

Reference Note on required data/information Disaster Resilience Scorecard for Cities

Preliminary & Detailed Assessments

<https://www.unisdr.org/campaign/resilientcities/toolkit/article/disaster-resilience-scorecard-for-cities>



Contribution from the Action on "Making Cities Sustainable and Resilient: Implementing the Sendai Framework for Disaster Risk Reduction 2015-2030 at the Local Level", supported by the European Commission.

Essentials	Common for both preliminary and detailed assessment			Only for detailed assessment	
	Required Information	Example reference documents	Potential sources	Further information	Example
1 Organise for disaster resilience	Existing Disaster Risk Reduction (DRR) strategies and plans and its alignment to the Sendai Framework for Disaster Risk Reduction	<ul style="list-style-type: none"> • 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	Details about risk consideration and stakeholder participation in city plans, Review plans and timeline, Legal frameworks, annual budgets, Public and private partnership agreements, Feasibility studies of government proposals (EIA)	<ul style="list-style-type: none"> • Risk assessment process • magnitude and location of major new urban growth • significance of infrastructure investment • number of multi stakeholder consideration • consideration of traffic management system and land use changes
	Local Disaster Risk Management (DRM) organisational structure and coordination mechanism	<ul style="list-style-type: none"> • 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	Details about coordination among DRR organisations, List of stakeholders involved with their specific roles and responsibilities, Communication strategy	<ul style="list-style-type: none"> • Coordination and response arrangements • Authorities of the agencies • Physical contribution of the organisations

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2 Identify, understand, and use current and future risk scenarios	Documentation of hazards, exposures and vulnerabilities and local risk information	<ul style="list-style-type: none"> • 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	Details of city-wide exposure and vulnerability for each hazard	<ul style="list-style-type: none"> • Estimates of hazard probability • insurance industry risk assessments • other records and expert opinions
	Documentation of critical assets and dependencies between these	<ul style="list-style-type: none"> • 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	Comprehensive scenarios on total impact of the hazards	<ul style="list-style-type: none"> • Information of exposure and vulnerability of neighbourhoods and economic zones, • critical infrastructure items, with and without alternatives, • potential cascading impacts of critical assets
	Common understanding and presentation of the scenarios and narratives of the total impact of a hazard across the city	<ul style="list-style-type: none"> • 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	Publication of hazard, vulnerability and risk maps to other organisations and to the public	<ul style="list-style-type: none"> • Frequency of updates to risk maps, • updates on hazard patterns, dwellings, business, critical assets, physical and social infrastructure, ecosystem services
3 Strengthen financial capability for resilience	Budgets, information on sources of funding for DRR	<ul style="list-style-type: none"> • 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, aids organizations, international and regional trust funds, private sector	Documents of alternative financing methods and sources	<ul style="list-style-type: none"> • Details on the use of external funding or management consultants, • systematic • identification of co-benefits

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3 Strengthen financial capability for resilience	Dedicated budget for DRR and contingency management	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> 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	Statistics of insurance and incentive coverage	<ul style="list-style-type: none"> Extend of insurance cover for domestic and non-domestic property, extent of incentives for DRR to businesses and non-profit organisations
	Documentation of any incentives or financing plans	<ul style="list-style-type: none"> 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	Information of financial planning and capital planning for all actions necessary for disaster resilience	<ul style="list-style-type: none"> Financial plans with a reasoned set of priorities, % funding for capital elements of plans
4 Pursue resilient urban development and design	Urban development policies and plans	<ul style="list-style-type: none"> 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	Details of existing urban design solutions	<ul style="list-style-type: none"> Use of urban design solutions to improve resilience, e.g. soakaways and porous pavement, underground parking garages, trees and greenery
	Building codes and their application (mandatory and voluntarily)	<ul style="list-style-type: none"> 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	Details of existing building codes, sustainable building design standards, and land zoning and their applicability	<ul style="list-style-type: none"> Validation and effectiveness of building codes, information about building code updates, use of sustainable building design standards

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4 Pursue resilient urban development and design	Statistics for each area of the city	<ul style="list-style-type: none"> Statistics on land-use, population, income levels and economic activity, Vulnerability and risk maps 	Environment division, Local authorities, Local DRM division, Development authority, Statistics and sensors department	Statistics on socio-economic status related to disasters	<ul style="list-style-type: none"> % of population at risk of displacement, % of employment at risk, % of business output at risk, % of agricultural land at risk
5 Safeguard natural buffers to enhance the protective functions offered by natural capital	General knowledge on the functions of ecosystems	<ul style="list-style-type: none"> 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	Information on available ecosystem services, change in their health, benefits of each ecosystem service	<ul style="list-style-type: none"> Documents show the identification of ecosystem services, measures of extent, health, and buffering capacity of ecosystems derived by technical experts
	Use of green and blue infrastructure in urban development and infrastructure projects	<ul style="list-style-type: none"> Policy to support the use of green infrastructure, e.g. greening streets, squares and roadsides; greening roofs and facades; developing urban agriculture; green corridors; replace impermeable surfaces; natural water filtration; daylighting urban buildings; embankment restoration, etc. Policy to support the use of blue infrastructure, e.g. increase river corridors, wetlands and other waterways 	City planning division, Environment authority, Department of forest and agriculture, Local authorities	Information on impact of land use policies to critical ecosystem services, inclusion of green and blue infrastructure in new urban projects	<ul style="list-style-type: none"> Assessment of land use zoning, policies and codes that covers blue and green infrastructure
	Agreements related to ecosystems among cities	<ul style="list-style-type: none"> Transboundary environmental agreements 	Environment authority, Department of forest and agriculture, Local authorities	Details of transboundary environmental issues and agreements	<ul style="list-style-type: none"> Identification of critical ecosystem assets out the city boundaries, details on transboundary agreements and collaborations
6 Strengthen institutional capacity for resilience	Database on available resources and required skills to reduce risks and respond to identified disaster scenarios	<ul style="list-style-type: none"> Database or records of local human resources (public, private, individual experts), with breakdown information on skillsets and available equipments, and contact information Agreements with private sectors, neighboring cities or authorities to access required resources for DRM 	Local DRM authorities, City's office		

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6 Strengthen institutional capacity for resilience	Awareness raising campaign, education program on disaster risk reduction	<ul style="list-style-type: none"> Historical records of public campaign/ education program on DRR News programme related to disaster risk information Records of using social media and offline media in disseminating disaster risk information 	Local DRM authorities, city's office, educational department, public relation department, local media and academic institutes		
	Survey and research data on disaster resilience and effectiveness, and data sharing methods	<ul style="list-style-type: none"> City data on population, demographics, vulnerabilities, infrastructure risks, flooding, disaster event records Communication strategy and existing web portal for sharing risk information 	Statistics and census department, Local DM authorities, GIS department National DM bodies, NGOs	Information to compile a single integrated set of resilience data	<ul style="list-style-type: none"> A summary of readiness, hazard maps, building codes, resources, key roles and accountabilities of the stakeholders, planned investments, and citizen involvement
	Documents related to pre-disaster training and delivery and city-to-city experience sharing and learning	<ul style="list-style-type: none"> Training curricula Training records & courses run Related school and university curricula Record of participants, with details of designation (government, private sector, NGOs, communities) Training materials in all of the languages commonly used in the cities Records on peer-to-peer and city-to-city exchange programs 	Local DM authorities, National DM bodies, Education and culture authorities, academic institutions, NGOs	Details of skills and experience in all disaster management stages, engagement of private and other sectors in DRR, details related to disaster training	<ul style="list-style-type: none"> Inventory of skills and experience in all disaster management stages, public relation materials, training materials, % of population trained, learning activities and evidences
7 Understand and strengthen societal capacity for resilience	Information about 'grassroots' or community organisations	<ul style="list-style-type: none"> List of grassroots organisations, and information on their size, role, and how they operate, city's population they cover Records of past DRM trainings and the number of grassroots or community organizations participation 	Local authorities, NGOs, Regional community organisations, Community leaders	Details of coverage and engagement of 'grassroots' organisations	<ul style="list-style-type: none"> Information to prove the involvement of non-governmental organisations in post and pre disaster response, list of roles and responsibilities of community organisations
	Information about disadvantage and vulnerable groups and training available for them	<ul style="list-style-type: none"> 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 Records of past DRM trainings and number of vulnerable population covered in the trainings 	Statistics and censors department, Local authorities	Information about social connectedness immediately after an event, engagement of vulnerable population	<ul style="list-style-type: none"> Likelihood of resident connectivity, based on the previous history, evidence of public awareness programmes, education and training to involve vulnerable population

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7 Understand and strengthen societal capacity for resilience	Information about private sector	<ul style="list-style-type: none"> Documented business continuity plans and how often these are updated 	Local governments, Business registration department, private sector	Details of private employers and employees communication on resilience issues, plans on business continuity	<ul style="list-style-type: none"> Proportion of employers that pass resilience communications to employees, proportion of business with a solid business continuity plan
	Techniques used to engage and communicate with citizens on disaster risk information and activities	<ul style="list-style-type: none"> 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	<ul style="list-style-type: none"> Data on execution of disaster resilience plan for different infrastructures 	One or more separate agencies that own the infrastructure	Details about customer service days at risk of loss, designated critical asset service days at risk of loss, and cost of restoration service for each infrastructure including water sanitation, electricity, gas and transport, details about protective maintenance	Information needed for loss calculation for each infrastructure <ol style="list-style-type: none"> Estimated number of days to restore regular service area wide % of user accounts affected % of critical assets affected Carrying capacity of different transport
	Documents related to critical assets (i.e. water-potable and sanitation, energy, transport, communications, health care, education facilities)	<ul style="list-style-type: none"> 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	Information of critical assets that are on risk, designated critical asset service days at risk of loss, cost of restoration, health records and data, education data	<ul style="list-style-type: none"> Statistics on number of beds at healthcare, % of education structures at risk of damage, details of assurance of continuity of critical administration, computer systems, and data critical to government continuity
9 Ensure effective disaster response	Information about emergency response, earl warning systems and whom they will reach	<ul style="list-style-type: none"> Early warning and forecasts with communication plan Standard operating procedures for early warnings and forecasts Disaster management, preparedness, emergency response plans 	National DM authority, Local DM authorities, Line agencies, Environment division, early warning center	Details of length and reliability of early warning systems	<ul style="list-style-type: none"> Details of existing single and/or multi-hazard early warning systems, 24/7 emergency response, Response criteria for decision making, length and reliability of early warnings, % of population coverage, available emergency response plans, Standard operating procedures that cover vertical and horizontal coordination, Evacuation shelter / infrastructure, Public awareness programmes

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9 Ensure effective disaster response	Staffing – first responders and volunteers	<ul style="list-style-type: none"> • 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 	All related agencies that offer first responder services	Information about the availability of staffing, equipment and relief supply, food, shelter, staple goods and fuel supply	<ul style="list-style-type: none"> • Statistics on professional capacity, equipment and supply needs, • number of days that city can feed after a disaster, • shelter gap
	Information of systems where interoperability with other agencies is critical	<ul style="list-style-type: none"> • Standards adopted for interoperability • Records of evaluations, • Learning points and improvements enacted 	Local DM authorities, Line agencies, NGOs	Details about the ability to cooperate at all levels with neighbouring cities and other levels of government	<ul style="list-style-type: none"> • Number of emergency operation centres • coordination arrangements among agencies, • details about training and drills
	Emergency response equipments and relief supplies (partially for Essential 8 and partially for Essential 9)	<ul style="list-style-type: none"> • 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		
10 Expedite recovery and build back better	Post event recovery plans	<ul style="list-style-type: none"> • 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	Details of post event recovery and economic reboot plans, stakeholder involvement and financial aid, mechanisms to capture lessons learnt	<ul style="list-style-type: none"> • Post recovery plans including: Interim arrangements for damaged facilities and homes, locations and sources of temporary housing, counselling and personal support arrangements, arrangements to ensure social equality, etc.