FINNISH CLIMATE PANEL WORKSHOP
16/10/2023

Promises and challenges of adaptation monitoring and evaluation

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IKERBASQUE & BC3

IMAGINE adaptation
Funded by the European Union
erc European Research Council
BC3 BASQUE CENTRE FOR CLIMATE CHANGE
Klima Aldaketa Ikergai

A fact

Thousands of governments, communities and private actors worldwide are planning and implementing adaptation actions


BURGER KING

- Adaptation responses have been observed in every region and across a wide variety of sectors, **but little evidence exists of their outcomes in terms of climate risk reduction** (high confidence).

- **Monitoring and Evaluation (M&E) is the systematic process of collecting, analysing and using information to assess the progress of adaptation and evaluate its effects**—for example, risk reduction outcomes, co-benefits and trade-offs—mostly during and after implementation (AR6 Glossary, Annex II).

IMAGINE adaptation

Source: New, et al. 2022: Decision Making Options for Managing Risk. In: *Climate Change 2022: Impacts, Adaptation, and Vulnerability*. Contribution of WGII to AR6 IPCC. doi:10.1017/9781009325844.026

What is what in MERL?

MONITORING entails tracking progress made in implementing a specific adaptation action in relation to its objectives and inputs.

What do we need to observe?

EVALUATION entails systematically and objectively determining the effectiveness of an adaptation action.

What does it mean for us?

REPORTING entails the systematization and communication of progress and results of the adaptation action to other higher level public or private entities or to other peers and communities and citizens.

How should we explain this to other actors?

LEARNING continual acquisition, generation and processing of knowledge from the implementation of adaptation, its monitoring and evaluation, to further adjustment including the improvement of efficiency and effectiveness of the adaptation process.

What do we learn from this? How can we improve?

IMAGINE adaptation

Sources: *UNFCCC 2023, IPCC 2022, own elaboration.*

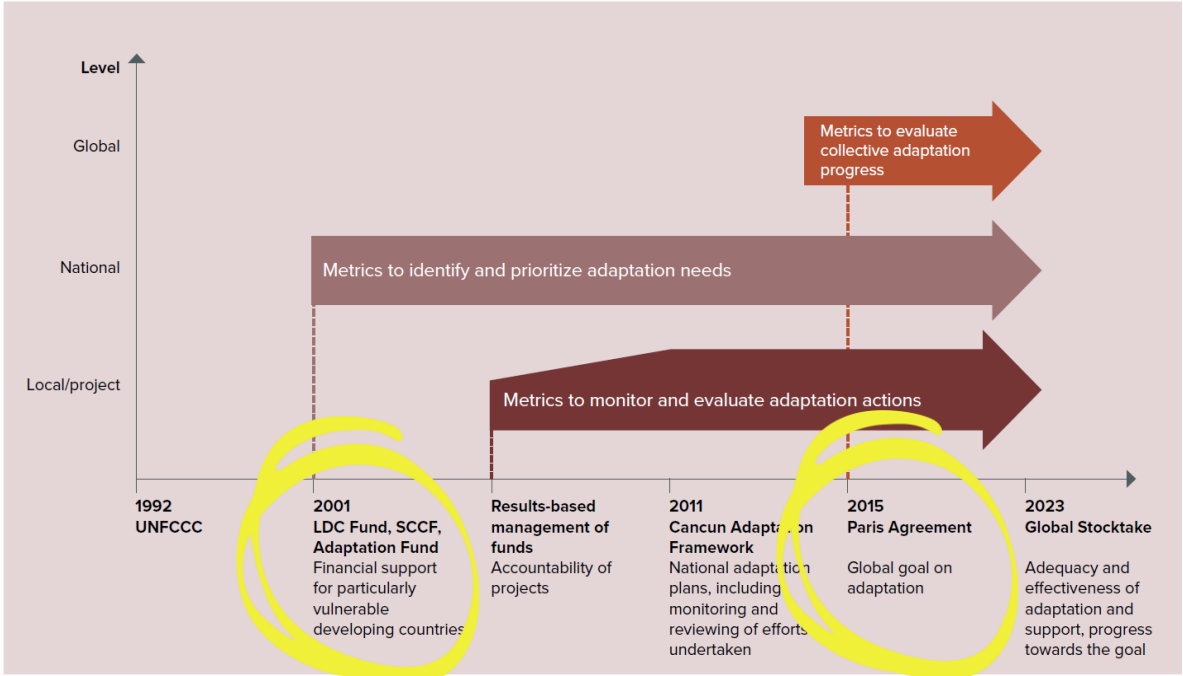
The question of how to measure adaptation is not new

Needs

Actions

Progress

Figure 1. Evolution of functional needs of adaptation metrics over time in relation to the UNFCCC process



Source: *Möhner, A., 2018. The evolution of adaptation metrics under the UNFCCC and its Paris agreement, in: Christiansen, L., Martinez, G., Naswa, P. (Eds.), Adaptation Metrics: Perspectives on Measuring, Aggregating and Comparing Adaptation Results, Adaptation Perspective Series. UNEP DTU, p. 15.*


Needs
Actions
Progress

Reasons to assess adaptation

01	Assess adaptation **needs** and its dynamics/evolution.
02	Provide **accountability** of actions.
03	Assess **efficiency** of adaptation efforts.
04	Evaluate **effectiveness** of adaptation actions (*or inactions*).
05	Assess **impacts**: results of actions (*positive and negative too!*)
06	Understand **equity** of adaptation progress.
07	Improve **learning**: and thus, increase capacities – *learn how to learn* (*knowledge, data*).
08	**Positively change** future activities or interventions (as a result of learning).
09	**Compare** with other similar activities or interventions (and thus, learn).
10	**Attract funding** and distribute resources.
11	Gather **political momentum**.
12	Increase **understanding of adaptation** and its relationship with development, sustain. &others.

Adapted from Turner, S., Moloney, S., Glover, A., Fünfgeld, H., 2014. A review of the Monitoring and Evaluation literature for climate change adaptation. Centre for Urban research, RMIT University, Melbourne, Australia.

- **There is a significant increase in attention to M&E (2017→ 2021)**
- **Less attention to evaluation.**

STUDY ON 70 NAPs (National Adaptation Plans)
Source: Leiter, T. (2021). *Environmental Science & Policy*, *125*, 179–188. https://doi.org/10.1016/j.envsci.2021.08.017

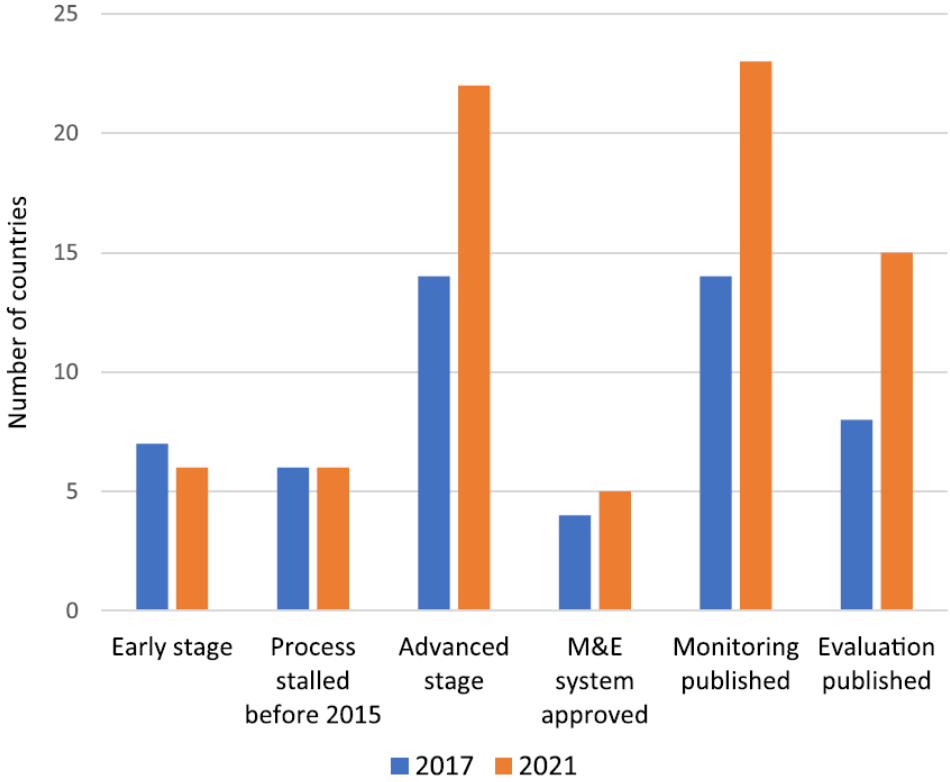


Fig. 2. Number of countries per NAP M&E stage in 2017 and 2021.

	Vulnerability assessment (%Yes)*	Risk assessment (%Yes)*	Aligment of actions with scenarios and risks (%Yes)*	Socio-economic projections (%Yes)*	Climate scenarios (%Yes)*	*IPCC scenarios (% directly)***	*IPCC scenarios (% indirectly)***
Type of policy							
A	74.7%	65.1%	19.3%	14.5%	90.4%	*66.7%*	*17.3%*
A/M	58.2%	47.8%	11.9%	19.4%	79.1%	*52.9%*	*11.8%*
A;C	100.0%	75.0%	50.0%	25.0%	75.0%	*66.7%*	*33.3%*
A;DRR	100.0%	100.0%	50.0%	50.0%	100.0%	*50.0%*	*50.0%*
C	28.0%	52.0%	16.0%	12.0%	64.0%	*25.0%*	*50.0%*
DRR	57.1%	71.4%	42.9%	28.6%	71.4%	*0.0%*	*60.0%*
Others	31.6%	34.2%	2.6%	36.8%	44.7%	*41.2%*	*5.9%*
Policy scale							
City	53.3%	53.3%	26.7%	31.1%	77.8%	*42.9%*	*22.9%*
Metropolitan	58.3%	75.0%	16.7%	22.2%	69.4%	*56.0%*	*12.0%*
National	65.9%	51.1%	5.7%	14.8%	75.0%	*59.4%*	*17.2%*
Regional	40.5%	35.1%	8.1%	10.8%	73.0%	*44.4%*	*25.9%*
State	60.0%	65.0%	45.0%	35.0%	90.0%	*66.7%*	*22.2%*
World region							
Africa	69.2%	38.5%	0.0%	23.1%	61.5%	*50.0%*	*0.0%*
Asia	54.5%	50.9%	9.1%	14.5%	74.5%	*79.5%*	*0.0%*
Europe	60.0%	70.0%	18.0%	8.0%	86.0%	*39.5%*	*37.2%*
Latin America	68.8%	62.5%	0.0%	25.0%	65.6%	*66.7%*	*14.3%*
North America	46.5%	41.9%	39.5%	39.5%	88.4%	*36.8%*	*31.6%*
Oceania	50.0%	55.0%	20.0%	15.0%	60.0%	*58.3%*	*16.7%*
Total	**57.5%**	**54.0%**	**15.5%**	**20.4%**	**75.7%**	***53.8%***	***19.5%***

Most beneficial for adaptation planning

Least beneficial for adaptation planning

* of the total number of policies analysed

** of the total number of policies using climate scenarios

Source: Olazabal et al 2019. Environmental Research Letters. https://doi.org/10.1088/1748-9326/ab5532

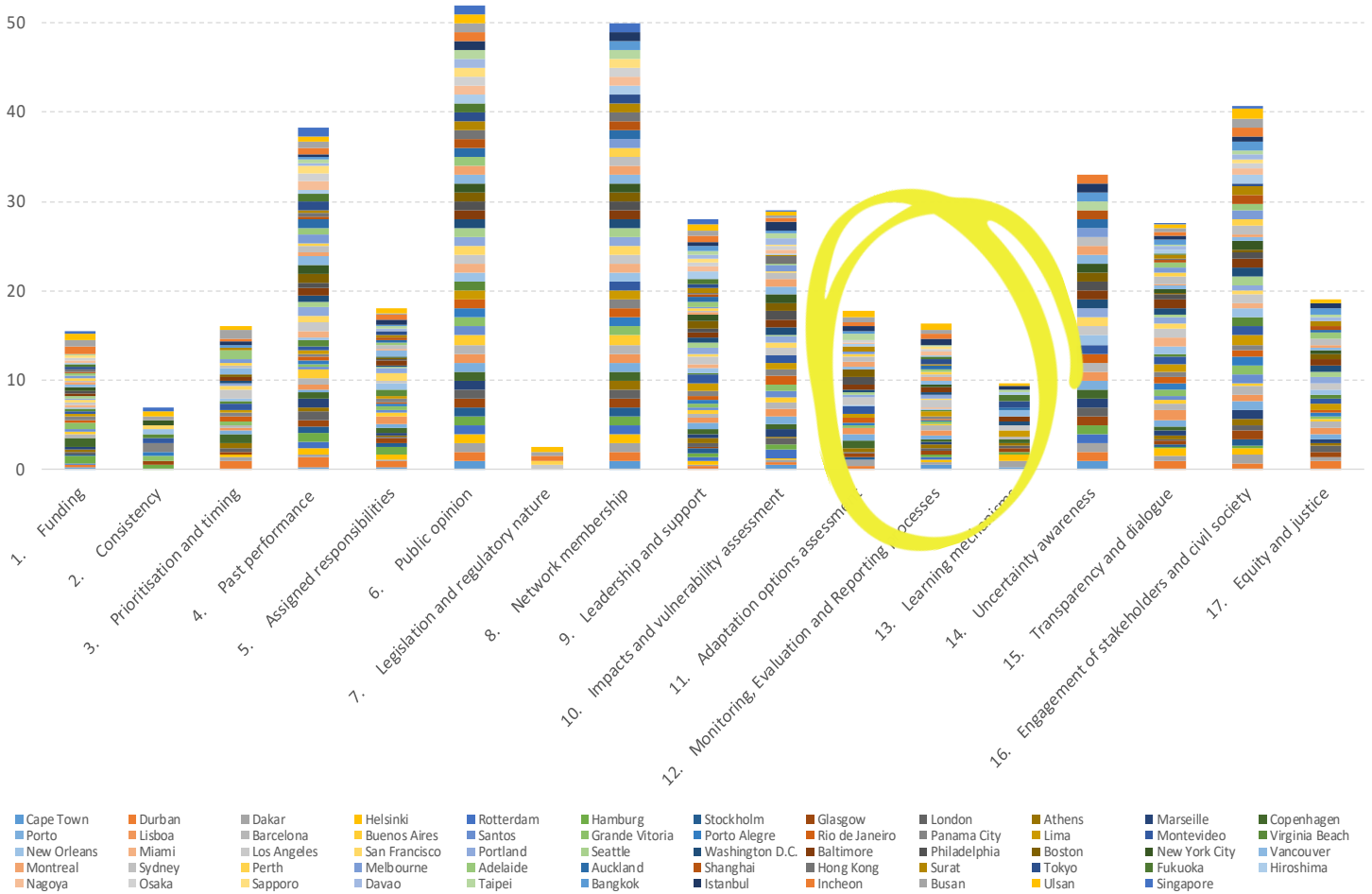
Analysis of 226 adaptation policies (2019):

- Around 42% of documents do NOT use vulnerability or risk assessments.
- Almost 85% do NOT align actions with identified risks.
- Almost 80% do NOT consider socio-economic projections.
- Almost 25% do NOT consider climate scenarios.

We are yet to understand how to identify specific adaptation goals.

Assessment of credibility of 59 adaptation plans of large cities worldwide

Source: Olazabal, M., Ruiz De Gopegui, M., 2021. Landscape and Urban Planning 206, 103974. https://doi.org/10.1016/j.landurbplan.2020.103974



How do we decide what we need to monitor and evaluate?

What metrics?

E·x·a·m·p·l·e

Credit: Marta Olazabal

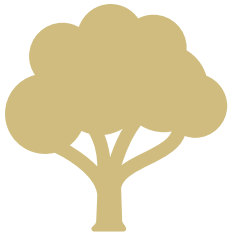
Process Effectiveness approach

Target	Input	Output	Outcome	Impact

Hale et al 2020

What we normally assess/measure	What we (also) need to measure
PROCESS	***EFFECTS OF ACTIONS***

EXAMPLE: an urban park to increase thermal comfort



Potential metrics:

- Cost of the construction of the park
- Number of workshops to inform or negotiate with local businesses.

- New green surface
- Urban park project delivered
- Park works executed

Potential metrics:

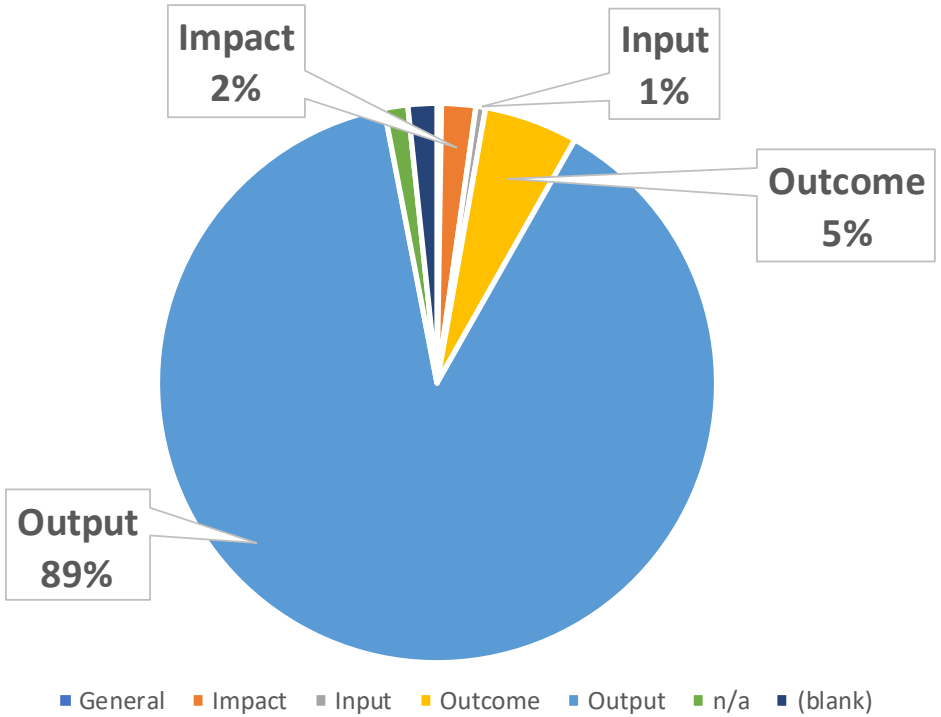
- Actual temperature decrease (mean/during heatwave)

- Number of users of park
- Types of users of park (gender, race, age…)
- Dynamics of the use of the park (timing, season)
- Increase in nearby housing prices
- Decrease in cooling demand in nearby buildings

- Number of hospitalizations
- Number of deaths as a result of extreme temp

From 59 plans:
46 mentioned MERL
Only 11 listed indicators and metrics

City	Number of metrics
Athens	81
Auckland	38
Barcelona	76
Glasgow	6
Lima	12
Montreal	1602
Nagoya	8
New York City	69
Portland	33
Tokyo	20
Vancouver	28
Grand Total	**1973**



Source: *Goonesekera, S. M., & Olazabal, M. (2022).* ***Climate adaptation indicators and metrics: State of local policy practice.*** *Ecological Indicators, 145, 109657.* https://doi.org/10.1016/j.ecolind.2022.109657

01

Adaptation has multiple metrics.

02

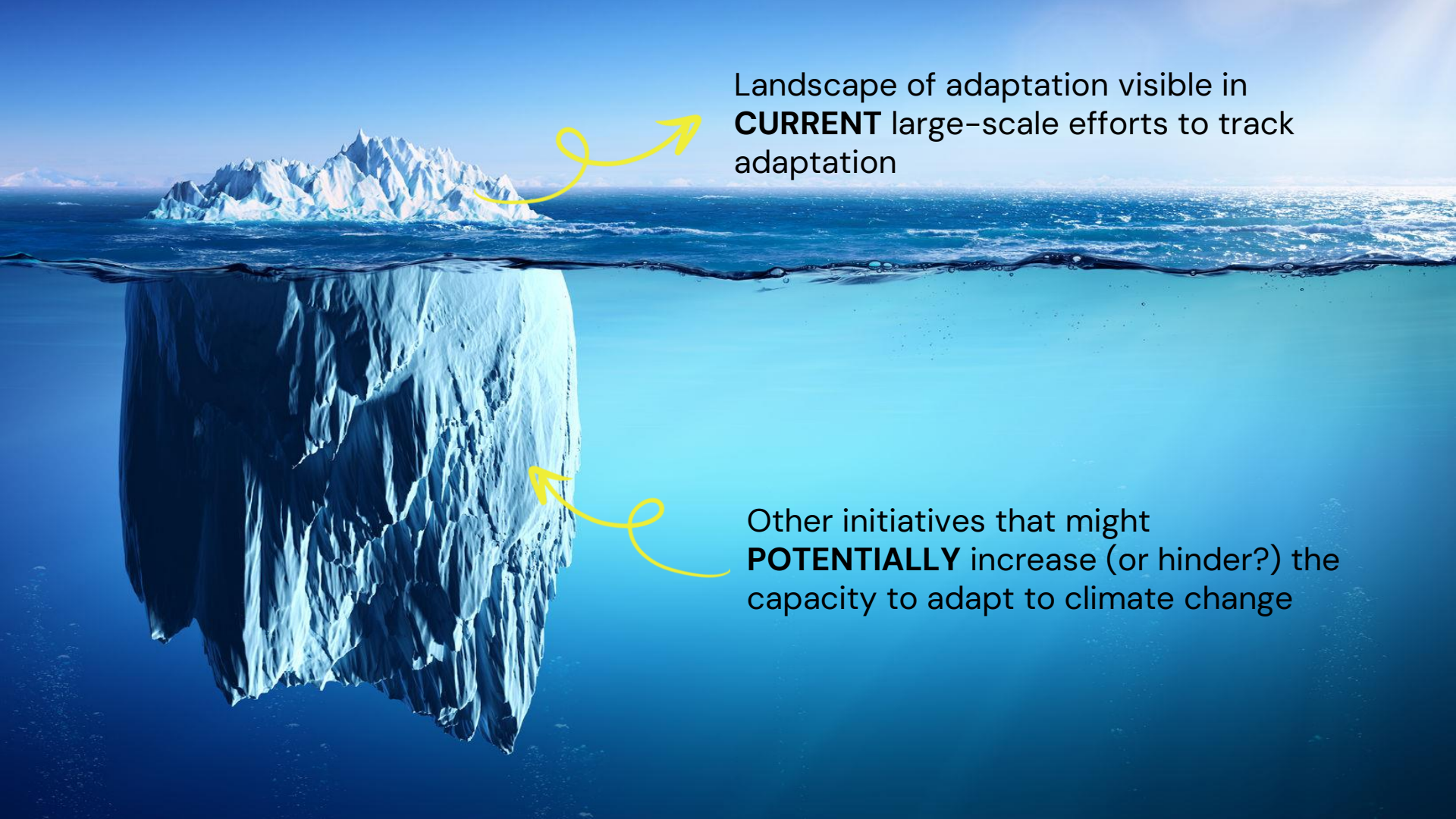
Adaptation is local, context specific.

03

Adaptation does not have universal effects.

“*You* can't manage what *you* can't *measure*.”

Management expert
Peter Drucke


Landscape of adaptation visible in **CURRENT** large-scale efforts to track adaptation
Other initiatives that might **POTENTIALLY** increase (or hinder?) the capacity to adapt to climate change

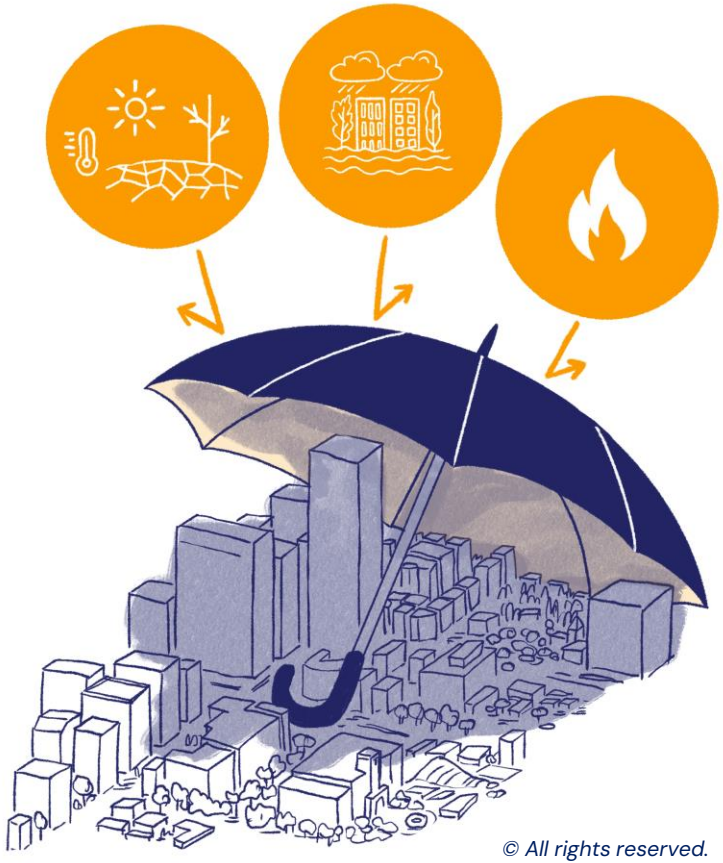
Some thoughts

1. We have a lot of work to do to **improve the way we measure adaptation and its progress**.

2. The questions is: How can we develop measurements and measurement systems that **support adaptation decision-making** processes in a way that adaptation is

   responsive to real needs?
   more equitable?
   more effective?
   more efficient?
   aligned with sustainability goals?
   does not produce maladaptation?

3. In this mission, **science, policy and practice are going hand by hand**. Knowledge transfer, capacity building are collaboration are key.



Key areas of needed work

1. M&E is integral to the **planning process**: needs to be planned early.
2. Moving beyond outputs to **outcomes and impacts.**
3. Moving beyond monitoring to **evaluation and learning**.
4. Moving beyond the **adaptation niche.**
5. Integrating the **scale**: spatial and temporal.
6. **Include** all those that matter in the decision-making process.

Kiitos!

Thank you!

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IMAGINE adaptation

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ikerbasque
Basque Foundation for Science

NZ CCC approach to adaptation progress assessment

Creating robust national adaptation MER frameworks:
Discussing latest advances

Dr Judy Lawrence, NZ Climate Change Commissioner

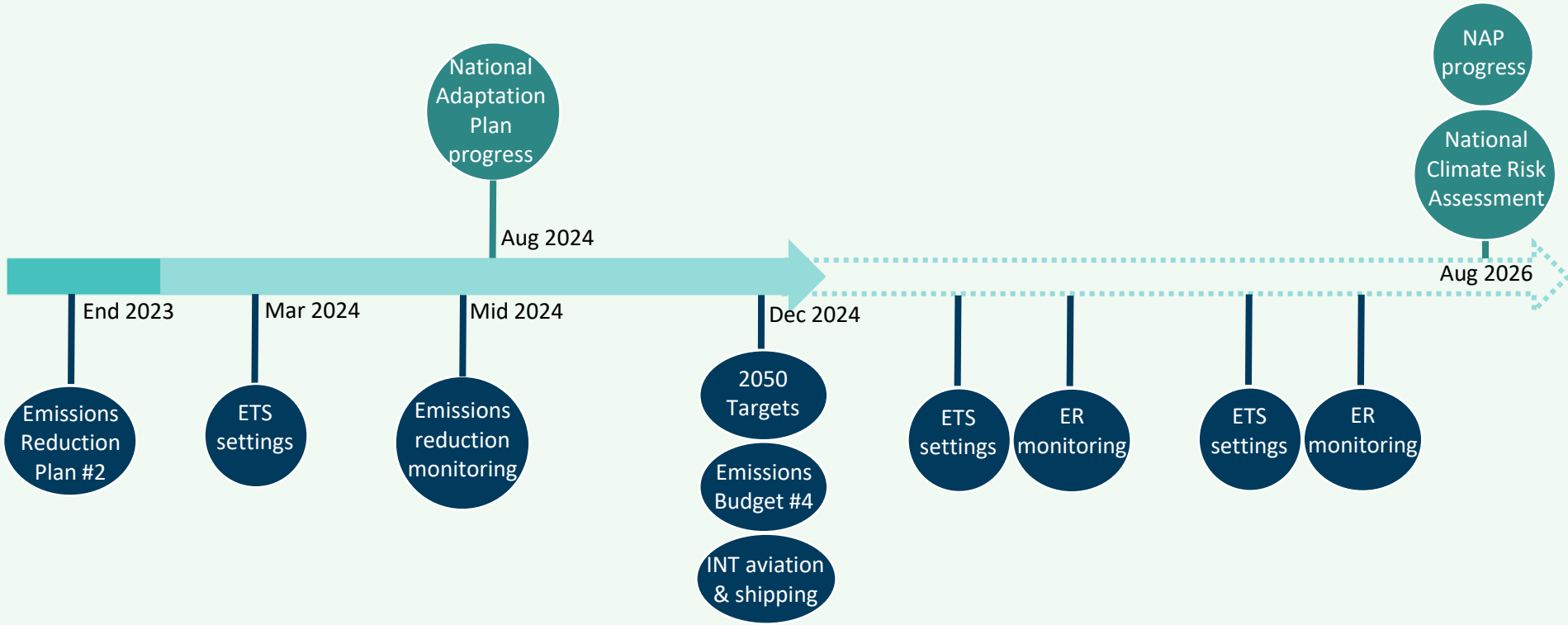
16 October 2023

He Pou a Rangi
Climate Change Commission

New Zealand Climate Change Commission

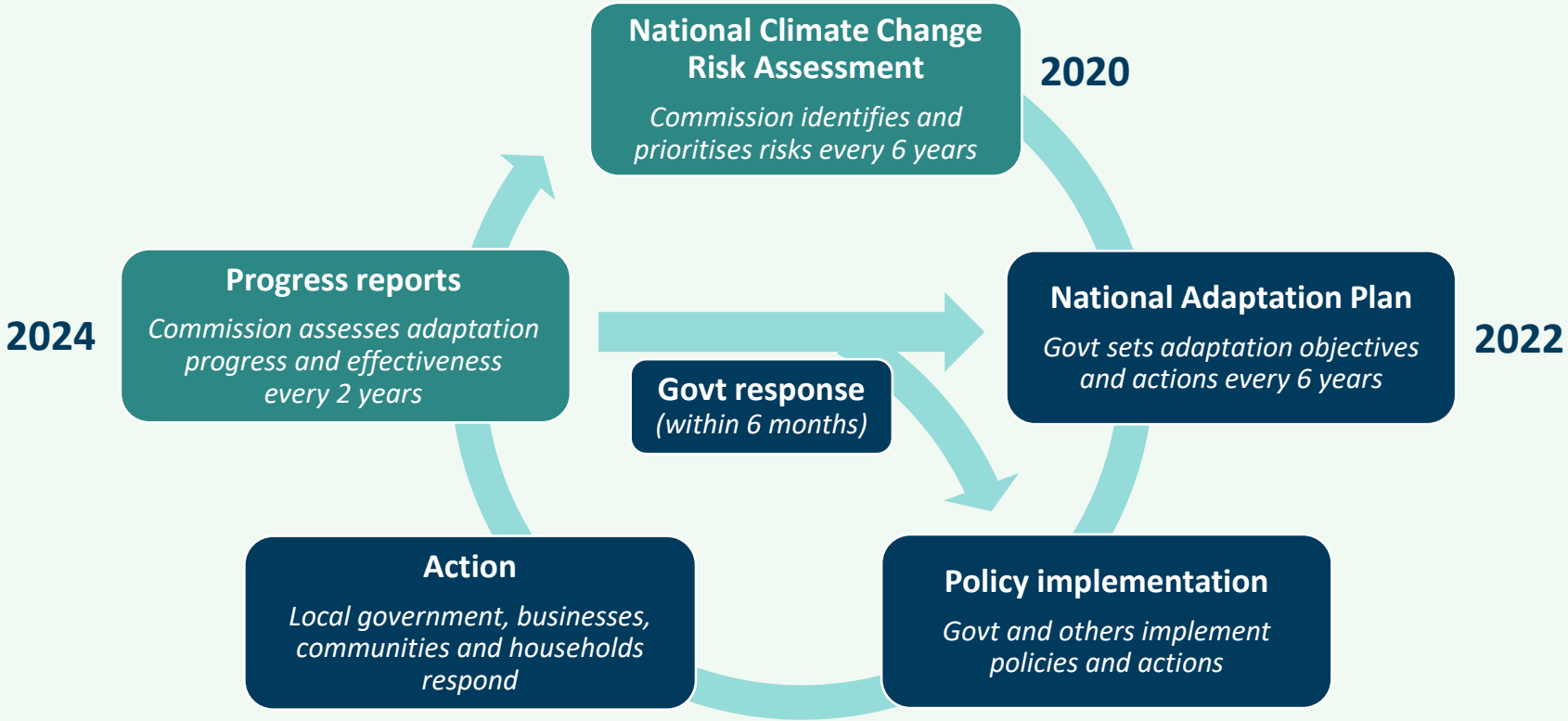
- We were established under the Climate Change Response (Zero Carbon) Amendment Act in 2019
- We provide independent, evidence-based advice to Government and monitor progress on climate mitigation and adaptation
- To date, we have released advice on emissions budgets, emissions reduction plan, NDC, NZ ETS settings, and agricultural emissions reductions
- Our team are a group of experienced analysts and a board of 8 commissioners

The NZ Commission's upcoming advice



More info on upcoming work: https://www.climatecommission.govt.nz/our-work/our-upcoming-work/

NZ climate adaptation policy cycle



What our adaptation progress assessment must do

Under NZ law, our adaptation progress assessments must evaluate the implementation of the adaptation plan and its effectiveness

Each progress report must include:

- An assessment of the progress made towards implementing the strategies, policies, and proposals included in the plan
- An assessment of the degree to which the objectives of the plan have been achieved and how well the plan responds to the most significant risks posed by climate change
- An identification of any known barriers to the implementation and effectiveness of the current plan, including recommendations for how those barriers might be addressed or overcome in future
- Any other relevant matters required to support the report

Our adaptation progress assessment framework

1	2	3
Quality of the plan	**Implementation**	**Observed progress**
How likely is the National Adaptation Plan to achieve the desired outcomes?	How well is implementation progressing?	How much progress are we observing towards desired outcomes?

Overall Effectiveness

A scorecard for each part of the assessment framework

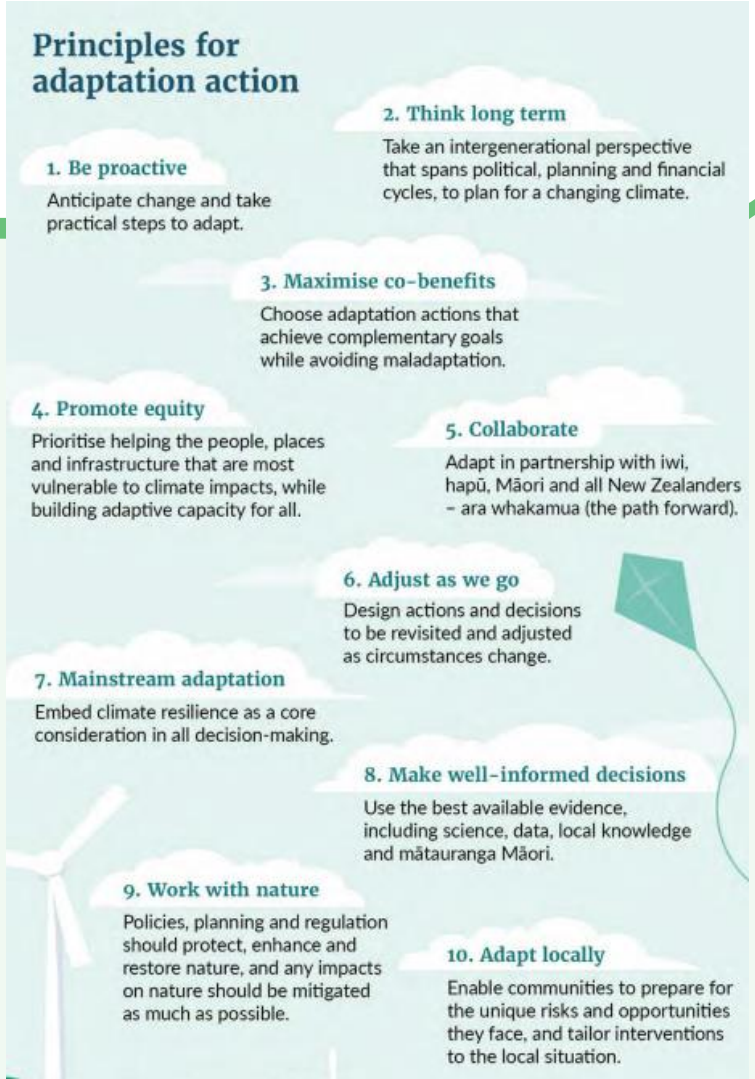
- We’re conscious of the potential unintended consequences of quantitative indicators (e.g. maladaptation)
- We’re intending to use both quantitative and qualitative evidence
- We’re developing a scorecard so our overall assessment is qualitative

e.g.

Principles to help our assessment

- The Government outlined principles in their National Adapation Plan (figure on right)
- We're developing our own principles to assess against. These are still to be determined, but may include:
  - Consider future climate change
  - Enable proactive adaptation (not just reactive)
  - Enable transformative change (not just incremental)
  - Equity considerations
  - Te Tiriti and Te Ao Māori considerations

Indicative only – Still in development



Our assessment of the quality of the plan

We're considering:

- How the actions in the plan set NZ up for effective adaptation (based on adaptation principles)
- How well the plan addresses the risks identified in the 2020 NCCRA
- How well the plan addresses key policy barriers and opportunities
- How timely the actions in the plan are, relative to expected climate impacts
- Whether governance and institutional arrangements enable risk-informed decisions

Our assessment of implementation

We're considering:

- Responsibility: Is it clear who is responsible for delivery of actions and outcomes?
- Funding: Has appropriate funding been allocated to implement the actions?
- Milestones: Are there are clear milestones and long-term implementation plans in place?
- Status: Are actions on track to achieve milestones? Have any actions been delayed or revoked? Are clear reasons given for delayed and revoked actions?
- Monitoring: Is it clear how lead agencies will track ongoing implementation towards outcomes? Is monitoring information available and accessible to the public?

DRAFT – Still in development

Our assessment of observed progress

We're considering:

- Whether risk is reducing and resilience improving, where risk is a function of exposure, sensitivity and adaptive capacity
- Whether adaptation action is driving that change
- Quantitative and qualitative indicators across different theme and sub-theme areas
- Localised insights from case studies and engagements
- Insights into extent to which barriers are still in place, or opportunities are being realised

Challenges we're facing

- What adaptation outcomes we are seeking
- Aligning national, regional, local outcomes
- How we express performance
- Combining quantitative and qualitative insights

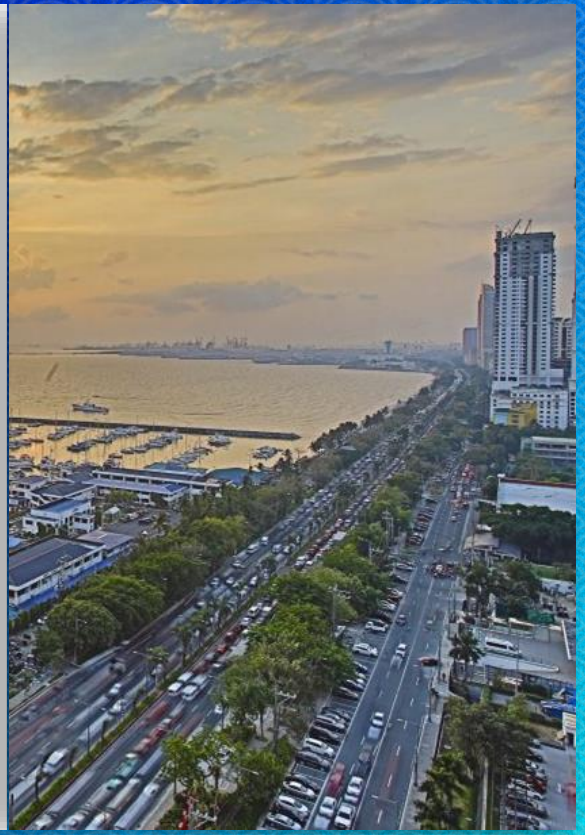
Thank you

Want to get in touch?
hello@climatecommission.govt.nz

He Pou a Rangi
Climate Change Commission

Creating Robust Adaptation Plans: Focus on M & E Initiatives-Philippines

Emma Porio, PhD
CCARPH Project Leader & Principal Investigator
Professor, Ateneo de Manila University
Science Research Fellow, Manila Observatory
Co-Chair, NPTE, Climate Change Commission (Philippines)
Co-Chair, International Climate Change Council, Adaptation Workstream



BEAUTY UNMATCHED – Sunset at Roxas Boulevard | Manila Bulletin

https://resiliencetoolkit.ph

https://coastalcitiesatriskph.com

https://linktr.ee/ccarph

Emma Porio, PhD
CCARPH Project Leader & Principal Investigator
Professor, Ateneo de Manila University
Science Research Fellow, Manila Observatory

IPCC Report Summary for Policymakers, 2022

1 **Increasing poverty levels, widening inequality, and creating new vulnerabilities,** especially among the most exposed, vulnerable nations and populations like women, children, elderly, PWDs, LGBTQ+

2 **Twin crises of our time, climate and social inequality, exacerbated by the COVID-19 Pandemic,** intensifying vulnerability among those in already marginal and disadvantaged communities (Porio 2022)

Rapid Urbanization + Social Inequality.
Bonifacio Global City (L) and Makati (R) (Google Earth)

Unemployment
due to COVID-19 lockdowns (Source)

Interrupted education
due to school closures (NikkeiAsia)

Coastal Inundation.
City of Bulacan.(UNDRR/Getty Images)

Bündnis Entwicklung Hilft

Gemeinsam für Menschen in Not.

WorldRiskIndex 2022

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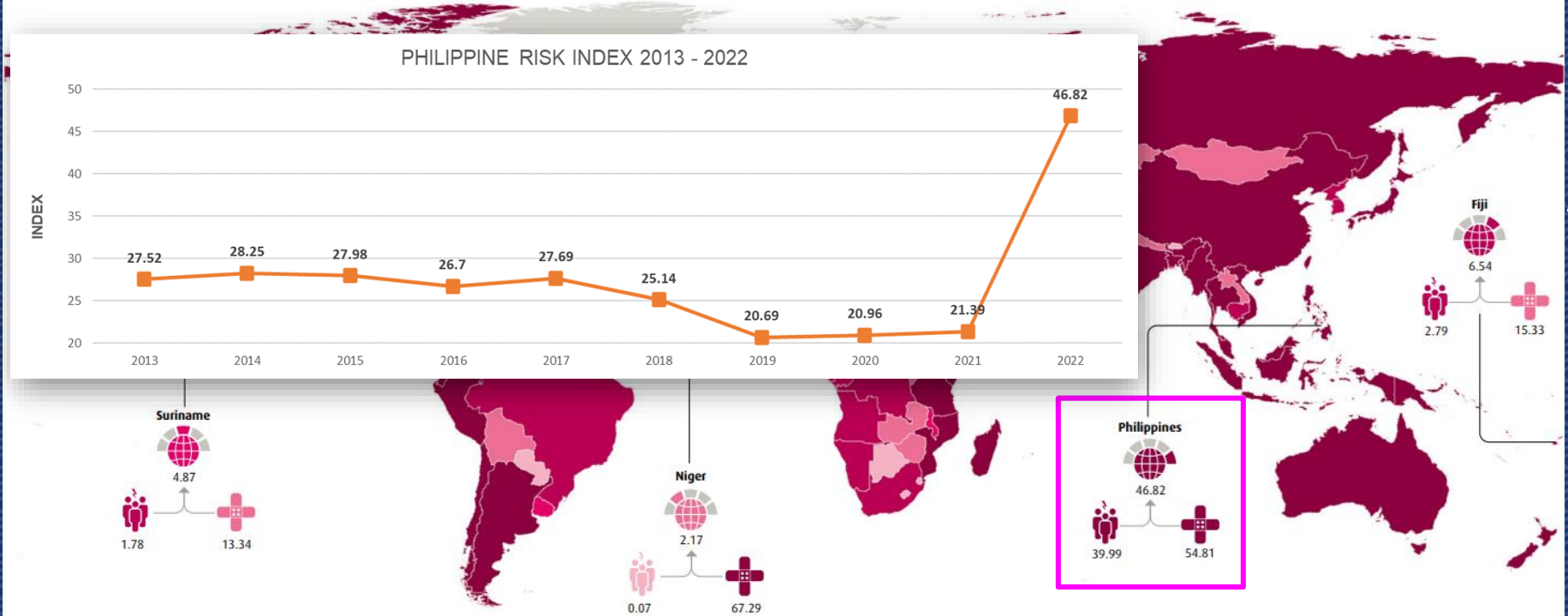


Data Sources: Secondary Data Sources Supplemented with Primary Sources

1. RA 9729-climate change plans and programs of government; NFSCC and the NCCAP, the NCCAP Results-Based Monitoring and Evaluation System (RBMES) 2011-2028; Review and Enhancement of Philippines M & E Systems for NAP-NDC
2. National Climate Change Adaptation Plans with M & E Systems
3. National Economic Development Plan of the Philippines
4. National Disaster Risk Reduction and Management Plan (2018-2028)
5. National Adaptation Plan (2023-2050): Adaptation Priorities
6. Sendai Framework Priorities
7. UN Sustainable Development Goals (SDGs)
6. Climate Change Act of 2008

Some Innovations:

1. National Resilience Scorecards (Sendai plus SDGs)
2. Blue and Green Economy Scorecards (Livable Cities and Communities Scorecards)

Preliminary Analysis:

1. Philippine NAP M and E—rich but need to be contextualized & harmonized with partner NGAs and LGUs

→NCCAP and NCCAP- RBMES aligned; NDC Roadmap need more harmonization

→ 2017-2018, the CCC undertook its first monitoring of the NCCAP, with the RBMES results framework as basis;

→NCCAP's priority thematic areas: Water Security (WS), Climate-Smart Industries and Services (CSIS) and Sustainable Energy (SE)

→ Progress: development of an integrated M&E system; gender mainstreaming of the NCCAP; Climate Change Expenditure Tagging (CCET) system;

→CC mainstreaming challenges with NGA partners and LGUs (e.g., LCAP, CLUP, AIP).

2. Metrics are fine but robustness of the data ecosystem challenged

3. Need for intersectional data analytics plus big data for validation

4. Opportunities for a robust M & E—initiatives/innovations

Some Initiatives to Contextualize NAP and M & E Initiatives

1. Coastal Cities at Risk: Manila Case Study
2. National Resilience Scorecards
3. Sendai Priorities plus SDGs

Metro Manila's Socio-Pol-Eco Profile: Monitoring Risk Governance and Resilience

Metro Manila:

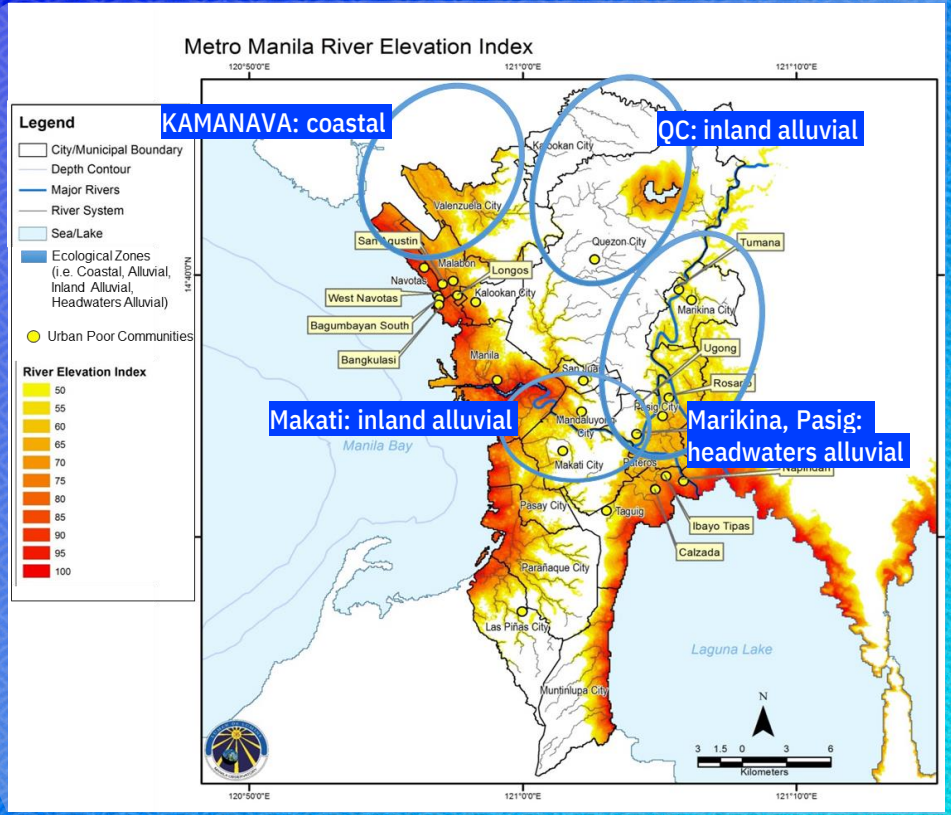
Population: 15 M
- Daytime: 16M- 18 M
- Mega-Manila: 25M

Informality: 45 %- 60%

Population Density: 20,000/km^2

Urban Economic Primacy: 37% of GDP

Risk Governance:
- Metro Manila Dev. Authority
- Decentralized
  - 17 cities and 1 municipality



↑ Demand for land
↑ Land values

↑ Needs of growing population
↓ Economic growth rate
↓ Investment in services
↓ Security for housing, jobs, and livelihood

"... the net worth of the top 20 Filipino families is about US$15.6 billion while 70 percent of the people subsist on less than US$2 per day."
- Yulo-Loyzaga and Porio (2015)

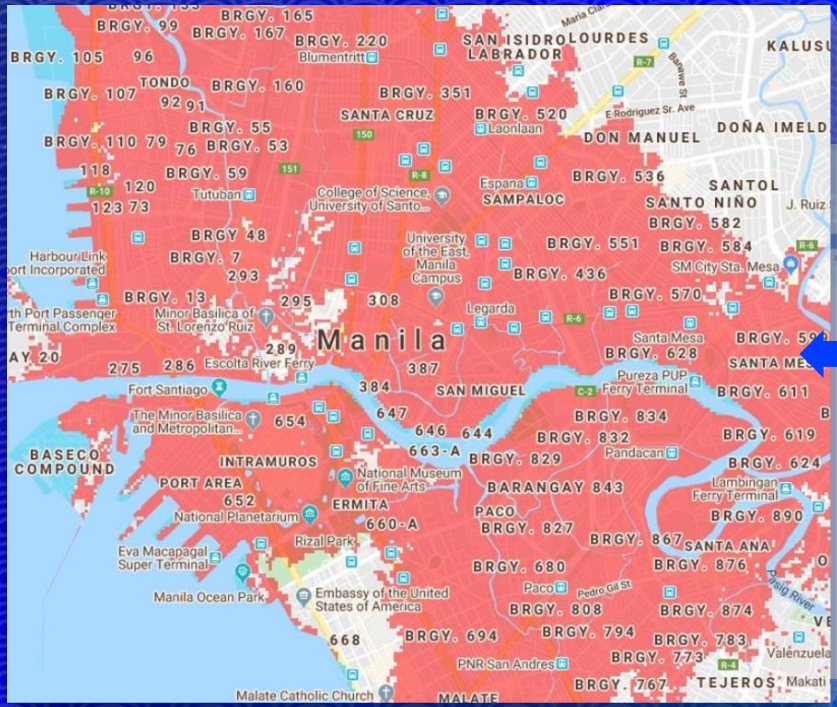
Source: Narisma (2011); Porio (2014; 2019)

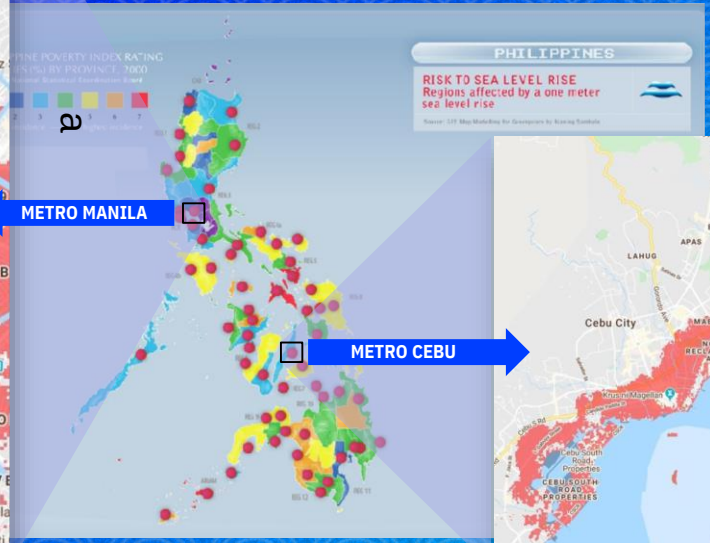
Geographical and Environmental Characteristics

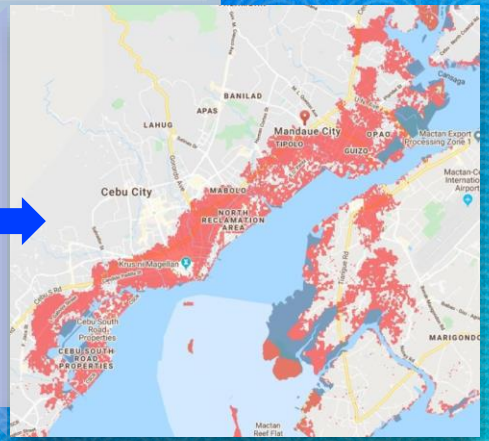
Associated Risks

Metro Manila's Climate Change Context and Vulnerability

Projected coastal flooding in Metro Manila and Metro Cebu by 2050 due rising sea levels vis-à-vis NAP 2023-2050

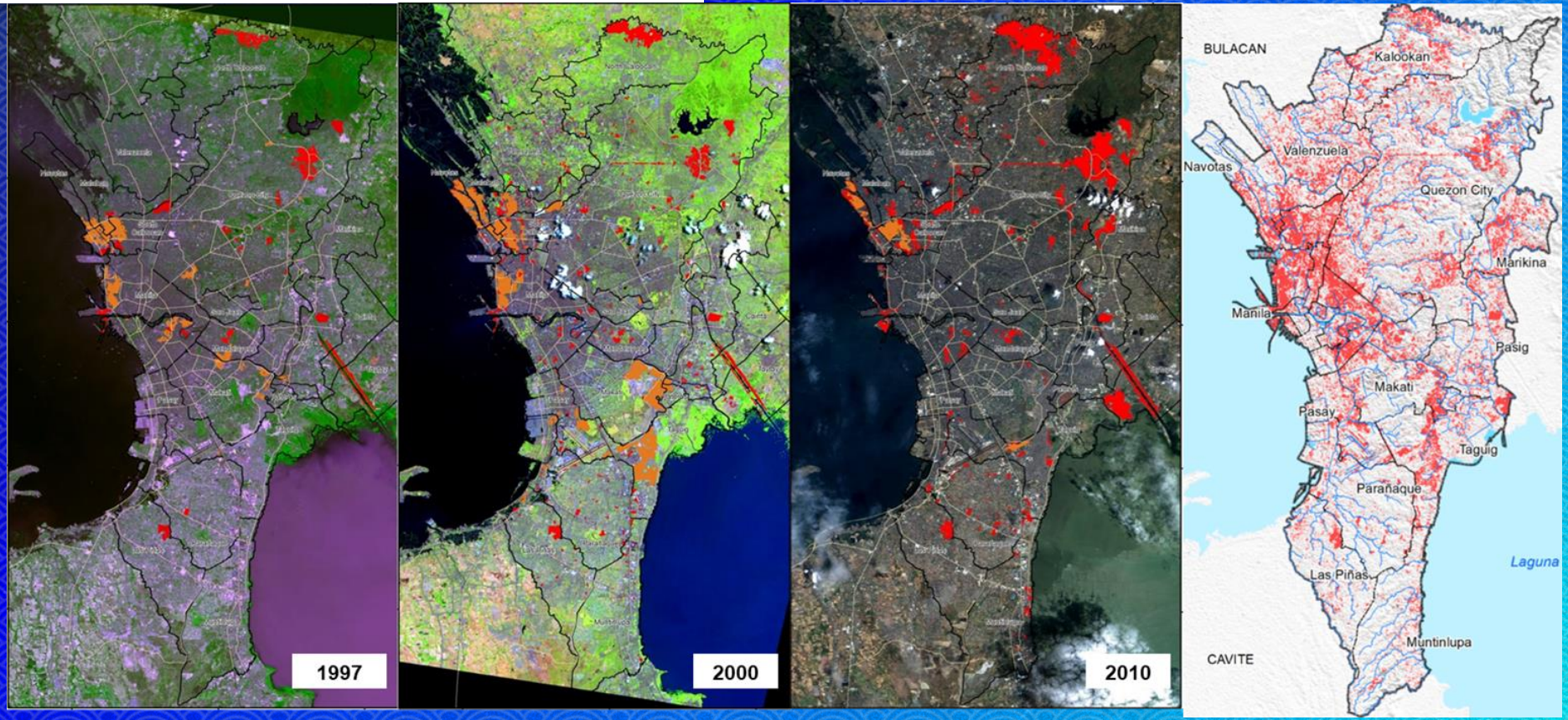






Images from Climate Central

Shifting Patterns of Informality and Vulnerability

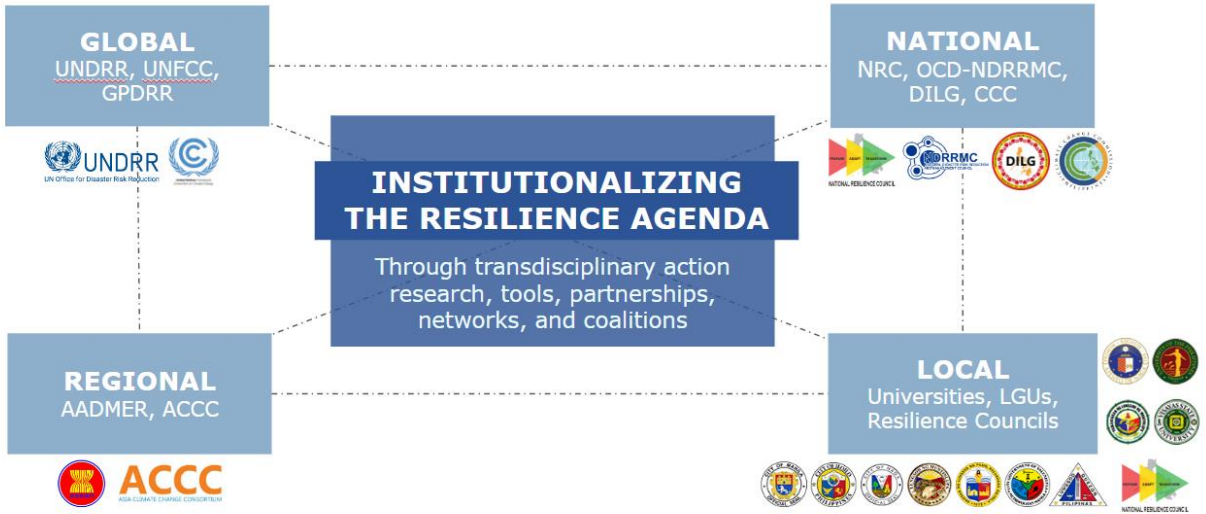


Informal Settlement

Mixed Settlement

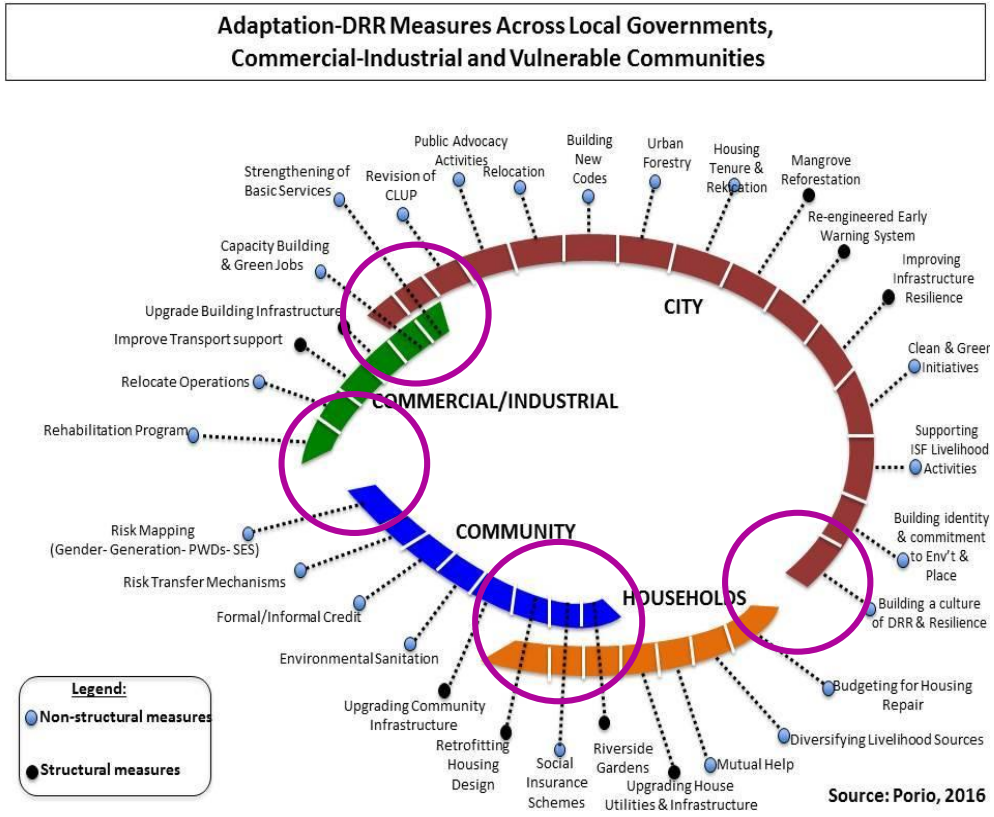
Source: GED, Manila Observatory

Strategy:
Vertical, Horizontal, Intersectional
Strengthen nest of resilience



We need to advance: Integrated, inter/transdisciplinary, and multi-scalar approaches to risk governance and resilience

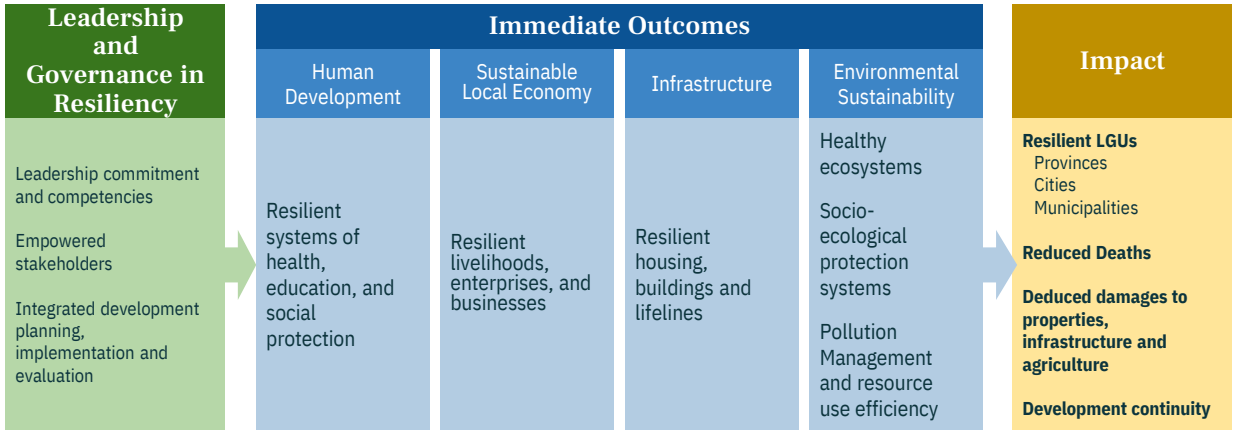
1. **Establish coherence in the introduction of structural and non-structural measures of adaptation (Porio 2011)**
2. **Design resilience frameworks to address dynamic interactions between sectors (Porio 2014)**
3. **Contextualize gender, generation, and social geographies to reflect conditions in formal and informal sectors/economies (Porio 2016)**
4. **Problem-focused, solutions driven and the need for inter-transdisciplinary approaches in transformative adaptation and resilience.**



SOURCE: Porio, 2016

Resilience Metrics of Local Governments and Communities

THE RESILIENCE FRAMEWORK



NATIONAL RESILIENCE COUNCIL

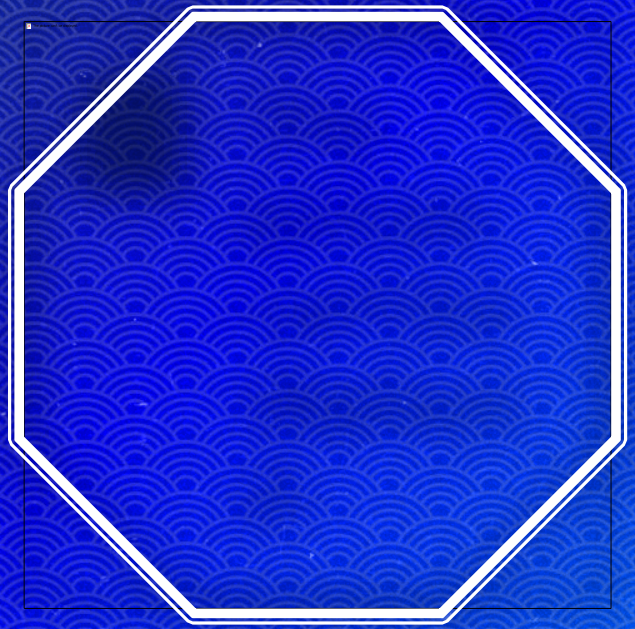
Source: National Resilience Council

Metro Manila's Innovations for Transformative Adaptation

Actionable science for decision-making: Data sets and models produced	Disaggregating resilience for a programmatic implementation in risk governance at national level: Defining Resilience through CCA-DRR Convergence	Unpacking resilience for programmatic implementation in risk governance at national and regional-global level	Transdisciplinarity and intersectionality in science-informed risk assessment: The Case of Climate and Disaster Risk Assessment (CDRA)
Climate and disaster risk-informed development planning	Risk visualization and applied systems thinking tools for resilience	Champions for climate and disaster resilience among professionals	Public-Private-People partnerships in resilience building

Urban Resilience and SDG Innovations in Metro Manila

THANK YOU SO MUCH FOR LISTENING!!!



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https://resiliencetoolkit.ph

https://coastalcitiesatriskph.com

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ATENEO DE MANILA UNIVERSITY

MANILA OBSERVATORY

COASTAL CITIES AT RISK IN THE PHILIPPINES
Investing in Climate and Disaster Resilience

NATIONAL RESILIENCE COUNCIL

IDRC · CRDI

Canada

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SUOMEN ILMASTOPANEELI
The Finnish Climate Change Panel

Evaluating heat risk adaptation and cost efficiency assessments

Markku Ollikainen
Chair,
The Finnish Climate Change Panel

Towards scientific and efficient adaptation policy

SUOMEN ILMASTOPANEELI
The Finnish Climate Change Panel

Starting point

- Climate policy must be based on scientific risk assessments that help in prioritizing actions
- Apply IPCC's risk assessment framework to model and simulate adaptation policies
- Climate policy = concrete and measurable targets, specified actions and required means of implementation

Responsibilities between public and private actors

The government: public goods

- Citizen's security, health, environmental goods and provision of relevant knowledge
- Preventing deaths is the prime priority for the government in adaptation

Private actors

- Actions in their own sectors and industries, such as agriculture and forestry

Prepare to fundamental changes in ecosystems and habitats

- Open discussion and research is needed
- What is a sustainable way to adapt to fundamental changes in nature

Monitoring climate impacts and effectiveness of adaptation policy

- Use of indicators to follow its implementation and impacts

Heat and heatwaves – a threat to human life

SUOMEN ILMASTOPANEELI
The Finnish Climate Change Panel

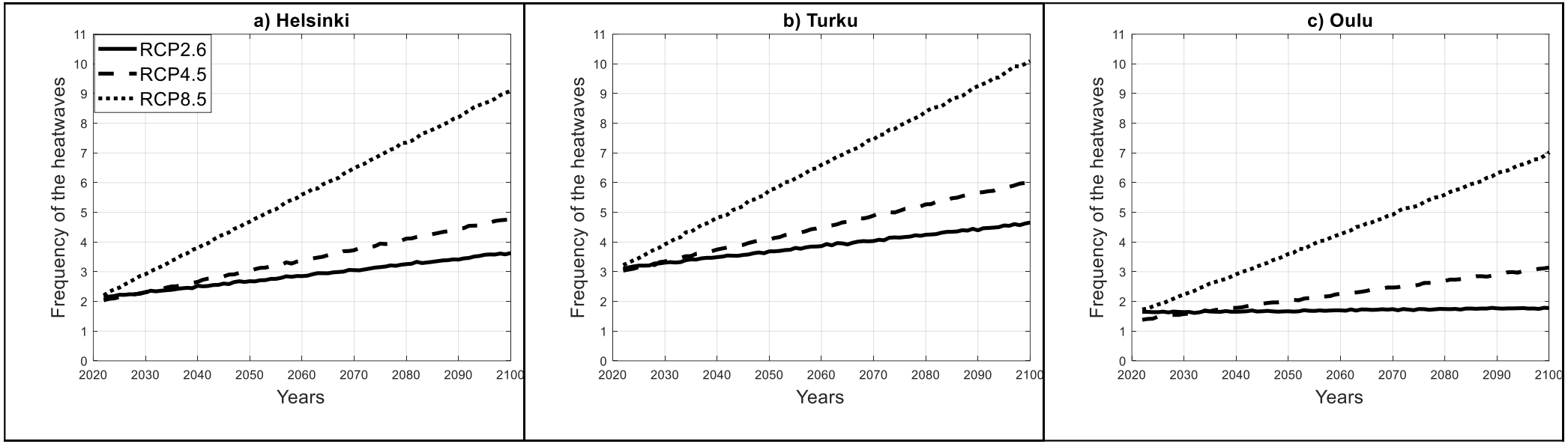
- Scientific evidence overwhelming: heatwaves increase deaths among elderly and other vulnerable people

- Risk of deaths can be decreased by increasing cooling and cooling heat islands by greening city structures

- Planning of adaptation policy within the IPCC's risk framework
  - How does the risk (frequency of heatwaves, exposure and impact) evolve over time
  - What are the best means of reducing risk (any of the three components)
  - What is the optimal adaptation effort when benefits and cost are taken into account

- We provide three applications of the IPCC's risk framework as an example of how science-based policy should me conducted
  - Promoting cooling of houses
  - Greening of heat islands in cities
  - Cooling of a river suffering from weakening ecological state of aquatic ecosystem

Frequency of heat waves, means



Helsinki and Turku are located in southern Finland, Oulu in north

- Increase depends on what globally happens to warming of temperatures
- RCP2.6 is comforting and RCP8.5 terrifying alternative

Demographic evolvement and cost of no-adaptation

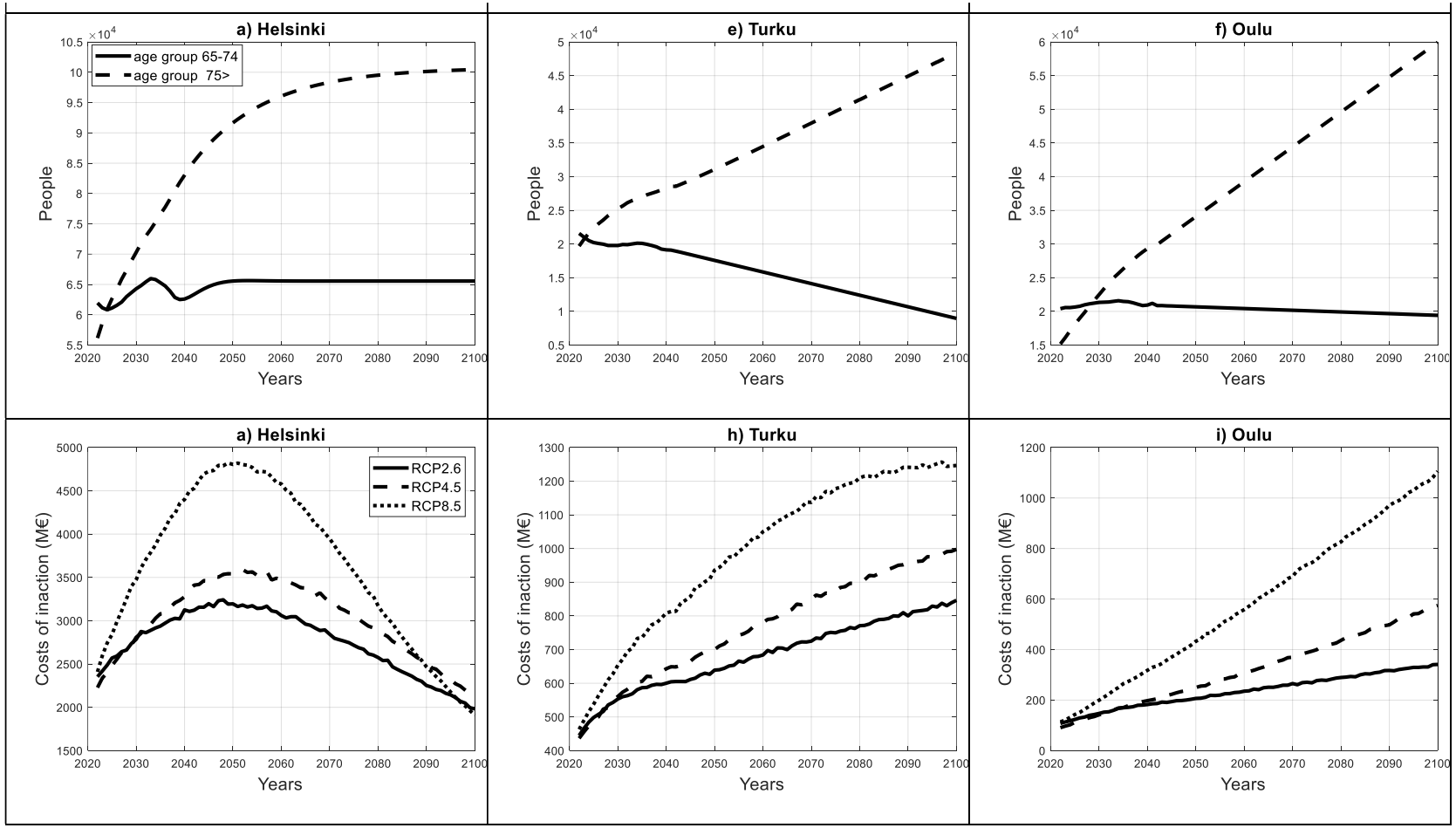
The share of elderly people (above 75) and people in age class (65-74)

Upper panel: age structure

- Shows the Finnish demographic feature, society gets older

Lower panel: cost of inaction

- Number of fatalities
- Helsinki peaks by 2050s
- Turku and Oulu by the end of the century
- Again, differences are huge between RCPs



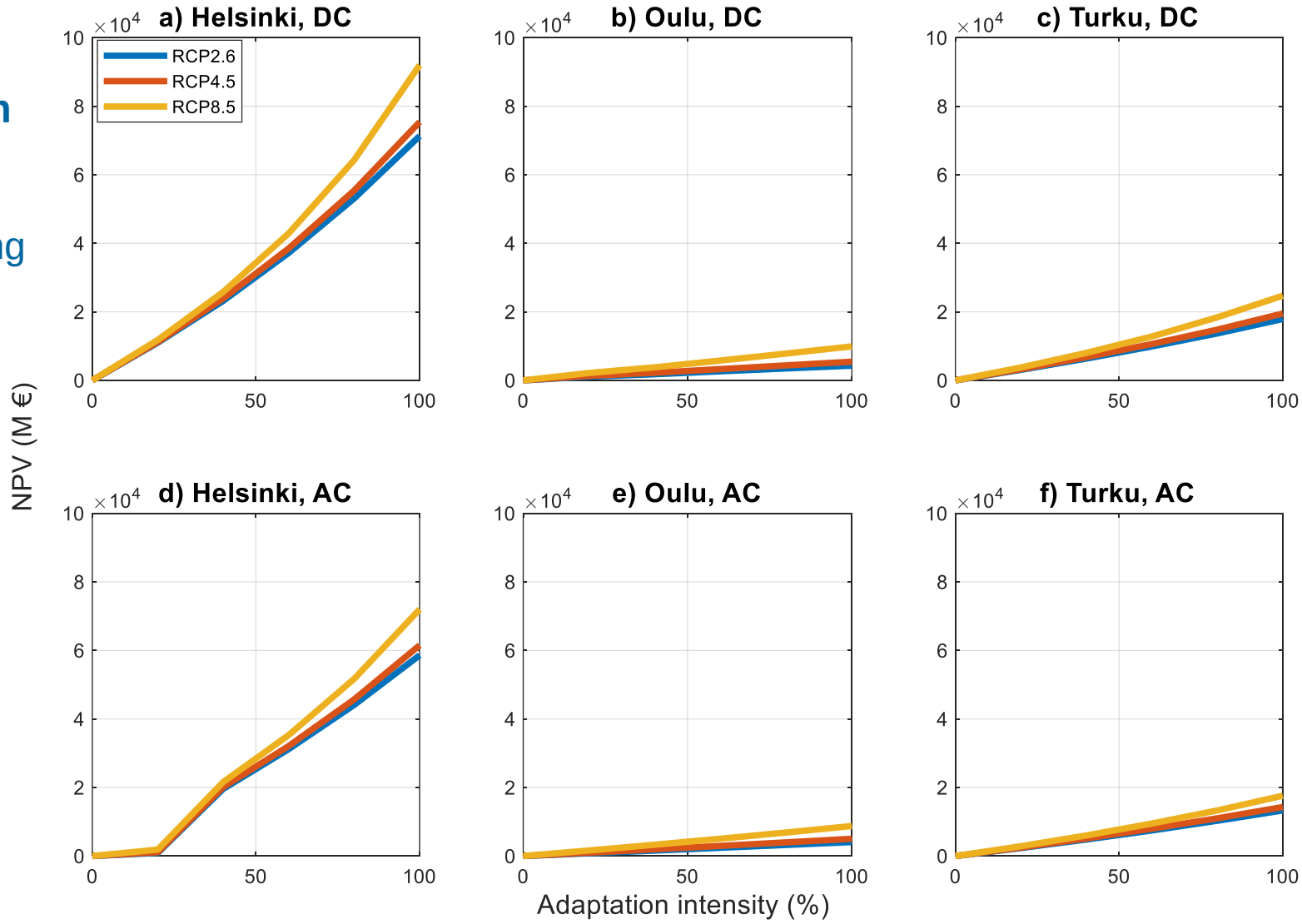
Results

Net present value of adaptation

- **Benefits** = value of saved lives
- **Costs** = investment and user costs of expanding district heating (DC) and in air conditioning (AC) in sub-urbs

Conclusions: net benefits of increasing adaptation (cooling)

- 100% cooling in Helsinki
- Increase the share of cooling in Turku
- Provide cooling in certain part in Oulu



Conclusions

All three cases demonstrate

- How to apply IPCC's risk framework to simulate policies
- Policy designs are meaningful and applicable in terms of actions, benefits and costs