

Simplified ClimateResilientCITIES (CRC) Methodology and its linkages with the Climate Smart Cities Assessment Framework, MoHUA.

CapaCITIES phase-II was launched following the successful execution of its phase-I project, with the overarching aim of supporting cities and state governments in adopting a process that would enable integration of climate considerations in urban planning, and implementation in India. A process that will help enhance capacities of cities and states to adopt integrated climate resilient planning, design innovative finance mechanisms and develop climate resilient infrastructure in select Indian cities.

The **Simplified ClimateResilientCITIES Process (CRCP)** along with its assessment instruments (Basket of Solutions) is a major component of the CapaCITIES phase-II, a much simpler version of the earlier more comprehensive CRCP methodology developed during phase-I of the CapaCITIES projects implementation in India. It is a synthesized tool that integrates the ClimateResilientCities Methodology, of Phase I, Basket of Solutions tool developed with Swiss expertise, based on the European Energy Award approach (eea) and a well-defined monitoring and reporting approach.

The **Simplified ClimateResilientCITIES Process**, also termed as the Simplified ClimateResilientCITIES Methodology is a tailor made process for Local Governments (LGs), providing step by step guidance to prepare, implement and monitor Climate Resilient City Action Plans, to support LGs in their endeavour to move towards climate resilient development.

LGs could choose to initiate climate action by adopting a simplified 3-phase, 5-step process, defined by the **Simplified ClimateResilientCITIES (CRC) Methodology**. This methodology is based on a pre-defined set of comprehensive climate actions; Basket of Solutions tool. It is envisaged that the simplified methodology would support the city in preparing a quick climate action plan within 3 months that is to be implemented over a two year period, with detailed annual action plans.

The Basket of Solutions (BoS) tool consists of a set of 38 climate actions, across 9 areas/sectors. Each climate action is further graded into 4 categories; each of the grades addresses a critical step in the implementation of the entire climate action, starting from planning to design to implementation and monitoring. Grade 4 corresponds to the full implementation and monitoring of the selected climate action. The BoS also indicates, for each climate action, the relevant evidentiary documentation that would need to be recorded during the course of executing the climate action. This documentation could then be used for monitoring, reporting and also verification of climate performance in subsequent years.

The BoS is designed to support the LGs in:

- Conducting an initial evaluation of climate performance, vis-à-vis the 38 climate actions included in the tool.
- Annual monitoring of the defined climate action plan
- Developing future CRCAPs, post implementation of the city's first Climate Resilient City Action Plan.

The BoS allows cities the flexibility to choose relevant climate actions and define the action plan accordingly. As a monitoring tool, the city can benchmark itself against its own targeted performance. For each of the 4 grades for each climate action, scores are assigned and based on the achievement of targeted grade, at the end of each annual review the city, a consolidated score is assigned to the city. The grades are designed to help a city evaluate itself on climate action. The 38 climate actions proposed in the BoS, corresponding to 9 topics, are listed as **Table 1**:

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Table 1: Basket of Solutions

S. No	Areas/Topics	Indicators (BoS)
1	Procurement and Finance	1.1 Procurement Guidelines and Bylaws
		1.2 Climate Finance
2	City Planning	2.1 Energy Profile and GHG Emission Inventory
		2.2 Climate Change Vulnerability and Risk Assessment
		2.3 Disaster Resilience
		2.4 Climate Resilient Urban Planning
3	Cooperation and Communication	3.1 Education/Research Institutions and NGOs
		3.2 Public organisations
		3.3 Private Sector
4	Buildings	4.1 Energy Management in Municipal Corporation Owned Existing Buildings
		4.2 Green Buildings: Municipality owned buildings and social housing schemes
		4.3 Energy Management in existing Private Buildings
		4.4 Implementation of Green Building Standards in Private buildings
		4.5 Dissemination of Best Examples (Public Buildings and Social Housing)
5	Mobility	5.1 Mobility Planning
		5.2 Non-Motorised Transport
		5.3 Public Transport
		5.4 Intermediate Public Transport
		5.5 E-Mobility
		5.6 Urban Freight Movement
		5.7 Intelligent Traffic and Transport System
		5.8 Pollution Management
		5.9 Parking
6	Waste	6.1 Solid Waste Management Action Plan/ Strategies
		6.2 Waste Collection Systems
		6.3 Waste Recycling and Processing
		6.4 Disposal
7	Water and Sewage	7.1 Overall Water Resource Management Strategy
		7.2 Water Treatment and Distribution System
		7.3 Storm Water Management
		7.4 Sewage Management
		7.5 Waste Water Recycle and Reuse
		7.6 Faecal Sludge/ Septage Management
8	Urban Biodiversity	8.1 Local Biodiversity Strategy Action Plan and Implementation
		8.2 Natural areas in the city
9	Energy/Energy-Infrastructure	9.1 Public Lighting
		9.2 City electrical energy derived from renewable sources
		9.3 District Energy Systems for Cooling

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The pre-defined climate actions included in the Basket of Solutions also consider and are in sync with the indicators included in the **Climate Smart City Assessment Framework (CSCAF)** and the Liveability Index, initiated and implemented by the Ministry of Housing and Urban Affairs (MoHUA), Government of India.

MoHUA initiated the CSCAF as a first of its kind city assessment framework on climate relevant parameters for Indian cities. It serves as a tool for cities to assess their current climate situation and provides a roadmap for cities to adopt and implement relevant climate actions. It comprises of 28 indicators across five categories namely; (i) Energy and Green Building, (ii) Urban Planning, Green Cover and Biodiversity, (iii) Mobility and Air Quality, (iv) Water Resource Management and (v) Waste Management. The 28 indicators across the 5 categories are listed in **Table 2**.

Table 2: CSCAF2.0 along with its sectors and indicators

S. No	Areas/Topics	Indicators (BoS)
1	Energy & Green Buildings	1.1 Electricity Consumption in the City
		1.2 Total Electrical Energy in the City Derived from Renewable Sources
		1.3 Fossil Fuel Consumption in the City
		1.4 Energy efficient street lighting in the city
		1.5 Promotion of green buildings
		1.6 Green Building Adoption
2	Urban Planning, Green Cover, & Biodiversity	2.1 Rejuvenation & Conservation of Water Bodies & Open Areas
		2.2 Proportion of Green Cover
		2.3 Urban Biodiversity
		2.4 Disaster Resilience
		2.5 City Climate Action Plan
3	Mobility and Air Quality	3.1 Clean Technologies Shared Vehicles
		3.2 Availability of Public Transport
		3.3 Percentage of coverage of Non-Motorized Transport network (pedestrian and bicycle) in the city
		3.4 Level of Air Pollution
		3.5 Plan (Planning and Implementation)
4	Water Management	4.1 Water Resources Management
		4.2 Extent of Non- Revenue Water
		4.3 Wastewater Recycle and Reuse
		4.4 Flood/ water stagnation risk management
		4.5 Energy efficient water supply system
		4.6 Energy efficient wastewater management system
5	Waste Management	5.1 Waste minimization initiatives undertaken by the City
		5.2 Extent of dry waste recovered & recycled
		5.3 Construction & Demolition (C&D) waste management
		5.4 Extent of Wet Waste Processed
		5.5 Scientific Landfill availability & operations
		5.5 Landfill/ dumpsite Scientific Remediation

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The BoS tool of the Simplified CRC Methodology meets common ground with the CSCAF across its sectors and indicators. Its broad thematic areas relating to City Planning, Urban Biodiversity, Energy/Energy-Infrastructure, Buildings, Mobility, Waste, Water & Sewage, and are in sync with various sectors of CSCAF; Urban Planning, Green Cover, & Biodiversity, Energy & Green Buildings, Mobility and Air Quality, Waste Management, and Waste Management respectively. Of the 38 pre-determined climate actions included in the BoS, 27 are consistent with various indicators of CSCAF2.0. The following **Table 3** illustrates the extent of linkages between the BoS and the CSCAF2.0 indicators.

Table 3: Linkages of Simplified CRC Methodology with CSCAF indicators

S. No	Areas/Topics (BoS)	Indicators (BoS)	Corresponding CSCAF2.0 Indicators
1	Procurement and Finance	1.1 Procurement Guidelines and Bylaws	
		1.2 Climate Finance	
2	City Planning	2.1 Energy Profile and GHG Emission Inventory	CSCAF2_4.2 Indicator 5: City Climate Action Plan
		2.2 Climate Change Vulnerability and Risk Assessment	CSCAF2_4.2 Indicator 5: City Climate Action Plan
		2.3 Disaster Resilience	CSCAF2.0_4.2 Indicator 4: Disaster Resilience
		2.4 Climate Resilient Urban Planning	CSCAF2.0_4.2 Indicator 5: City Climate Action Plan
3	Cooperation and Communication	3.1 Education/Research Institutions and NGOs	
		3.2 Public organisations	
		3.3 Private Sector	
4	Buildings	4.1 Energy Management in Municipal Corporation Owned Existing Buildings	CSCAF2.0 4.1 Indicator 5: Promotion of green buildings
			CSCAF2.0_4.0: Indicator 6 Green Building Adoption
		4.2 Green Buildings: Municipality owned buildings and social housing schemes	CSCAF2.0 4.1 Indicator 5: Promotion of green buildings
			CSCAF2.0_4.0: Indicator 6 Green Building Adoption
		4.3 Energy Management in existing Private Buildings	CSCAF2.0 4.1 Indicator 5: Promotion of green buildings
		4.4 Implementation of Green Building Standards in Private buildings	CSCAF2.0_4.1 Indicator 5: Promotion of Green Building
4.5 Dissemination of Best Examples (Public Buildings and Social Housing)			
5	Mobility	5.1 Mobility Planning	CSCAF2.0_4.3 Indicator 2: Availability of Public Transport
		5.2 Non-Motorised Transport	CSCAF2.0_4.3 Indicator 4: Percentage of coverage of Non-Motorized

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S. No	Areas/Topics (BoS)	Indicators (BoS)	Corresponding CSCAF2.0 Indicators
			Transport network (pedestrian and bicycle) in the city
		5.3 Public Transport	CSCAF2.0_4.3 Indicator 2: Availability of Public Transport
		5.4 Intermediate Public Transport	
		5.5 E-Mobility	CSCAF2.0_4.3 Indicator 1: Clean Technologies Shared Vehicles
		5.6 Urban Freight Movement	
		5.7 Intelligent Traffic and Transport System	
		5.8 Pollution Management	CSCAF2.0_4.3 Indicator 4: Level of Air Pollution CSCAF2.0_4.3 Indicator 5: Clean Air Action Plan (Planning and Implementation)
		5.9 Parking	
		6	Waste
6.2 Waste Collection Systems	CSCAF2.0_4.5 Indicator 1: Waste minimization initiatives undertaken by the City		
6.3 Waste Recycling and Processing	CSCAF2.0_4.5 Indicator 2: Extent of dry waste recovered & recycled CSCAF2.0_4.5 Indicator 3: Construction & Demolition (C&D) waste management		
6.4 Disposal	CSCAF2.0_4.5 Indicator 5: Scientific landfill availability & operations CSCAF2.0_4.5 6: Landfill/ dumpsite Scientific Remediation		
7	Water and Sewage	7.1 Overall Water Resource Management Strategy	CSCAF2.0_4.4 Indicator 1: Water Resources Assessment and Management
		7.2 Water Treatment and Distribution System	CSCAF2.0_4.4 Indicator 5: Energy-efficient water supply system
		7.3 Storm Water Management	CSCAF2.0_4.4 Indicator 4: Flood/ water stagnation risk management
		7.4 Sewage Management	CSCAF2.0_4.4 Indicator 6: Energy-efficient wastewater management system
		7.5 Waste Water Recycle and Reuse	CSCAF2.0_4.4 Indicator 3: Wastewater Recycle and Reuse
		7.6 Faecal Sludge/ Septage Management	
8	Urban Biodiversity	8.1 Local Biodiversity Strategy Action	CSCAF2.0_4.2 Indicator 3 Urban

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S. No	Areas/Topics (BoS)	Indicators (BoS)	Corresponding CSCAF2.0 Indicators
		Plan and Implementation	Biodiversity
		8.2 Natural areas in the city	CSCAF2.0_ 4.2 Indicator 3 Urban Biodiversity
9	Energy/Energy-Infrastructure	9.1 Public Lighting	CSCAF2.0_4.1 Indicator 4: Energy efficient street lighting in the city
		9.2 City electrical energy derived from renewable sources	CSCAF 2.0_4.1 Indicator 2: Total Electrical Energy in the City derived from renewable sources
		9.3 District Energy Systems for Cooling	

The Simplified CRC Methodology could further strengthen the CSCAF assessments by enabling cities and states to better comprehend the processes involved in the assessments through its 5 steps, 3 phases process. It is envisaged that the methodology will enable LGs in undertaking climate action planning and implementations which in the long run will supports the Government of India's goals of climate sensitive urban development and development of "Climate Smart Cities", for a green, sustainable and resilient urban habitats.