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# *Building Resilience in a Changing Climate*

*A European Perspective*

Demetrio Innocenti
UNISDR Programme Officer

**17 Maggio 2013 – Firenze**

# UNISDR – The United Nations Office for Disaster Risk Reduction

- ***Coordinate**: (How Organise: GP, RP, NP) international efforts disaster risk reduction and provide guidance for the implementation of the HFA and monitor its implementation.*

- ***Advocate**: (Encourage - Climate Change, Education, Gender, MDG) for greater investment in disaster risk reduction actions to protect people's lives and assets.*

- ***Campaign**: (Promote – Making Cities Resilient, Safe Schools and Hospitals Sasakawa Award)*

- ***Inform**: (Provide – GAR, HFA Report, Terminology, PreventionWeb)*


*http://www.unisdr.org/we/inform/publications/19846*

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# IPCC SREX Report

The IPCC Special Report on Managing the Risks of Extreme Events and Disasters to Advance Climate Change Adaptation

ipcc
INTERGOVERNMENTAL PANEL ON climate change

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# A changing climate leads to changes in extreme weather and climate events

***Nature and severity of event***

***Vulnerability***

***Exposure***

*Source: IPCC*

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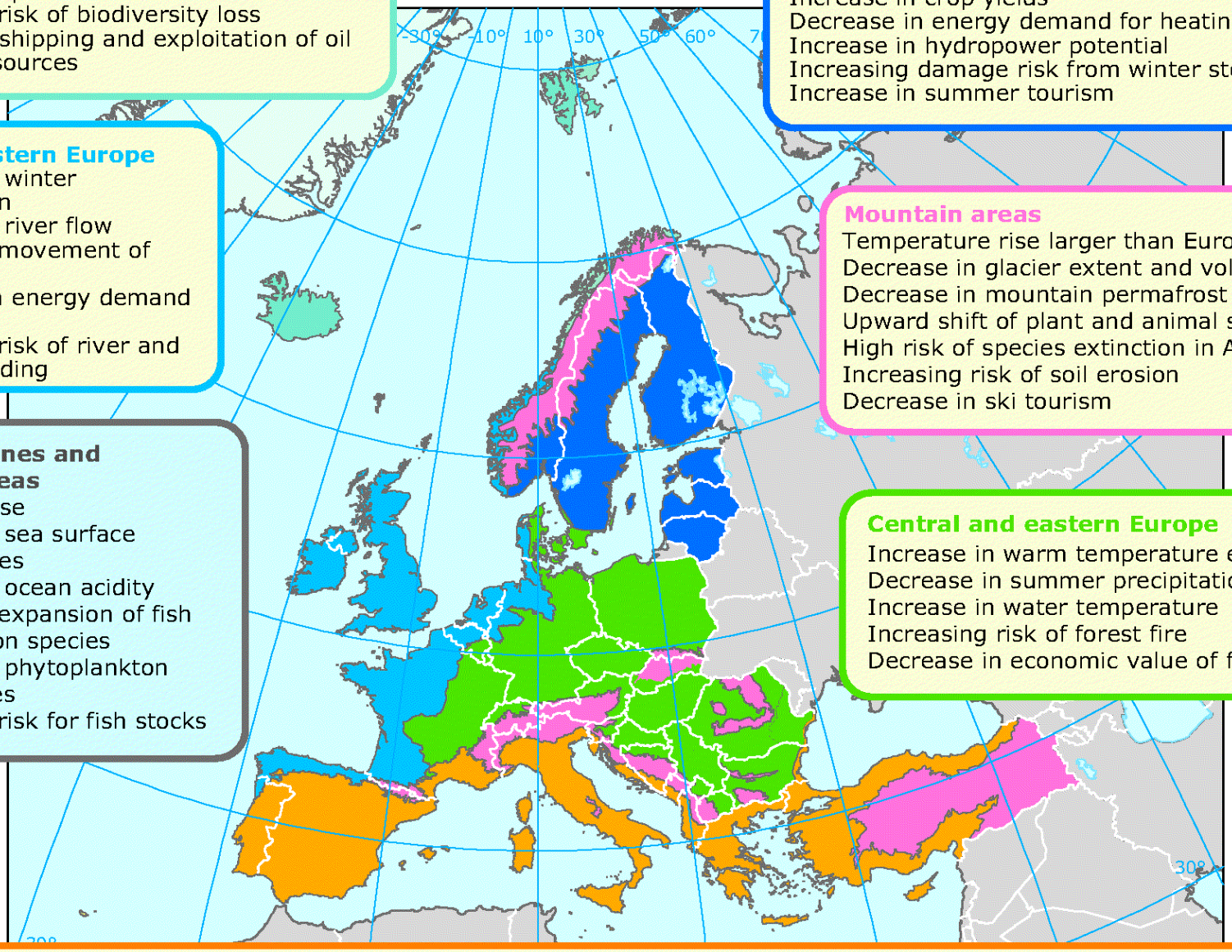


**Arctic**
Temperature rise much larger than global average
Decrease in Arctic sea ice coverage
Decrease in Greenland ice sheet
Decrease in permafrost areas
Increasing risk of biodiversity loss
Intensified shipping and exploitation of oil and gas resources

**Northern Europe**
Temperature rise much larger than global average
Decrease in snow, lake and river ice cover
Increase in river flows
Northward movement of species
Increase in crop yields
Decrease in energy demand for heating
Increase in hydropower potential
Increasing damage risk from winter storms
Increase in summer tourism

**North-western Europe**
Increase in winter precipitation
Increase in river flow
Northward movement of species
Decrease in energy demand for heating
Increasing risk of river and coastal flooding

**Mountain areas**
Temperature rise larger than European average
Decrease in glacier extent and volume
Decrease in mountain permafrost areas
Upward shift of plant and animal species
High risk of species extinction in Alpine regions
Increasing risk of soil erosion
Decrease in ski tourism

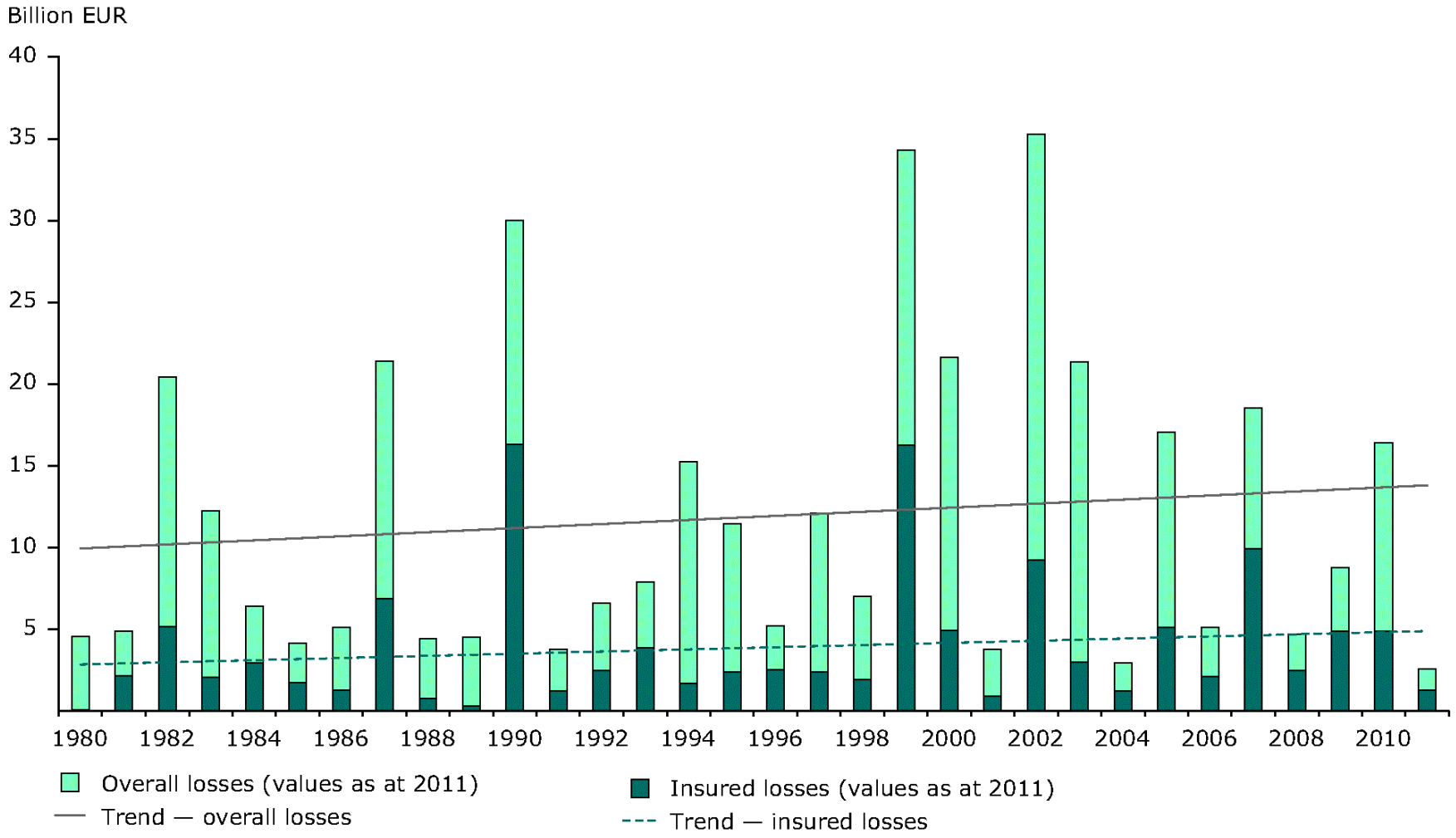
**Coastal zones and regional seas**
Sea-level rise
Increase in sea surface temperatures
Increase in ocean acidity
Northward expansion of fish and plankton species
Changes in phytoplankton communities
Increasing risk for fish stocks

**Central and eastern Europe**
Increase in warm temperature extremes
Decrease in summer precipitation
Increase in water temperature
Increasing risk of forest fire
Decrease in economic value of forests

**Mediterranean region**
Temperature rise larger than European average
Decrease in annual precipitation
Decrease in annual river flow
Increasing risk of biodiversity loss
Increasing risk of desertification
Increasing water demand for agriculture
Decrease in crop yields
Increasing risk of forest fire
Increase in mortality from heat waves
Expansion of habitats for southern disease vectors
Decrease in hydropower potential
Decrease in summer tourism and potential increase in other seasons

*Source: EEA*

# Economic losses due to climate-related disaster are on the rise




*Source: EEA*

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# Impacts of climate extremes can be felt locally and regionally

| | |
|---|---|
| *AGRICULTURE* | "Mongolian herdsmen face starvation"<br>*March 14, 2000, **BBC World News*** |
| *ENERGY* | "Heatwave hits French power production"<br>*August 12, 2003, **The Guardian*** |
| *WATER* | "Drought returns to haunt Ethiopia"'<br>*May 19, 2008, **Reuters*** |
| *PUBLIC HEALTH* | "Cholera confirmed in Pakistan flood disaster"<br>*August 14, 2010, **Associated Press*** |
| *TOURISM* | "Alpine resorts feel heat during record warm spell"<br>*December 08, 2006, **CNN World News*** |
| *TRANSPORTATION* | "Flash flooding causes train to derail"<br>*July 30, 2001, **Chicago Sun Times*** |

*Source: IPCC*

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# Managing the risks: heat waves in Europe

## Risk Factors

- lack of access to cooling
- age
- pre-existing health problems
- poverty and isolation
- infrastructure

France, August 2003 (over 14,000 dead)

## Risk Management/ Adaptation

- cooling in public facilities
- warning systems
- social care networks
- urban green space
- changes in urban infrastructure

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*Source: IPCC*

# EU strategy on climate change adaptation objectives

- ✓ **Promoting action by Member States:**
- ✓ **'Climate-proofing' action at EU level**
- ✓ **Better informed decision-making**

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# EU adaptation strategy proposed actions

- *Action 1: Encourage all Member States to adopt comprehensive adaptation strategies*
- *Action 2: Provide LIFE funding to support capacity building and step up adaptation action in Europe. (2013-2020)*
- ***Action 3: Introduce adaptation in the Covenant of Mayors framework (2013/2014).***
- *Action 4: Bridge the knowledge gap (H2020, JPI, Copernicus)*
- *Action 5: Further develop Climate-ADAPT as the 'one-stop shop' for adaptation information in Europe.*

# EU adaptation strategy proposed actions

- *Action 6: Facilitate the climate-proofing of the Common Agricultural Policy (CAP), the Cohesion Policy and the Common Fisheries Policy (CFP).*
- *Action 7: Ensuring more resilient infrastructure*
- *Action 8: Promote insurance and other financial products for resilient investment and business decisions.*

- *Draft 2014-2020 Multi-annual Financial Framework share of climate-related EU expenditure of 20% (35% for research)*

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# Key Messages

- **Climate change** (increases in temperature, changes in precipitation and decreases in ice and snow) is **occurring globally and in Europe**
- **Wide range of impacts on environmental systems and society** is occurring; further climate change impacts are projected for the future.
- Climate change **can increase existing vulnerabilities and deepen socio-economic imbalances** in Europe.
- **Damage costs from climate-related disasters** have increased; the contribution of climate change to these costs is **projected to increase** in the future.
- Projected future damage costs from climate change **can be reduced significantly by adaptation and disaster risk reduction actions.**

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# DRR and CCA

- Disaster risk reduction and adaptation to climate change share the same ultimate goal of reducing vulnerability to weather and climate related hazards.

- Climate change will affect disaster risks in two ways:
  - likely increase in weather and climate related hazards
  - increases in the vulnerability of communities to natural hazards (ecosystem degradation, water/ food availability, rapid urban growth)

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# Hyogo Framework for Action 2005-2015: Building the resilience of nations and communities to disasters (HFA)

*World Conference on Disaster Reduction 2nd WCDR, Kobe, Hyogo, Japan, 18-22 January 2005*

➢HFA Overall Objective: *"..to substantially reduce disaster losses, in lives, social, economic and environmental assets…"*


➢ HFA 3 Strategic goals

- The integration of disaster risk reduction into sustainable development policies and planning.
- The development and strengthening of institutions, mechanisms and capacities to build resilience to hazards.
- The systematic incorporation of risk reduction approaches into the implementation of emergency preparedness, response and recovery programmes

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# HFA Priorities for Action

**1 Make Disaster Risk Reduction a Priority**

Ensure that disaster risk reduction is a national and a local priority with a strong institutional basis for implementation

**2 Know the Risks and Take Action**

Identify, assess, and monitor disaster risks - and enhance early warning

**3 Build Understanding and Awareness**

Use knowledge, innovation, and education to build a culture of safety and resilience at all levels

**4 Reduce Risk**

Reduce the underlying risk factors

**5 Be Prepared and Ready to Act**

Strengthen disaster preparedness for effective response at all levels

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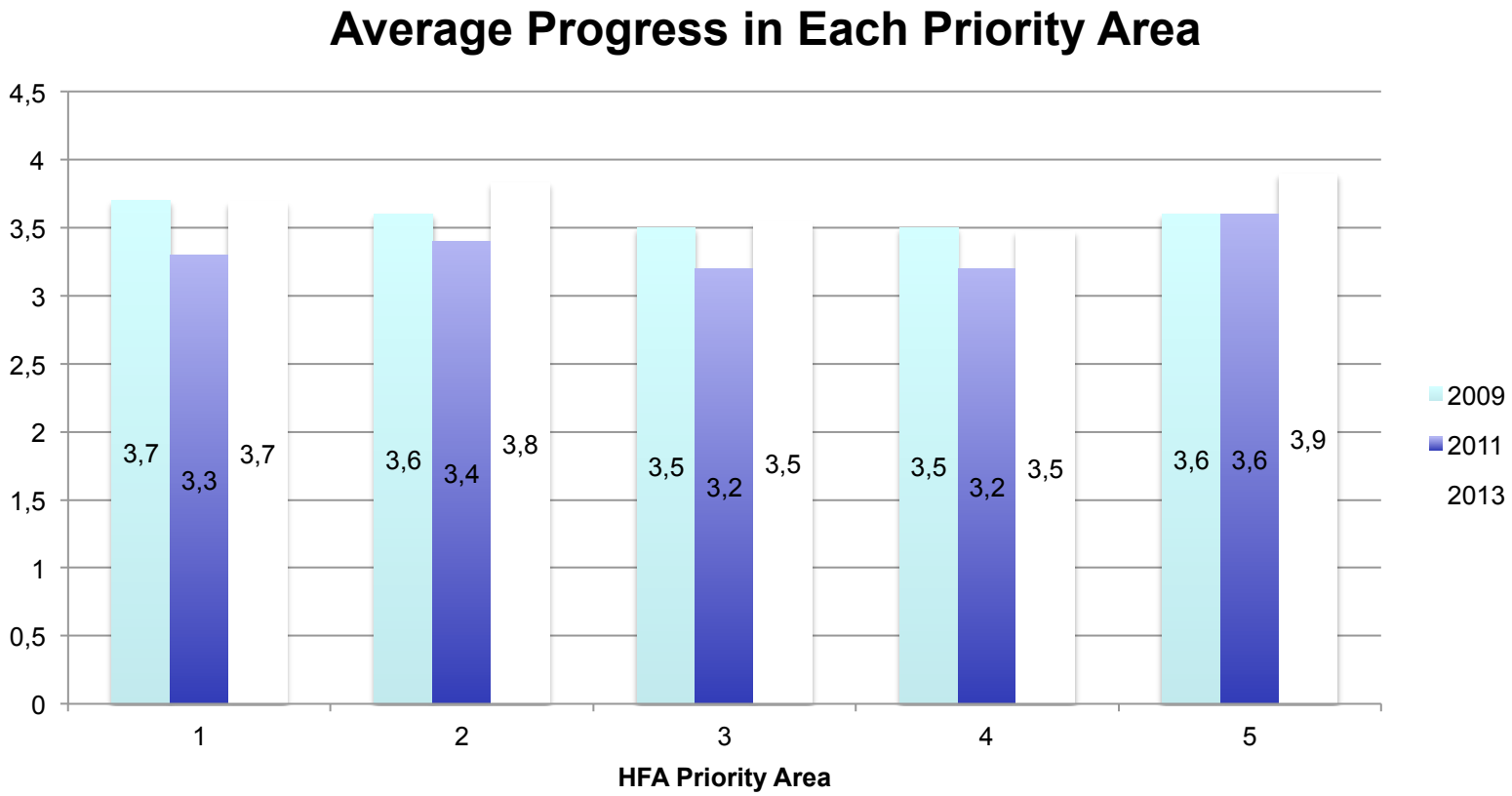
# HFA Reports – Europe analysis

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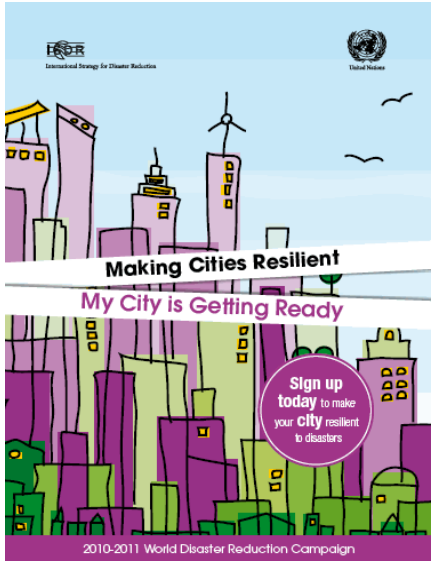
# Making Cities Resilient: My City is Getting Ready!

## 2010 – 2011 (2012-2015) World Disaster Reduction Campaign

***Launched in 2010 in Bonn***

***Building on the previous World Disaster Reduction Campaign – Safer Schools and Hospitals***




***Objetives:***

*Achieve resilient, sustainable urban communities through actions taken by local governments to reduce disaster risk*

- ***Know More***
- ***Invest Wisely***
- ***Build More Safely***

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# Partners


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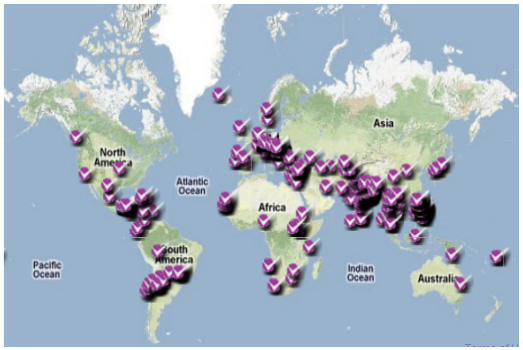
# 421 European cities have signed up. Over 1400 Worldwide

*Armenia: Yerevan, Gyumri*
*Austria: 279 cities incl. Innsbruck,* ***Lienz****, etc.*
*Bosnia and Herzegovina: Sarajevo Centar*
*Croatia: Town of Bjelovar, Dubrovnik, Zagreb*
*Denmark: Copenhagen*
*France:* ***Nice, Sommières***
*Germany:* ***Bonn***
*Greece: Patrass*
*Iceland: Arborg*
*Ireland: Dublin*

## *Italy: 51 cities incl. Ancona, Venice, Rome, Florence*

*Kosovo*: Pristine*
*Portugal: Amadora ,Cascais, Funchal, Lisbon*
*Serbia: 50 cities including Nis*
*Spain: Bullas, Lugo, Madrid, Barcelona*
*Sweden:* ***Arvika, Karlstadt, Kristianstad, Gothenburg, Jonkoping,*** *Jokkmokk*
*Switzerland: Davos*
*Tajikistan: Dushanbe*
*The former Yugoslav Republic of Macedonia: Strumica*
*Turkey: Antalya, Istanbul, Yalova*
*United Kingdom: Stoke-on-Trent*
*Ukraine: Ivano-Frankivsk ,Grabovets, Roslina, Yarblunka*




***European Champion: Mayor of Venice, Mr Giorgio Orsoni***

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# Ten-Point check list – Essentials for Making Cities Resilient

*1. Put in place **organization & coordination** to clarify everyone's roles & responsibilities.*

**2. Assign a budget** & provide incentives for homeowners, low-income families, private sector to invest in risk reduction.

**3.** Update data on hazards & vulnerabilities, **prepare & share risk assessments**.

**4.** Invest in & maintain **critical infrastructure**, such as storm drainage.

**5.** Assess the **safety of all schools and health facilities** & upgrade these as necessary
(1 million safe schools).

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# Ten-Point check list – Essentials for Making Cities Resilient

**6.** Enforce **risk-compliant building regulations & land use planning** principles, identify safe land for low-income citizens.

**7.** Ensure **education programmes & training** on disaster risk reduction are in place in schools and local communities.

**8. Protect ecosystems & natural buffers** to mitigate hazards, adapt to climate change.

**9.** Install **early warning systems & emergency management** capacities.

**10.** After any disaster, ensure that the **needs of the affected population are at the centre of reconstruction**.

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# HFA at local level - LGSAT

**Local Government Self-Assessment Tool**

- Key questions and measurements against the Ten Essentials (HFA)
- Set baselines, identify gaps and have comparable data across local governments, within the country and globally, to measure advancements over time

**Cities in Europe concluding the LGSAT**

- Venice (Italy)
- Amadora, Lisbon (Portugal)
- Arvika, Gothenburg, Jonkoping, Karlstad (Sweden)

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# Local Communities – Progress Reported

- *Strongest area of progress is reported in putting organizational structures in place for DRR work that coordinates and clarifies roles and responsibilities.*
- *Decentralized nature of local governments allows for great flexibility and innovation in addressing DRR.*
- *Strong progress towards addressing flood risks.*
- *Risk assessments are an area of high achievement.*
- *Strong advances towards protecting critical social infrastructure, such as hospitals and schools.*
- *Further develop public-private partnerships for DRR.*

# Local Communities – Gaps Identified

- *The cities all report progress towards strengthening building codes for safety and security. However, strengthening the codes does not automatically result in increased resilience.*
- *While progress has been made towards building safer structures, challenges remain in retrofitting existing properties.*
- *Mandates for emergency work and long-term preparedness are not adequately funded.*
- *Training drills tend to focus on known hazards, gaps remain in developing responses to emerging threats and new risks.*
- *Delegation of authority between local and higher levels makes coordination difficult.*
- *High level of awareness of the need for climate change adaptation strategies does not always lead to tangible outcomes and results.*

# Key messages (local level)

Climate change **exacerbates existing socio-economic pressures** (urbanization, competing demands for water, increasing number of homes, industry and infrastructure in flood-prone areas)

Investments for **urban infrastructure** should include adaptation (e.g. improve water retention, urban drainage, sewage systems, building standards)

Need for **green infrastructure** (forests, parks, wetlands, green walls/ roofs) and **'soft' measures** (e.g. sharing information, capacity building, participation of stakeholders) and linked to **spatial planning**

**Support** from **national and European level** is crucial (e.g. legal and institutional frameworks, funds)

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# Examples from cities of DRR and Adaptation actions: Copenhagen


- 'A one in 1,000' year flood in July 2011
- Climate change plan, backed by the national government
- The city's Climate Plan is designed to limit the impacts of more severe weather and climate change.
- Calls for a 20 per cent cut in carbon emissions by 2015
- Goal to be carbon neutral by 2025
- Estimated savings of €3 billion over the next 100 years
- Expected increase in rain by 30 per cent (50 % late summer

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# In Italy…

## Venice: Living with floods while protecting cultural heritage

✓'living with floods' rather than 'fighting floods'

✓General plan of interventions for safeguarding the city

✓MOSE system - a mechanical barrier system designed to protect the city from high tides over 110cm

## Ancona: Landslides and risk awareness

✓Landslides (major risk): community and risk awareness

✓"ACT-programme (Adapt to Climate Change in Time)"

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# European Campaign Champion

*Mr. Giorgio Orsoni, City of Venice (2012) – cultural heritage*

## *The role of Champions*

*Connect with - and convince - government officials at all levels, high-profile thinkers, innovators and entrepreneurs whose activities can catalyse action to address those challenges.*

## *Four major achievements to be recognized as a Champion*

*Proven ability to mobilize others to adopt disaster resilient thinking and behaviour.*

*Ability to successfully influence policy and change at the national, local or community level so that laws or other policy measures are passed to reduce disaster risk.*

*Ability to convey messages to at-risk people - young people, women and girls, the aging population and disabled persons - in ways proven to reduce those people's vulnerability to disaster.*

*Demonstrating extraordinary commitment to the "Making Cities Resilient" campaign.*

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**European Forum for Disaster Risk Reduction (EFDRR)**

•European Regional Platform for DRR

•September 2013, Oslo, Norway

•WG 2 – HFA implementation at the local level

•Members: Sweden, Italy, Portugal, DG ECHO, EUR-OPA (Council of Europe)

•City of Amadora

•Ongoing tasks 2012

- Conduct a survey on Local level DRR measures undertaken
- Share experiences in using the LGSAT

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# Towards a post-2015 DRR Framework

- Requested by the UN General Assembly (GA) Resolution A/RES/66/199
- UNISDR is facilitating a multistakeholder consultation process
- Consultation process engages a full range of actors from Member States to civil society. Events include regional platforms, the Global Platform, national and local events, and targeted events of DRR stakeholders, partners and networks.
- Builds on the *Hyogo Framework for Action 2005-2015 (HFA) - Building the Resilience of Nations and Communities to Disasters.*
- Expected to be adopted by the World Conference for Disater Risk Reduction and endorsed by the GA in 2015.

For more information, visit:
http://www.preventionweb.net/posthfa/

## CONSULTATION LAUNCH

Multistakeholder consultation process officially starts and continues through 2014, drawing on the HFA Mid-Term Review (2010-2011).

## GLOBAL PLATFORM FOR DISASTER RISK REDUCTION

Global consultation of stakeholders (19-23 May 2013, Geneva, Switzerland).

## OUTLINE OF FRAMEWORK

Special meeting with Member States to review outline of the post-2015 Framework. Continued development in consultation with all stakeholders.

## WORLD CONFERENCE FOR DISASTER RISK REDUCTION

World Conference on Disaster Risk Reduction (WCDRR) in Japan (first quarter of 2015).

## UNITED NATIONS GENERAL ASSEMBLY

Post-2015 Framework for disaster risk reduction and resilience will be considered by the UN General Assembly for endorsement (fall session 2015).

**2012**

- Secretary-General Report to UN General Assembly (Nov)
- Ministerial Conferences and Regional Platforms on Disaster Risk Reduction

  Asia (Indonesia - Oct)
  Americas (Chile - Nov)
  Europe (Croatia - Oct)
  Pacific (New Caledonia - Sept)
- Rio +20: UN Conference for Sustainable Development (Rio de Janeiro - June)

**2013**

- Secretary-General Report to UN General Assembly
- Ministerial Conferences and Regional Platforms on Disaster Risk Reduction

  Africa (Tanzania - Feb)
  Arab States (Feb)

**2014**

- Secretary-General Report to UN General Assembly
- Ministerial Conferences and Regional Platforms on Disaster Risk Reduction

**2015**

- Secretary-General Report on WCDRR and recommendation for post-2015 Framework to be adopted
- Post 2015 Development Consensus - MDGs and SDGs

**2016**

Version: 6 December 2012

For more information on UNISDR, visit: http://www.unisdr.org

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# Thank you


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