

Project Brief

Sustainable Urban Habitat Action Plan (SUHAP): a climate action plan for Nashik

About SUHAP

The Sustainable Urban Habitat Action Plan (SUHAP)- a climate action plan- for Nashik has been prepared in line with the Ministry of Urban Development's National Mission on Sustainable Habitat (NMSH) to assess both mitigation and adaptation related climate risks, emissions, vulnerabilities and potential for reducing their impacts through an appropriate mix of implementation measures. The action plan addresses the sectors of waste management, building energy efficiency, storm water drainage, water supply, transport, urban planning and waste water. The project was undertaken as part of a collaborative effort between the Nashik Municipal Corporation, GIZ under the Indo German Environment Partnership Program (IGEP) and ICLEI South Asia.

National Mission on Sustainable Habitat (NMSH)

National Mission on Sustainable Habitat (NMSH) is one of the eight missions under government of India's National Action Plan on Climate Change (NAPCC). This mission is under the guidance of the Ministry of Urban Development, Government of India and addresses the issues of mitigation and adaptation in the sectors of transport, storm water management, waste management, water supply, building energy efficiency in residential and commercial buildings, waste water and urban planning. The mission proposes strategies to tackle the climate change issues by promoting adoption of measures related to mitigation and adaptation in urban areas.

Objectives of the Pilot in Nashik

- To pilot test a replicable SUHAP process that would facilitate the application of the National Mission on Sustainable Habitat in Indian cities
- To build capacity of the regional training centre to enable replication

The SUHAP Process

The process is divided into 6 steps, namely engagement, baseline data collection and analysis, climate research and impact assessment, vulnerability assessment, ground verifications and consultations and action planning. The process is detailed in the figure below:

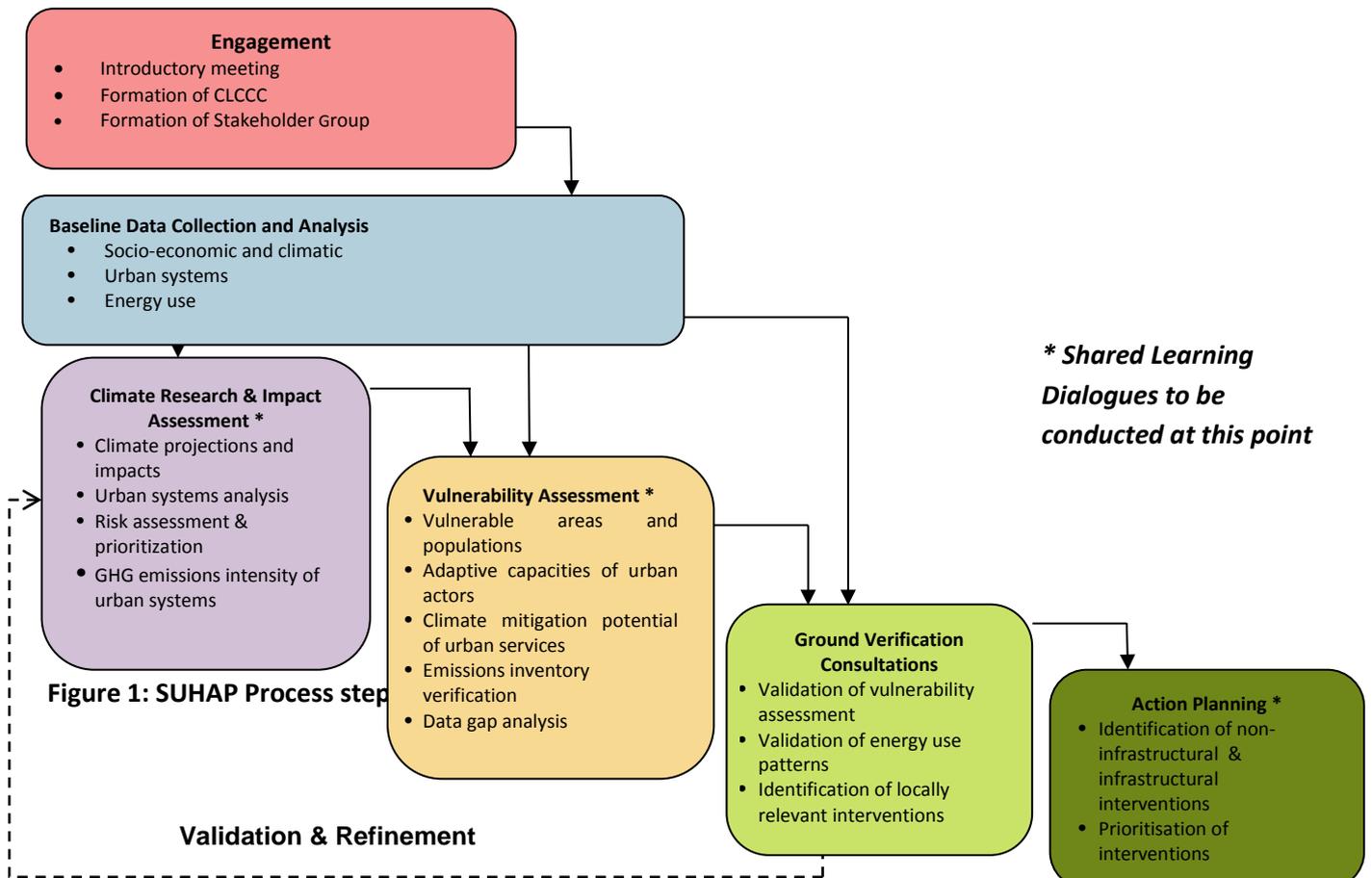


Figure 1: SUHAP Process steps

Anticipated Climate Trends and Impacts in the Nashik City Area

Over the next few decades, the following climate trends are expected:

- Gradual increase in temperature with greater number of days with high temperature
- Reduction in number of rainy days. However, greater incidences of short duration – high intensity rainfall events are expected

The impacts of climate threats on various urban systems have been tabulated in the below mentioned table.

Table 1: Impacts of climate threats on various urban systems

Sectors	Potential Impacts on Urban Systems
Urban Planning	<ul style="list-style-type: none"> Increasing temperatures will cause energy and water demands to increase. Increasing high intensity rainfall events could lead to greater chances of water logging.
Water Supply	<ul style="list-style-type: none"> With an expected increase in average temperature and a greater frequency of days with extremely high temperatures, the demand for water could exceed.
Sewerage	<ul style="list-style-type: none"> Improper disposal of sewerage during water logging incidences can compound health problems of local communities, especially those in slums.
Storm Water	<ul style="list-style-type: none"> Climate projections indicate an increase in the number of days with rainfall greater than 25mm/day.
Solid Waste	<ul style="list-style-type: none"> Improper disposal of solid waste can cause blockages in drainage systems resulting in a potential increase in water logging incidences due to high intensity rainfall events Rising temperatures increase the risk of landfill fires
Transportation	<ul style="list-style-type: none"> Increased traffic leads to increased local emissions
Energy	<ul style="list-style-type: none"> Increased average temperatures and greater incidences of days with extremely high temperatures would lead to increased demands on energy for cooling, disrupting the existing demand-supply balance

Assessed Patterns of Energy Consumption & GHG Emissions in Nashik City

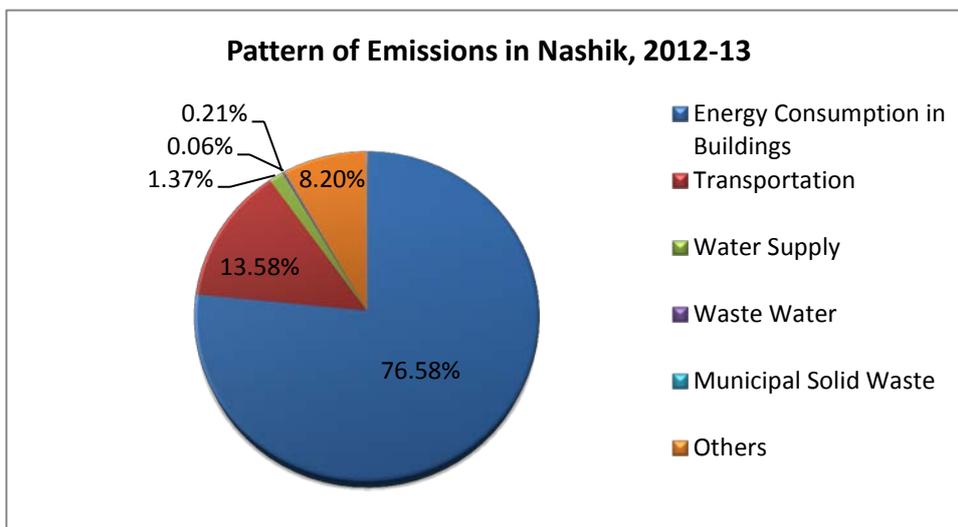


Figure 2: Emissions pattern in Nashik City

- The total GHG emissions for the city in the year 2012-13 was 2.85 million tCO₂e
- Energy consumption in various buildings is causing highest amount of GHG emissions, contributing to about 76.58% to the total city emissions. Energy consumption in Industrial buildings is highest followed by residential buildings.
- Transportation sector also has a significant share of 13.58% in the total city emissions.
- Others activities including agriculture and other electricity usage have an 8.20% share in total city emissions.
- Water Supply accounts for 1.37% share in total city emissions and is followed by waste water and solid waste management having 0.21% and 0.06% share respectively.
- The per capita emission for the year 2012-13 is 1.7 tonne.
- The trend of increasing GHG emissions from various urban activities could further lead to changes in the climate parameters like temperature, rainfall, etc.

Vulnerability Assessment and Hotspot Identification

The map below spatially identifies the degree of climate vulnerability in Nashik city as far as the urban sectors are concerned. Different “prabhags” were identified considering the degree of vulnerability of those areas for the identified potential adverse impacts in 7 different urban sectors. Among all the prabhags, the areas where maximum number of (4 out of 7) urban sectors were identified as vulnerable are considered to be the ‘Hotspots’. According to the study zones 12, 13, 28, 29 and 60 are identified Hotspots in Nashik city.

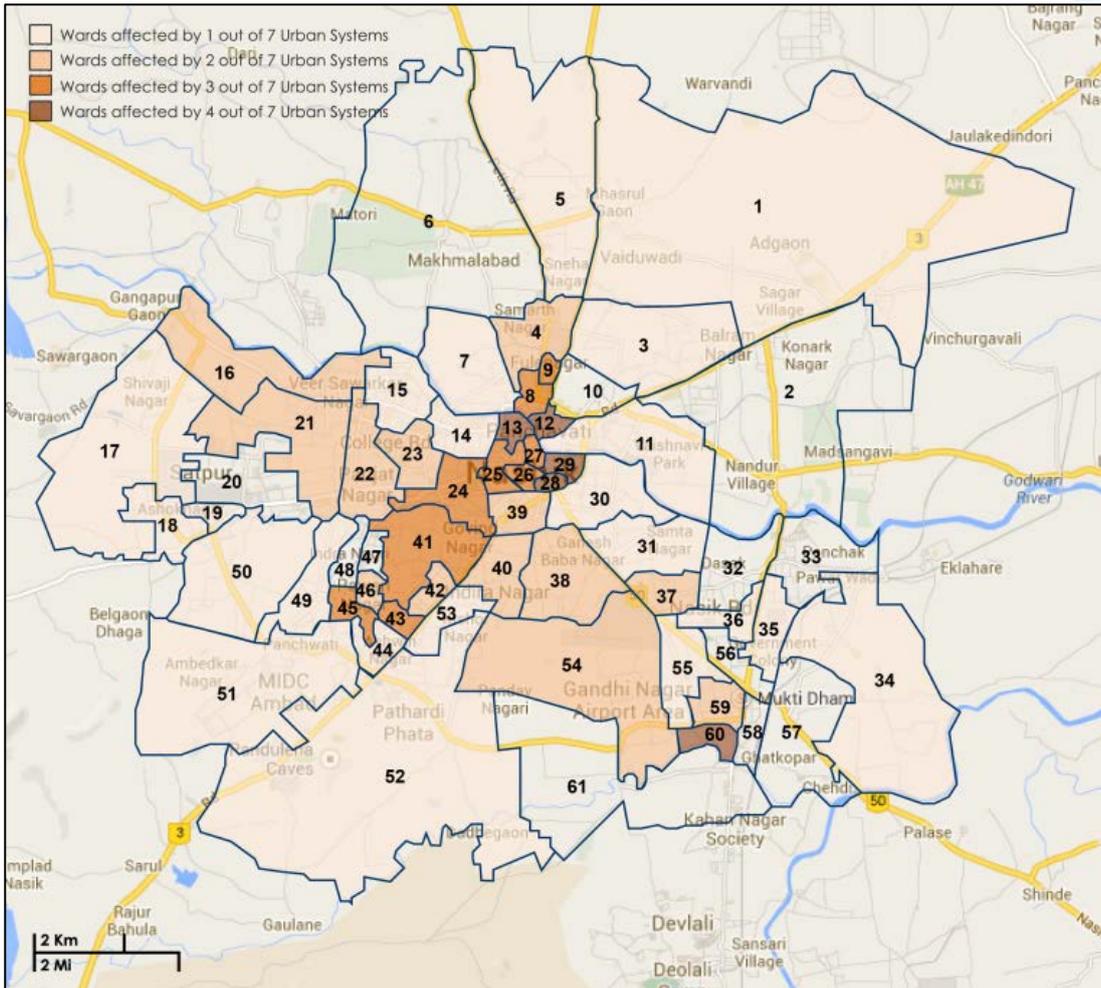


Figure 3: Hotspots in Nashik City

Prioritised Actions

Considering the vulnerability of areas in the city and the risks associated with each urban sector, a detailed action plan has been prepared. The plan aims to suggest detailed sustainable actions to mitigate the causes as well as to facilitate adaptation within the city. Few prioritised actions both from mitigation and adaptation perspective have been tabulated below.

Table 2: List of Prioritised actions to be taken to reduce Climate Change impacts in Nashik city

	Type of Measures
Urban Storm Water Drainage	Policy and Institutional Measures (non-infrastructurel)
	Controlling construction below flood line
	Practice of pre-monsoon maintenance / cleaning of drainage systems
	Infrastructurel Measures
	Developing drainage networks in slum areas renovation and maintenance of existing storm water drainage system
Urban Planning	Policy and Institutional Measures (non-infrastructurel)
	Developing guidelines for providing space for green areas and infiltration zones Enforcement of building byelaws to curb illegal constructions and encroachment
	Infrastructurel Measures

	Development of green belts and open spaces as per the bylaws.
	Utilisation of solar power to its maximum potential
Sewerage	Policy and Institutional Measures (non-infrastructure)
	Strengthening institutional and technical capacity of city staff for effective O&M of sewerage system and for recycling and reuse of waste water for non-potable uses.
	Regular maintenance of sewerage drains
	Infrastructural Measures
	Use of power saver devices in the 5 STPs based on regular water energy audits
	Develop strategies for localised use of recycled water for non - potable & non - contact use.
Urban Transport	Policy and Institutional Measures (non-infrastructure)
	Regulating the entry of heavy vehicles in the city by zones and time
	Improved traffic management systems e.g. regulation of traffic flow to avoid congestion
	Infrastructural Measures
	Provision of cycle tracks to encourage eco- mobility
Provision of pedestrian zones to encourage walkability in selected areas.	
Solid Waste Management	Policy and Institutional Measures (non-infrastructure)
	Public awareness generation campaigns to improved solid waste management practices
	Ban on the plastic bags of < 40 mm and other plastic bags.
	Infrastructural Measures
	Establishing dry waste collection centres at the Divisional level
Regular maintenance of <i>Ghanta Gadis</i> to ensure efficient fuel consumption and reduced emissions	
Energy	Policy and Institutional Measures (non-infrastructure)
	Exercise regular energy audits of the industrial units
	Enforcement of bye laws for the use of solar water heaters in domestic, commercial and industrial buildings
	Infrastructural Measures
	Installing Solar PV systems in municipal schools in Nashik
	Installing Solar PV systems in various municipal office buildings

Outcomes

The following steps were taken by NMC and GIZ for ensuring the implementation of the plan:

1. The plan recommendations have been incorporated as part of the revised CDP for Nashik.
2. The Development Plan for Nashik, which is currently under revision, will incorporate recommendations from SUHAP.
3. Plans for implementation of project interventions through NMC's own funds.
4. External Funding for implementation:
 - a. The waste to energy project for utilization of organic waste and septage is currently being implemented by GIZ funds. 1 million Euros has been sanctioned for the project.
 - b. One waste water project has been submitted for funding from Rockfeller. (20,000 Euros)



Way forward

SUAHP is a useful resource document for city's master plan, city development plan, city sanitation plan and other development schemes and programs. The sector wise climate friendly measures with little addition in overall budget can substantially reduce the environmental degradation and facilitate sustainable development

Opportunity to link SUHAP with various programs and schemes of government of India like AMRUT, Swachh Bharat Mission, Smart Cities Mission and Clean Ganga Mission as a methodology/tool for incorporating actions related to climate change mitigation and adaptation, at city level.



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