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IMAGINE climate change adaptation in urban areas



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@Asier Aranzadi



Extreme temperatures, heatwaves



and their impacts on
health, infrastructures
and ecosystems.





Credit: Marta Olazabal

Flooding, sea level rise, storm surges, extreme precipitation

and their impacts on infrastructures, on services, ecosystems and people's health.





A fact

Thousands of cities worldwide are planning adaptation actions





**We don't know how to
measure how well they are
doing.**

**If we don't measure,
we don't learn from what we do
and we don't improve.**

The question of how to measure adaptation is **not new**

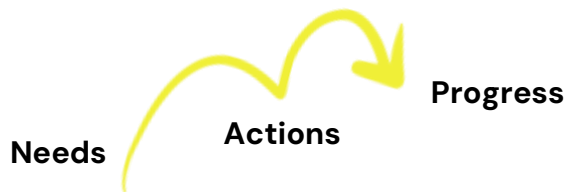


Figure 1. Evolution of functional needs of adaptation metrics over time in relation to the UNFCCC process



@martaolazabal



- 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.

Reasons to assess adaptation

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.

E · x · a · m · p · l · e



Credit: Marta Olazabal

Process Effectiveness approach

Target	Input	Output	Outcome	Impact
What we normally assess/measure			What we (also) need to measure	
PROCESS			EFFECTS OF ACTIONS	

Hale et al 2020

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



01 Adaptation has multiple metrics.

02 Adaptation is local, context specific.

03 Adaptation does not have universal effects.

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The result?



5%

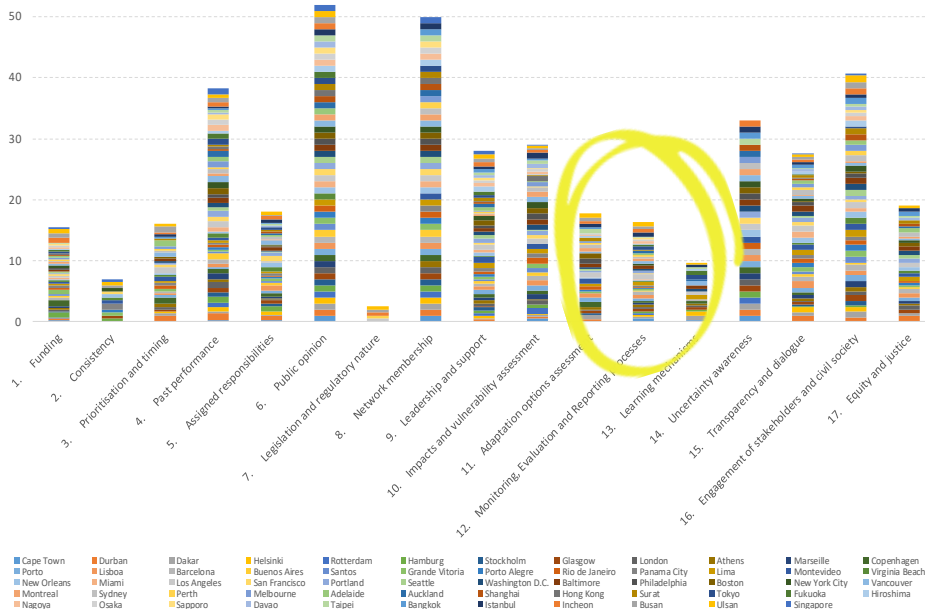
of the indicators measure performance, look at the results of actions.

Source: Olazabal et al 2019 and Goonesekera and Olazabal 2021.



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>



**"You can't
manage what
you can't
measure."**

Management expert
Peter Drucke



IMAGINE *adaptation*

1



Envision

what adaptation looks like in your city.

2



Include

in this process ALL those affected by climate impacts and adaptations.

3



Own

processes & tools to evaluate the progress towards YOUR goals, and learn from them.



✧ ✧
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adaptation

