

Deepening Evidence-based Climate Resilience
Planning in Asian Cities

CLIMATE CHANGE ADAPTATION AND RESILIENCE PLANNING

Programme summary and guide for cities



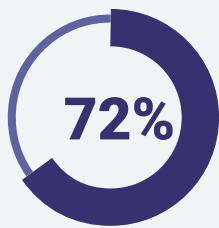
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Background

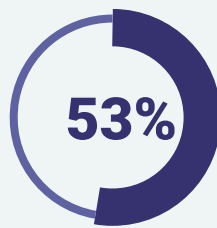
According to CDP's report '[Cities on the route to 2030](#)' based on a decade of data disclosed by cities, 93% of cities are facing significant climate risks. However 43% of cities do not have a plan in place to address these risks and to adapt to the impacts of climate change. Asian cities are at high risk to the impacts of climate change. According to the Environmental Risk Outlook 2021, 99 of the world's 100 most vulnerable cities are in Asia¹ while the Global Climate Risk Index 2021 shows that India and Indonesia are ranked as the 7th and 14th most vulnerable countries respectively.² Given that cities are home to more than half of the world's population and responsible for around 70% of greenhouse gas emissions, ensuring low-emissions and resilient urban development is crucial to building a liveable and resilient planet for all.

Evidence-based adaptation and resilience plans are crucial for ensuring that the actions taken by local authorities are strategic and impactful. These actions can also result in co-benefits, including improved public health, ecosystem preservation, biodiversity improvement, social inclusion, justice, and more.

310 cities in Asia disclosed their climate-related data through [CDP-ICLEI Track](#) in 2021, highlighting the following key gaps in the region:



of cities had not set any **climate adaptation goals**



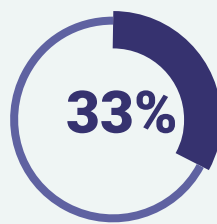
of cities with adaptation plans had not addressed **water security** as a critical sector



of cities had not yet prepared **adaptation plans**



of cities with adaptation plans did not consider **synergies, trade-offs, and co-benefits** that address climate change adaptation and/or resilience



of cities with adaptation plans had not conducted or specified a **stakeholder engagement process** for their plan addressing climate change adaptation and/or resilience

To address these gaps, CDP conducted a capacity-building programme in 2022 supported by the Bank of America Charitable Foundation for local authorities in South and Southeast Asia to improve their understanding on evidence-based climate change adaptation planning. This document provides a summary of the key learnings from the programme and may be utilised by city stakeholders in Asia and globally.

¹ Environmental Risk Outlook 2021, Verisk Maplecroft, May 2021, <https://www.maplecroft.com/insights/analysis/asian-cities-in-eye-of-environmental-storm-global-ranking/>

² Global Climate Risk Index 2021, Germanwatch, January 2021, https://germanwatch.org/sites/default/files/Global%20Climate%20Risk%20Index%202021_2.pdf

Climate change adaptation and resilience planning

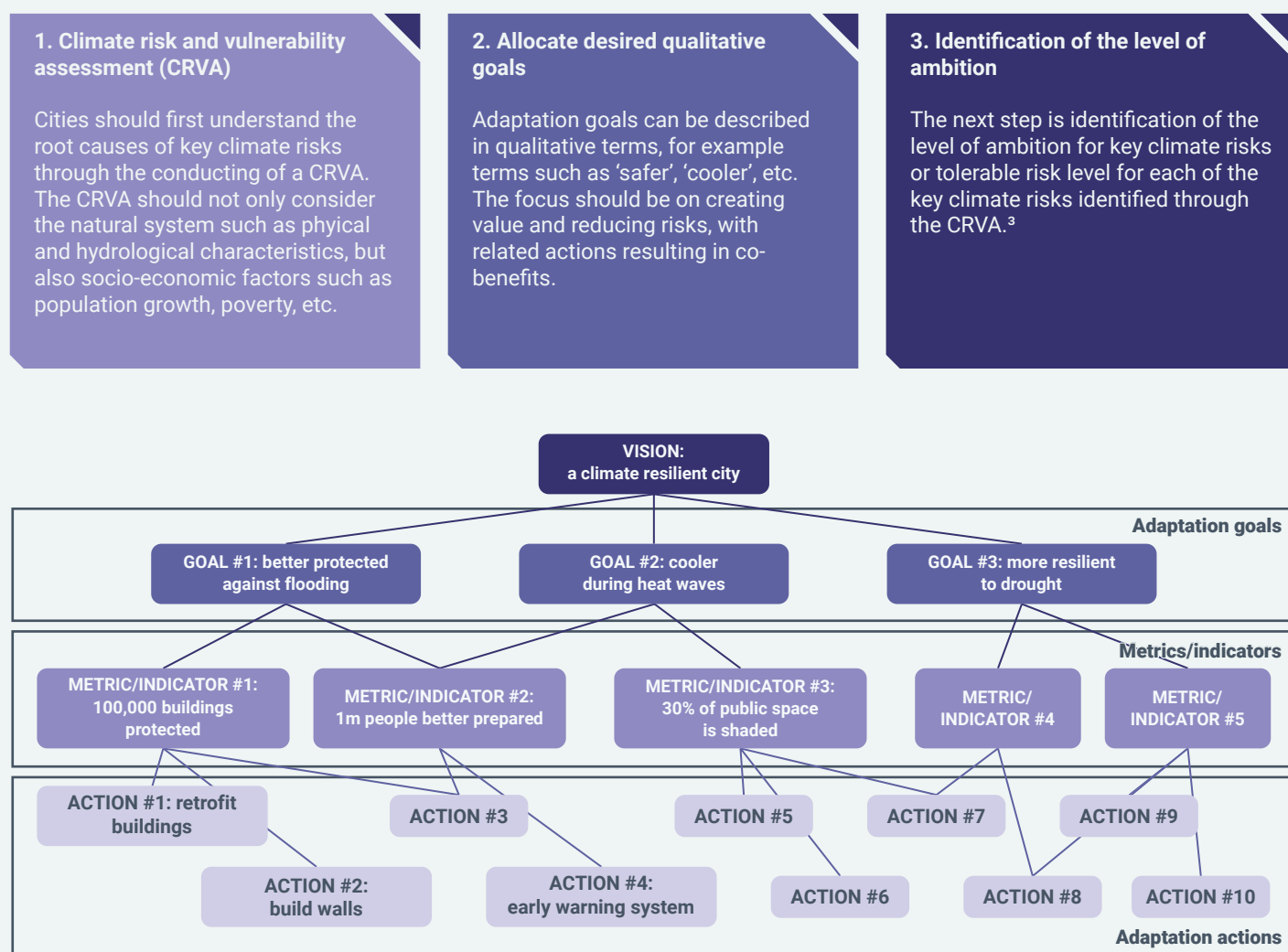
Climate change adaptation and resilience planning should be based on evidence which can then inform a set of priorities and actions. This evidence might relate to climate change hazards, impacts, vulnerabilities and risks, ideally in the form of a comprehensive [city-level climate risk and vulnerability assessment](#) (CRVA), but should also account for the needs of different stakeholders and the capacity of those who will implement the plan.

Adaptation actions should aim to reduce negative impacts or leverage opportunities from climate change, as well as address gaps identified while assessing adaptive capacity to ensure that the city and its stakeholders are able to effectively build long-term resilience.

Setting adaptation goals

Adaptation goals are high-level targets, usually qualitative and time bound, which are monitored and evaluated by quantitative metrics/indicators.

Adaptation actions would then be set accordingly for cities to meet these goals. Below are the overarching steps needed to set adaptation goals.



Source: [C40 Climate Action Planning Guide](#)

³ How to identify adaptation goals and strategies, C40 Cities Climate Leadership Group, https://www.c40knowledgehub.org/s/guide-navigation?language=en_US&guideRecordId=a3t1Q0000007IEWQAY&guideArticleRecordId=a3s1Q0000001ia1LQAQ

Resilience intervention strategies

1. Identification

Cities can develop a list of possible resilience actions or interventions to address the identified climate risk and vulnerability, considering vulnerable areas, vulnerable actors and supporting actors.

2. Prioritisation

Evaluate the proposed list of actions against a set of resilience indicators i.e. redundancy, flexibility, responsiveness, GHG emission reduction and access to information to ensure their contribution to urban resilience.

3. Integration

Align the proposed action with existing city plans or programmes.

This will determine whether the required interventions can be integrated with little or no additional resources into an existing departmental programme or project.

Adaptation approaches: Nature-based vs Technical-based solutions

While taking climate adaptation actions, cities should consider various approaches including nature-based solutions and technical based solutions.

Nature-based solutions

- Approaches that reverse ecosystem degradation and address societal challenges while also benefitting human well-being and biodiversity.
- 2-5 times more cost-effective than business-as-usual interventions resulting in greater savings, social benefits and avoided losses.



“Room for the River” strategy in the Netherlands

- Aim:** To live with the water.
- Strategy:** Allowing water to spread out naturally during flooding by providing more space, hence reducing damage and loss of life.
- Action:** Moving dikes inland, widening rivers, raising bridges, digging flood channels, adding river catchment areas.

Technical solutions

- Man-made physical structures that are designed after conducting a risk assessment.
- High cost and time consuming, takes a number of years to construct the structures which may be maladaptive if they do not consider relevant social and environmental processes.



“G-Cans” project in Greater Tokyo area

- Aim:** To protect the city of Tokyo itself from floods during heavy rainfall and typhoons.
- Strategy:** Channeling the overflowing flood waters from the rivers within Tokyo to five silos through tunnels.
- Action:** Construction of large-scale, underground rainwater retention tanks. These tanks are expensive to install compared with other measures but can hold vast amounts of water. A good option in densely built-up areas where surface space is at a premium.

Importance of integrated climate action

An integrated approach to climate action should consider a wider scope of potential co-benefits, synergies and trade-offs as described below. This could enable cities to achieve goals and targets that are not only climate change-related, but also ensure that any negative effects are avoided.

Co-benefits

Beneficial outcomes from actions that are not directly related to climate action.

e.g., cleaner air, green job creation, public health benefits from active travel, or biodiversity improvement through expansion of green space.

Synergies

Actions that reduce both carbon emissions (mitigation) and climate risk (adaptation).

e.g., nature-based solutions

Trade-offs

Actions with contrary effects on mitigation and adaptation.

e.g., material or energy-intensive adaptation measures

Governance and policy integration

There is no uniform definition of good climate governance, as it can vary based on contexts, priorities, and perspectives. However, there are some key principles that are often associated with effective climate governance.

1. **Institutional arrangements**, meaning the design of the city's institutional structures and the allocation of roles and responsibilities within them.
2. **Legal frameworks to support climate action**, with measures such as acts, bylaws and legally-binding aspects of strategies.
3. **Mainstreamed climate policy**, with climate action integrated across the city through governance structures and systems, policy frameworks and other enabling conditions.
4. **Cross-departmental arrangements and action**, focusing on transformative multi-departmental actions that happen through, for instance, committees.
5. **Vertical integration**, to ensure city climate action is integrated or aligned with both higher and lower levels of government.
6. **Budgetary mainstreaming**, where climate priorities are included into the wider city budget processes.
7. **External governance** through structures or bodies which facilitate engagement with external stakeholders.
8. **Monitoring and transparent reporting** systems to track progress and create accountability.
9. **Communication and engagement between the city, civil society and others**, including engaging key stakeholder groups and sharing information.
10. **Innovative solutions to capacity and resource challenges** in the city.

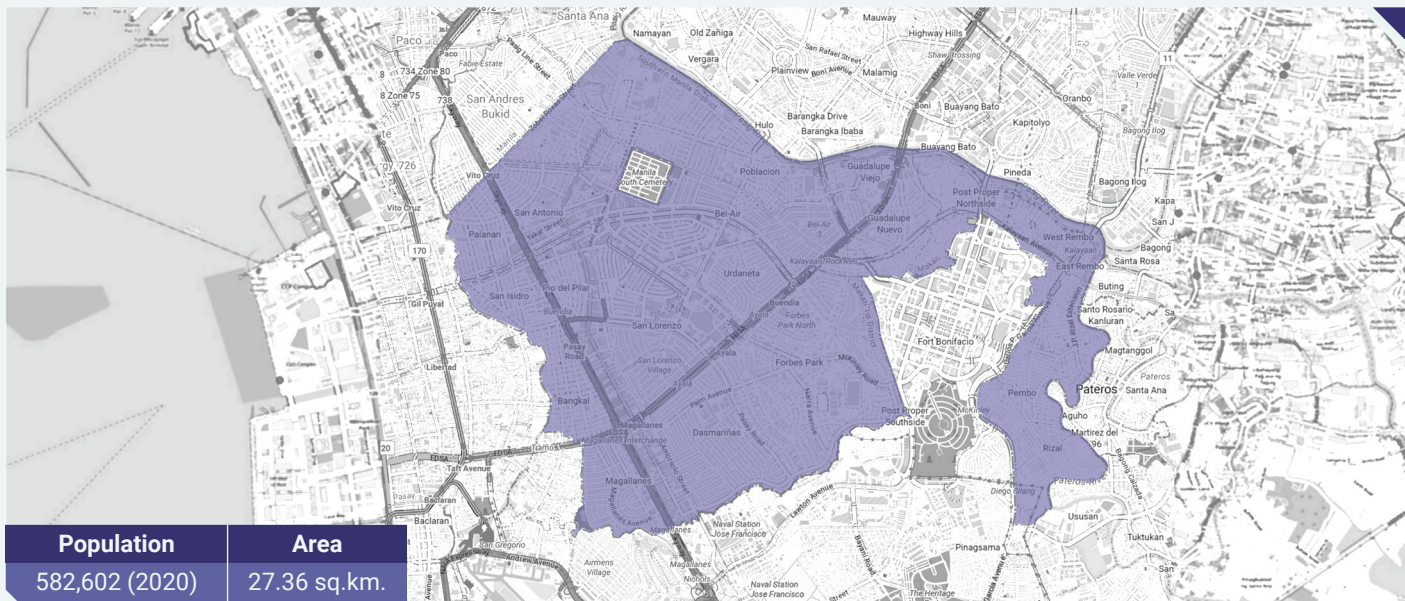


Climate governance refers to the formal and informal rules, structures, processes and systems that define and influence action on climate change. A good climate governance system is integral to the effective implementation of a city's climate action plan (CAP) and to ensuring that the plan is embedded in all city activities and decision-making processes. It is critical that the climate action planning process considers, assesses and strengthens existing governance structures and strengthen those structures to create a supportive environment for implementation. ▽ ▽

Source:
[C40 Climate Action Planning Guide](#)

Best practice examples

City Government of Makati – Inclusive climate change planning



City's climate goals and targets

- Commitment to Paris Agreement (1.5°C global warming limit)
- Compliance and Alignment with National Laws/Policies and Programmes
- Development of local priorities

Inclusive Planning Process

As a response to the increasing impacts of climate change, the City of Makati has integrated climate adaptation planning into its overall urban planning process. Here are some of the ways the city government of Makati promotes an inclusive planning process for climate adaptation planning:

1. Stakeholder engagement

The city government engages with various stakeholders, including residents, business owners, and civil society organizations, in the development of its climate adaptation plans. This ensures that the plans are informed by local knowledge and responsive to the needs and concerns of the community.

2. Vulnerability and risk assessments

These are conducted to identify areas and communities that are most at risk to the impacts of climate change. These assessments also help in identifying the priority areas and measures that need to be taken to reduce the impacts of climate change.

3. Multi-stakeholder partnerships

The city government collaborates with various stakeholders, including non-government organizations, academic institutions, and private sector, in the development and implementation of its climate adaptation plans. This ensures that a diverse range of perspectives and expertise is included in the planning process.

4. Public consultations and feedback mechanisms

Public consultations are conducted to gather feedback from the community on its climate adaptation plans. This feedback is used to refine the plans and ensure that they are inclusive and responsive to the needs and concerns of the community.

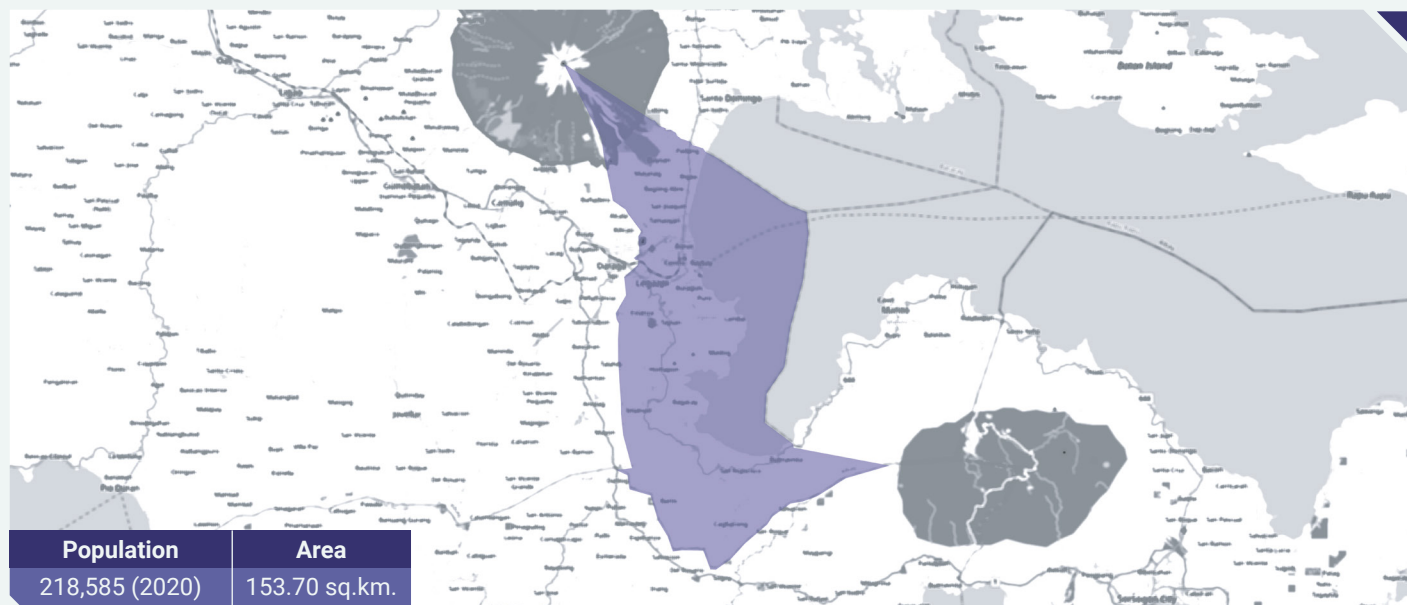
5. Capacity-building and awareness-raising

Capacity-building and awareness-raising activities are provided to the community to help them understand the impacts of climate change and to build their capacity to adapt to it. This includes training programmes on disaster risk reduction, climate change adaptation, and sustainable urban development.

Issues and challenges

- Increasing demand for climate investments;
- Inadequate technical staff/expertise;
- Paradigm shift – looking at issues through the lens of climate change;
- Increasing demand from the Local Government Unit (LGU) to implement programmes at the community/ grass-root level.

Legazpi City – Governance and policy integration



Key steps undertaken for climate change adaptation policy integration

Climate and disaster risk management

Legazpi City engaged in Representative Concentration Pathway-based climate projections which included elements of exposure and ecosystem-based impact chain analysis. This allowed the city to effectively develop its risk management strategy.

Issues and policy identification

Using its risk indices, the city identified its essential decision areas. By performing a gap analysis based on Business-as-Usual scenarios, policy options which would help the city achieve multiple stakeholder objectives were generated.

Design charettes

Legazpi City also ensured the inclusion of civil society organizations and stakeholders, particularly those in vulnerable sectors. Such inclusion promoted the creation of diverse ideas, as well as the outlining of realistic goals and priorities. Through the city's risk assessments, resilient designs and criteria were created, further advancing its goal of climate resilience.

Local climate change action planning

Objective and goal setting programmes prioritized critical projects and activities that aided the city's adaptation measures. These initiatives were subsequently integrated into the city's planning considerations to generate effective action.

Factors contributing towards resilient policy improvement

Commitment and support

The continued support from the executive and legislative branches allowed for the alignment of the goals and objectives of the city's climate agenda, creating a cohesive strategy.

Competence

The political will and capabilities of the city government towards its zero-casualty strategy encouraged the upgrading and transformation of the city's strategies to include a climate-based perspective.

Technical assistance

The aid rendered by resilience partners such as CDP-ICLEI and UNHabitat facilitated the city's learning and exposure to global standards and ideas in DRR and CCA strategies.

Institutional arrangements

Horizontal and vertical linkages between provincial and city governments allowed for capability building opportunities which strengthened the city's ability to act.

Citizen engagement

Connection and communication with all sectors and stakeholders.

Key Challenges, Successes and Learnings

Challenges

Financing and technology access

- ▀ Investment intensive climate adaptation solutions.
- ▀ Gaps in knowledge and access to technology and other climate solutions.

Successes

Integration of resilient design in policies and ordinances

- ▀ Design of urban streetscapes.
- ▀ Ground elevation considering flooding, storm surge and sea level rise.
- ▀ Development limitations in high risk areas.

Learnings

Cheaper nature-based solutions

- ▀ Redirecting strategy to embrace the grey-green-blue mix of solutions.



Resources

Link to resource	Source	Description
Climate Risk and Vulnerability Assessment (CRVA)	CDP	Training guide for cities on conducting their climate risk and vulnerability Assessment (CRVA).
Climate Resilient Cities Methodology	ICLEI	Step by step guidance for the development of a climate resilient city action plan that addresses both, climate change adaptation and climate change mitigation.
Governance Self-Assessment Guidance document	C40	To support cities to strengthen the development and implementation of their Climate Action Plans (CAPs) through better climate governance.
How to identify adaptation goals and strategies	C40 Cities	Practical guidance for cities on identifying adaptation strategies.
Adapting to climate change: CDP guidance for UK local authorities	CDP	Comprehensive resource developed for UK cities but may be useful to all cities.
Adaptation options	CLARITY	List of adaptation actions, their effects, co-benefits, costs and case studies.
How to prioritise actions for your climate action plan	C40 Cities	Practical guidance for cities on prioritising actions – both for adaptation and mitigation.
How to embed equity and inclusivity in climate action planning	C40 Cities	Practical guidance for cities on ensuring equity and inclusivity is part of your climate action planning.
Making Climate Infrastructure Equitable: A Toolkit and Workbook	CDP	This toolkit is designed for people working within local governments to ignite ideas on how to create, design, implement and finance projects that equitably benefit people and the planet.
How to write and launch a climate action plan	C40 Cities	Best practices for designing, writing and launching a document that effectively communicates the city's commitment to climate action to all stakeholders.
https://napcentral.org/	UNFCCC	An ecosystem for all National Adaptation Plan (NAP)-related resources maintained by the LEG.
https://www.adaptation-undp.org/	UNDP	A knowledge-sharing platform that highlights UNDP-supported climate adaptation projects around the world.

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CDP is a global non-profit that runs the world's environmental disclosure system for companies, cities, states and regions. Founded in 2000 and working with more than 680 financial institutions with over \$130 trillion in assets, CDP pioneered using capital markets and corporate procurement to motivate companies to disclose their environmental impacts, and to reduce greenhouse gas emissions, safeguard water resources and protect forests. Nearly 20,000 organizations around the world disclosed data through CDP in 2022, including more than 18,700 companies' worth half of global market capitalization, and over 1,100 cities, states and regions. Fully TCFD aligned, CDP holds the largest environmental database in the world, and CDP scores are widely used to drive investment and procurement decisions towards a zero carbon, sustainable and resilient economy. CDP is a founding member of the Science Based Targets initiative, We Mean Business Coalition, The Investor Agenda and the Net Zero Asset Managers initiative.

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