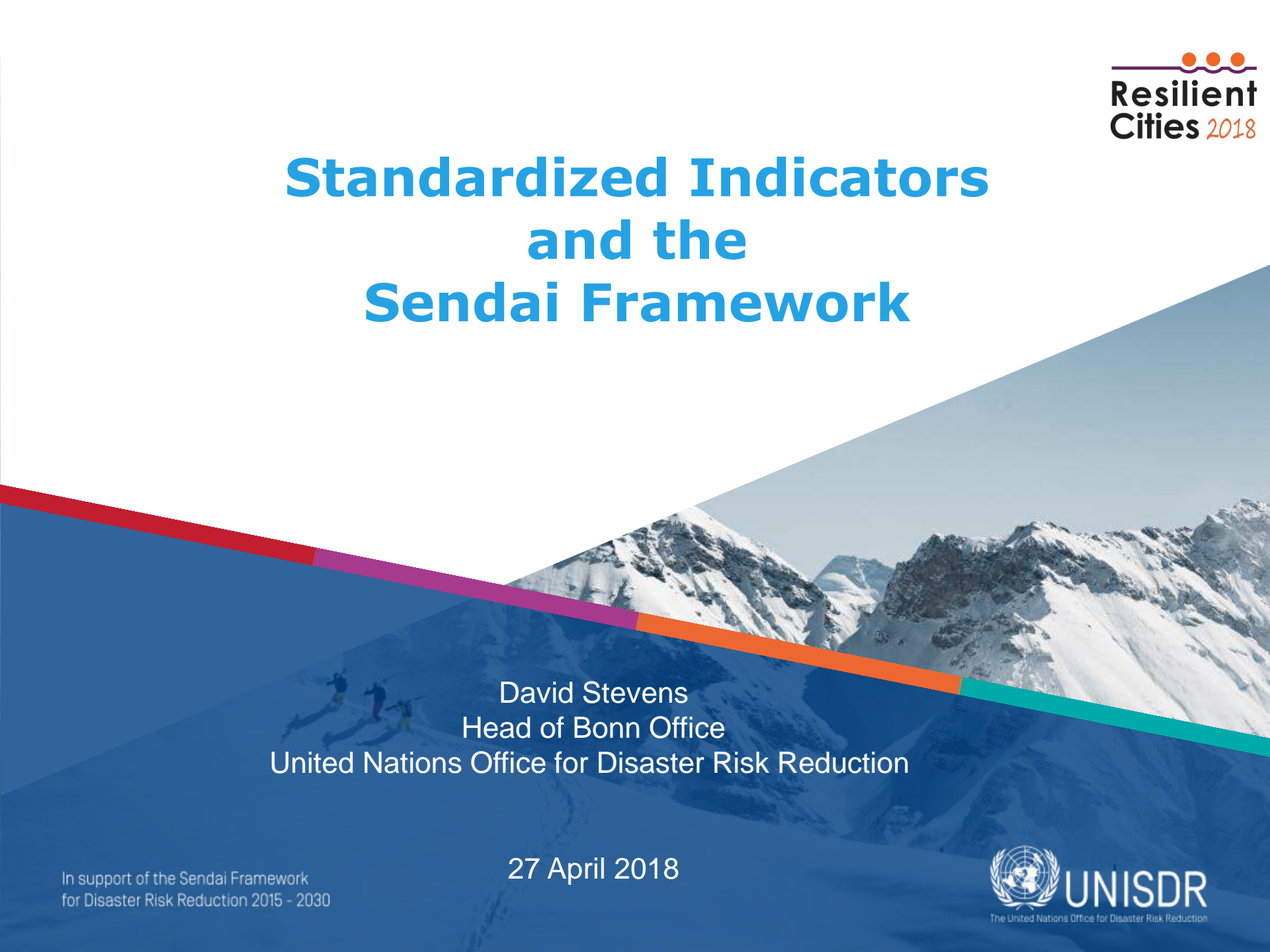
## THE SENDAI FRAMEWORK FOR DISASTER RISK REDUCTION & UNISDR



# UNISDR

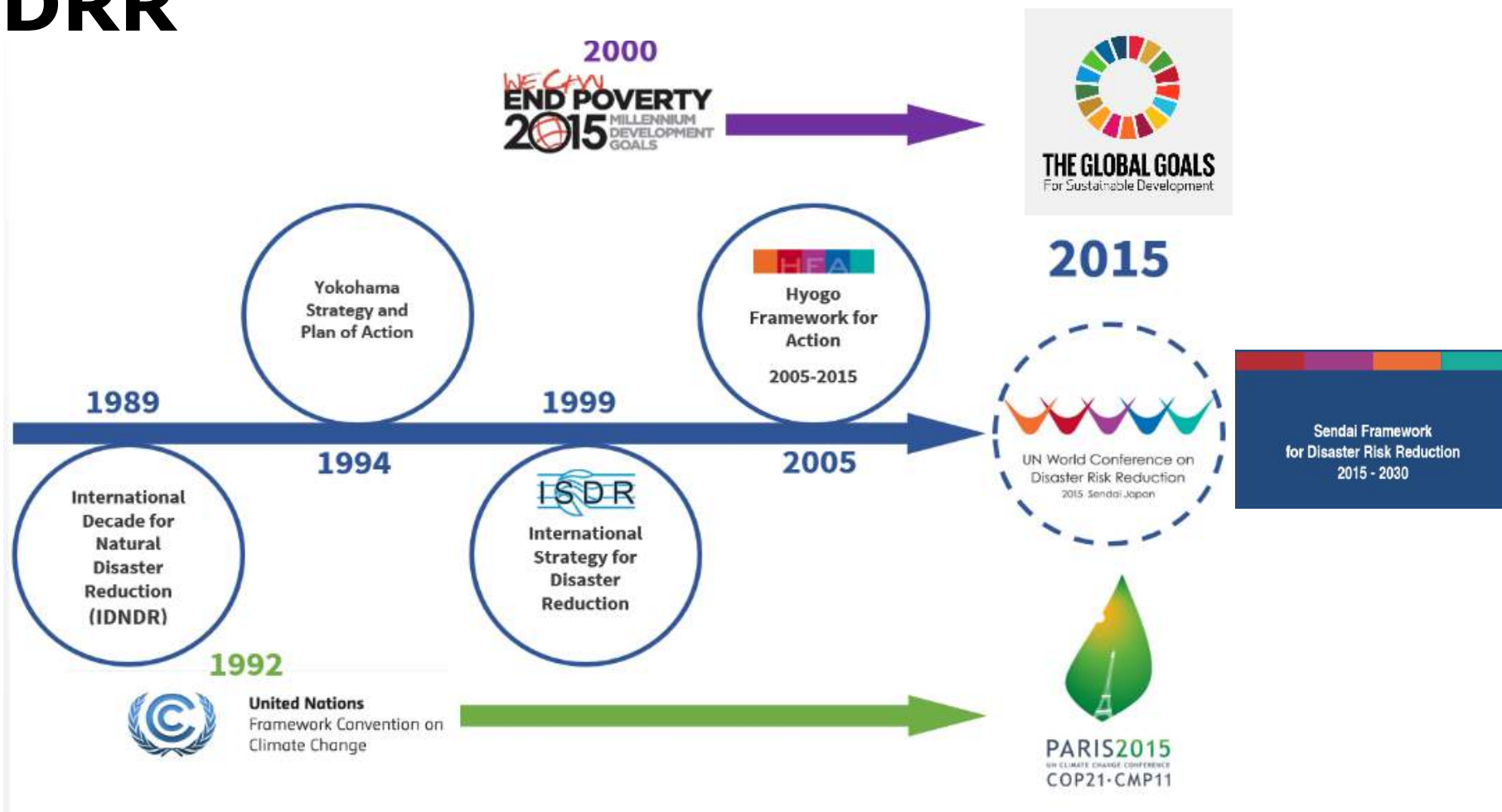
United Nations Office for Disaster Risk Reduction

# Standardized Indicators and the Sendai Framework



David Stevens  
Head of Bonn Office  
United Nations Office for Disaster Risk Reduction

# The Long and Winding Road to DRR





# Making Cities Resilient Campaign (2010)

Supporting >3,850 cities globally

- 98 countries
- Benefitting 700 million people
  - 73 Capital cities





Tools:  
Disaster Resilience Scorecard for Cities  
Quick Risk Estimation Tool

C2C  
Exchanges

City Peer Review

DRR  
Strategies

ISO 37123

L&D  
Databases

# New Ten Essentials



## How To Make Cities More Resilient A Handbook For Local Government Leaders

A contribution to the Global Campaign 2010-2020  
Making Cities Resilient – "My City is Getting Ready!"



### Enabling Essentials

- 1 Organize for disaster resilience
- 2 Identify, understand and use current and future risk scenarios
- 3 Strengthen financial capacity for resilience

### Build back better Essentials

- 9 Ensure effective preparedness and disaster response
- 10 Expedite recovery and build back better

### Operational Essentials

- 4 Pursue resilient urban development and design
- 5 Safeguard natural buffers to enhance the protective functions offered by natural ecosystems
- 6 Strengthen institutional capacity for resilience
- 7 Understand and strengthen societal capacity for resilience
- 8 Increase infrastructure resilience

# Disaster Resilience Scorecard for Cities



Preliminary Assessment



Detailed Assessment

Preliminary has just 47 criteria and simpler scoring. Designed for use in multi-stakeholder workshops and reports back directly progress made against Sendai targets. Detailed assessment includes 117 criteria.




Sendai Framework Monit

Secure | https://sendaimonitor.unisdr.org

Apps | UNISDRWEBMAIL | Entrada - dstevens@ | Inbox - tazarkount@ | Entrada - contato@ | EIRD.ORG - Agenda - Facebook | Google Calendar | Other bookmarks

UNISDR | PreventionWeb | English



**SENDAI FRAMEWORK**  
FOR DISASTER RISK REDUCTION

LOGIN

# MEASURING IMPLEMENTATION OF THE SENDAI FRAMEWORK

**ANNOUNCEMENT**

## The Sendai Framework Monitor system is now live!

After the adoption of Sendai Framework in 2015, 38 indicators were defined to measure progress in achieving its 7 Global targets. This system is the official tool to report these indicators to both the Sendai Framework and SDG's reporting processes.

# Importance of the ISO 37123 to the implementation of the Sendai Framework

- It is aligned with the Sendai Framework principles and priorities and therefore ***contributes to the articulation between local and national governments on data sharing and monitoring*** for disaster risk reduction
- Standardization allows cities to ***compare their performance worldwide*** and ***exchange good practices***
- Provides a ***minimum set of indicators necessary to measure urban resilience***

# THANK YOU

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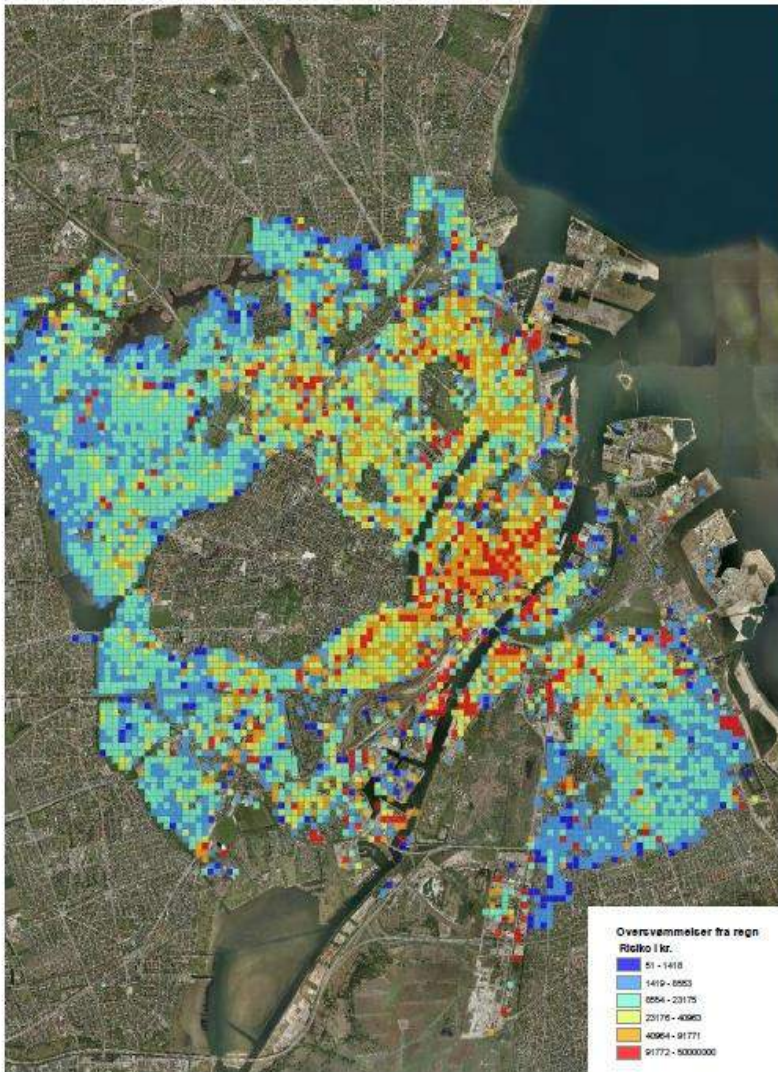
# How do we measure Progress?



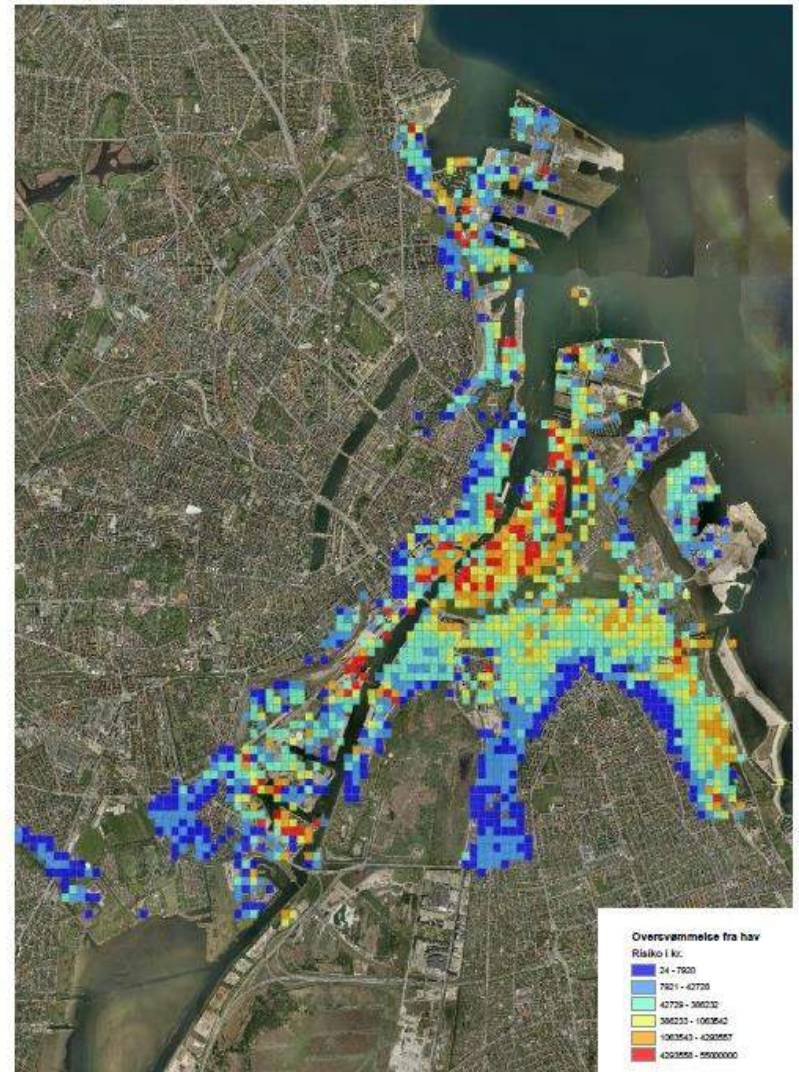
21-03-2017



# THE CHALLENGES



K Risk map for flooding caused by rain in 2110



Risk map for storm surges from the sea in 2110



# CLOUDBURST OVER COPENHAGEN



150 mm rain in 2 hours

Damages close to 1 billion euro

Damages to critical infrastructure

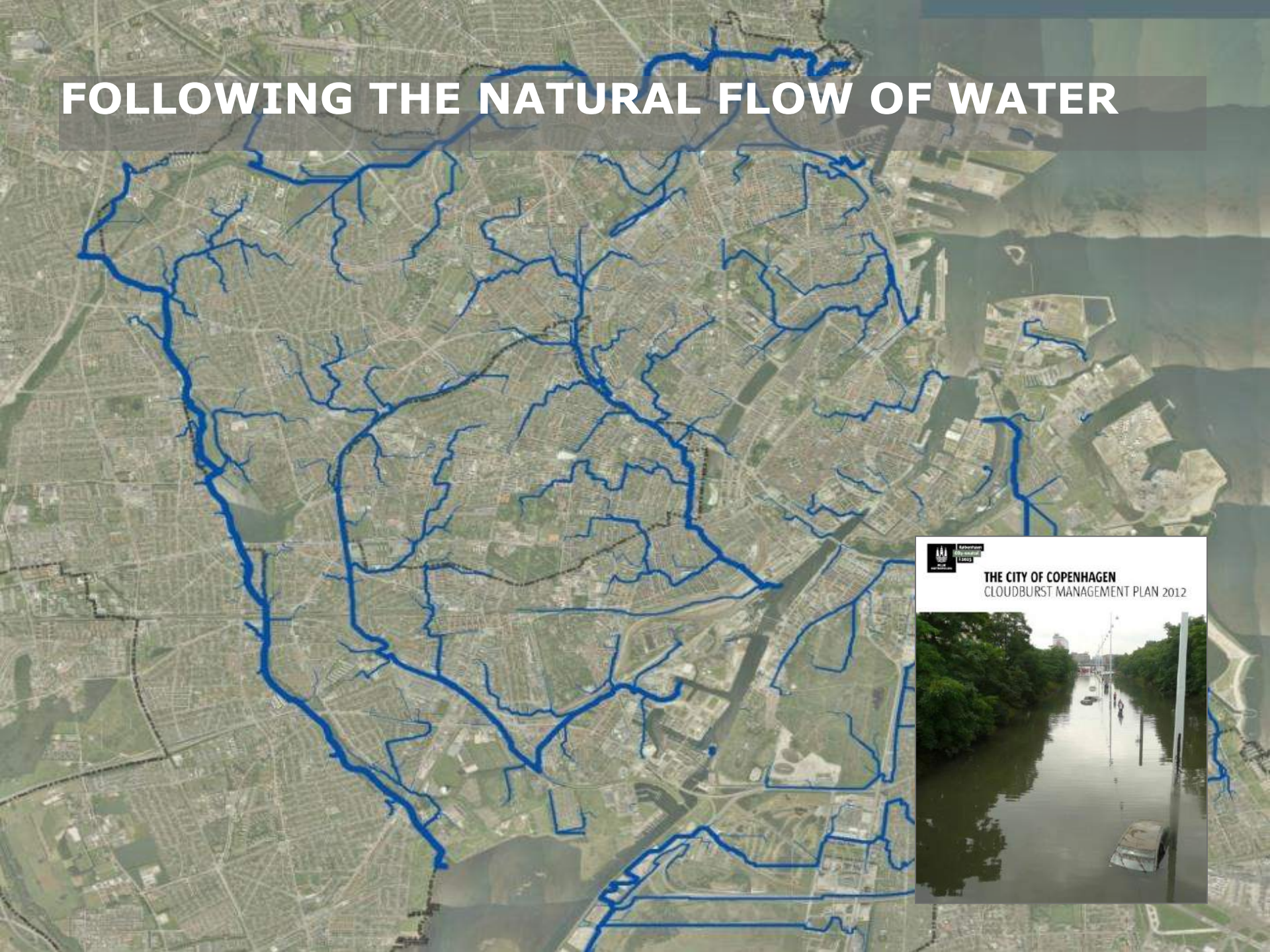
A game changer for the city

Development of a Cloudburst management Plan

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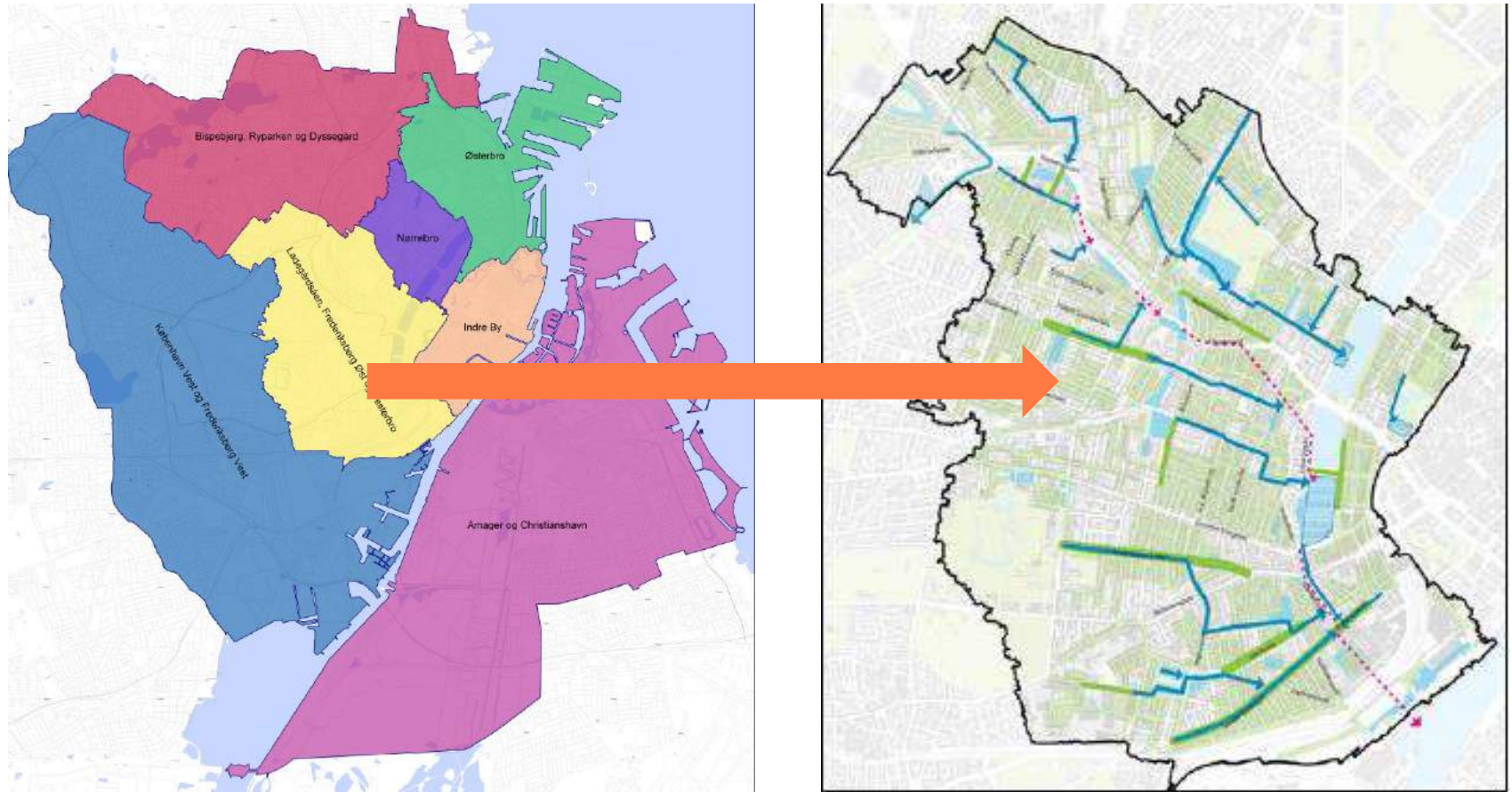


# FOLLOWING THE NATURAL FLOW OF WATER





# DIVIDING THE CITY INTO CATCHMENTS





# 7 CATCHMENT AREAS – 300 PROJECTS – ALL CONNECTED

- Each project has its function within the system
- 1.5 billion dollars investment
- 20 years implementation period

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- 1.5 billion dollars investment
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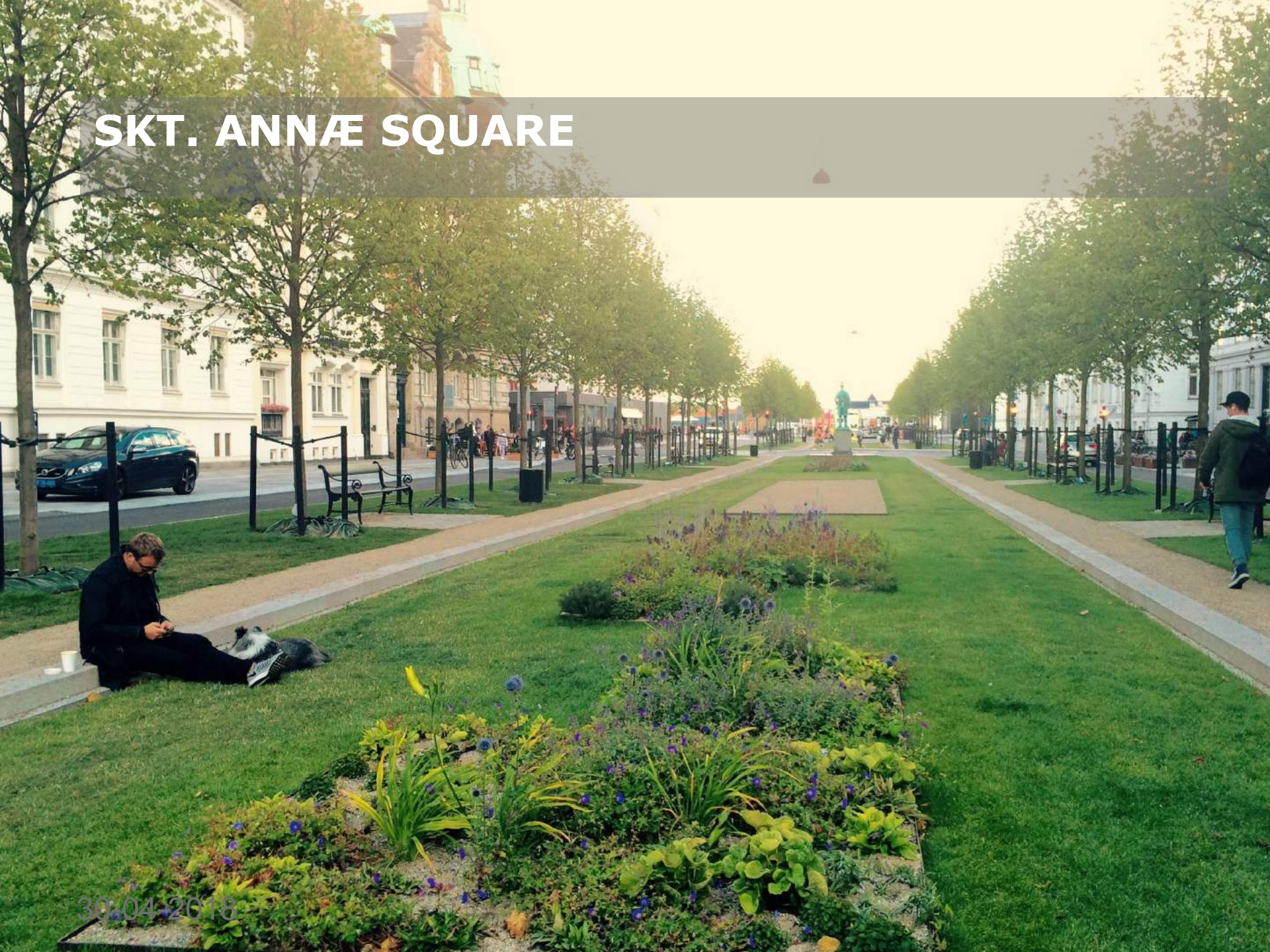
# TÅSINGE SQUARE – THE FIRST WATER PARK



30.04.2018



# SKT. ANNÆ SQUARE



30.04.2018



# MONITORING PROGRESS?

- From output to outcome
- Economic performance
- Number of projects implemented
- Number of citizens protected
- But no other measures....







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## DISCUSSION QUESTIONS



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# Discussion Questions (I)

What are the most important indicators and metrics used by your city to guide resilience planning and to measure progress towards resilience objectives?

Which resilience indicators can guide city-to-city learning and collaboration on resilience?



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# Discussion Questions (II)

Which indicators should be prioritized for inclusion in the new ISO 37123 Standard?

Which measures would benefit from global standardization (i.e. definitions and measurement methodology) to enhance comparability of data?



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