

# **C4O CITIES** **CLIMATE CHANGE RISK ASSESSMENT GUIDANCE**

**MAY 2018**

A guidance document to help cities conducting a Climate Change Risk assessment in line with GCOM and C4OCities requirements.



# 1 | CONTEXT

## 1.1. OBJECTIVES

This document aims to provide a concise, easy-to-read guidance, to help the cities to develop a climate risk assessment report, compatible with the GCOM and C40 Climate Action Planning Framework. It provides the methodology and components of the assessment, and can serve as a basis to request consultant services by cities.

This reporting framework uses precise language to indicate the following for a Climate Change Risk Assessment report:

# **Essential components**, which GCOM and C40 Climate Action Planning Framework define as crucial for the assessment.

# **Best practices**, for highly recommended items.

## 1.2. WHY CITIES SHOULD CONDUCT A RISK ASSESSMENT

A climate risk assessment seeks to understand the likelihood of future climate hazards and the potential impacts of these hazards on cities spatially, and their inhabitants. This is fundamental information for prioritizing action and investment into climate adaptation and resilience.<sup>4</sup> As a part of city's Climate Change Risk Assessment, both GCOM and C40 require cities to report on:

# **Climate-related hazards**; affecting the whole city, including all communities. Hazards may include meteorological, climatological, hydrological, geophysical, or biological events and should acknowledge variability in hazard exposure across the city. The hazard assessment should identify the most frequent, severe and widespread hazards and those likely to cause the greatest impact. It should take into account the city's historic trends and current situation, as well as future scenarios based on available scientific evidence through to 2050 at least.

# **Impacts assessment of hazards**; on people, systems and sectors such as: urban planning, environmental quality, food, Information and Communication Technologies (ICT), transport, energy, water, waste, public health, and economy, among others. The assessment would consider the vulnerability of people, systems or sectors; their capacity to adapt in the face of hazards, and also the potential impact in terms of number of people affected, cost of damage, days' service lost, etc. The impact assessment would consider hazards experienced today and projections through to 2050.

4. C40Cities, May 2018, Climate Action Planning Framework.

## >>>> GLOSSARY

### # CLIMATE RISKS:

Risk depends on the likelihood (also sometimes referred as probability) of an event, multiplied with the hazards impacts (also sometimes referred as consequences).<sup>1</sup> Risk at an urban scale can also be defined as the potential for adverse consequences on lives, health, ecosystems, economic, social and cultural assets, services, and infrastructures. In general, three broad risk categories are usually used: acceptable risks, tolerable risks, and intolerable risks.

The uncertainty of this probability increases considerably with climate change. Major risks lie in the failure to adapt to changes in the environment, leading to instability and insecurity of economic system(s) threatening adequate level of societal welfare. Climate change risk depends on climatic factors as well as decisions (intentional or unintentional) of agents governing interdependencies among climatic and socio-economic-environmental systems. Inadequate decisions (adaptation) can cause systemic risk propagating through all systems.<sup>2</sup>

### # VULNERABILITY:

Facing a climate hazard, people and infrastructures are exposed to the same potential losses but are not vulnerable in the same way. Vulnerability depends on physical, socio-economic, the availability of services, governmental and cultural factors and can be quantified by the degree of loss resulting from a hazard, and the capacity to recover from an event.

### # ADAPTIVE CAPACITY:

It is the technical and financial ability and willingness of the city's key stakeholders at various levels—local, regional, and national— to cope with the adverse impacts of climate change. A quick measure of institutional awareness is the presence of a comprehensive analysis of climate risks for the city and corresponding adaptation and mitigation initiatives.<sup>3</sup>

1. IPCC, 2014: Annex II: Glossary.

2. EC FP7 research project, April 2018, *Econadapt Toolbox Website*.

3. Shagun Mehrotra & al, 2009, *Framework for city risk assessment*.

### 1.3. PROCESS FOR REPORTING

In order to maximise the quality and applicability of the assessment, the following process is recommended. Steps 1 and 2 are preliminary phases, to establish the goals and the team for the report. Steps 3 and 4 establish the Climate Change Risk Assessment. Further, the assessment will allow the development and implementation of an Adaptation Action plan.

**# STEP 1 | Establish the Context**

It is essential for the city to determine the **goals & objectives** of this assessment, what would be considered as a success. Identify the **existing & potential human and financial resources**, as well as the relevant **internal** (local government) and **external stakeholders** to engage throughout this process.

**# STEP 2 | Stakeholders, Interdisciplinary Team and Resources**

Identify and involve relevant **actors**: universities, scientific/academic institutions, different government agencies who can take part in the study.

Identify and analyse the existing **sets of data** : what documentation is available, incomplete or have dated. An independent pre-assessment can be used to facilitate the city acknowledging gaps and sets the new objectives.

**# STEP 3 | Identify, Analyse and Evaluate Risks**

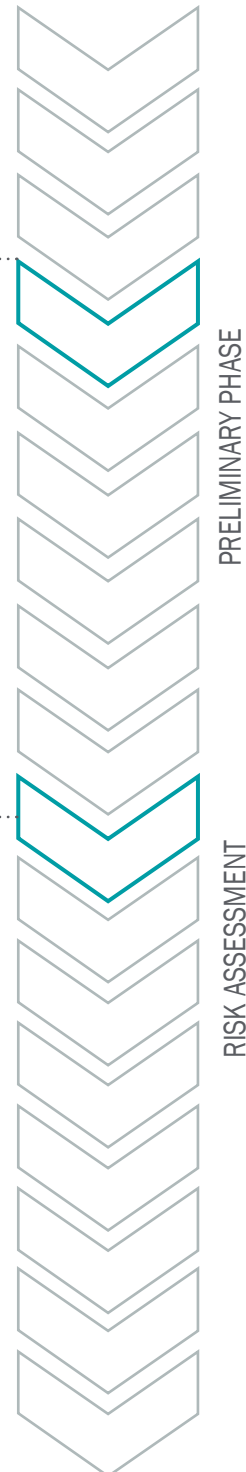
Create a report detailing the sector-based hazards and risks:

- # Analyse the **demographic, socio-economic and environmental context**, to understand the potential evolution of impacts and priorities on the city;
- # Study the **past climatic events**: intensity, frequency, scale and impacts;
- # Set the **climate change trends**, future scenarios of evolution;
- # Research each of the **future hazards**: likelihood, consequence, frequency
- # Assess the **impact** these extreme events could have on people and sectors.

**# STEP 4 | Create Risks and Vulnerabilities Map**

Include spatial maps highlighting vulnerable areas and hot spots, to the previous report:

- # Identify **how and where** each climate hazard will affect the city, and **which assets/sectors** will be affected.
- # Consider the cascading effects on other sectors via an **interdependencies** assessment.
- # Identify **priority risks** based on level of exposure, sensitivity, interdependencies and vulnerability



# 2 | ASSESSMENT CHECKLIST

A   Introduction and General Content		No	Limited	Yes
	<p><b># Essential</b>   The Climate Change Risk Assessment identifies the following essential elements<sup>5</sup>:</p> <ul style="list-style-type: none"> <li>&gt;&gt; <b>Boundary of assessment</b> (boundary of assessment shall be equal to or greater than the city boundary), including the local government(s) name(s);</li> <li>&gt;&gt; <b>Data sources</b> ;</li> <li>&gt;&gt; <b>A glossary</b> of key terms and definitions ;</li> <li>&gt;&gt; <b>Leading/coordinating team</b> in the city.</li> </ul> <p>Terminologies and definitions used in the reports should be consistent with those used in the IPCC Fifth Assessment Report (AR5)<sup>6</sup> or any update following the AR5 as well as with national frameworks/requirements.</p>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<p><b># Best Practice</b>   The report can include greater analytical details about:</p> <ul style="list-style-type: none"> <li>&gt;&gt; <b>Introduction</b> (of the goals and objectives for the local government);</li> <li>&gt;&gt; <b>Summary</b> setting out the main findings.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
B   Context, Past Climatic Events and Trends		No	Limited	Yes
<p><b>B.1. DEMOGRAPHIC AND SOCIO-ECONOMIC CONTEXT</b></p>	<p><b># Essential</b>   The Climate Change Risk Assessment identifies the following essential elements:</p> <ul style="list-style-type: none"> <li>&gt;&gt; <b>A short description</b> on the city’s demographic and socio-economic context and key future trends: an overview of the <b>city’s contextual data, trends</b> and/or information on <b>social and economic projections</b> for the city<sup>7</sup>.</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
	<p><b># Best Practice</b>   The report can include greater analytical details about trends<sup>8</sup>:</p> <ul style="list-style-type: none"> <li>&gt;&gt; <b>Population/demographics</b> (e.g. age profiles, life expectancy, immigration);</li> <li>&gt;&gt; <b>Socio-Economic development</b> (e.g. housing affordability; energy demand/access; water demand/access; undernourishment; poverty; Social Progress Index);</li> <li>&gt;&gt; <b>Future trends</b> (e.g. emerging technologies; innovations and disruptors enabling transformational action).</li> </ul>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

5. GCOM Data Standards, Measurement and Reporting Technical Working Group (D-TWG), April 2018.  
 6. IPCC, 2014: Annex II: Glossary.  
 7. C40Cities, May 2018, Climate Action Planning Framework.  
 8. Social Progress Imperative (M. E Porter, S. Stern, M. Green), 2016, Social Progress Index.

**B.2. ENVIRONMENTAL CONTEXT AND PROJECTED TRENDS**

**# Essential |** The Climate Change Risk Assessment identifies the following essential elements <sup>9</sup>:

>> A short description of the **current administrative and physical geography** as relevant to climate change (e.g. coastal; inland; fluvial; topography; elevation).

No  
Limited  
Yes



**# Best Practice |** A report can include greater analytical details about trends:

>> **Global climate trend:** a short description of climate change anticipated globally, a short description of the country-wide impacts and governance.



>> **Climate change in the city:** assess past and recent climatic trends experienced in the city. Identify climate change scenarios based on at least three different representative concentration pathways and the expected impact. Climate change scenarios should also include estimated likelihood and frequency of high intensity events (e.g. droughts, cyclones and floods, heat waves and high wind speeds). The analysis should be based on recent data, using a combination of global and regional climate models, statistical downscaling and expert judgment (including interviews with key city officials and researchers).



>> Bring information on the **city's current environmental quality** : e.g. water quality, air quality, biodiversity and green areas.<sup>10</sup>



>> When relevant to climate change, bring extra information on **resource management** : e.g. solid waste volume and management, food sources and consumption, deforestation, alien plant invasions.



**B.3. MAJOR CLIMATE HAZARD OCCURRED IN THE PAST**

**# Essential |** It is essential for the Climate Change Risk Assessment to report the major hazards occurred in the past <sup>11</sup>:

>> **Scale of the hazard**, including loss of human lives and economic losses (direct and indirect, if possible), environmental and other impacts spatially specified;



>> **Current risk level** of those hazards (likelihood x impact, also sometimes referred as probability x consequence);



>> **Intensity and frequency** of the hazard ;



>> **At least five sectors**, assets, or services most impacted by the hazard and the magnitude of impact for each of them. The sectors can be among the following list: Transport, Energy, ICT (Information and Communications technology), Water supply and sanitation, Waste management, Public Health, Law & Order, Emergency Services, Land use planning, Education, Food & Agriculture, Environment, Biodiversity, Forestry, Commercial, Industrial, Tourism, Residential, Society/community & culture... The results may be reported following the template in the annexes (table 1, section A and B Current and future climate risks, exposure, impacts and vulnerability).



>> **Vulnerable population groups** most affected by the hazard.



**# Best Practice |** No Specification.

9. C40Cities, May 2018, Climate Action Planning Framework.

10. C40Cities, May 2018, Climate Action Planning Framework.

11. GCOM Data Standards, Measurement and Reporting Technical Working Group (D-TWG), April 2018.

## C | Projected Climate Hazard and Impact

No  
Limited  
Yes

### C.1. PROJECTED CLIMATE HAZARDS

**# Essential |** It is essential for the Climate Change Risk Assessment to report the most significant climate hazards faced or projected to be faced by their communities, based on global climate trends and climate downscale to the region, and to report for each <sup>12</sup>:

- >> **Description of expected future hazards**, spatially specified;
- >> **Current risk level** (likelihood x impact) of the hazard (also sometimes referred as probability x consequence);
- >> **Expected intensity, frequency, and timescale** of the hazard
- >> At **least five sectors**, assets, or services that are expected to be most impacted by the hazard in future and the magnitude of the impact for each of them. In each sector, include a brief background of the sector and its importance for the city. The results can be reported following the template in the annexes (table 1, section A and B Current and future climate risks, exposure, impacts and vulnerability);
- >> **Qualitative assessment on vulnerable population groups** (e.g. poor, elderly, youth, people with chronic disease, unemployed, etc.) that are expected to be most affected by future hazards. The results can be reported in the last section of the template in the annexes (table 1, section A and B Current and future climate risks, exposure, impacts and vulnerability).



**# Best Practice |** The report can include greater analytical details about:

- >> **Interdependencies analysis across service sectors**, considering knock-on impacts from one system/business/community to another and potential for cascading damage or failures.<sup>13</sup>
- >> Assessment of **how specific hazards may influence others**. Assessment of projected hazards beyond 2050 to inform long-range planning. Updates to the hazard assessment scheduled to take account of emerging scientific evidence.
- >> **Impacts quantified** (e.g. number of people affected, days of service lost) for potential damages, avoided economic and societal costs; and the value of city systems at risk assessed and set out (value-at-risk assessment).<sup>14</sup>



### C.2. ADAPTIVE CAPACITY

**# Essential |** It is essential for the Climate Change Risk Assessment to identify factors that will most greatly affect their adaptive capacity, and report for each factor<sup>15</sup> :

- >> **Description of the factor** as it relates to (supporting or challenging) adaptive capacity;
- >> **Degree** to which the factor challenges (as opposed to supports) adaptive capacity.



The results can be reported in the template in the annexes (refer to table 2).

12. GCOM Data Standards, Measurement and Reporting Technical Working Group (D-TWG), April 2018.  
 13. C40Cities & AECOM, Spring 2017, C40 Infrastructure Interdependencies + Climate Risks Report.  
 14. C40Cities, May 2018, Climate Action Planning Framework.  
 15. GCOM Data Standards, Measurement and Reporting Technical Working Group (D-TWG), April 2018.

**C.2. ADAPTIVE CAPACITY**

**# Best Practice |** The report can include greater analytical details about:

- >> **Measurement** from the factors previously identified of the climate sensitivity in the city and **mapping** of areas that will have the highest sensitivity to projected changes and are vulnerable to specific hazards or risks.



**D | Conclusion**

No  
Limited  
Yes

**# Essential |** No Specification.

**# Best Practice |** The report can include greater analytical details about:

- >> **Gaps in the understanding of impacts**, identifying where more research might be needed.
- >> **Compare updated projections with previous projections** to identify significant differences or areas where data might be more certain.
- >> **Priority risks** based on levels of exposure, sensitivity, interdependencies and vulnerability.
- >> **Existing policies, programmes, assets, capacities, and actions** that could address the priority risks and vulnerabilities. Also highlight the critical **gaps** in capacity, policy, programs, assets and knowledge (including, where possible, informal knowledge that may be held in the community).
- >> **Additional actions needed** to address priority risks and vulnerabilities due to climate change.



# ANNEXES

## REFERENCES

- >> C40Cities, May 2018, Climate Action Planning Framework.  
[https://assets.locomotive.works/sites/5ab410c8a2f42204838f797e/pages/5ae2f92374c4837e195d0e00/files/CAP\\_Framework\\_20180515.pdf?1526373999](https://assets.locomotive.works/sites/5ab410c8a2f42204838f797e/pages/5ae2f92374c4837e195d0e00/files/CAP_Framework_20180515.pdf?1526373999)
  
- >> C40Cities & AECOM, Spring 2017, C40 Infrastructure Interdependencies + Climate Risks Report.  
[https://unfccc.int/sites/default/files/report\\_c40\\_interdependencies\\_.pdf](https://unfccc.int/sites/default/files/report_c40_interdependencies_.pdf)
  
- >> EC FP7 research project, April 2018, Uncertainties and risk analysis climate change adaption, Econadapt Toolbox Website  
<http://econadapt-toolbox.eu/insights>
  
- >> IPCC, 2014: Annex II: Glossary [Mach, K.J., S. Planton and C. von Stechow (eds.)]. In: Climate Change 2014: Synthesis Report. Contribution of Working Groups I, II and III to the Fifth Assessment Report of the Intergovernmental Panel on Climate Change [Core Writing Team, R.K. Pachauri and L.A. Meyer (eds.)]. IPCC, Geneva, Switzerland, pp. 117-130. [https://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5\\_SYR\\_FINAL\\_Glossary.pdf](https://www.ipcc.ch/pdf/assessment-report/ar5/syr/AR5_SYR_FINAL_Glossary.pdf)
  
- >> GCOM Data Standards, Measurement and Reporting Technical Working Group (D-TWG), April 2018, Recommendation for common reporting frameworks for greenhouse gas emissions inventories, targets, risk and vulnerability, climate action and energy access, Draft for Consultation, version 2.0.  
<https://www.globalcovenantofmayors.org/wp-content/uploads/2018/05/Consultation-document-English-1.pdf>
  
- >> Shagun Mehrotra, Claudia E. Natenzon, Ademola Omojola, Regina Folorunsho, Joseph Gilbride, Cynthia Rosenzweig, 2009, Framework for city risk assessment, Fifth Urban Research Symposium.  
<http://siteresources.worldbank.org/INTURBANDEVELOPMENT/Resources/336387-1256566800920/6505269-1268260567624/Rosenzweig.pdf>
  
- >> Social Progress Imperative, M. E Porter, S. Stern, M. Green, 2016, Social Progress Index.  
<http://www.socialprogressimperative.org/wp-content/uploads/2016/06/SPI-2016-Main-Report.pdf>



## RISK AND VULNERABILITY ASSESSMENT REPORTING FRAMEWORK

These tables were from the GCOM Data Standards, Measurement and Reporting Technical Working Group (D-TWG), April 2018, Recommendation for common reporting frameworks for greenhouse gas emissions inventories, targets, risk and vulnerability, climate action and energy access, Draft for Consultation, version 2.0.

(m)	=	mandatory to report
(r)	=	Recommended to report
(c)	=	For consultation
(opt)	=	Optional to report
†	=	Indicates this language (e.g. of headers) is a placeholder, the subcommittee did not discuss exact wording in this case (in other cases, the language presented is part of the subcommittee's recommendation at this stage).
<i>italics</i>	=	Explanatory notes
footnotes	=	Further information on fields and suggestions for guidance materials; formatting

<b>Table 1.</b> Please identify the most significant climate hazards faced by your jurisdiction (m) and complete the questions to the right for each one.†		
HAZARDS <sup>16</sup> (grouped under headers, can report on multiple across the table)	CURRENT hazard RISK level (dropdown for each hazard selected)	
	Probability of Hazard <sup>17</sup> (m)	Consequence of hazard (m)
<b>Extreme Precipitation</b>		
Rain storm	<input type="radio"/> High <input type="radio"/> Moderate <input type="radio"/> Low <input type="radio"/> Do not know	<input type="radio"/> High <input type="radio"/> Moderate <input type="radio"/> Low <input type="radio"/> Do not know
Monsoon	[dropdown as above]	[dropdown as above]
Heavy snow	[dropdown as above]	[dropdown as above]
Fog	[dropdown as above]	[dropdown as above]
Hail	[dropdown as above]	[dropdown as above]
<b>Storm and wind</b> ∨		
Severe wind	[dropdown as above]	[dropdown as above]
Tornado	[dropdown as above]	[dropdown as above]
Cyclone (Hurricane / Typhoon)	[dropdown as above]	[dropdown as above]
Extra tropical storm	[dropdown as above]	[dropdown as above]
Tropical storm	[dropdown as above]	[dropdown as above]
Storm surge	[dropdown as above]	[dropdown as above]
Lightning / thunderstorm	[dropdown as above]	[dropdown as above]
<b>Extreme cold temperature</b> ∨		
Extreme winter conditions	[dropdown as above]	[dropdown as above]
Cold wave	[dropdown as above]	[dropdown as above]
Extreme cold days	[dropdown as above]	[dropdown as above]
<b>Extreme hot temperature</b> ∨		
Heat wave	[dropdown as above]	[dropdown as above]
Extreme hot days	[dropdown as above]	[dropdown as above]

16. Hazards based on C40 Hazard Taxonomy. Full definitions available in the CRAFT glossary. Can report on 1 or more, suggest 5-10 if applicable.

17. For Guidance Document: refers to probability the hazard "occurring in the next five years" – tbd is how to define high, moderate, low (CRAFT uses % chance).

Water Scarcity ▾		
Drought	[dropdown as above]	[dropdown as above]
Wild fire ▾		
Forest fire	[dropdown as above]	[dropdown as above]
Land fire	[dropdown as above]	[dropdown as above]
Flood and sea level rise ▾		
Flash / surface flood	[dropdown as above]	[dropdown as above]
River flood	[dropdown as above]	[dropdown as above]
Coastal flood	[dropdown as above]	[dropdown as above]
Groundwater flood	[dropdown as above]	[dropdown as above]
Permanent inundation	[dropdown as above]	[dropdown as above]
Chemical change ▾		
Salt water intrusion	[dropdown as above]	[dropdown as above]
Ocean acidification	[dropdown as above]	[dropdown as above]
Atmospheric CO2 concentrations	[dropdown as above]	[dropdown as above]
Mass movement ▾		
Landslide	[dropdown as above]	[dropdown as above]
Avalanche	[dropdown as above]	[dropdown as above]
Rock fall	[dropdown as above]	[dropdown as above]
Subsidence	[dropdown as above]	[dropdown as above]
Biological hazards ▾		
Water-borne disease	[dropdown as above]	[dropdown as above]
Vector-borne disease	[dropdown as above]	[dropdown as above]
Air-borne disease	[dropdown as above]	[dropdown as above]
Insect infestation	[dropdown as above]	[dropdown as above]

16. Hazards based on C40 Hazard Taxonomy. Full definitions available in the CRAFT glossary. Can report on 1 or more, suggest 5-10 if applicable.

17. For Guidance Document: refers to probability the hazard "occurring in the next five years" – tbd is how to define high, moderate, low (CRAFT uses % chance).

Please indicate how you expect climate change to affect the intensity and frequency of each hazard and when you FIRST expect to experience those changes <sup>18</sup>		Please describe the overall impact of FUTURE hazards in your jurisdiction and the sectors, assets, and/or services that will be most affected (up to 5). <sup>19</sup>		Please indicate which vulnerable population groups will be most impacted by FUTURE hazards. <sup>20</sup>		
Expected change in frequency (m)	Expected change in intensity (m)	Timescale <sup>21</sup> (m)	Description of expected impact (r)	Impacted sectors, assets, and services (m) (c) <sup>22</sup> (select up to 5) and the magnitude of those impacts (m)	Impacted vulnerable groups <sup>†</sup> (r) (c) (can select multiple for each hazard)	
<input type="radio"/> Increase <input type="radio"/> Decrease <input type="radio"/> No change <input type="radio"/> Not known	<input type="radio"/> Increase <input type="radio"/> Decrease <input type="radio"/> No change <input type="radio"/> Not known	<input type="radio"/> Immediately <input type="radio"/> Short-term <input type="radio"/> Medium-term <input type="radio"/> Long-term <input type="radio"/> Not known	[open field]	<input type="radio"/> Transport <input type="radio"/> Energy <input type="radio"/> ICT (Information and Communications technology) <input type="radio"/> Water supply and sanitation <input type="radio"/> Waste management <input type="radio"/> Public Health <input type="radio"/> Law & Order <input type="radio"/> Emergency Services <input type="radio"/> Land use planning <input type="radio"/> Education <input type="radio"/> Food & Agriculture <input type="radio"/> Environment, Biodiversity, Forestry <input type="radio"/> Commercial <input type="radio"/> Industrial <input type="radio"/> Tourism <input type="radio"/> Residential <input type="radio"/> Society/community & culture <input type="radio"/> Other _____	<input type="radio"/> High <input type="radio"/> Moderate <input type="radio"/> Low <input type="radio"/> Do not know	[List of vulnerable groups, e.g. Women Youth Elderly Indigenous population (Other etc.)
[repeat as above, for all hazards]	[repeat as above, for all hazards]	[repeat as above, for all hazards]	[repeat as above, for all hazards]	[repeat, for all hazards and s/a/s]	[repeat as above, for all hazards]	

18. Allow entities to report multiple expected impacts across multiple time scales for the same hazard (e.g. allow cities to add multiple rows for the same hazards).

19. Terminology: this and the following section address exposure and impacts (include explanation in guidance document).

20. A full list is not provided here, recommend a "preapproved" list is taken from relevant scientific literature.

21. Range of years for each option to be provided in the guidance document: Short Term = by 2025 Medium term = 2026-2050 Long term = after 2050

22. For each hazard, select which sectors/assets/services will be most impacted (max 5). Then for each sector/asset/service selected, indicate the magnitude of the expected impact (creative formatting needed). For Guidance Materials: Law & Order = police, security personnel and systems etc.; Emergency services = first responders, EMT, Firefighters etc.; Society/Community & culture = things like cultural assets, heritage, community in the sense of social cohesion etc. (which could be impacted if communities are relocated or heritage sites submerged, for example)

**Table 2. Please identify and describe the [5-10] factors that will most greatly affect your jurisdiction's adaptive capacity. (m)**

FACTOR (grouped under headers, can report on multiple across the table)	Description (m)	Degree to which this factor presents a challenge for your jurisdictions adaptive capacity (m)
<b>Services</b>		
Access to basic services	[open field]	<ul style="list-style-type: none"> <li><input type="radio"/> High</li> <li><input type="radio"/> Moderate</li> <li><input type="radio"/> Low</li> <li><input type="radio"/> No concern<sup>23</sup></li> <li><input type="radio"/> Do not know</li> </ul>
Access to healthcare	[open field]	[dropdown as above]
Access to education	[open field]	[dropdown as above]
Public health	[open field]	[dropdown as above]
<b>Socio-economic</b>		
Cost of living	[open field]	[dropdown as above]
Housing	[open field]	[dropdown as above]
Poverty	[open field]	[dropdown as above]
Inequality	[open field]	[dropdown as above]
Unemployment	[open field]	[dropdown as above]
Migration	[open field]	[dropdown as above]
Economic health	[open field]	[dropdown as above]
Economic diversity	[open field]	[dropdown as above]
<b>Governmental</b>		
Political stability	[open field]	[dropdown as above]
Political engagement / transparency	[open field]	[dropdown as above]
Government capacity	[open field]	[dropdown as above]
Budgetary capacity	[open field]	[dropdown as above]
Safety and security	[open field]	[dropdown as above]
Land use planning	[open field]	[dropdown as above]
Access to quality / relevant data	[open field]	[dropdown as above]
Community engagement	[open field]	[dropdown as above]
<b>Physical &amp; Environmental</b>		
Rapid urbanization	[open field]	[dropdown as above]
Resource availability	[open field]	[dropdown as above]
Environmental conditions	[open field]	[dropdown as above]
Infrastructure conditions / maintenance	[open field]	[dropdown as above]
Infrastructure capacity	[open field]	[dropdown as above]
<b>Other</b>		
Other _____	[open field]	[dropdown as above]

23. Factors reported as “no concern” may have a neutral or a positive influence on adaptive capacity. To reduce reporting fields, preference is given here to factors that challenge adaptive capacity, though cities may also describe factors that have a positive influence as well (and GCOM partners may choose to independently collect more data on positive factors as an optional field).

**Table 3.** If available, please provide more information on your jurisdiction's climate risk or vulnerability assessment(s) (rows can be added so multiple assessments can be reported on)

Title (m)	Year (m)	Scope/Boundary <sup>24</sup> (m)	Primary author (m)	Update/revision process (opt)	Upload file (m) <sup>25</sup>
[open field]	[dropdown of years]	<input type="radio"/> Same, covers whole jurisdiction and nothing else <input type="radio"/> Smaller, covers part of the jurisdiction <input type="radio"/> Larger, covers the whole jurisdiction and adjoining areas <input type="radio"/> Partial, covers part of the jurisdiction and adjoining areas	<input type="radio"/> Local government <input type="radio"/> Consultant <input type="radio"/> International organization <input type="radio"/> Community group <input type="radio"/> Regional / state / provincial government <input type="radio"/> National / central government <input type="radio"/> Other _____	<input type="radio"/> Formal schedule for update <input type="radio"/> Yes <input type="radio"/> No <input type="radio"/> Do not know <input type="radio"/> If yes, what is the time period for update? (years): _____ <input type="radio"/> Status of current update <input type="radio"/> Currently Exists; <input type="radio"/> In Progress <input type="radio"/> Does not exist but intending to undertake in the future; <input type="radio"/> Do not know	

24. Recommend that to be considered for compliance, the boundary should be at least equal to the boundary of the whole jurisdiction. Jurisdiction definition = ICLEI Typology (assuming jurisdiction type will be indicated earlier in the profile section of the reporting form) - State / Region; Province / County / District; Independent province; City / Municipality; Independent city; Special city / Federal district; Sub-municipal district; Sovereign city-state (to include – guidance on where “metropolitan area” fits).

25. The mandatory fields in this table are required for compliance after 2 years in GCOM.

The C40 Cities Climate Leadership Group connects more than 90 of the world's greatest cities, representing over 650 million people and one quarter of the global economy.

Created and led by cities, C40 is focused on tackling climate change and driving urban action that reduces greenhouse gas emissions and climate risks, while increasing the health, wellbeing and economic opportunities of urban citizens.

*This report is being made available "as is" for informational and educational purposes only. You acknowledge and agree that if you rely on any information in the report, you do so solely at your own risk. C40 Cities Climate Leadership Group Inc. makes no representations or warranties of any kind, express or implied, about the report, including, but not limited to, about the completeness, accuracy, reliability, suitability or otherwise and expressly disclaims any warranty of merchantability, fitness for a particular purpose, non-infringement, and otherwise regarding the report and its content. C40 Cities Climate Leadership Group Inc. will not be liable for any damages of any nature, including, but not limited to, direct, indirect, incidental, special, consequential damages or under any legal or equitable theory in connection with any use of the report for any purpose.*

C40 Cities Climate Leadership Group Inc.

120 Park Ave.

New York, NY 10017

[www.c40.org](http://www.c40.org)