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| **1 Organise for disaster resilience** | Existing Disaster Risk Reduction (DRR) strategies and plans and its alignment to the Sendai Framework for Disaster Risk Reduction | • DRR sections of the city master plans and development plans including spatial plan, infrastructure plan, environmental or sustainability plan  
• DRR stand-alone plans | Local Disaster Risk Management (DRM) authorities, DRM management communities, local governments and other environment and development planning authorities |
| | Local Disaster Risk Management (DRM) organisational structure and coordination mechanism | • DRR organisation charts  
• Memoranda of understanding among multi-agencies  
• Meeting minutes and any documentation with cross-agency collaboration  
• Coordination mechanism  
• Documentation from national, regional and local platforms  
• Actions from organisations concerned | Local DRM authorities, Local NGOs and other local level organisations, Local governments |
| **2 Identify, understand, and use current and future risk scenarios** | Documentation of hazards, exposures and vulnerabilities and local risk information | • Statistics on local hazards, exposures and vulnerabilities,  
• Ranking of most probable and most severe hazards in the city  
• Local disaster loss database  
• General hazard assessment  
• Risk, hazard, and vulnerability maps  
• Local risk profile | Fire department, Environment authorities, Local DRM authorities, NGOs, academic institutions |
| | Documentation of critical assets and dependencies between these | • Critical asset maps  
• Risk information  
• Damage estimation  
• Scenarios of cascading impact of hazards on these critical assets | Road development authority, Water board, Electricity board, Line agencies, Local authorities, national and local statistical office, academic institutions |
| | Common understanding and presentation of the scenarios and narratives of the total impact of a hazard across the city | • Public announcement and communication on disaster narratives and hazard statistics across the city  
• Sharing of risk assessment documents (online, offline via government offices and via media channels)  
• Plan and timeline for the update of risk assessment | The local boards for DRM, NGOs, academic institutions, online and offline media including social media |
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| 3 | Strengthen financial capability for resilience | Information on sources of funding for DRR | • Ring-fenced budget for DRR or government budget for related activities  
• Loans, leasing and grants from development banks, aid organizations, trust funds, etc.  
• Government grants  
• Resilience bonds  
• Crowd funding  
• Tax schemes  
• Private sector partnership, public-private partnership agreements  
• Budget and capital plan documents  
• Profit and loss accounts on DRR | National and local budget and financial offices, local DRM authorities, development banks, international organizations, aid organizations, international and regional trust funds, private sector |
|  | Dedicated budget for DRR and contingency management | • Budgetary documents  
• Disaster risk management plan  
• Contingency plans, resource section  
• Financial reports | Local DRM authorities, Public work division, Revenue and accounts division, budgetary office |
|  | Available insurance schemes for sectors, businesses and communities | • List of available insurance coverage, with terms, details of assets covered  
• Statistics on insurance coverage for each area/sector of the city | Local or private insurance agencies, Environment division, Local authorities, Statistics and censors department |
|  | Documentation of any incentives or financing plans | • Loans, leasing, government grants, tax relief for seismic upgrades, flood protection, and other DRR initiatives  
• Micro-financing for household related to DRR, climate change adaptation (CCA) or enhancement of livelihoods  
• Tax relief and surcharges | Local or private insurance agencies, Local DRM authorities, Revenue and accounts division, financial institutions |
| 4 | Pursue resilient urban development and design | Urban development policies and plans | • Land-use and zoning plans  
• Policies on locations for new developments  
• Design that helps in disaster prevention and mitigation e.g. water sensitive urban design, integration of disaster refuge areas, access and egress routes (street width)  
• Urban design guides e.g. engineering techniques, landscape architects  
• Planning and building regulations  
• Building control and safety | Housing and urban development authority, Public works unit, local authorities, City planning division |
|  | Building codes and their application (mandatory and voluntarily) | • Seismic resilient building code  
• Cyclone resilient building code  
• Voluntary codes (e.g. BREEAM, LEED, Greenstar, REDi)  
• Review & update policy  
• Planning regulations | Development authority, State disaster management authority. Local authorities, Housing and urban development authority |
<p>| 5 | Safeguard natural buffers to enhance the protective functions offered by natural capital | General knowledge on the functions of ecosystems | • General knowledge and information on ecosystem and its protective functions including water attenuation, food growing, fuel, carbon sequestration, air filtration, heat attenuation, pollination, aesthetic value, etc. | Environment authority, Department of forest and agriculture, Local authorities, academic institute, media |</p>
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<td><strong>5</strong></td>
<td>Use of green and blue infrastructure in urban development and infrastructure projects</td>
<td>• Policy to support the use of green infrastructure, e.g. greening streets, squares and road sides; greening roofs and facades; developing urban agriculture; green corridors; replace impermeable surfaces; natural water filtration; daylighting urban buildings; embankment restoration, etc.</td>
<td>City planning division, Environment authority, Department of forest and agriculture, Local authorities</td>
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<td>Agreements related to ecosystems among cities</td>
<td>• Transboundary environmental agreements</td>
<td>Environment authority, Department of forest and agriculture, Local authorities</td>
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<td><strong>6</strong></td>
<td>Database on available resources and required skills to reduce risks and respond to identified disaster scenarios</td>
<td>• Database or records of local human resources (public, private, individual experts), with breakdown information on skill sets and available equipments, and contact information</td>
<td>Local DRM authorities, City’s office</td>
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<td>Awareness raising campaign, education program on disaster risk reduction</td>
<td>• Historical records of public campaign/education program on DRR</td>
<td>Local DRM authorities, City’s office, educational department, public relation department, local media and academic institutes</td>
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<td>Survey and research data on disaster resilience and effectiveness, and data sharing methods</td>
<td>• City data on population, demographics, vulnerabilities, infrastructure risks, flooding, disaster event records</td>
<td>Statistics and census department, Local DM authorities, GIS department National DM bodies, NGOs</td>
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<td>Documents related to pre-disaster training and delivery and city-to-city experience sharing and learning</td>
<td>• Communication strategy and existing web portal for sharing risk information</td>
<td>Local DM authorities, National DM bodies, Education and culture authorities, academic institutions, NGOs</td>
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<td><strong>7</strong></td>
<td>Information about ‘grassroots’ or community organisations</td>
<td>• List of grassroots organisations, and information on their size, role, and how they operate, city’s population they cover</td>
<td>Local authorities, NGOs, Regional community organisations, Community leaders</td>
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<td>Information about disadvantage and vulnerable groups and training available for them</td>
<td>• Statistics on those in areas of high poverty, transient or nomadic communities, slum/favela residents, the elderly, physically or mentally sick or disabled, children, non-native language speakers</td>
<td>Statistics and censors department, Local authorities</td>
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<td>Information about private sector</td>
<td>• Documented business continuity plans and how often these are updated</td>
<td>Local governments, Business registration department, private sector</td>
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| **7 Understand and strengthen societal capacity for resilience** | Techniques used to engage and communicate with citizens on disaster risk information and activities | • Communication plan/strategy  
• Records of media channels used (social, radio, email, newspaper, mobile device)  
• Mobile application and websites for crowd sourcing of risk information | Local governments, public relation department, city’s office, media, emergency control center |
| **8 Increase infrastructure resilience**       | Disaster resilience plans for each infrastructure                                      | • Data on execution of disaster resilience plan for different infrastructures                  | One or more separate agencies that own the infrastructure                          |
|                                                | Documents related to critical assets (i.e. water-potable and sanitation, energy, transport, communications, health care, education facilities) | • Documents on population different infrastructures serve  
• Documentation related to loss and damage of critical assets during past disasters | One or more separate agencies that own the infrastructure                          |
| **9 Ensure effective disaster response**       | Information about emergency response, early warning systems and whom they will reach   | • Early warning and forecasts with communication plan  
• Standard operating procedures for early warnings and forecasts  
• Disaster management, preparedness, emergency response plans  
• Documents or database of staffing capabilities  
• Records of drills and practices and after action reviews  
• Triage policies for inspection  
• Database on trained volunteers and the roles of volunteers | National DM authority, Local DM authorities, Line agencies, Environment division, early warning center |
|                                                | Staffing – first responders and volunteers                                             | • Standards adopted for interoperability  
• Records of evaluations,  
• Learning points and improvements enacted | All related agencies that offer first responder services                                   |
| **10 Expedite recovery and build back better** | Information of systems where interoperability with other agencies is critical          | • Documents or database equipments needed for emergency responses (e.g. vehicles for fire-fighting, ambulances, police vehicles; helicopters and aircrafts; emergency food and first aid stocks/supplies; shelters; back-up generators; utility vehicles for communication, energy restoration, water and sanitation; other critical equipment such as earthmovers, trucks, winches, chainsaws, etc.  
• Availability of equipments  
• Collaboration an agreements between government, military and civilian for back up equipments  
• List of relief supplies needed for different disaster scenarios and their availability | National DM authority, Local DM authorities, military, private sector/NGOs               |
|                                                | Emergency response equipments and relief supplies (partially for Essential 8 and partially for Essential 9) | • Rapid damage and needs assessment  
• Interim arrangements for damaged facilities  
• Repairs and debris removal,  
• Economic reboot arrangements,  
• Community support arrangements,  
• Resettlement plans,  
• Post-recovery financial aid and distribution plan,  
• Best practice guide  
• Lesson learnt, post-disaster assessment, failure analyses, build back better guidance | Local DM authorities, Disaster management communities, Local governments and other environment and planning authorities |