SECTION 03

Assessment Exercise: Discovery of a "Hot Spot"

Section 03 engages city officials in an assessment exercise to identify the city's human and built environment characteristics, potential impacts of climate change, and natural or other hazards. Beyond that, the assessment will also identify local government prerogatives and authorities that would allow it to take action in dealing with potential climate change impacts and natural hazards.

The ultimate determination from the assessment is to identify main vulnerable and at-risk areas. This knowledge is then critical for defining priority actions that move (or "cool down") the city from becoming a Hot Spot. Some contributing attributes that result in a city becoming a Hot Spot include the following:

- Moderate to high level of one or more natural hazards.
- Medium or high observed vulnerability in past disasters.
- Moderate to high sectoral vulnerability of climate change.
- Poor or nonexistent urban development plan or growth plan.
- Poor compliance with urban development plan or growth plan.
- Poor quality of building stock.
- High population density.
- Medium to large population or high decadal growth rate or high population density in case of low population.
- Medium or high slum density or large proportion of informal population.
- No comprehensive disaster response system.
- Economic and/or political significance in regional or national context.

The exercise requires completing a City Typology and Risk Characterization Matrix. The assessment is not a quantitative tool for ranking cities nor is it intended to be a scientifically rigorous assessment. It is intended to give the following results:

OBJECTIVES OF SECTION 03:

- Identify the interrelationship between governance structure, urban characteristics, disaster risk, and climate change impacts.
- Use knowledge of risks of various hazards to determine the composite risk of the city following a suggested Hot Spot identification exercise.

OUTCOMES OF SECTION 03:

- Identify the role of a Climate Change Team to mainstream the interrelationship between governance structure, urban characteristics, disaster risk, and climate change impacts.
- Become familiar with typology and the risk characterization matrix from which to evaluate the disaster risk and climate change impact and determine whether the city is a Hot Spot.

- Identify major problem areas for climate change impact and disaster risk management as a step toward identifying priorities for action;
- Generate awareness among local government officials and other stakeholders on the important contributors to climate change and disaster risk management;
- Assist the local government and other stakeholders to intuitively establish the link between climate change impact, disaster risk management, and urban governance; and
- Develop programs using the examples of sound practices from other cities (Section 05);
- Benchmark progress by filling out the matrix periodically.

For several cities, prior assessment of disaster risk or climate change impact may already be available. All such available information should be used in the exercise to establish the city's profile. For many questions, rigorous scientific information or prior assessment reports may not be available. For these questions, the exercise provides an opportunity to look back over several decades (the Primer recommends 50 years) to document and record events, trends, and cycles for determination of the query responses. Guidance is provided in the exercise to help differentiate annual events (such as monsoon flooding) from infrequent or episodic events (such as earthquakes) for response, preparedness, mitigation, and adaptation with regard to frequency and impact.

This exercise supports the idea of a local government establishing a working relationship with scientific institutes or technical bodies with expertise in natural hazard and climate change knowledge to advise on the impacts and management strategies to respond to climate change.

A/ COMPLETING THE CITY TYPOLOGY AND RISK CHARACTERIZATION MATRIX

The City Typology and Risk Characterization Matrix [see Tables 3.1(a)–(f)] is completed with information and data typically available within local government, and its preparation is an important step to engage various city departments and other stakeholders in climate change programs.

1. Select Climate Change Team

It is recommended that the city government identify a *City Climate Change Team* to prepare the Matrix. Depending on the city's ongoing activities in climate change impacts and disaster risk management, the Climate Change Team may not necessarily be a new team; it may include the expansion of scope of responsibility of an existing team such as the Disaster Risk Management Team. The *team head* should be an officer with sufficient authority to enable the team to implement the recommendations in the policies and programs of various departments of the government. The *team members* should represent those departments that deal with environment, planning, construction, transportation, and infrastructure, as well as other departments that impact climate change. The cities are also encouraged to include other stakeholders from the scientific and technical institutions and from civil society. The team can form the nucleus for continuing activities related to climate change impacts and disaster risk management after completing the assessment exercise. The selection of a City Climate Change Team can also be used to facilitate ownership of different programs by the line departments by ensuring their participation.

▲ *Recognizing a city's risks and vulnerabilities is the first step to action.*

2. Hold Series of Workshops

It is recommended that a series of workshops be held that comprise a range of city stakeholders to discuss current situations and reach consensus on the assessment. The purpose of the initial workshop would be to ensure that consensus is built in terms of priorities, usable data, and other pertinent issues. As part of the workshop planning, key resource documents should be collected and provided to help in completing the City Typology and Risk Characterization Matrix. These workshops will also help officials and other participants to understand the importance of the City Information Base discussed in the Section 04.

3. Complete the Matrix

Once the climate change team feels it has had proper discussions and collected adequate background material, it should complete the City Typology and Risk Characterization Matrix. Designed to give an overview of all important issues and activities that could affect the city, the City Typology and Risk Characterization Matrix is divided into 11 categories of attributes (A through K), in six main areas:

- City description (A-B)
- Governance and management (C-E)
- Built environment (F)
- Political and economic impacts (G-H)
- Natural hazards (I-J)
- Climate change impacts (K)

The Matrix has been divided into discrete tables for easier review and completion. Preceding each table is a detailed description of each category that will help in identifying the information requested for completing the Matrix.

City Description

Category A identifies the geographic location of the city. This helps in identification of impacts of climate change and the likely natural hazards that are of concern to the city. Section 02 of the Primer can help in determining how climate change impacts and disaster risks management are linked to city geography, (e.g., coastal cities and sea-level rise). See Table 3.1(a) for categories A and B.

Category B identifies the size and main characteristics of the city area and population. Resident population (i.e., night population), floating population (i.e., migrant day-workers), density, and growth rate are important indicators of the concentration of problems and their rate of increase over time. In general, larger, denser, or rapidly growing cities have higher vulnerability to climate change impacts and disaster risk. Moreover, if not properly accounted for in disaster preparation and response plans, the floating population enhances the risks and vulnerabilities of a city.[37] Where large numbers of migrants cannot be fully integrated into the permanent urban population and formal housing settlements, increases in informal settlements and pressure on the city's infrastructures is likely, consequently making the city even more vulnerable to the impacts of climate change and natural hazards. Moreover the larger the area a city occupies and the more dense a city is also impact the resources required to adequately protect the population against climatic events and natural hazards.

TABLE 3.1(a)/
Typology and Risk Characterization Matrix

City description and size characteristics

A. City description	
1. City location	
a. In a coastal area? (Y or N)	
b. On or near mountain area? (Y or N)	
c. On inland plain? (Y or N)	
d. On inland plateau? (Y or N)	
e. Near or on a river(s)? (Y or N)	
f. Near earthquake fault lines? (Y or N)	
B. Size characteristics of city	
1. Resident population (VH, H, M, or L)	
VH = Greater than 10 million H = 2 million to 10 million M = 0.5 million to 2 million L = up to 0.5 million	
2. Population growth during last 10 years (H, M, or L)	
H = Greater than 10% M = Between 2% to 10% L = Less than 2%	
3. Floating population (VH, H, M, or L)	
VH = Greater than 30% of resident population H = Between 20%–30% of resident population M = Between 10%–20% of resident population L = Less than 10% of resident population	
4. Area in square kilometers (km^2)	
5. Maximum population density (day or night) (H, M, or L)	
H = Greater than 2,000 persons per km^2 M = Between 1,000 to 2000 persons per km^2 L = Less than 1,000 persons per km^2	

Governance and Management

Category C relates to governance structure and hazard management. Whether by appointment or by election,[38] excessively short terms in the government office may inhibit long-term planning. Appointed governments should prioritize stakeholder consultation and engagement to counter any misperceptions that they are not accountable to an electorate; stakeholder consultation is, of course, as important for an elected government. The existence of departments for disaster risk and climate change impact management indirectly verifies the level of city preparedness. If disaster risks and climate change impacts are managed by the same department, chances to develop linked plans and programs increase. The existence of disaster risk management and climate change departments at provincial and national levels is also an important indicator of the level of their integration with other departments of the local government. See Table 3.1(b) for categories D, E, and F.

Category D establishes the responsibilities for disaster risk management and climate change management. Responsibilities are clearly identified when someone is appointed to a specific activity (related to climate change and disaster risk management) and this appointment is well communicated and known by other departments. This exercise also helps to establish the level of decentralization depending on whether the city has an established system to contract for services.

Category E focuses on the financial resources of the city. Cities with a larger budget and those with significant financial autonomy (e.g., local taxes, levies, and access to domestic markets) will find implementing new climate change programs easier. The total budget should be viewed in light of actual needs for climate change and disaster management programs. Cities with large budgets may have even larger needs, and conducting this assessment up front will provide a clearer picture as to the resources that need to be raised.

TABLE 3.1(b)/
Typology and Risk Characterization Matrix

Governance structure, city management, and financial resources

C. Governance structure as related to disaster risk management	
1. Appointed head of government? (Y or N)	
a. Term of assignment? (Years)	
2. Elected head of government? (Y or N)	
a. Term of elected officials? (Years)	
3. Local government office structure: Does it have…	
a. Disaster risk management department? (Y or N)	
b. Environment, sustainability or climate change department? (Y or N)	
c. Are (a) and (b) in the same department? (Y or N)	
4. Other government office structure (state, national): Does it have…	
a. Disaster risk management department? (Y or N)	
b. Environment, sustainability, or climate change department? (Y or N)	
c. Are (a) and (b) in the same department? (Y or N)	
D. City management on climate change and disaster risk management	
1. Responsibilities clearly specified? (Y or N)	
2. Responsibility for climate change management established? (Y or N)	
3. Responsibility for disaster risk management established? (Y or N)	
4. Authority to contract for services? (Y or N)	
E. Financial resources	
1. Total budget	
2. From local taxes and levies (% of total)	

TABLE 3.1(b)/ (cont.)

E. Financial resources	
3. From state and national government grants & devolutions (%)	
4. From domestic market—bonds & loans (%)	
5. From international market (%)	
6. From external or multilateral lending agencies (%)	

Built Environment

Category F relates to the city's built environment. This information is useful for establishing the physical vulnerabilities of the city. Existing programming and planning capabilities are inferred by verifying the presence of master plans and urban development plans. The presence of building codes and the level of compliance is a good proxy for regulating capacity in this field, which may be upgraded to include climate change impact and additional disaster risk management measures. High proportions of informal settlements are likely to indicate higher vulnerability of the city. Good insight comes from the level of dispersion of informal population: Concentrated informal settlements could further increase the city's vulnerability and risks to natural hazards. Older tenements and historical structures are likely to be highly vulnerable, and the proportion of total population in these buildings is a useful indicator of the city's risk profile. Information on observed vulnerability (in terms of extent of disruption of a building's functionality) during past disasters acts as an indication of structural vulnerability. In general, for new and formal settlements, vulnerability can be assigned based on the quality of building codes and the city's compliance level. If more than 5 percent of such buildings are vulnerable, vulnerability can be assigned as high. Medium vulnerability of new and formal buildings implies that 1 to 5 percent of buildings are vulnerable, while low vulnerability implies less than 1 percent of vulnerable buildings. The corresponding ranges for informal building types, in terms of percentage that are vulnerable, are as follows: low, less than 5 percent; medium, between 5 percent and 15 percent; and high, greater than 15 percent. The same percentages are given for historic buildings, which are already more vulnerable and often more valuable. See Table 3.1(c) for category F.

TABLE 3.1(c)/
Typology and Risk Characterization Matrix

Built environment

F. Built environment	
1. Does the city have urban growth Master Plans? (Y or N)	
2. Does the city have urban development plans and land-use plans? (Y or N)	
a. Population in authorized development? (% of total)	
b. Population in informal colonies? (% of total)	
c. Population density of informal colonies? (H, M, or L)	
H = Population of informal colonies >20% of total	
M = Population of informal colonies <20% but >10% of total	
L = Population of informal colonies <10% of total	
d. Population in old tenements and historical development? (% of total or H, M, or L using ratings in 2c)	
3. Does the city have building codes? (Y or N)	
a. Level of compliance? (% compliant buildings)	
4. Observed vulnerability of buildings in past natural disasters (extent of disruption of building functionality)	
a. Informal buildings (H, M, or L)	
H = Greater than 15% of informal buildings highly vulnerable	

TABLE 3.1(c)/ (cont.)

F. Built environment	
M = Between 5% and 15% of informal buildings highly vulnerable	
L = Less than 5% of informal buildings highly vulnerable	
b. Historic buildings (H, M, or L)	
c. New & formal developments (H, M, or L)	
H = Greater than 5% of new & formal developed buildings highly vulnerable	
M = Between 1% and 5% of new & formal developed buildings highly vulnerable	
L = Less than 1% of new & formal developed buildings highly vulnerable	

Political and Economic Impacts

Category G relates to the political impact of a disaster affecting some cities. Political impact can be high if the city is an administrative center, a financial and economic pole for the area, or an important service provider to the area. These cities should be identified as "hotter" Hot Spots on the basis of the impact of a disaster on these activities and capacities. See Table 3.1(d) for categories G and H.

Category H establishes the impact of disasters on the most relevant urban economic activities of the city. The word "major" means that those specific sectors are present in the city and account for at least 10 percent of local employment or at least 15 percent of income generation, each. A city with high economic significance is generally a "hotter" Hot Spot due to the widespread indirect adverse consequences of disasters or adverse climate change impacts affecting the city.

TABLE 3.1(d)/
Typology and Risk Characterization Matrix
Political and economic impacts

G. Political impact of disasters	
1. Is the city a national/provincial capital or where a large number of decision-makers live? (Y or N)	
2. Is impact of disaster in the city likely to influence political activity in areas far away from affected regions? (Y or N)	
H. Economic impact of disasters	
1. Is the city a major center of economic activity in regional or national context? (Y or N)	
2. Do the following sectors have major activity in the city?	
a. Industrial sector? (Y or N)	
b. Services sector? (Y or N)	
c. Financial sector? (Y or N)	
d. Tourism and hospitality sectors? (Y or N)	

Natural Hazards

Category I assesses the threat of natural hazards. For most hazards, the information will be available from building regulations and from the past meteorological records (approximately for last 50 years). Seismic, tsunami, and volcanic hazards are very important since they occur after long intervals and may not have occurred during the last 50 years. These hazards should be considered in case they are identified as a specific hazard for the city in its master plan or in building code specifications. These hazards, if present, must be considered for all disaster management plans and in identification of the city as a Hot Spot since their occurrences often result in significant casualties and loss of property. The threat of other hazards is a useful indicator of their recurrence rate since climate change is likely to increase the frequency of these hazards.

Category J relates to the disaster response system and existence of a city's emergency response plan. It also assesses if the plan is comprehensive (such as with detailed plans and standard operating procedures for the most important hazards, and involving stakeholders other than the government), regularly practiced, and regularly updated so that the plan can be effective after a disaster occurs.

TABLE 3.1(e)/
Typology and Risk Characterization Matrix

Hazards and a disaster response system

I. Threat of natural hazards	
1. Earthquake? (Y or N)	
2. Wind storm? (Y or N)	
3. River flood? (Y or N)	
4. Flash rainwater flood or extreme precipitation? (Y or N)	
5. Tsunami? (Y or N)	
6. Drought? (Y or N)	
7. Volcano? (Y or N)	
8. Landslide? (Y or N)	
9. Storm surge? (Y or N)	
10. Extreme temperature? (Y or N)	
J. Disaster response system	
1. Does a disaster response system exist in the city? (Y or N)	
2. Is the response system comprehensive and equipped for all natural hazards specified? (Y or N)	
3. Is the disaster response system regularly practiced? (Y or N)	
4. Is the disaster response system regularly updated? (Y or N)	

Climate Change Impacts

Category K relates to climate change impact. *Does the city know what the impacts of climate change are?* To know means that the city has enough background and knowledge resources to address actions and measures in the field, including the impact on several urban sectors. The impact may be known from detailed scientific investigations or from empirical data and field observations. Moreover, the matrix response relies on the existence of a climate change policy (and/or a strategy) and of climate change programs, specifically addressing the issues of mitigation, adaptation, and resilience as discussed in Section 02. This information will also help prepare for climate change events by climate-proofing certain sectors (e.g. beach tourism to have sea walls and clear evacuation plans) or by diversifying a city's economic base. Table 3.1(f) reflects the existence or presence of these climate change programs; more details on disaster risk management preparedness will be reflected in Tables 3.2 and 3.3. If climate models are available at regional, local, and national levels, comparison and more effective scenario evaluation is possible, and climate change programs will then be developed consistently.

TABLE 3.1(f)/
Typology and Risk Characterization Matrix

Climate change impacts

K. Climate change impact	
1. Is the impact of climate change on the city known? (Y or N)	
2. Are the following sectors vulnerable to the consequences of climate change?	
a. Built environment? (Y or N)	
b. Cultural and religious heritage? (Y or N)	
c. Local business, industry, and economy? (Y or N)	

TABLE 3.1(f)/ (cont.)

K. Climate change impact	
d. Energy generation and distribution system? (Y or N)	
e. Health-care facilities? (Y or N)	
f. Land use? (Y or N)	
g. Transportation system ? (Y or N)	
h. Parks and recreation areas? (Y or N)	
k. Tourism? (Y or N)	
3. Is climate change assessment based on local studies instead of regional/global models? (Y or N)	
4. Does the city have a climate change strategy (maybe as a component of national policy)? (Y or N)	
5. Does the city have climate change programs in place? (Y or N)	
6. If Yes, do the climate change programs consider:	
a. Mitigation? (Y or N)	
b. Adaptation? (Y or N)	
c. Resilience? (Y or N)	

B/ ADDITIONAL TESTING FOR A HOT SPOT

A clearer link between climate change impacts and the city vulnerability assessment can be established by completing Table 3.2, in which cities evaluate the consequences of specific climate factors, such as temperature rise, precipitation change, and sea-level rise on the main sectors in their city.

Attribute matrix	*Climate factor*		
	Temperature rise	Precipitation change	Sea-level rise
Rate the level of vulnerability in each of the following areas. H = Very important consequences and priority for action M = Important and should be considered in city development plans L = Unimportant			
Built environment (H, M, or L)			
Cultural and religious heritage (H, M, or L)			
Local business, industry, and economy (H, M, or L)			
Energy generation and distribution system (H, M, or L)			
Health-care facilities (H, M, or L)			
Land use (H, M, or L)			
Transportation system (H, M, or L)			
Parks and recreation areas (H, M, or L)			
Social equity system (H, M, or L)			
Water management (H, M, or L)			
Tourism (H, M, or L)			

TABLE 3.2/ Vulnerability assessment for different consequences of climate change in urban areas

If the vulnerability to a specific climate impact in a sector is not known or poorly understood, the City Climate Change Team can refer to the information provided in Section 02 and can review the materials and downscaling methods listed in the Annex D Resource Guide. If the City Climate Change Team is able to define the most important threats by using Table 3.2, the team will better understand the extent to which the city is a Hot Spot and the factors that contribute to this determination, simply by the attributes rated at medium and high vulnerability levels. With this knowledge, the team can use Section 05 to build on it and gain insight from relevant international sound practices.

A benchmark evaluation of risks can also be helpful in motivating the city to understand where the main gaps and difficulties are in preparing for disasters and natural hazards. To establish a benchmark evaluation on Disaster Preparedness and Response in specific sectors for specific natural hazards, the city officials and their Climate Change Team should complete Table 3.3. The latter could be further specified and detailed by the team itself.

TABLE 3.3/
Preparedness and response to different natural hazards in urban sectors

Attribute matrix	Disaster preparedness and response			
	Industrial sector	Service sector	Financial sector	Tourism and hospitality sector
Define the level of preparedness for each event for each sector. H = High level of preparedness and readiness to respond to disaster and hazard M = Somewhat high level and the basic/key informants are present (i.e., a basic disaster management system is in place, but may not be comprehensive or consider specific hazards) L = Low (i.e., no disaster management system, no warning system, etc.)				
1. Earthquake (H, M, or L)				
2. Wind storm (H, M, or L)				
3. River flood (H, M, or L)				
4. Flash rainwater flood or extreme precipitation (H, M, or L)				
5. Tsunami (H, M, or L)				
6. Drought (H, M, or L)				
7. Volcano (H, M, or L)				
8. Landslide (H, M, or L)				
9. Storm surge (H, M, or L)				
10. Extreme temperature (H, M, or L)				

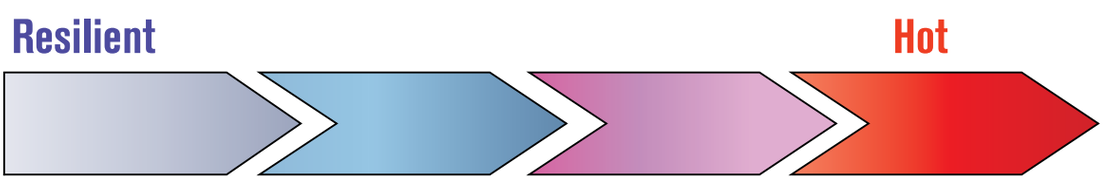
To fill out Table 3.2, experience from past disasters or information from global studies, such as those included in the IPCC reports or in UNISDR documents, should be used to assess the risks. The attributes are also intended to motivate the city to carry out this risk assessment based on local scientific models so that the impact is assessed with greater accuracy. Since mitigation measures are essential for better response to natural hazards, and resilience is essential to improve the capacity of a city to respond to any disaster, these factors are explicitly included in the Sound Practices Section for the reference of the City Climate Change Team. If these risks in the specific sectors are not known, the City Climate Change Team should refer to the information provided at Section 02 and/or the materials and downscaling methods from the Annex D Resource Guide.

C/ IS YOUR CITY A HOT SPOT?

Being a Hot Spot means that the city has a high level of vulnerability to climate change impacts (at least in some sectors, activities, and areas) and is at high risk of being affected by natural disasters.[39] After completing the matrices (Tables 3.1, 3.2, and 3.3), the Climate Change Team should be able to determine whether some conditions (Categories A–H, Table 3.1) and threats (Categories I–K, Table 3.1) are present in the city. To define whether these conditions and threats make the city a Hot Spot, some attributes should be verified more in depth (Table 3.2 and 3.3).

Based on the completed City Typology and Risk Characterization Matrix and rating levels, the city government and Climate Change Team should determine their vulnerability assessment that leads to a Hot Spot characterization: the higher a city's vulnerability, the "hotter" the city is as a Hot Spot (Figure 3.1).

FIGURE 3.1/ The climate change Hot Spot spectrum



The greater the number of adverse conditions that are satisfied (ratings of High and Medium and Yes responses), the "hotter" the city's categorization is as a Hot Spot. Some conditions that determine a Hot Spot are considered static or given. Static conditions include the existing political structure, disasters history, and the city geography—conditions that are not influenced by city policies. All others can be influenced by the city policies. City policies on climate change and disaster risks management should focus on the elements that may be influenced.

The level of "hotness" can be used by the city to prioritize its activities and to motivate integration of development plans considering climate change impacts and disaster risk management. When cities take proactive actions to respond to disaster risk and climate change impacts, "cooling" the Hot Spot will be reflected in the City Typology and Risk Characterization Matrix since it will reduce the number of adverse conditions.

City policies on climate change and disaster risks management should focus on the influentiable elements.

The evaluation of a city as a Hot Spot from climate change impacts and disaster risk management considerations [Tables 3.1(e) and (f), Categories I–K] can be also assessed based on indicators specified in Table 3.4, as proposed by UNISDR. Each indicator needs to be examined in the city context to determine its relevance and importance when evaluating a city as a Hot Spot. The city officials and the Climate Change Team could use the recommended indicators as a checklist to evaluate their level of preparedness and the ability of their city climate change impact and disaster management systems to reduce vulnerability and risks.

TABLE 3.4/ Recommended indicators for preparedness

Priority for action	Recommended Indicators
1. Ensure that climate change impact and disaster risk management is a local priority with a strong institutional basis for implementation.	(a) Institutional and legal frameworks for climate change impacts and/or disaster risk management exist with decentralized responsibilities and capacities at all levels. (b) Dedicated and adequate resources are available to implement climate change impacts and disaster risk management plans at all administrative levels. (c) Community participation and decentralization is ensured through the delegation of authority and resources to local levels.
2. Identify, assess, and monitor disaster risks and enhance early warning.	(a) Local risk assessments based on hazard data and vulnerability information are available and include risk assessments for key sectors. (b) Systems are in place to monitor, archive, and disseminate data on key hazards and vulnerabilities. (c) Early warning systems are in place for all major hazards, with outreach to communities.
3. Use knowledge, innovation and education to build a culture of safety and resilience at all levels.	(a) Relevant information on disasters is available and accessible at all levels, to all stakeholders (through networks, development of information-sharing system, etc.). (b) School curricula, education material, and relevant training include risk reduction and recovery concepts and practices. (c) Research methods and tools for multirisk assessments and cost-benefit analysis at the city or regional level are developed and strengthened. (d) Public awareness strategy exists to stimulate a culture of disaster resilience, with outreach to urban and rural communities.
4. Reduce the underlying risk factors.	(a) Disaster risk management is an integral objective of climate change–related policies and plans, including for land use, natural resources management, and climate change adaptation. (b) Social development policies and plans are being implemented to reduce the vulnerability of populations most at risk. (c) Economic and productive sectoral policies and plans have been implemented to reduce the vulnerability of economic activities. (d) Planning and management of human settlements incorporate climate change impacts and disaster risk management elements, including enforcement of building codes. (e) Disaster risk management measures are integrated into postdisaster recovery and rehabilitation processes. (f) Procedures are in place to assess disaster risk impacts of all major development projects, especially infrastructure.
5. Strengthen disaster preparedness for effective response at all levels.	(a) Strong policy, technical, and institutional capabilities and mechanisms for disaster management, with a disaster risk reduction perspective, are in place. (b) Disaster preparedness plans and contingency plans are in place at all administrative levels, and regular training drills and rehearsals are held to test and develop disaster response programs. (c) Financial reserves and contingency mechanisms are in place to enable effective response and recovery when required. (d) Procedures are in place to exchange relevant information during disasters and to undertake postevent reviews.

The next section describes the **City Information Base**. This is another tool for the city to understand itself better in the context of disaster risk and climate change impact management. The availability of the City Information Base will enable more accurate assessment of the Hot Spot status using the Matrix. The Typology and Risk Characterization Matrix can therefore be considered as an exercise that is carried out at regular intervals to incorporate the most recent City Information Base.