

Informality and Resilience: Nashik City

Purpose Statement

This city specific problem statement will present an overview of the current situation of informal settlements and analyse their vulnerability through a climate lens. It intends to generate discussion that will enable the formulations of solutions aimed at more inclusive decision making.

Rationale

Informal settlements are situated in highly vulnerable locations and the conditions of its residents are worsened by their inability to adequately meet the basic needs due to their socioeconomic status. Their informal status makes it difficult for them to gain access to government service. This reality does not only aggravate their situation to cope with daily survival but also deprives them of the opportunity to enhance their capacity to respond to the potential impacts of climate change in their areas. They are thus the

Box 1: Within the context of this study the following are the definitions that have been adopted

Informal Settlements are residential areas where 1) inhabitants lack security of tenure 2) the neighbourhoods usually lack, or are cut off from, basic services and city infrastructure and 3) the housing may not comply with current planning and building regulations, and is often situated in geographically and environmentally hazardous areas¹.

Slums are heavily populated urban informal settlement characterized by poverty and large agglomerations of dilapidated housing often located in the most hazardous urban land².

The term '**Climate Resilience**' describes the ability of a system to bounce back or recover from a climate imposed hazard³. The resilience of an informal settlement increases and the risk of disruption decreases if it has benefited from investment in robust infrastructure that is adapted to local conditions and built to anticipate future climate threats⁴.

most vulnerable section requiring the most support. Building resilience within Informal Settlements will raise the city bottom line which will in turn lead to a more comprehensive city development.

Approach

The study adopted a mix of qualitative and quantitative techniques to capture data. Secondary review of literature, Key Personnel interviews, Participatory Learning Appraisals in the settlements and collection of primary data from the municipality was conducted.

Slums in India and their Context within the Policy Framework

India has a total of 108,227 slums (Census 2011) with largest number being in the state of Maharashtra (21, 359). Indian cities with 46 million plus population had 38% of households within slums⁵. The National Sample Survey Office (NSSO) classifies slums in India into notified and non-notified. A survey conducted by the same (2011) on living conditions, found that a higher percentage of non-notified slums lack basic facilities as compared to notified slums. 31% of slums had no latrine or drainage facility, 27% of slums had no garbage disposal arrangement and 71% of the slums used a public tap standpost for drinking water.

For two decades (1970-1990) slum policies focused on the notion of 'slum free cities' which ended up translating into forced or voluntary resettlement of slums in central cities. The shortcomings of such an approach then led to a greater focus on slum upgrading and rehabilitation programs. The 12th schedule of the 74th Constitutional Amendment Act passed in 1993 initiated specific programmes that could be applied to address slum dwellers' needs⁶. While many poverty programmes are driven and funded by the Central Government, States are given the option of determining how to implement them or develop their own. Urban local bodies are further empowered to identify, formulate, implement and monitor local developmental and welfare programmes.

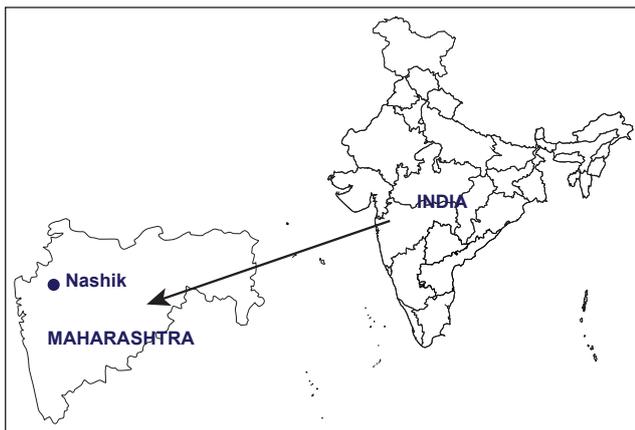
There is a rich and diverse policy landscape in India with both, a centralized and decentralized approach.

1. Derived from UN-Habitat (2003), The Challenge of Slums; UN-Habitat (2013), The State of the World Cities Report 2012/13. Refer to Issue Paper No. 9 on Land for 'security of tenure' definition.
2. World Bank (2008), Approaches to urban slums; UN-Habitat (2015), Streets as tools for urban transformation in slums; Cities Alliance (2010), Building Cities; Cities Alliance, World Bank and UN-Habitat (2002), Cities without Slums
3. Holling, Crawford Stanley (1973), "Resilience and stability of ecological systems", Annual Review of Ecology and Systematics Vol 4, pages 1-23
4. Seeliger, Leanne and Turok, Ivan (2013), 'Averting a downward spiral: building resilience in informal urban settlements through adaptive governance'. Environment & Urbanization, International Institute for Environment and Development (IIED). Vol 26(1): 184-199. DOI: 10.1177/0956247813516240
5. <http://www.globalurban.org/GUDMag07Vol3Iss1/Buckley.htm>
6. Loughhead, S., et. al, 2001. Urban Poverty and Vulnerability in India. DIFD's experiences from a social policy perspective. DIFD.

In essence, government poverty programmes aimed at economic development and social justice of the marginalized sector can be categorized as: 1) Urban Poverty Alleviation Schemes, 2) Other poverty programmes and 3) Empowerment and Safety Nets.

City Introduction: Nashik

Nashik city is the third largest city (108 wards) in the state of Maharashtra, and is part of the industrial and manufacturing triangle along with Pune and Mumbai. The city is administrated by the Nashik Municipal Corporation (NMC) and is also the headquarters of the Nashik District. It is popularly known as the "Grape City" of India because of its many vineyards. Its location on the banks of river Godavari makes it a major pilgrimage centre as well. Spread over 259 sq.km, Nashik had an estimated population of 1.4 million in 2009. This is projected to cross 3 million in 2026 with implications for planning of civic services and land allocation for various uses.



There are 168 slums (2011 data)⁷ in Nashik city, with a population of 214,769 (14.44% of the total population of the city) out of which 56 slums are notified and 112 non-notified. Mahatma Phule has the highest percentage of slum population (4.62 per cent) while Upnagar Nashik road accounts for the largest occupied slum area (12.25 per cent).

A large floating mass of population (agricultural labour) visits Nashik City for employment on a daily basis. These people occupy slums during those times of the year when they are not working in farms or on agricultural lands.

Situation Analysis

The two slums of Nashik that were surveyed were selected on the basis of their legal status within the city.

Box 2: Notified and Non notified slums- NSSO 2011

Notified slums: These are areas notified as slums by the concerned State governments, municipalities, corporations, local bodies or development authorities.

Non-notified slums: Any compact settlement with a collection of poorly built tenements, mostly of temporary nature, crowded together, usually with inadequate sanitary and drinking water facilities in unhygienic conditions, provided at least 20 households live there.

Mahatma Phule Nagar is a large, centrally located, notified, slum in Panchvati division of Nashik city and occupies land belonging to Nashik Municipal Corporation. It is a well- established slum of more than 40 years comprising of 1985 households housing the highest percentage of slum population (4.2%) of Nashik. The population is primarily made up of permanent migrants from tribal castes like the Gonds, Bharadi and Vaidu who have migrated from other areas of the state like Nagpur, Vidharba. These people lost their traditional livelihoods and moved to the city in search of more permanent shelter. The monthly income of families in this slum ranges between 7,000-15,000 INR. Nashik Municipal Corporation extends municipal services to Phule Nagar. The community living in this slum is very well aware of their rights and is constantly lobbying with the Municipality through NGOs, informal local leaders and ward councilors. However, little self-initiative is taken in the upkeep, maintenance and development of the slum.

Amrapali Slum is a non-notified slum located on the fringes of the city in Nashik East division and illegally occupies Irrigation Department Land. The slum is found between Nashik Road- Jail Road and the Revenue Department compound and is relatively more recent comprising of 699 hutments. A single cemented lane runs through the slum. Since the year 2000, Amrapali has expanded by about 50% (2007 data) from 162 to 732 households. The population is chiefly made up of temporary and seasonal migrants from backward castes who work on farms and agricultural lands or as industrial labour. Monthly income ranges from 5000 to 10,000 INR per family. In Amrapali, access to basic services has been given on humanitarian grounds. The community here is aware of this and very proactive in the maintenance and upkeep of the services. The informal leaders here too are very active and very approachable and through local politicians have been able to get the Municipality to provide services like lighting, water and sanitation. Figure 1 presents the situation in detail in both the slums.

7. Nashik Municipal Corporation Records

Institutional Support

Current urban poor programmes and schemes initiated and implemented by the government within the city of Nashik are given in Table 1. These only have limited outreach and poor inclusivity particularly in non-notified slums.

Looking at informal settlements through lens of climate change

Past Hazards

Floods are most significant climate hazard in Nashik. About 10,000 to 20,000 population stands vulnerable to the episode of floods. The flood of September 2008⁸

Table 1: Current schemes implemented by Nashik Municipal Corporation

Scheme/Programme/Mission	Highlight of Scheme	Outreach so far
Pradhan Mantri Awas Yojana	Housing for All by 2022	Surveys initiated to identify/verify the beneficiaries. Site identification is also in progress.
National Urban Livelihoods Mission (NULM)	Skill and capacity development, livelihood and employment opportunities, shelter for the Urban Homeless	City level guidelines, data collection and staff recruitment and identification of NGOs to implement the mission have been completed. Shelter sites have been identified for the homeless people and proposals sent for the approval. Self Help Groups have been formed, funds disbursed for training. Loans up to 1 million sanctioned. In the year 2015 NMC provided 1.4 million INR worth of loans under the Self Employment Programme of the scheme.
JNNURM- BSUP (Basic services to the Urban Poor)	Provision of basic services including affordable housing, provision of land tenure and social security to the poor. Reservation of 25% of developed land in all housing projects, public or private, critical for slum improvement.	About 200 families have been shifted to two buildings constructed under BSUP at Phule Nagar slum. 2 more buildings are under construction in this area.
National Slum Development Programme (NSDP)	Provision of Physical, Community and Social Amenities	21,000 properties have been surveyed and preparation of plans is in progress. Some works like construction of community toilets, roads have already been completed in the slums.
Sishu Sikshak Kendra (SSK) and Mid-Day meal Programme	Education and Mid-day meals to students in government schools	Near Phule Nagar slum 2 schools (No. 56 and 67 for boys and girls) are already present. In all the municipal schools Khichadi is provided to the students.
Antyodaya Anna Yojana	Subsidized grains and sugar	About 30-40 families are benefitted in Phule Nagar and Amrapali.
Swachh Bharat Mission	Sanitation	Total applications: 7104, Individual applications: 6950 out of which 1072 units completed and 772 are under construction. 877 applications rejected. Applications from Amrapali slum: 30 Applications from Phule Nagar slum: 44 out of which 34 applicants received 1st installment.
Other	NMC allocated 5% funds for slums every year for physical works	-



Figure 1: Current scenario of slums surveyed

				CURRENT		
		PHULE NAGAR (Notified-Panchvati) Area: 64523 sq m	AMRAPALI (Non-notified- Nashik East) Area: 34949.26 sq m			
 <p>SOCIAL</p>	POPULATION	 9925*	 3495*	 <p>PHYSICAL</p>	HOUSING	 Mixed housing, concrete structures, roofs and shiplinths present
	HEALTH (Common disease outbreaks)	 Water borne diseases, skin diseases, vector transmitted diseases and TB. Swine flu outbreak a few years ago	 Water borne diseases, skin diseases, vector transmitted diseases and TB.		WATER SUPPLY	 90% Coverage, connection, tap stands available, pumps, 80-100 hr availability. 'Nal' scheme. Quantity is sufficient
	EDUCATION (Literacy rates)	 Literacy rate: Adults 30-40% (Lower in women) Children 70-80%	 Literacy rate: Adults 30-40% (Lower in women) Children 70-80%		SANITATION	 60% connections, 5% drains, 4% toilet seats in place. Function fee: Rs 10. BSUP scheme toilets 63 HH. Education point canal. Infrastructure damaged by connections
	CRIME	 Crime center of the city. High rates of crimes like theft, murders, sexual harassment, domestic abuse. Community centers are used for illegal activities. Attributed to aggression from certain castes and competition for resources.	 Petty theft and domestic abuse are common.		SOLID WASTE MANAGEMENT	 80% area covered by Ghanta gadi. No segregation. Small resource recovery and minor recycling mostly by rag pickers
	ADDICTION	 Alcoholism, tobacco consumption. abuse of ganja and charas, manufacture of illicit alcohol	 Alcoholism, manufacture of illicit alcohol		STORM WATER DRAINAGE	 50% drains are covered. Water log 2-3 days. Drains cleaned by NMC
	LEADERSHIP	 Informal leaders are very active and are representatives of ward councillors within slums.	 Informal leadership is strong.		ELECTRICITY	 90% HH legal connections, power supply
	VOTING RIGHTS	 Majority of residents have voting ID cards and exercise their right to vote.	 Majority lack voting rights however they liaise with informal leaders, NGOs to bring their issues to local municipal authorities.		LIGHTING	 Most of covered lighting. 69 lamps
						PUBLIC DISTRIBUTION SYSTEM
				GAS CONNECTIONS	 50% of households have gas connections. kerosene used for cooking fuel. wood.	
				HEALTH	 There is one Health Centre located within the slum.	
				EDUCATION	 There are schools located in the slum. one for boys, one for girls. community center in the slum is used to engage dropouts. an NGO called Loknirana	

* 2007 data



SCENARIO

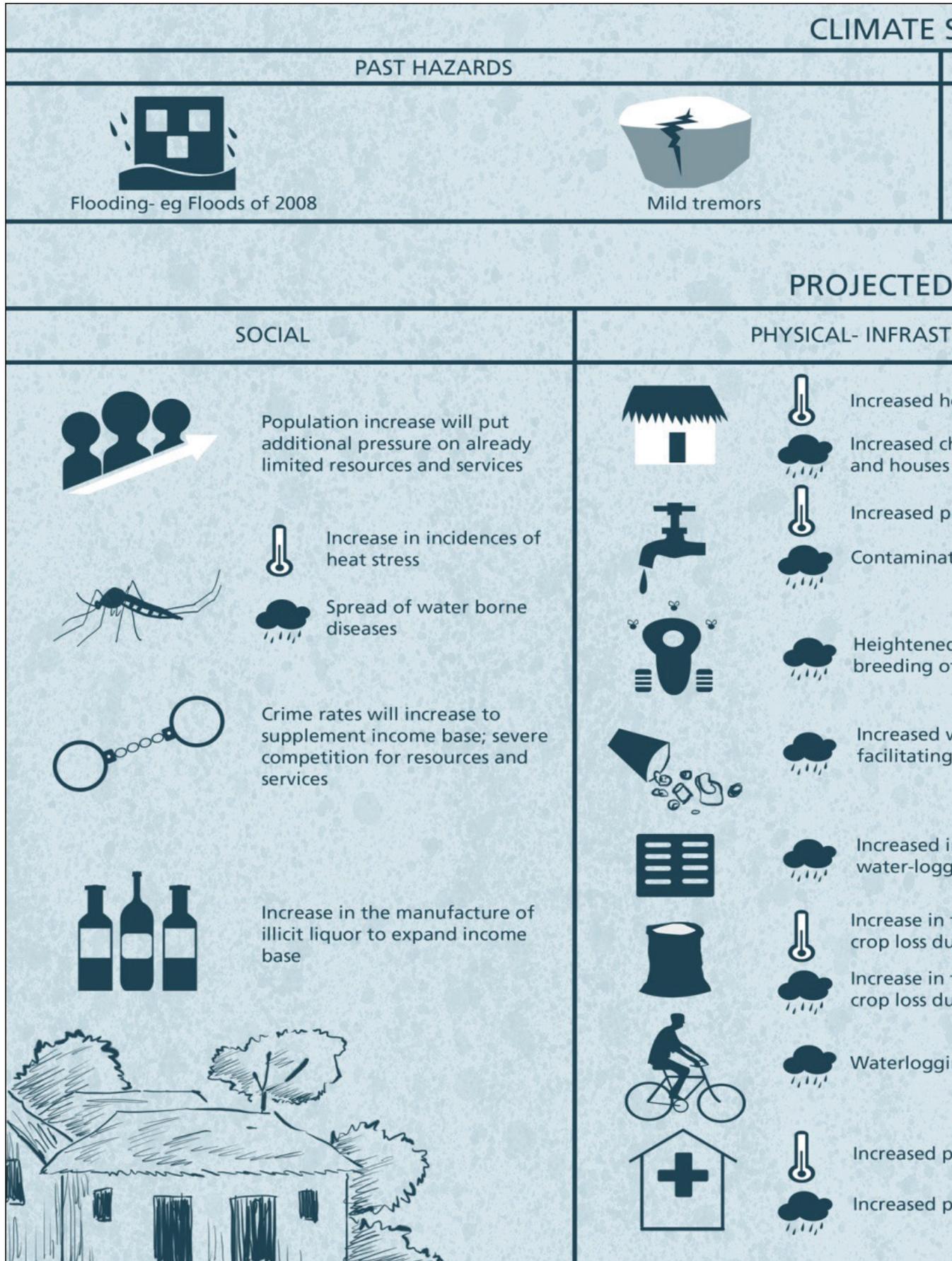
<p>PHULE NAGAR (Notified-Panchvati) Area: 64523 sq m</p> <p>Concrete - 90% concrete, 10% tin sheets. Raised plinths</p>	<p>AMRAPALI (Non-notified- Nashik East) Area: 34949.26 sq m</p> <p>Primarily temporary structures- tin sheet, one storey hutments that may or may not have raised plinths.</p>
<p>60% HH connected to public hand pumps, 1-2 taps, 'Ghar Thite' water quality and satisfactory</p>	<p>60% coverage, 30% HH connections, 50-60lpcd, 1 hr. water availability, 16 tap stands, Additional water has to be purchased as quantity is not satisfactory</p>
<p>Mostly open defecation points, 10 of 159 community toilets. Maintenance - 30-40% of individual toilets. Open defecation points along road structure is illegal</p>	<p>Negligible percent connected to sewers, 5% have septic tanks, 10% drains. 15 of 43 toilet seats in community toilet functional. Maintenance fee: Rs 40. Negligible toilets. Open defecation points along road</p>
<p>Waste management - 90% area covered by Ghanta gadi No segregation Small resource recovery and minor recycling mostly by rag pickers</p>	<p>90% area covered by Ghanta gadi No segregation Small resource recovery and minor recycling mostly by rag pickers</p>
<p>Flooding - 60% of the slum lacks storm water drains. Prone to flooding.</p>	<p>60% of the slum lacks storm water drains. Prone to flooding.</p>
<p>Electricity - Most of the slum has electricity connections; however it is not clear as to whether they are legal or illegal.</p>	<p>Most of the slum has electricity connections; however it is not clear as to whether they are legal or illegal.</p>
<p>Street lighting - 24 lamp posts. Some are non functional because of vandalism.</p>	<p>24 lamp posts. Some are non functional because of vandalism.</p>
<p>Ration - There are two ration shops located within a radius of 1km of the slum (one within and one outside). Antyodaya ration card is the most common</p>	<p>There are two ration shops located within a radius of 1km of the slum (one within and one outside). Antyodaya ration card is the most common</p>
<p>Energy - 30% of households have gas connections. Rest use kerosene and wood</p>	<p>30% of households have gas connections. Rest use kerosene and wood</p>
<p>Health - While there is no health facility available within the slum, a dispensary is present 4kms away.</p>	<p>While there is no health facility available within the slum, a dispensary is present 4kms away.</p>
<p>Education - A municipal school 3kms away imparts primary education. A nursery facility for 2-4 year old children is present in the slum.</p>	<p>A municipal school 3kms away imparts primary education. A nursery facility for 2-4 year old children is present in the slum.</p>



	<p>PHULE NAGAR (Notified-Panchvati) Area: 64523 sq m</p>	<p>AMRAPALI (Non-notified- Nashik East) Area: 34949.26 sq m</p>
<p>LIVELIHOOD</p>	<p>Mostly daily wage earners, industrial workers and domestic help.</p>	<p>Daily wage earners in industries or agricultural farms, rag pickers and domestic help.</p>



Figure 2: Future projections and vulnerabilities of slums in Nashik



SCENARIO

FUTURE PROJECTIONS



Increased temperature and decreased precipitation



High intensity rainfall events

SCENARIO

STRUCTURE & SERVICES

...eating in temporary houses.
 ...ances of flooding in temporary houses without plinths.
 ...ressure on water systems.
 ...ion of potable water due to flooding.
 ...d unhygienic conditions facilitating of vectors and spread of disease
 ...water logging due to blocked drains breeding of vectors.
 ...ncidences of flooding due to ...ing.
 ...the price of grains and may affect quota, ...e to drought.
 ...the price of grains and may affect quota, ...e to water-logging.
 ...ng of roads affecting commute
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ECONOMIC



Agriculturally dependent livelihoods- droughts or floods will impact this sector significantly.



Daily wage earners will be impacted by flooding events which will affect their ability to go into work



was the worst one that affected at least 25,000 people in the city. The district also falls in seismic zone III and has experienced earthquakes in the past.

Climate Projections

In the absence of downscaled climate impacts for the city of Nashik, regional level projections for Maharashtra and the Western Ghats were reviewed⁹. It was found that the following impacts could be expected:

- An increase in temperature for the region of Maharashtra and the Western Ghats in the range of 1.5- 3° C.
- A reduction in the number of rainy days and an increase in the intensity of rainfall by 1-2mm/day by 2030

In addition a review of the existing literature as well as city level interactions with officials and slum

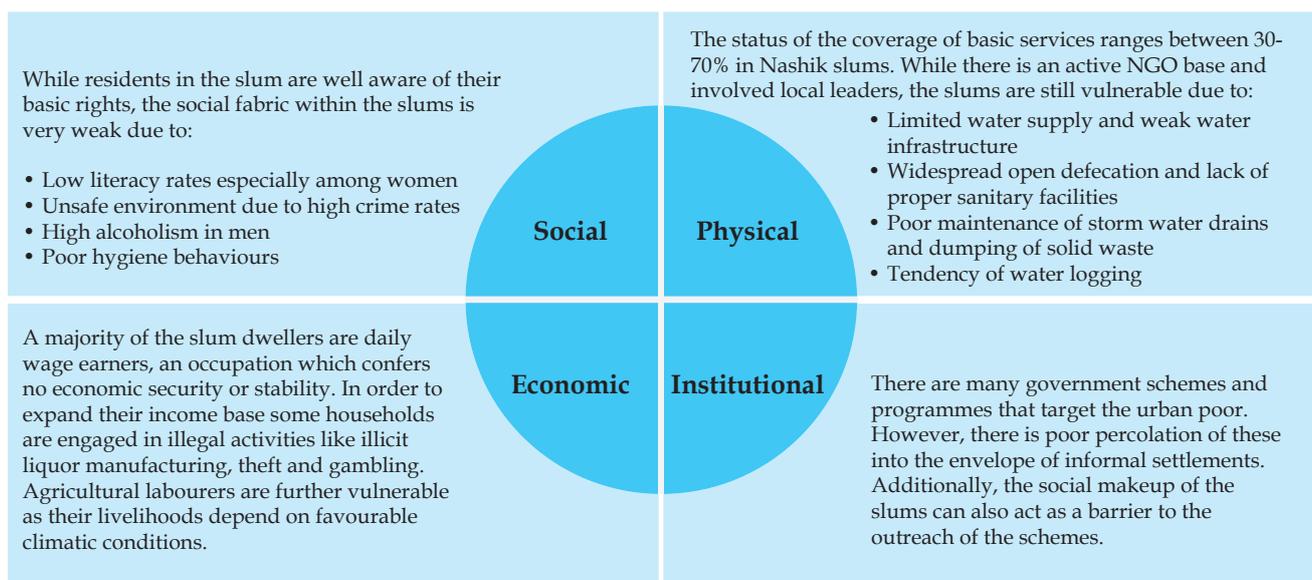
residents were undertaken to capture the perceptions on climate change impacts at the city level. It was found that Nashik has been experiencing a rise in temperature and an amplified frequency of high intensity rainfall along with a decrease in the total number of rainy days. These trends are aligned with the regional level projections. The city is thus vulnerable to flooding and droughts in the future.

Climate Change and the Informal Settlements

Taking into account the climate projections and the current state of the social, physical and economic systems within the slums, major vulnerabilities are summarized in Figure 2.

Problem Statement

Summarizing the situation of slums within the city, the following is the problem statement for Nashik.



Slums in Nashik face land ownership issues, resource and service shortages and economic instability. Poor literacy levels and weak awareness levels, an unsafe atmosphere due to crime, domestic abuse and alcoholism renders the social fabric feeble. The already fragile urban systems of water supply, sanitation, health and storm water drainage will be further impacted and challenged in the event of climate shocks like floods and drought. Livelihoods will be adversely affected. Poor percolation of government schemes to the informal settlement dwellers will further hamper building their climate resilience in Nashik.

8. <http://www.oneindia.com/2008/09/21/25000-affected-death-toll-rises-to-eight-1221937337.html>. http://www.deshdoot.com/detail_archive_news.php?type=latest&id=4309558®ion_id=7&month=1&year=2015
9. Climate Change and India: A 4x4 Assessment, <http://chimalaya.org/2010/11/17/report-climate-change-and-india-a-4x4-assessment-in-india/>, Accessed on December 14, 2012; http://www.metoffice.gov.uk/media/pdf/c/a/GOM_brochure_for_web.pdf