ISPRA
Istituto Superiore per la Protezione e la Ricerca Ambientale

Life SEC Adapt Project - LIFE14 CCA/IT/000316
Kick Off Meeting
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Integrated strategy for climate change response – inspiring achievements and latest insights from COP21

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Adaptation, mitigation and sustainable development

- **Adaptation and mitigation are complementary strategies for reducing and managing the risks of climate change.** Substantial emissions reductions over the next few decades can reduce climate risks in the 21st century and beyond, increase prospects for effective adaptation, reduce the costs and challenges of mitigation in the longer term, and contribute to climate-resilient pathways for sustainable development.

- Many adaptation and mitigation options can help address climate change, but no single option is sufficient by itself. **Effective implementation depends on policies and cooperation at all scales, and can be enhanced through integrated responses that link adaptation and mitigation with other societal objectives**.

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Integration of adaptation and mitigation

- Adaptation options exist in all sectors, but their context for implementation and potential to reduce climate-related risks differs across sectors and regions. **Some adaptation responses involve significant co-benefits, synergies and trade-offs**. Increasing climate change will increase challenges for many adaptation options.

- Mitigation options are available in every major sector. **Mitigation can be more cost-effective if using an integrated approach** that combines measures to reduce energy use and the greenhouse gas intensity of end-use sectors, decarbonize energy supply, reduce net emissions and enhance carbon sinks in land-based sectors.

- **Effective adaptation and mitigation responses will depend on policies and measures across multiple scales: international, regional, national and sub-national.**

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Adaptation in the UNFCCC

- The United Nations Framework Convention on Climate Change (UNFCCC) recognises the need for adaptation already in its article 3 (Principles) *"**The Parties should take precautionary measures to anticipate, prevent or minimize the causes of climate change and mitigate its adverse effects**"*.

- However, it does not introduce specific commitments for all Parties, apart from a reporting commitment: *"All Parties…"shall"… "formulate, implement, publish and regularly update national and, where appropriate, regional programmes containing" … "measures to facilitate adequate adaptation to climate change"*.

- In addition to that, "***The developed country Parties and other developed Parties included in Annex II shall also assist the developing country Parties that are particularly vulnerable to the adverse effects of climate change*** *in meeting costs of adaptation to those adverse effects*".

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Workstreams concerning adaptation

Loss and Damage	Nairobi Work Programme
A workstream under the Convention to consider approaches to address loss and damage associated with climate change impacts in developing countries that are particularly vulnerable to the adverse effects of climate change	Work programme established to assist all Parties, in particular developing countries, including the least developed countries and small island developing States to enhance knowledge about adaptation. The NWP is implemented by Parties, intergovernmental and non-governmental organizations, the private sector, communities and other stakeholders
National Adaptation Plans	National Adaptation Programmes of Action
Process established under the Cancun Adaptation Framework (CAF) to enable least developed country Parties (LDCs) to formulate and implement national adaptation plans as a means of identifying medium- and long-term adaptation needs and developing and implementing strategies and programmes to address those needs	Process established to provide the least developed country Parties (LDCs) the opportunity to identify priority activities that respond to their urgent and immediate needs to adapt to climate change – those for which further delay would increase vulnerability and/or costs at a later stage

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Adaptation in the draft Paris agreement

- **The draft Paris agreement refers to adaptation in its Article 4, but does not introduce any new commitments**.
- It defines the different steps of the implementation of adaptation planning processes and actions, as follows:
  - Implementation of adaptation actions, undertakings and/or efforts;
  - The process to formulate and implement national adaptation plans;
  - Assessment of climate change impacts and vulnerability with a view to formulating nationally determined prioritized actions, taking into account vulnerable people, places and ecosystems;
  - Strengthening enabling environments for the implementation of adaptation;
  - Monitoring, evaluating and learning from adaptation plans, policies, programmes and actions;
  - Building resilience of socioeconomic and ecological systems, including through economic diversification and sustainable management of natural resources.
- **It introduces the possibility for Parties to submit an adaptation communication**, which may include its priorities, support needs, plans and actiones, and will be the basis for a periodic stocktaking exercise.

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INDCs at the basis of the Paris agreement

- In preparation of the 21st Conference of the Parties of the United Nations Framework Convention on Climate Change (UNFCCC) which has met in Paris, 30 November – 11 December 2015, **all Parties have been invited to submit their Intended Nationally Determined Contributions (INDCs)**.
- **INDCs are national climate action plans/goals for the post-2020 time period** that countries submit to the UNFCCC, showing their possible contribution under a new international climate agreement.
- **As of 4th December, 157 INDCs had been submitted, covering 184 countries, which correspond to 97,9% of global emissions**.

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Submitted INDCs

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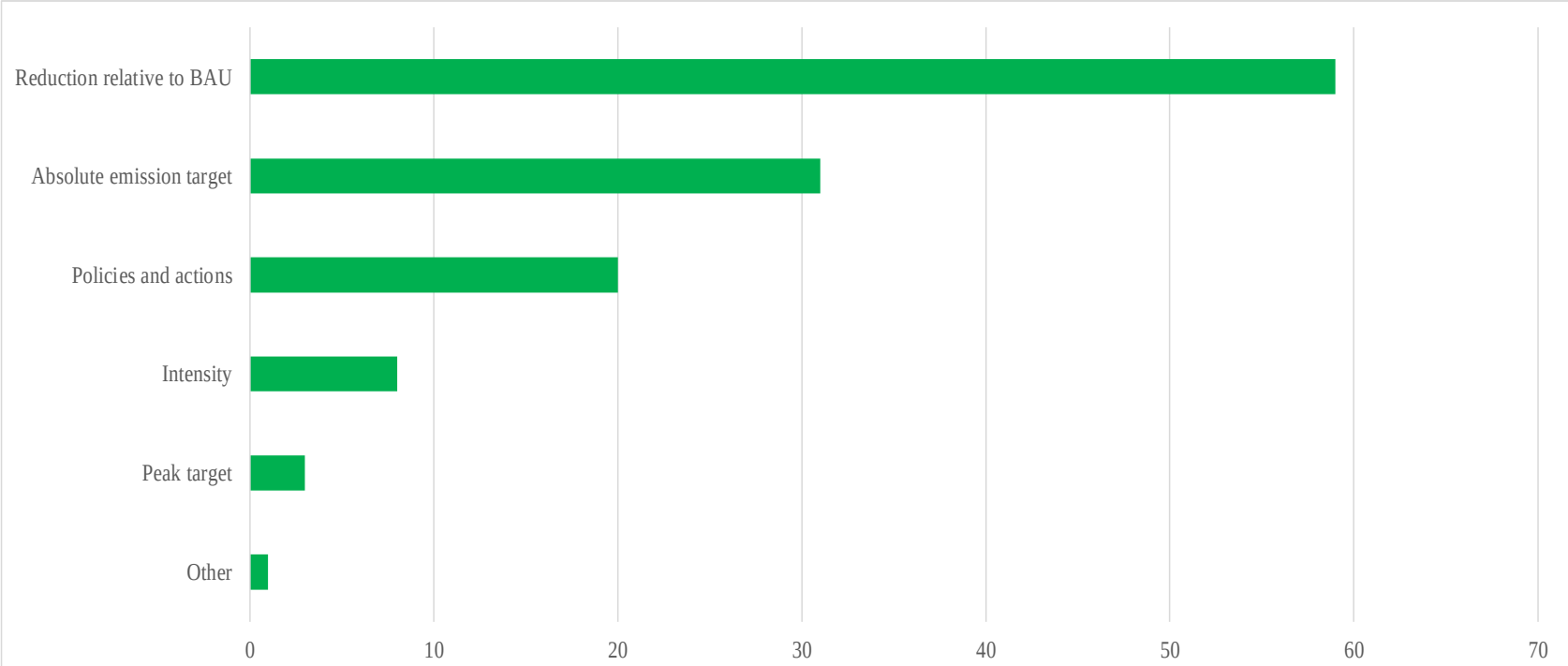
Mitigation in the INDCs

- Most of the INDCs are national in scope; they address all major national GHG emissions or at least the most significant sources. **Many INDCs contain quantified emission reduction targets, which take a variety of forms**:



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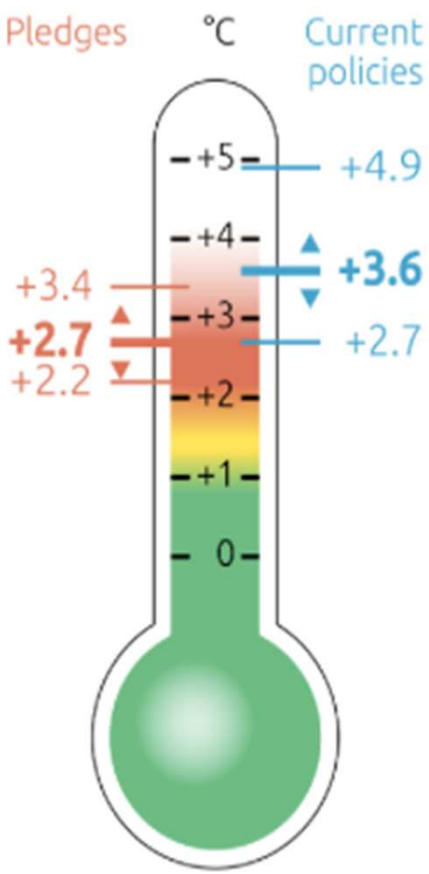
Overall impact of submitted INDCs



- In the absence of policies, global warming is expected to reach 4.1°C – 4.8°C above pre-industrial by the end of the century.
- Current policies presently in place around the world are projected to reduce baseline emissions and result in about 3.6°C warming above pre-industrial levels.
- The unconditional pledges or promises that governments have made, including in submitted INDCs as of 1 October 2015, **would limit warming to about 2.7°C above pre-industrial levels, or in probabilistic terms, likely limit warming below 3°C**.

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INDC review mechanisms

- There remains a substantial gap between what governments have promised to do and the total level of actions they have undertaken to date. Furthermore, both the current policy and pledge trajectories lie well above emissions pathways consistent with a 1.5°C or 2°C world.
- Therefore, it is important that the new agreement provides for:
  - **a mechanism for periodic review** (for example, every five years), under which all countries are obliged to update their commitments, without withdrawing them or making them less ambitious than previous ones;
  - **a mechanism for monitoring, reporting and verification (MRV)** of the implementation of the commitments (including those for LULUCF) **based on transparency criteria**.
- This will make it possible to monitor compliance with the commitments, their adequacy to the targets and to review them; the effectiveness of the new agreement will depend on the stringency of this mechanism.

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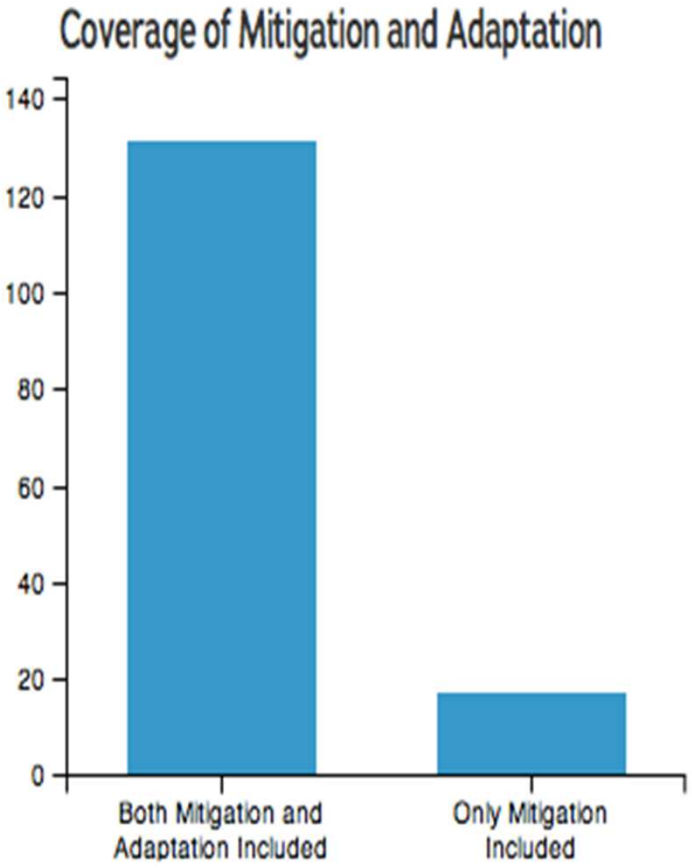
Adaptation in the INDCs



- By 1 October 2015, 100 Parties, including 38 Least Developed Country Parties, had included an adaptation component in their INDCs.

  Adaptation components were mentioned from 46 African States, 26 Asia-Pacific States, 19 Latin American and Caribbean States, 7 Eastern European States and 2 Western European and other States.

  Some of them indicated that adaptation is their main priority in addressing climate change. Some Parties emphasized that they are and will be undertaking adaptation with domestic support. **Many underlined the need for receiving international support in line with the Convention.**

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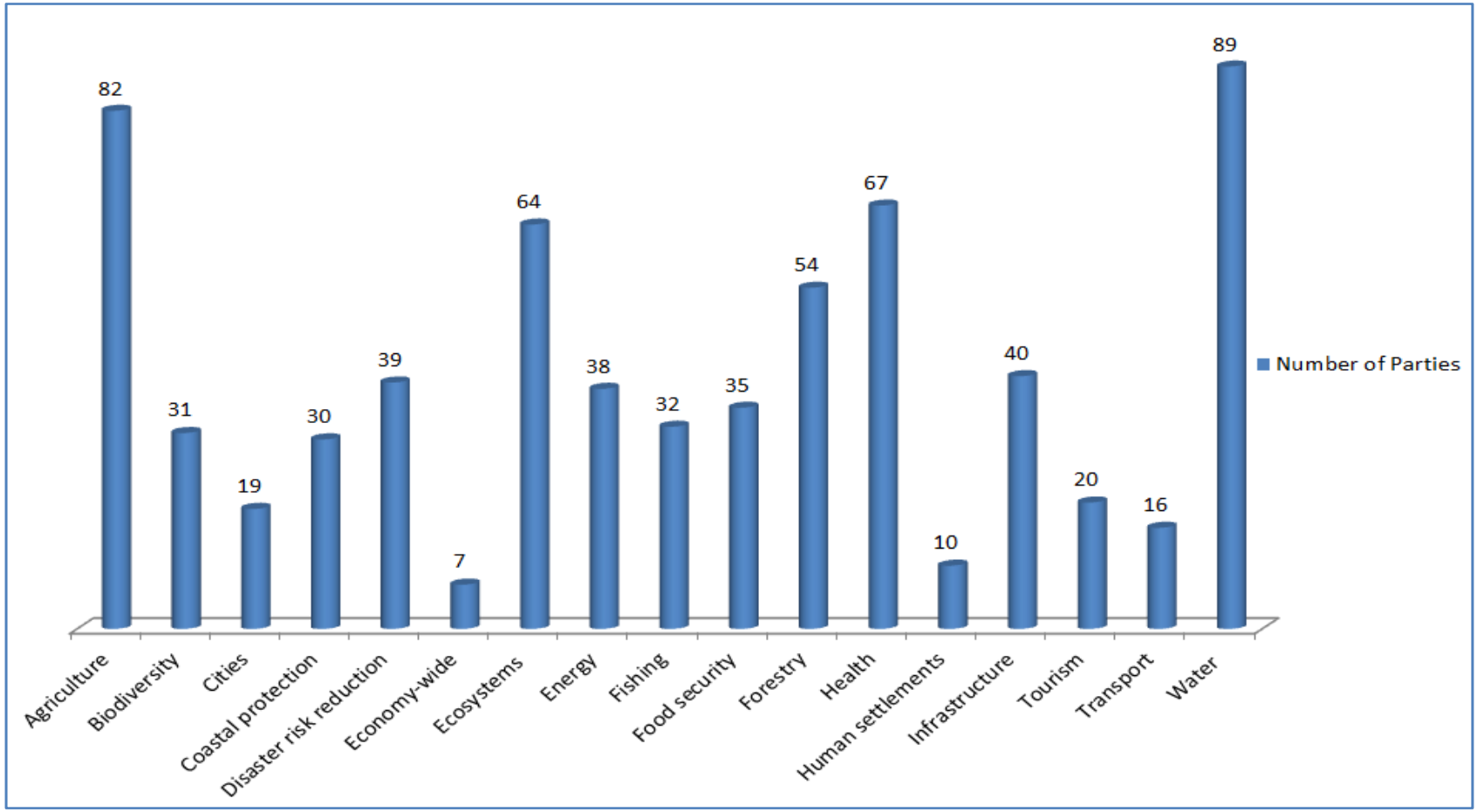
Priorities for adaptation actions in the INDCs



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Approaches to adaptation by Annex I / non Annex I Parties

- **Countries are increasingly taking a national, strategic approach to preparing for climate change**.
- **According to a review by the OECD, currently 24 OECD countries have published national adaptation strategies and 7 are in the process of developing them**.
- Under the UNFCCC National Adaptation Plan (NAP) process, 52 developing countries, mostly Least Developed Countries, have submitted or are developing strategies on their mid- to long-term adaptation needs.

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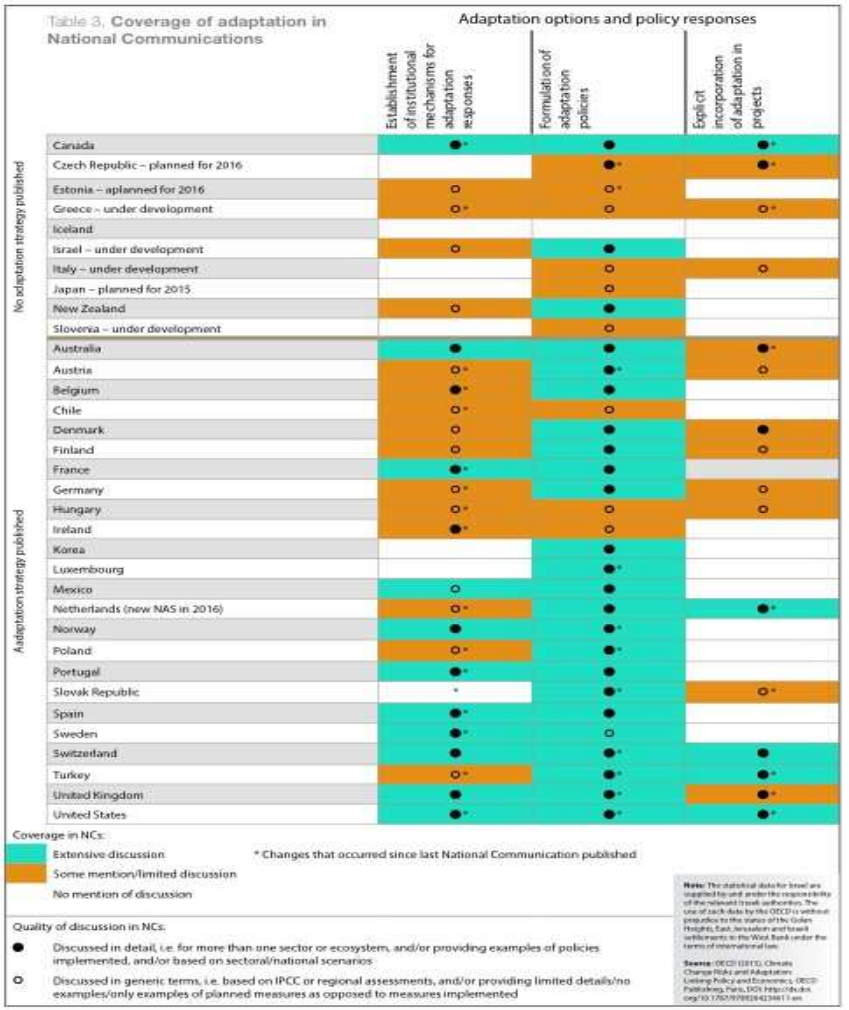
Coverage of adaptation in the National Communications

- **This progress is encouraging but there is still room for improvement**.
- OECD countries' adaptation strategies are all based on impact assessments, often based on historic trends and climate scenarios, and most have identified adaptation options, but few have incorporated adaptation into projects, or established institutional response mechanisms.
- Only two of the NAPs submitted to the UNFCCC have undertaken comprehensive risk and vulnerability assessments.



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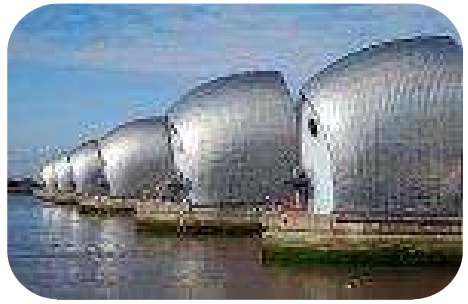
The EU strategy on adaptation to climate change

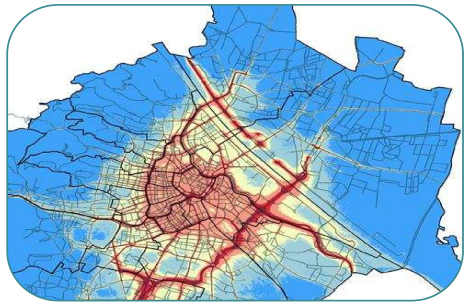
Priority 1: Promoting action by Member States

- Action 1. Encourage MS to adopt Adaptation Strategies and action plans
- Action 2. LIFE funding, including adaptation priority areas
- Action 3. Promoting adaptation action by cities along the Covenant of Mayors initiative: Mayors Adapt



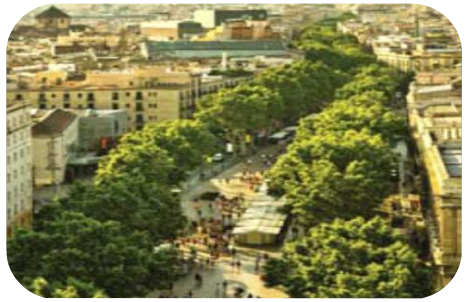
Priority 2: Better informed decision-making

- Action 4. Knowledge-gap strategy
- Action 5. Climate-ADAPT platform



Priority 3: Key vulnerable sectors

- Action 6. Climate proofing the Common Agricultural Policy, Cohesion Policy, and the Common Fisheries Policy
- Action 7. Making infrastructure more resilient
- Action 8. Promote products & services by insurance and finance markets



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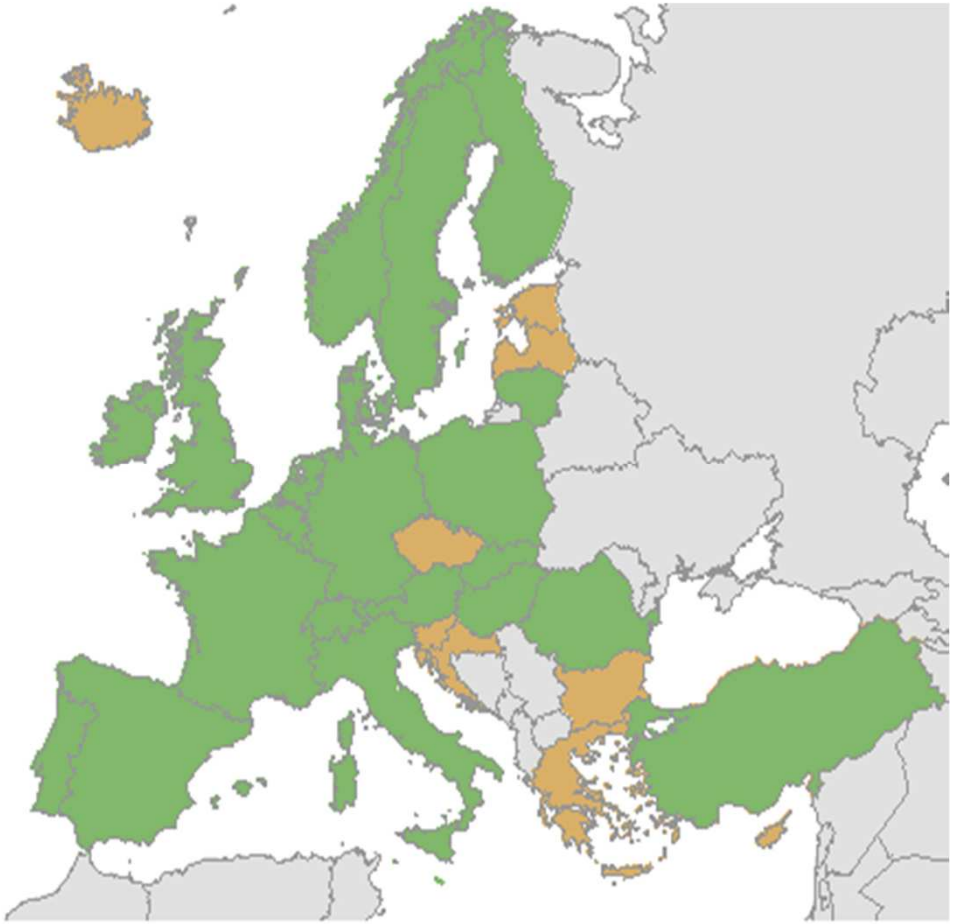
Adaptation strategies in Europe



- In Europe, all countries have submitted information on their adaptation plans and actions in their National Communication to the UNFCCC.
- **22 countries have already adopted an adaptation strategy**.
- Increasingly, additional actions and measures are being taken at regional and local levels.

Adaptation strategy adopted

No adaptation strategy adopted

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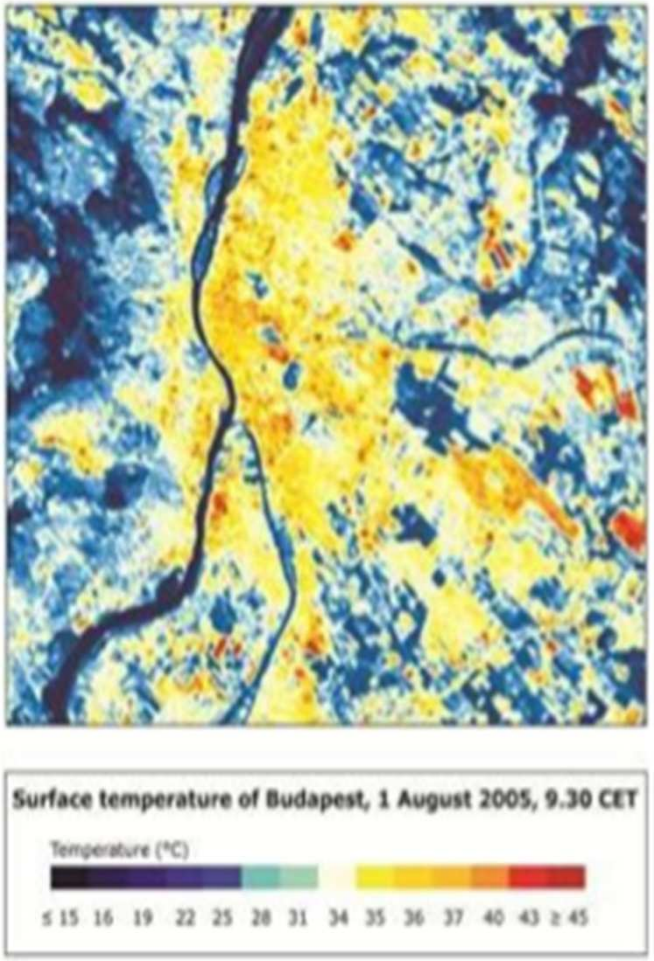
Urban areas are particularly vulnerable to climate change



- **Impacts are often stronger and more costly**:
  - High share of population concerned (e.g. heat waves)
  - Different magnitude of damages due to concentration of infrastructure/assets (e.g. cost of floods in cities; port cities)
  - Co-location of network infrastructure and possible cascade failure (e.g. energy, ICT)
  - Urban Heat Island effect
- **Preparing to the adverse impacts saves lives and costs**

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The role of cities in climate change adaptation

- **An increasing number of cities around the world have begun to plan for climate change** by developing stand-alone climate plans or incorporating climate considerations into existing plans, policies, and projects.This is why, at urban level, there are unique opportunities for adaptation action:
  - Climate change adaptation in cities requires collaborative problem solving and coordination across sectors. **Cities are well positioned to act as conveners of a wide range of partners**.
  - **Adaptation efforts in cities offer cobenefits for climate change mitigation and for local economic development.**
  - **Cities can identify simple and low-cost (or no-cost) actions** that can be implemented to increase resilience in their day-to-day operations.

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Typical adaption options at the urban level

- Climate proofing flood prone areas
- Awareness campaigns for behavioural change
- Water Recycling
- Water sensitive urban and building design
- Adaptation or improvement of dikes and dams
- Adaptation of urban planning: water and energy
- Financial tools for risk management
- Evacuation and Contingency Management Plans
- Heat Health Warning System

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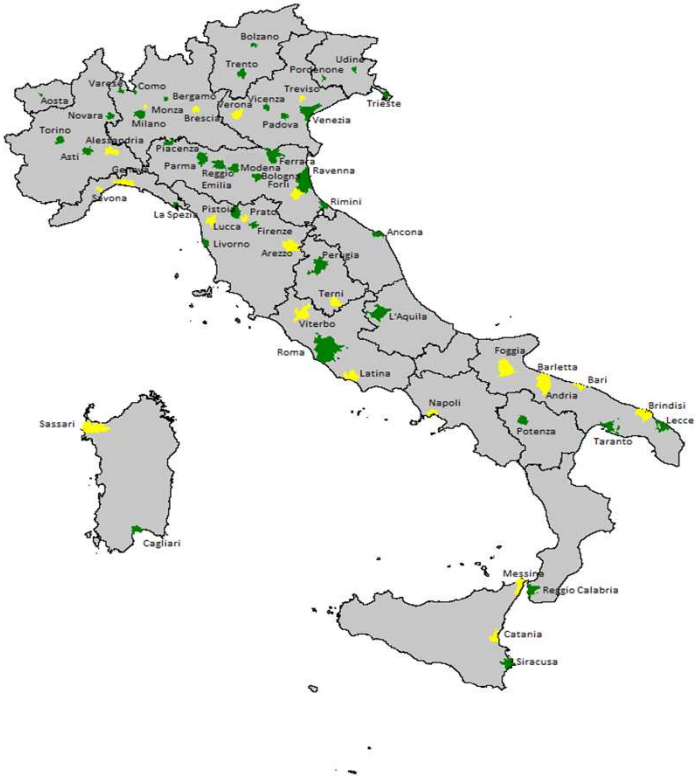
Current status of urban adaptation initiatives in Italy

- In 2014, in the framework of the preparation of the 10th report on the "Quality of the urban environment", ISPRA has carried out a survey in order to understand the current status of urban adaptation initiatives in Italy.
- 38 questionnnaires, corresponding to 62% of the cities that had been involved in the survey, have been completed and returned to ISPRA.



Completed questionnaires

Not completed questionnaires

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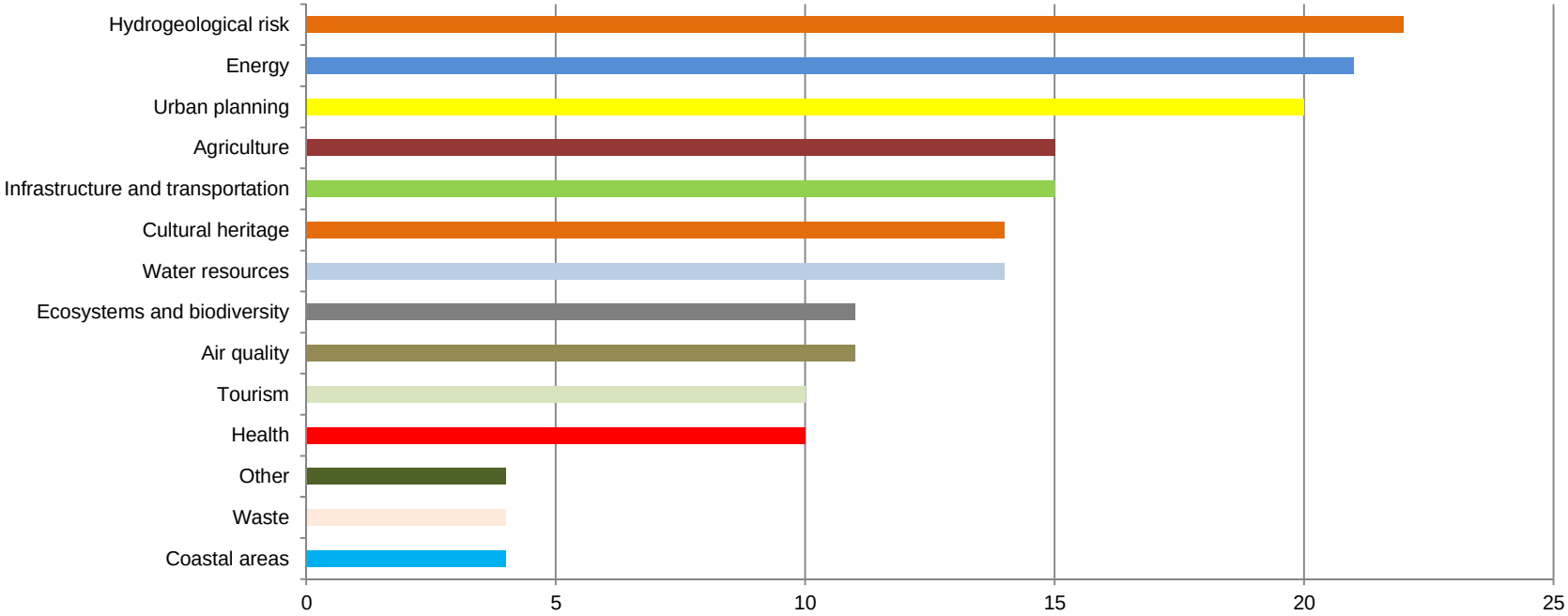
Priorities for urban adaptation in Italy



- Among cities that have already undertaken planned adaptation initiatives, **hydrogeological risk, energy and urban planning are the issues which are most frequently considered**

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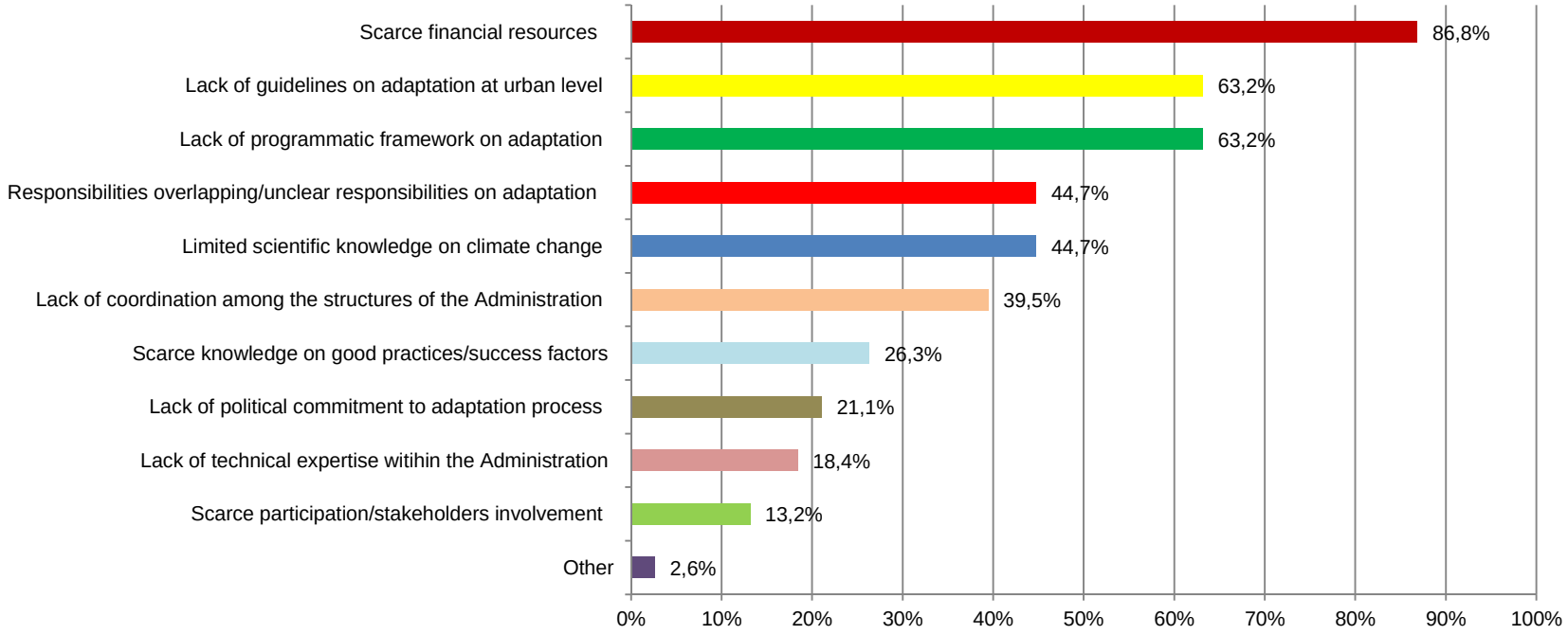
Barriers to urban adaptation in Italy



- **Scarcity of financial resources, lack of guidelines, lack of programmatic framework** are among the issues that are perceived by municipal administrations as barriers to adaptation inititatives.

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Global, national and regional city networks for climate action

City Network/Partnership	Membership
Global Networks	
C40 Cities Climate Leadership Group	40 participating and 19 affiliate cities
ICLEI-Local Governments for Sustainability	> 1,200 cities, towns, counties
United Cities Local Governments (UCLG/Metropolis)	> 1,000 cites and 112 local governments
World Mayors Council on Climate Change (WMCCC)	> 50 members
Cities Alliance	24 members—local authorities, governments, NGOs, and multilateral organizations
National and Regional Networks	
Climate Alliance (Europe)	> 1,600 cities, municipalities and districts and > 50 associate members
Covenant of Mayors (European Commission)	> 2,700 Mayors
U.S. Conference of Mayors (USCM)	1,049 Mayors in 50 states have signed the USCM Climate Protection Agreement
EUROCITIES	Local governments of more than 140 large cities
Asian Cities Climate Change Resilience Network (ACCCRN)	11 cities in Asia
CITYNET	> 70 cities in Asia-Pacific region (full members)

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Projects combining adaptation and mitigation in cities

- EPA's web page on "Smart Growth and Climate Change"

  (http://www.epa.gov/smartgrowth/smart-growth-and-climate-change)
- EU/UN-Habitat's project on "Urban-LEDS Project Cities in Action"

  (http://unhabitat.org/urban-leds-project-cities-in-action-update-2014-promoting-low-emission-urban-development-strategies-in-emerging-economies/)
- ICLEI's initiatives on Resilient Cities

  (http://resilient-cities.iclei.org)

Resilient city
A city that supports the development of greater resilience in its institutions, infrastructure, and social and economic life. Resilient cities reduce vulnerability to extreme events and respond creatively to economic, social and environmental change in order to increase their long-term sustainability. Resilient city activities are sensitive to distinctive unique local conditions and origins. Efforts undertaken to prevent crisis or disaster in one area should be designed in such a way as to advance the community's resilience and sustainable development in a number of areas. As such, resilient cities define a comprehensive 'urban resilience' concept and policy agenda with implications in the fields of urban governance, infrastructure, finance, design, social and economic development, and environmental resource management

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Resources available at the EU level

- **The EU budget has an important role to play in promoting climate action** in all sectors of the European economy and in catalysing the investment needed to meet greenhouse gas reduction targets and ensure climate resilience.
- **The EU institutions have agreed that at least 20 % of the €960 billion EU budget for 2014-2020 should be spent on climate mitigation and adaptation**, some three times the previous level.
- Resources will be channelled through different instruments, such as the structural funds, the Horizon 2020 and the LIFE programs. The LIFE environment fund for the period will have a new €864 million climate sub-programme for mitigation and adaptation.

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Cities and towns

In Europe, around 75% of the population lives in urban areas and this is projected to increase. Climate change has the potential to influence almost all components of the urban environment and raises new, complex challenges. Thereby, climate change impacts on cities as hubs of Europe's economic activity, social life and culture, innovation and knowledge-creation have repercussions far beyond the city borders. As a city specific action of the EU Adaptation Strategy, the European Commission has initiated "Mayors Adapt" to foster urban adaptation on the local level.

Read more

Indicators

- Urban adaptation to climate change in Europe – indicators and maps
- EUROSTAT Urban audit
- Extreme temperatures and health

Publications & reports

- EU cities adapt - Adaptation Strategies for European Cities: Final Report
- European cities adapt to climate change - cities learning from cities
- IPCC Fifth Assessment Report, WGII, Part on Human Settlements, Industry, and Infrastructure. Chapter 8: Urban Areas
- Urban adaptation to climate change in Europe - Challenges and opportunities for cities together with

Tools

- Map book: Urban vulnerability to climate change in Europe
- Urban Adaptation Support Tool

Share your information

Search results

- ▶ Publications and reports (159)
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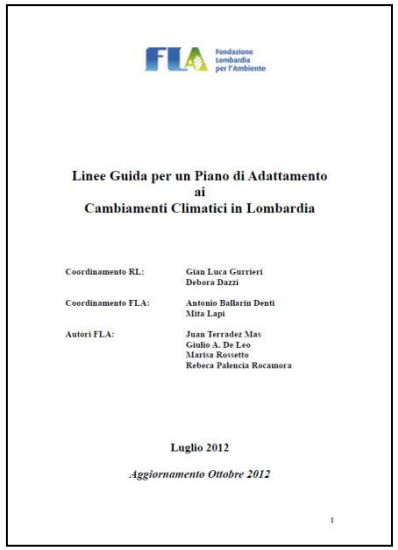
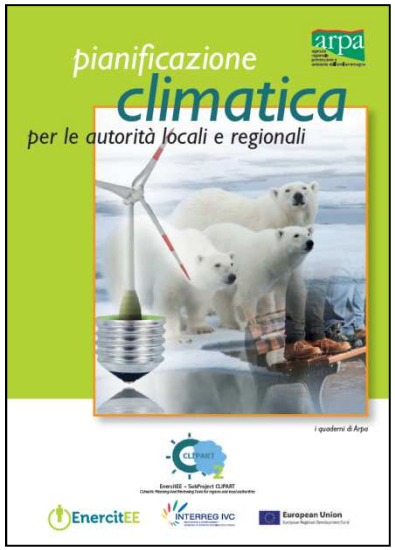
Share your information

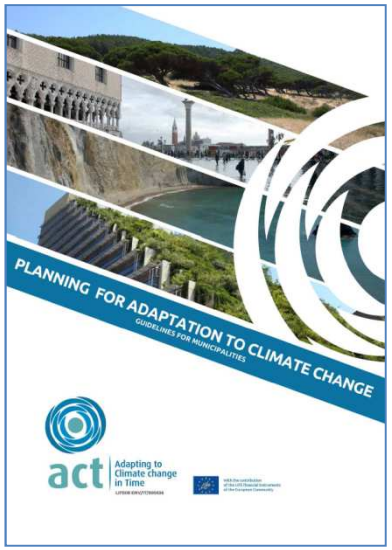
Guidelines for local adaptation plans



FLA, 2012



ARPA EMR, 2012



ISPRA, 2013

- **Guidelines for local adaptation plans have already been developed by Fondazione Lombardia per l'Ambiente, ARPA Emilia-Romagna and ISPRA**.
- Further support may be provided by scientific institutions, in particular for the establishment of **a climate baseline and of climate scenarios**.

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Thank you for your attention!

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