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LEARNING HOW TO LEARN: THE EXPERIENCES OF 6 GLOBAL CITIES IN TRACKING URBAN ADAPTATION

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Adaptation to climate change in cities is highly complex: actions lack funding, may not be appropriate, and may even increase vulnerability. An understanding of what constitutes effective or ineffective adaptation is therefore crucial. Yet, unlike climate change mitigation where a reduction in carbon emissions is an easy indicator for success, there is no obvious parallel for adaptation. In 2015, the Paris Agreement established a global goal on adaptation and since then, extensive research and investment has occurred on the subject. In spite of this, funding for climate change adaptation averages US $30 billion a year, far short of what is needed to ensure robust adaptive capacity (GCA, 2020). It is estimated that a ten-fold increase in funding is required and effective Monitoring, Evaluation, Reporting and Learning (MERL) systems are crucial to understanding how and why adaptation actions achieve or rather do not achieve their objectives.

HIGHLIGHTS

- A previous study conducted by BC3 has found that over 70% of urban adaptation metrics focus on measuring the outputs of adaptation actions (e.g. actions implemented) rather than considering outcomes (e.g. benefits to population).
- An understanding of the wider benefits of adaptation actions is crucial for learning and it is clear that reflective learning processes are needed within organisations to ensure investment is actually reducing vulnerability.
- Ahead of the 26th United Nations Climate Change conference (COP26) there is renewed focus on reporting on progress annually and tracking the broader social outcomes of adaptation strategies for vulnerable groups and communities particularly in light of the United Nations Framework Convention on Climate Change (UNFCCC) campaign "The Race to Resilience".
- As a number of cities move into the second generation of climate change adaptation plans they are finding new innovative ways to integrate learning and reflect on outcomes.
- This report aims to add to the discussion, providing insights on best practice from early adopters of adaptation metrics.

Pre COP26, there is renewed focus on reporting on progress annually as tracking the broader social outcomes of adaptation strategies for vulnerable groups and communities particularly in light of the UNFCCC campaign "The Race to Resilience"[1]. This timely report aims to add to the discussion, providing insights on best practice from early adopters of MERL systems and adaptation metrics, at city level. The report gathers experiences from 6 worldwide cities (Athens, Auckland, Barcelona, Glasgow, Lima, Montreal)(Table 1). A previous study (under review) conducted by the Basque Centre for Climate Change (BC3) found that over 70% of adaptation metrics focus on measuring the outputs of adaptation actions (e.g. actions implemented) rather than considering outcomes (e.g. benefits to population). Whilst an understanding of outputs is crucial for ongoing management and accountability, they are less helpful when it comes to learning and understanding the broader outcomes of adaptation actions (Leiter, 2017).

After a review of the contents of the adaptation plans, interviews were conducted with city representatives to discuss urban adaptation monitoring and evaluation in practice and identify any gaps and needs based on the experiences from these cities. Following the interviews the transcripts were analysed to identify key themes and extract examples of best practice.

What we found by interviewing cities about their MERL practices

The interviews with the six worldwide cities shed light on specific city-level approaches to MERL. In general, the focus tends to be on output-style indicators reflecting existing global evidence. Many cities mentioned the significant time, resourcing and cost constraints associated with data collection. Recent iterations of climate change adaptation plans particularly in the cities of Montreal, Lima and Athens signified a move to simplify indicators and streamline the collection of data. This was conducted, for all of them, in-line with C40's reporting guidelines. For example, in Montreal, the 1608 indicators of the first plan were streamlined to be 8 overarching ones in the current plan in force, with an additional set of output indicators to be published shortly. Meanwhile, in Athens there was a move towards key performance indicators (KPIs) to ensure ease of data collection through recognised methodologies.

"A rich participatory process"
[Lima Interview]

As a number of cities move into the second generation of climate change adaptation plans they are finding new innovative ways to integrate learning and reflect on outcomes. For example, the Municipality of Lima has set up a Metropolitan Technical Group on Climate Change and Water Resources. The group comprises different representatives from across the municipality and engages with members of different NGOs, public and private institutions, youth organisations, and local community groups. Crucially, this participatory process has allowed Lima to develop and refine plans to specifically benefit the local community and ensure that wider benefits are being achieved. The group was actively engaged at key stages in the design stages of the Local Climate Change Plan and will be engaged at regular intervals going forwards to reflect on what has been achieved or not achieved. Although there are no specific outcome indicators developed for this group, the engagement and representation is tracked through specific output indicators e.g. the number of socially vulnerable populations in attendance. The Municipality has also involved children and youth heavily in the design process through the Environmental Council of Girls and Boys and with the development of specific workshops aimed at youth organisations. Their participation laid the foundations for the development of the vision of the plan to 2050, taking into account the needs of the future generations and also inspired the development of a climate change plan aimed specifically at children. This approach is supported by previous research that subjective definitions of resilience can provide a way for MERL to reflect local priorities and perspectives (Coger et al., 2021).

Similarly, the city of Barcelona has a highly participatory process with

City	Institution(s)	Plan Referenced	Stage of Implementation
Athens	City of Athens	Climate Action Plan Part B: Climate Adaptation Strategy: Making Athens a Greener and Cooler City*	Post- / Pre-implementation*
Auckland	Auckland Council	Te Tāruke-ā-Tāwhiri: Auckland's Climate Plan	Pre-implementation
Barcelona	Ajuntament de Barcelona	Climate Plan 2018–2030	Mid-implementation
Glasgow	Climate Ready Clyde, Glasgow City Council	Glasgow City Region Climate Adaptation Strategy and Action Plan, MGSDP Surface Water Management Master Plan	Early-implementation
Lima	Municipalidad de Lima	Plan Local de Cambio Climático de La Provincia de Lima 2021-2030	Early-implementation
Montreal	Bureau de la transition écologique, Montréal	Climate Plan 2020 - 2030	Early-implementation

Table 1 - Cities interviewed

**New Climate Plan for Athens to be published October 2021*

[1] https://racetozero.unfccc.int/join-the-race-to-resilience/

Figure 1: Museu Frederic Marès, one of Barcelona's climate shelters (Source: Barcelona Regional)

members of the public engaged at key stages of the Climate Plan's lifecycle. This has allowed the city of Barcelona to gain insight and key learnings on their actions, alongside which Barcelona has also developed a number of specific research projects to investigate the outcomes for certain adaptation projects. For example, the Climate Shelters project (Figure 1) was founded on a solid baseline assessment and subsequent follow up studies. The project aims to offer all city residents, particularly the most vulnerable, a space to escape the heat and as of 2021, there are now 155 climate shelters and 87.6% of the city's population have one within 10 minutes walking distance from their home[2]. A central component of this was Barcelona's Office of Climate and Sustainability work to convert eleven vulnerable schools into climate shelters through a range of green, blue and grey infrastructure measures. The project considered a range of criteria such as the degree of heat exposure, level of green coverage and vulnerable populations, all of which will be continued to be monitored going forwards. The project is an example of where Barcelona's Office of Climate Change and Sustainability has taken on a novel project and is using it to pioneer the collection of outcome data.

"A social justice perspective"
[Glasgow Interview 2]

By contrast, the City of Glasgow has chosen not to develop a set of indicators for its climate plan, instead the plan has invested in a strong focus on understanding the vulnerability of the city's residents through vulnerability mapping, a social impact analysis, guided by three stretching targets. Indeed, in Glasgow, social impact assessments have been used to ensure that social justice is put first and foremost at the centre of the climate plan. The combination of social impact assessments, a comprehensive theory of change and vulnerability maps gives Glasgow a solid foundation of data to support their plan. The social impact assessment was not a mandatory part of the planning process but included a number of community representatives and community groups to get their feedback. The aspiration is to continue this involvement going forwards.

A solid understanding of vulnerability is crucial for facilitating learning and avoiding maladaptation. Glasgow's approach mirrors similar studies undertaken by Lima and Montreal, and underlines one approach to assessing the outcomes of adaptation actions outside of traditional indicators: repeated vulnerability assessments. In Montreal, the plan's renewed focus on vulnerability reflects learning made from previous plans to select simple indicators to monitor. Indeed, monitoring and evaluating a plan with over 940 commitments is a long process especially in an agglomerated city like Montreal with multiple different administrative bodies.

[2] https://www.barcelona.cat/barcelona-pel-clima/

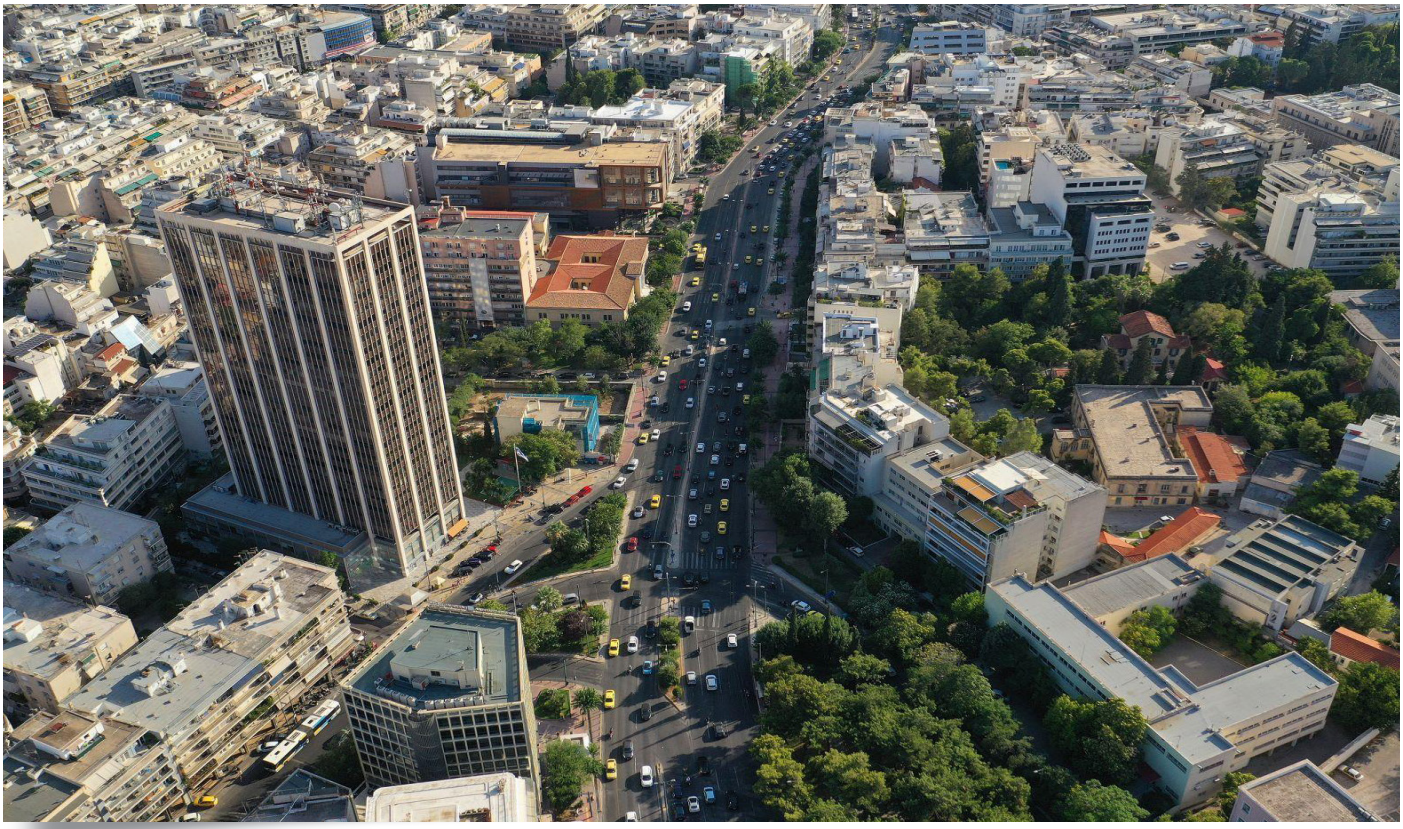

Figure 2: Green Corridors in Athens (Source: Aerial-motion)

Montreal acknowledges that in order to collect the data there is need for cross-organisational buy-in and work to become a learning organisation.

"A learning organisation"
[Auckland Interview]

One of the key challenges to collecting outcome data is the need to work with many different groups and departments. The proposed solution for this in many cities has been a platform to centralise data collection. However, in Barcelona's experience, prior to the implementation of a platform, a culture of learning and buy-in to MERL across the city is vital. For example, where data is unavailable or there is no methodology for a certain indicator, the Office of Climate Change and Sustainability leaves the indicator in the plan as an action to develop this type of information. This is a highly transparent approach that keeps the department accountable and also able to easily include the data in the plan when it becomes available. The approach acknowledges the inherent complexities to outcome data collection accepting that the long time horizons to adaptation require specific dedicated resources. Similarly, prior to the implementation of a platform the city of Athens has worked closely with different departments to break down silos and ensure that data on climate adaptation is collected at every possible opportunity. Athens's collaborative approach has helped to develop a number of climate maps for green infrastructure in the city. The maps were developed through the use of existing data sets relating to road obstructions, including trees, which could then be overlaid with heat maps. Data collaboration in this way has previously helped to justify new impactful projects such as Athens Resilient City[3] which aims to improve air quality and lower temperatures through a series of green corridors (Figure 2).

Based on this preliminary follow up with cities, it seems evident that cities need to be transparent and take a long-term collaborative approach to measuring outcomes of adaptation. This is the approach of Auckland who also plans on developing a platform for monitoring indicators. Although still in the very early stages of defining their approach to MERL, Auckland is taking the opportunity of being in the pre-stage of implementation of their climate change adaptation plan to ensure organisational commitment to the various actions and create a learning organisation. As a first step the department is surveying the whole of Auckland Council to understand all forms of monitoring and evaluation currently in place, this will then allow synergies and opportunities for external partnership to be identified. Through these partners Auckland Council hopes to continue reporting on climate actions up to five years post implementation, to ensure a deeper understanding of the impacts and wider benefits. This approach acknowledges that the design of MERL systems needs to be long-term

[3] https://www.athens-resilientcity.gr/

and prioritise learning over reporting. Crucially, for any city to become a learning organisation, time and effort is needed to create the necessary infrastructure and culture (Coger et al., 2021).

Looking forward

Cities are finding organic ways to learn and understand the wider impacts of their climate adaptation plans. From their experience, learning starts with a strong focus on vulnerability and traditional indicator systems can be supplemented through participatory approaches. However, in order to truly become a learning organisation, cities need to pioneer a long-term collaborative approach for MERL. Further efforts need to be directed to understanding how informative participatory processes and repeated vulnerability assessments can be for learning. From this experience, we find that following up the adaptation implementation journeys in cities will be key to develop reference frameworks for context-specific sustainable and transformative long-term climate adaptation strategies.

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CLIC
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