

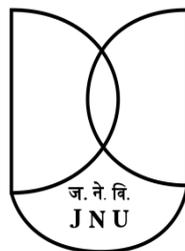
**QUALITY OF URBAN AMENITIES IN NEW TOWNS OF
PUNJAB: A CASE STUDY OF AMRITSAR DISTRICT**

Thesis submitted to Jawaharlal Nehru University

for the award of the degree of

DOCTOR OF PHILOSOPHY

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CENTRE FOR THE STUDY OF REGIONAL DEVELOPMENT

SCHOOL OF SOCIAL SCIENCES

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DECLARATION

I, VIPIN KUMAR, do hereby declare that the thesis entitled "QUALITY OF URBAN AMENITIES IN NEW TOWNS OF PUNJAB: A CASE STUDY OF AMRITSAR DISTRICT" submitted by me to the School of Social Sciences, Jawaharlal Nehru University, New Delhi for the award of the degree of "DOCTOR OF PHILOSOPHY" embodies the result of bonafide research work carried out by me and that it has not been submitted so far in part or in full, for any degree or diploma of this university or any other university/institution.

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It is hereby recommended that the thesis may be placed before the examiners for evaluation.

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Dedicated to

My PAPA

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LIST OF ABBREVIATIONS

AMC	: Amritsar Municipal Corporation
AMRUT	: Atal Mission for Rejuvenation and Urban Transformation
CAA	: Constitutional Amendment Act
CB	: Cantonment Board
CT	: Census Towns
DPC	: District Planning Committee
e.g.	: Example
FYP	: Five Year Plan
GDP	: Gross Domestic Product
GNP	: Gross National Product
GSDP	: Gross State Domestic Product
GST	: Goods and Services Tax
HH series	: Households Amenities and Houselisting series
HHs	: Households
HIP	: Household's Indoor Pollution
ILO	: International Labour Organization
JNNURM	: Jawaharlal Nehru National Urban Renewal Mission
LPG	: Liquefied Petroleum Gas
LSG	: Local Self Government
M CI	: Municipal Council
M. Corp.	: Municipal Corporation
MC	: Municipal Committee
MOHUA	: Ministry of Housing and Urban Development
MPC	: Metropolitan Planning Committee
MSME	: Micro, Small and Medium Enterprises
NH	: National Highway
NIUA	: National Institute of Urban Affairs
NP	: Nagar Panchayat
OG	: Out-Growth
PCA	: Principal Component Analysis
PCE	: Per Capita Expenditure
PCI	: Per Capita Income

PNG	: Piped Natural Gas
PUDA	: Punjab Urban Development and Planning Authority
SAS Nagar	: Sahibzada Ajit Singh Nagar
SBS Nagar	: Shaheed Bhagat Singh Nagar
SPM	: Suspended Particulate Matter
TCP	: Town and Country Planning
UA	: Urban Agglomeration
ULB	: Urban Local Body
UN	: United Nations
UNICEF	: United Nations International Children's Emergency Fund
WB	: World Bank
WHO	: World Health Organization

CHAPTER 1

INTRODUCTION

1.1 Introduction

Globally, majority of total population resides in urban areas i.e. 54 percent of the total population as compared to rural areas where population is decreasing continuously (*World Cities Report, 2016*)¹. The proportion of urban residents is projected to be increased to 66 percent by 2050 as observed by UN (*World Urbanization Prospects: The 2014 Revision*)². This trend of urbanisation is not new but paced up particularly in the last two or three decades. The most important aspect of this urbanisation is that it is not evenly distributed as some regions recorded high urban growth and some recorded low growth but no region has recorded decrease in urbanisation. It has been recorded that urbanisation is key for economic growth and development as more than 60 percent of Gross Domestic Product (GDP) are produced by cities. Urbanisation is often considered as an important indicator associated with the development processes that lead to the change in socio-economic attributes of the region over a period of time but the urban processes are marked with issues like urban growth, growth of informal settlements and slums in cities, exclusion and rising inequality, environmental degradation and challenge of providing basic amenities to people.

The magnitude of urbanisation is directly related to the rate of the urban expansion if the functions that these towns are served with their existing level of technology (*Castells, 1977*)³. The ‘quantum and the degree of urbanisation’ is a function of many factors like socio-cultural attributes to the modern economies of scale and globalization etc. In modern days the whole process of urbanisation underwent a change in the sense that it is related to the service driven development which suited to the skilled labour unlike the earlier one which was mostly the industrial phenomena (supported the unskilled labour also). The regional perspective of the urban development is also different in the manner

¹(2016). World Cities Report 2016: Urbanization and Development, Emerging Futures. *United Nations Human Settlements Programme (UN-Habitat)*

²(2015). World Urbanization Prospects: The 2014 Revision. *UN Department of Economic and Social Affairs*

³Castells, M. (1977). *The Urban Question, Translated by Alan Sheridan*. The MIT Press, Cambridge.

the town performs functions of backward and forward linkages. The urban centres are varying with the function that they perform and the inherent characteristics present in them owing to physical, historical, cultural and religious and tourism etc. The urban nature has changed in the last two decades in the sense that the pace has changed and the developing countries are getting pace with the developed countries in terms of urban growth.

The modern urban phenomena are marked with the huge emergence of new towns in addition of in-migration to cities and urban sprawl, etc. In urban processes, newly emerged towns are different for their development processes as well as in the space organization. They are totally different from the developed towns in the sense they surrounds the semi-urban and rural places. Therefore they need a vast expertise from different sectors like political, historical, geographical and economical to develop a town from starting. The distribution of urban population is usually across different sizes of settlements i.e. small towns to medium towns to the large cities and further to million-plus cities (*Pacione, 2009*)⁴. Initially a town started growing with development of industries or services depend upon the various factors like an agglomeration of economies but over a period of time it ends up with congestion and urban sprawl that causes overcrowding and also the pressure on the basic services of the town. It also started affecting the whole urban structure of the region. In the early phase of urbanisation, the small and medium towns is expected to grow at a slower rate than the large towns and cities in terms of population (mainly because of the migration) as well as the level of functions they provided to the population. But at the later stage, the number of small towns and as well as medium towns are also started growing mainly due to overcrowding and congestion of the large cities and towns.

India is the second most populous country in the world and also the second largest urban system after China which experienced urban population growing at faster pace in the world. Since 1951 the increase in total urban population in India has been eight fold as compared to only twice the increase in the total population which is also concentrated in a few regions and states. India is facing rapid urbanisation and urban spatial restructuring. In India, the growth of urban population is rapidly increasing especially after the

⁴Pacione, Michael (2009). *Urban Geography: A Global Perspective*. Taylor and Francis, New York.

economic reforms which took place in 1991 which led to the opening of the Indian economy for trade, exchange of goods and services and increase in urban infrastructure. Though the urban population growth rate is unevenly distributed but it has played a crucial role in changing the nature and pattern of urbanisation in India. In the process of changing pattern of growth of towns and cities, many new urban centres emerged (both census towns and statutory towns) while many existing towns converted into cities and the cities are converted into metropolitan centres and thereon. The metropolitan cities recorded the highest growth in urban population which consequently led to unchecked immigration and the problems like slums and squatter settlements, urban congestion, deficiency in urban infrastructure particularly in providing basic civic services like safe drinking water, proper sanitation facilities, health services and housing etc. The newly created towns are also the remedies to the big urban centres which are facing various problems like scarcity of financial resources, centralization of urban functions. After many decades of the urban development processes throughout the world newly emerged towns have not been used an option to de-pressure the large metropolises. Similarly in India the growth and development of the newly emerged large number of towns need a in-depth study to find their role in urban development. While comparing the growth and development of the newly emerged towns in India and other highly urbanised developed countries from the west, new towns in India lacks behind in urban basic services like adequate housing for all, safe drinking water, hygienic sanitation services. Industrial and urban agglomeration and disproportional land use for residences, industries led to mass migration towards large urban centres and cities hence discouragement to formation of new towns.

In India as recorded in past two censuses, the urban growth is modest but the quantum of urban population has created a pressure on urban basic amenities on one side and urban infrastructure on another side. Therefore one can say that on the whole the quality of urban amenities and their coverage have failed to keep pace with the kind of urbanisation process that India has been experiencing (*Kundu, 2005*)⁵. The concern is not only the accessibility and availability of the urban basic amenities to the households but also

⁵Kundu, Amitabh (2006). Introduction: A Framework for Analyzing Exclusion and Social Backwardness. *India Social Development Report, Council for Social Development, Oxford University Press, New Delhi, XIII-XIV.*

regarding the quality of these urban amenities provided to the households. The quality of urban amenities includes the sustainable quantity and its hygiene, safety and also the affordability for example if in a town a household is provided with drinking water, whether water is safe and potable (according to UNICEF parameters), is quantity sufficient or not, is it affordable and sustainable, etc? These questions are also regarding other basic amenities like safe cooking fuel, hygienic bathroom and toilet facilities within household premises, hygienic and closed waste water drainage system to the household.

The quality of basic amenities in a town is an important function of the socio-economic development of the town in terms of the demographic composition, literacy and educational attainment of the dwellers (both male and female), work participation rate (both male and female), distribution of working population into different sectors, etc. Among other determinants of the urban basic amenities the financial health of the urban local bodies (ULBs) is most important. The total income and expenditure of the ULBs on the urban amenities like sanitation and sewerage, drinking water, roads and streets, administration and establishments etc. are the key parameters along with per capita expenditure of the ULBs on basic civic services to analyse the provisioning and sustainability of urban development.

The urban infrastructural development in India is shared among three tiers of the government and their extensions in terms of private partners, corporations etc. (Mathur, 2018)⁶. The structure of the urban financing is complex that the responsibility of availability and accessibility of the urban basic amenities are not direct. The 74th Constitutional Amendment Act (1992) gives the ULBs an upper hand in spending on urban civic services of daily living of the dwellers among other responsibilities. But then the taxation and revenue powers of the ULBs are always questioned by policymakers, academicians, think tanks etc. due to the structuring under the state level governments. There are also many questions arising after the implementation of Goods and Services Tax (GST) after 2017 and its impact on the revenue and expenditure of ULBs, though

⁶ Mathur, Om Prakash (2018). The Financing of Urban Infrastructure Issues and Challenges. *A Background Note at Urban Development: Technological solutions and Governance Challenges, Ahmedabad.*

Retrieved from [http://ris.org.in/pdf/aib/19April2018/Urban percent20Development percent20Background percent20Note.pdf](http://ris.org.in/pdf/aib/19April2018/Urban%20Development%20Background%20Note.pdf)

some temporary provisions has been made to compensate for the loss of revenue to ULBs e.g. removal of octroi but still it is very early to argue the impact of GST on urban financing and its effects on urban basic amenities.

Given the urban processes of Punjab with highly rapid urbanisation, decreasing rural population growth rate, increasing urban growth, large number of emerging census towns on one front and the deficiency of urban housing along with other urban basic amenities and their quality in particular, financial position of ULBs in provisioning of these services to the people, the present study analyses the urban processes in Punjab with particular emphasis on emergence of new towns, availability and accessibility of urban amenities and the responsibility of ULBs in providing urban amenities to the people. The macro and state level analyses have been done to understand the urbanisation processes, provisioning of urban basic amenities and disparities among large and small towns. The study further analyses the various determinants of the urban civic services i.e. both socio-economic and financial health of the ULBs and the complexities related to ULBs in providing urban amenities and their limitations related to revenue generation and expenditure. The rest of the study looks into micro level analysis of the urban processes in towns of Amritsar districts along with basic amenities with the help of secondary data and comparison of urban amenities in old and new towns through data collected from primary field survey. The lack of urban amenities among demographic composition, relationships with socio-economic levels, relationship with income, perception of the HHs regarding the urban amenities is done at the town levels. Lack of urban amenities and their quality, various govt. programmes and policies to deal with these deficiencies, system of governance, problems of the different social groups etc have been studied both quantitatively and qualitatively to find the explanation of the issues and to propose some solutions to it.

1.2 Study Area

Punjab has more than 50 thousand sq. km. area and rank 20th in terms of the largest state of India. It is the Punjab's north-west location in the country which serves as a bridge between Central Asia, Asia and Middle East which assigned to it a regional importance. 'Punjab has a sensitive location' (Gosal)⁷. According to census of India 2011, the state

⁷ Gosal, G.S. Physical Geography of Punjab. *Journal of Punjab Studies*, 11(1), 19-37

has around 3 percent of India's total population (around 27 million) in just its 1.5 percent area of the country. With more than 550 persons living in a square km area, the state ranks 10th in density of population among all states of India.

Punjab has a developing economy growing at fast pace, and have agricultural development at its base which the state is known as '*bread basket of the nation*'. The state has fertile alluvial soil with a comprehensive good irrigation network provided by five rivers (Panchnad) Sutlej, Jhelum, Ravi, Beas and Chenab. Punjab is the land for the origin of the 'Green revolution' in India. 'Green Revolution' brought many changes like in irrigation methods (tubewells), variety of high yielding production mainly wheat and rice; these changes are also mixed up with institutional reforms like credit facilities through agricultural cooperative societies for easy credits, development of rural roads for market access and other extension services. The agricultural development in Punjab laid the basis for, upto some extent the changes in economic, political and hence demographic characteristics. The population density of 551 persons per sq. km in the state is more than national average. The literacy rate in the state is 75.8 percent while literacy rate is slightly lower i.e. 70.7 percent. The workforce participation rate in the state is 35.7 percent of total population but female work participation rate in the state is the worst i.e. only 13.9 percent which is a depressing situation.

The growth of the state income is 5.71 percent in 2017-18 which decreased from 6.58 percent in 2016-17 (*Punjab Economic Survey, 2017-18*). Punjab also has high GSDP of Rs. 372061 crore at constant price of 2011-12. The per capita income of the state is one of the highest i.e. Rs. 109884 in 2017-18 at constant price of 2011-12. Punjab has been on the forefront in many economic indicators due to the prioritization of these sectors by govt. but due attention has not been paid to some human development indicators like IMR (Infant Mortality Rate), Sex Ratio, Child Sex Ratio, Female Literacy and educational attainment, female workforce participation etc. Many documents available from govt. and other reports mention that one of the serious issues in Punjab today is the magnitude of unemployment particularly among youth, which is also one of the causes of external migration from Punjab. Agricultural development is also coupled with disguised unemployment for the youth. Female workforce participation is also on the lowest side in the state among all major states of India. The growth of the state domestic product (SDP) in the state is not synced with utilization of the labour force. High level of IMR as

compared to other developed states of India, high gender disparity in terms of employment, education and access to health facilities, unemployment rates are high particularly among youth are the factors that led to rethink the levels of quality of life in terms of social, economic, educational and health, infrastructural, service delivery and basic civic services.

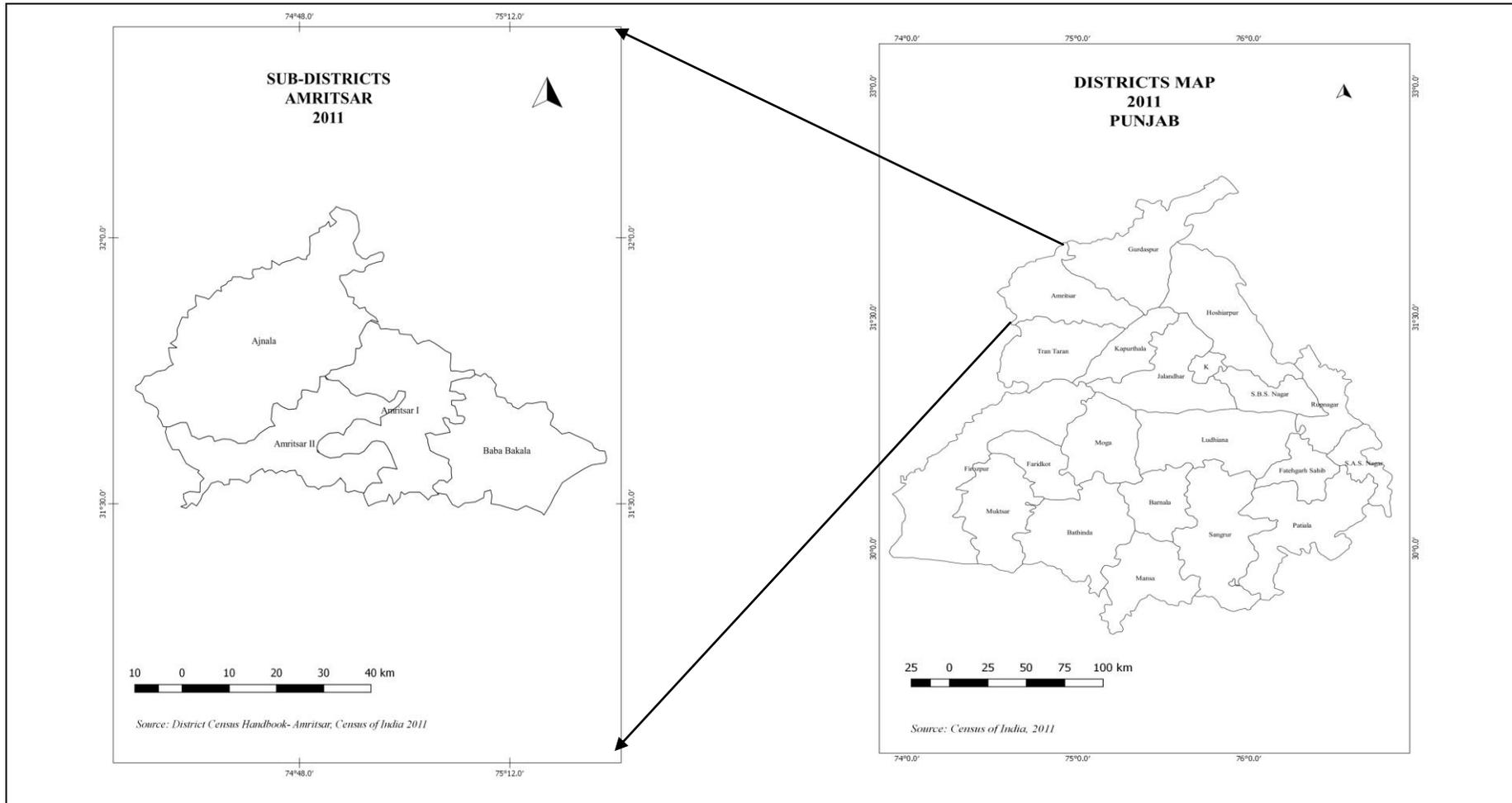
In Punjab, Amritsar district is chosen as the study region for primary survey. Amritsar is the district which share international boundary with the neighbouring country, Pakistan. The district is located in 'Bari Doab' i.e. region between Beas and Ravi river, one of the five doabs in the state. Amritsar district coupled with Gurdaspur district falls into the 'Majha region' of the state, which was ruled by Manjha dynasty. Amritsar was a leading center of trade in the north-western part of sub continent during Maharaja Ranjit Singh's rule in 1833, a large number of Kashmiri artisans settled in Amritsar in the wake of famine in the Kashmir Valley. Also after independence great strides were made on the industrial front. By the decade of 1970's many large sector and small sector industries came up in the district like electronics industry, textile industries (woollen, cotton and silk), printing technology, engineering and chemical industries etc. The district occupies the prominent place in the textile industries like shawls, blankets and other woollen fabrics. Many ancillary industries were also flourished in the district along the National Highway (NH 1) corridors, where in 2011 census many new census towns have emerged.

Amritsar is the second largest populated district in the state after Ludhiana, having 24.9 lakh population. The density of population in the district was 932 persons per sq. metre which is much higher as compared to the state average of 550 persons per sq. metre according to 2011 census. The decadal population growth rate of the district from 2001-11 was 15.48 percent as against the 13.89 percent of the state. The level of urbanisation in the districts stands at 53.58 percent as against the average level of urbanisation of 37.48 percent in Punjab state. But the urban decadal growth rate from 2001-11 is 26.12 percent in Punjab state is greater than that of the Amritsar district which recorded 20.69 percent urban decadal growth rate from 2001-11. Emergence of new towns is one of the key components of the urban growth rate. As per 2011 census, there are 15 towns in the district out of which 6 are newly emerged from 2001 to 2011. It is noted here that all the 6 newly emerged towns are 'Census Towns (CT)' which emerged due to change in demographic and economic changes not due to changes in its governance structure.

Amritsar city has been selected for 'Smart City Mission' in the second round of the evaluation by the Govt. of India for the comprehensive development of the city. It includes urban planning, inclusive urban growth, housing and other basic amenities provisioning, making the local govt. citizen friendly, smart solutions to urban issues with use of digital technology, public transport strengthening among many other objectives.

The level of urban amenities in Amritsar district also recorded among the highest category of district in the state. It is manifested from the census data that the district recorded more than 98 percent of households have safe sources of drinking water, it is accompanied with that 90 percent of the households have bathroom facilities. But the depressing picture is presented in the proportion of households having hygienic sewerage/drainage system that accounts for only 33 percent in 2011. Also there are nearby 50 percent of household without safe sources of cooking fuel in 2011. The level and distribution of basic amenities in the district raises many questions regarding the relation between the high degree of urbanisation i.e. nearby 54 percent of their total population and the low quality of basic urban amenities.

Map 1.1 Study Area showing size classes of towns in Amritsar district of Punjab, 2011



Source: Prepared from District Census Handbook, Amritsar, Census of India, 2011

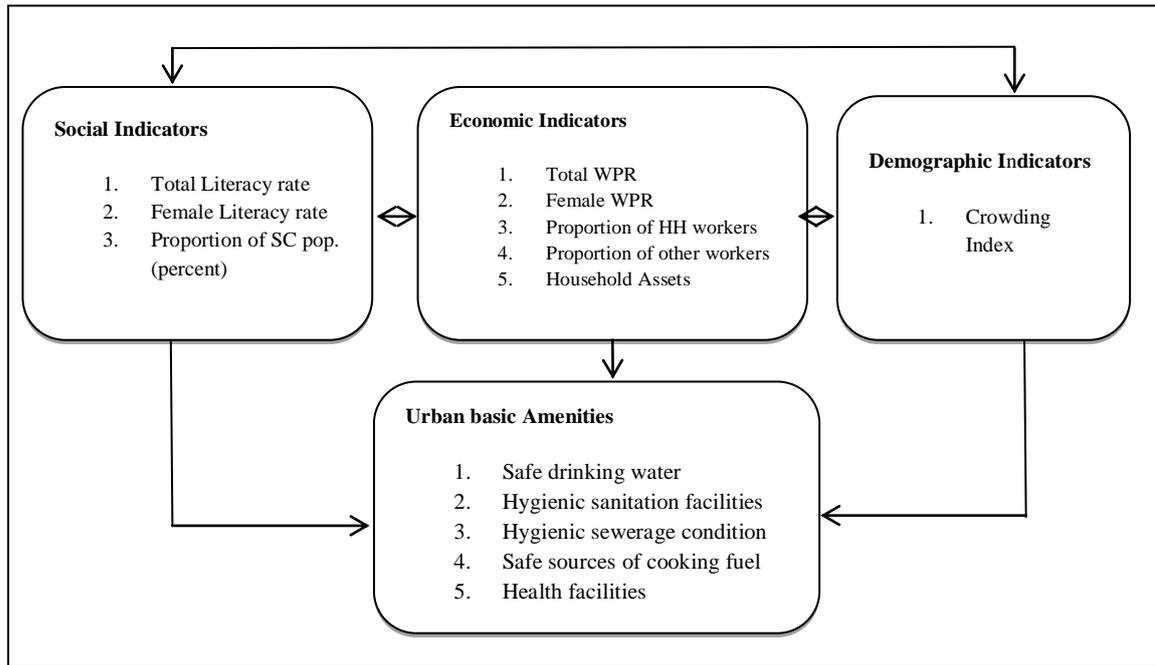
1.3 Conceptual Framework

The availability and the distribution of various urban basic amenities like safe drinking water, hygienic sanitation services, safe lighting facilities, affordable housing, hygienic drainage for the waste water outlet are not only essential for the well being of the households but also crucial for the quality of life of the people. The optimum standard of the basic amenities to the people also benefitting them by giving better health, positive environment, employment opportunities and hence increase in the economic productivity. Above them all, the access to basic services to the household like safe drinking water, hygienic drainage system, safe lighting etc. save their crucial hours which would have wasted in arranging these amenities. The importance of the basic amenities to the urban population has caught many eyes, from the international to the national to regional arena like in Goal 11 of the Sustainable Development Goals (SDG) i.e. “Sustainable cities and communities”. It further highlights that safe and affordable urban housing, high investment in public transport, citizen participation and urban planning is a key to sustainable urban development. It is considered as the primary challenge of urbanisation by ‘Ministry of Urban Development’ as mentioned in its strategic plan (2011-2016):

“Promote cities as an engine of economic growth through improvement in the quality of urban life by facilitating creation of quality urban infrastructure with assured service level and governance.”

There is a relationship between the levels of socio-economic indicators and levels of urban amenities present at the household level. But here some questions arise whether the level of socio-economic indicators and level of urban amenities are related to each other or not? If they are related what is the relationship between the two, is it positive or negative related to each other?

Fig. 1.1 Conceptual framework to interpret the relationship between socio-economic indicators and level of Urban Amenities in Punjab



As the level of urbanisation are not related to only one single factor, it depends on the number of factors like natural growth of population, urban sprawl, in-migration towards the urban centres and the re-categorization of villages into towns. In the same way the levels of urban amenities not determined by single indicator, so to understand the complex relationship between urban amenities and its determinants, various social and economic indicators have been taken for the study. The quality of urban basic amenities are not only determined by the financial health (sources of revenue and expenditure) of Urban Local Bodies (ULBs) but also by the households indicators in terms of the socio-economic attributes of the HH like annual Income of the household, educational attainment of household's head, Work participation rate especially of female work participation (for better per capita expenditure), households assets, literacy rate or educational attainment of the residents, female literacy rate, number of people in a households i.e. crowding of HH etc. among many other factors. The crucial linkage here is that socio-economic and demographic indicators are determinants of the quality of urban amenities but also related to each other. To say that increase in the literacy rate or educational attainment not only increases the probability of work participation rate but also led to increase awareness about importance of family planning, use of safe drinking water, cooking fuel etc.

1.4 Objectives

1. To examine the growth and pattern of urban centres with particular emphasis on emergence of new towns at district level and across size-classes of towns in Punjab from 2001-2011.
2. To examine the availability of basic amenities in the districts and across size class of towns and to find the relationship between social-economic characteristics and level of urban amenities.
3. To analyze the relationship between accessibility and availability of urban amenities with the financial conditions of urban local bodies (ULBs).
4. To study the quality of urban amenities by examining how people of towns perceive and rate the urban amenities provided to them by local civic bodies.

1.5 Research Questions

1. Does the industrial regions of the state shows the greater increase in the emergence of new towns as compared to other regions in the state?
2. Whether the large town has higher accessibility and availability of urban amenities and it decreases in the medium and smaller towns?
3. Does the higher social-economic index in the towns led to the increase in the levels of urban amenities?
4. Whether the higher proportion of SC population in the towns is negatively related to the level of urban amenities?
5. Does the higher municipal revenue and expenditure is positively related to the high levels of urban amenities?
6. How does the quality of urban amenities changes with the citizen participation and local civic bodies?

1.6 Indicators for the quality of urban amenities

1. Sources of safe drinking water i.e. tap water provided by Municipal bodies etc. or tube-well or hand-pump etc.
2. Safe sources of cooking fuel i.e. LPG, electricity and biogas.
3. Hygienic toilet facilities (pit latrines/ water closet latrines) available to the household.
4. Hygienic sewerage system i.e. closed drainage.
5. Frequency of sewage and trash collection in the locality.
6. Conditions of streets i.e. whether the streets get clogged during rainy season.
7. Street lightning facilities availability

1.7 Socio-Economic Indicators

1. Total Literacy rate
2. Female Literacy rate
3. Total Work Participation rate (WPR)
4. Female Work Participation rate (WPR)
5. Proportion of Scheduled Caste (SC) population (percent)
6. Household Assets
7. Proportion of Household (HH) Workers (percent) out of total workers
8. Proportion of other workers (percent) out of total workers

1.8 Database

The data sources that have been used for the study consists of primary as well as secondary sources. The secondary data has been used from various sources which are categorized as:

1. Census of India, Primary Census Abstract (PCA), 2001 and 2011
2. Census of India, All India Town Directory, 2001 and 2011 for data on socio-economic characteristics of size-classes of towns as well as data on urban basic amenities.
3. Census of India, Primary Census Abstract, Punjab, 2001 and 2011 for data on demographic and socio-economic characteristics.
4. Census of India, House listing and housing data, H-series, Punjab, 2001 and 2011 for basic amenities data across size Class of the towns and across districts. Data on urban amenities indicators used for this section is shown in the following table-

Table 1.1 Selections of indicators for urban basic amenities available to HHs

S. No.	Data Sources	Selection of Indicators
1.	HH-6	Sources of Drinking Water
2.	HH-7	Sources of Lighting
3.	HH-10	Source of Fuels used for Cooking
		Sanitation & Sewerage
4.	HH-9	Availability of bathroom facilities.
5.	HH-8	Availability of latrine facilities within households and households having different types of latrines.
6.	HH-9	Type of drainage connectivity for waste water disposal.

Source: Census of India, House listing and housing data, H-series, Punjab, 2001 and 2011

1.9 Methodology

The methodologies adopted for the study are divided as:

- Calculated simple percentage to show the level of urbanisation and decadal urban growth rate as:

$$(P2 - P1) / P1 * 100$$

Where, P2 is the population of the current year / decade

P1 is the population of the previous year / decade

- Simple bar diagrams and line diagrams to show the temporal patterns of urbanisation, urban decadal growth, trends of the quality of urban basic amenities in towns and districts.
- GIS softwares (Arc GIS and Q GIS) are used to show the choropleth maps of level of urbanisation, decadal urban growth and quality of urban basic amenities across districts. The growth of the number of towns across size-classes distribution and across districts are shown by various points on the map using 'point polygon' in GIS. Buffer of 5 km is used around National Highways (NH) along with the distribution of new town with the help of the 'Buffer' function in Q GIS.
- Composite Index of different amenities taken for the study, is calculated to describe the levels of urban amenities and to compare these levels of urban amenities among different size Classes of urban centres from 2001 to 2011. PCA (Principal Component Analysis) has been calculated to understand the accessibility and availability of the urban basic amenities across size-classes.

To study whether high urban amenities are available in large towns or in lower size classes of towns, an index using principal component analysis has been prepared for these towns for 2001 and 2011 by using the following indicators:

1. Percentage of HHs uses Safe Drinking Water
 2. Percentage of HHs uses Safe sources of Cooking Fuel
 3. Percentage of HHs uses Hygienic Toilet facilities
 4. Percentage of HHs uses Hygienic Drainage Facilities
 5. Percentage of HHs uses Safe source of lighting
- Correlation coefficient has been calculated by using ‘Karl Pearson correlation coefficient’ method to study the relationship between the levels of urban amenities and socio-economic indicators across different size-Classes of towns. Pearson’s CC ranges vary from -1 to 1, where either -1 or 1 signifies perfect correlation that is negatively or positively correlated respectively.

1.10 Sampling Design

Sampling is the method or technique to select the appropriate and suitable sample from the population which determines the characteristics of whole population. Sampling design is crucial in primary field survey so that the population attributes is not distributed and appropriate samples is collected which represents the ground conditions. Amritsar district, Punjab is chosen as the study area for thesis. Here the sample selection has been done at two levels, one at the town level and another at the household level. At the town level, there are two sub-categories i.e. from old or existing towns and from newly emerged towns. From the old/existing towns, *Ajnala* and *Ramdas* towns with size-class III and V respectively have been selected. Among these towns, two wards from each town have been selected on the basis of average SC population (percent) i.e. one ward with the lowest proportion of SC population in the town and another ward with the highest proportion of SC population (percent). And from each ward 50 households have been selected on stratified random sampling i.e. total 100 HHs from each town. From the newly emerged towns, *Nangli* and *Chogawan* towns have been selected from the size-class III and V respectively. In these towns (ward-wise classification has not given in census 2011) 100 households have been selected from each town. The proportion of SC population in Nangli and Chogawan towns are 39 and 21 percent respectively. The sample households in these towns have been selected on the basis of stratified random

sampling method. From the 100 households, 50 are the SC households and 50 are non-SC households to look into the variations of various amenities in both the categories.

Data collection has been carried out using the personal interview approach by visited selected households (HH) to collect information on demography, income and basic amenities using a set of questionnaires.

Fig 1.2 Sample selection for primary field survey from all 4 towns in Amritsar district

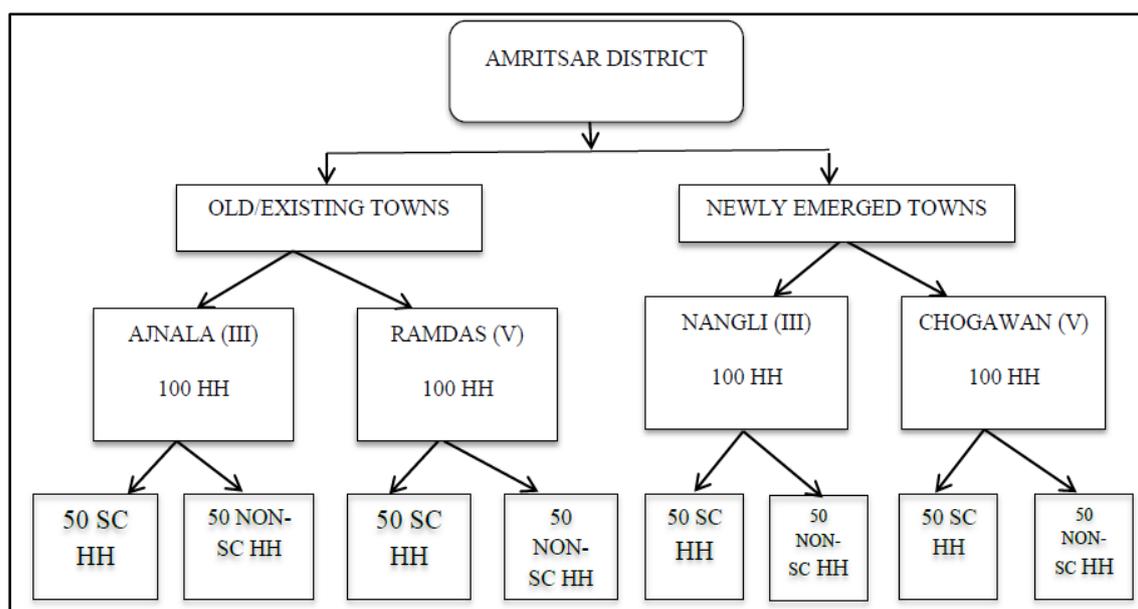


Table 1.2 Towns with Sample selection for Primary field survey

Sample size Selection method					
Sample Area		Avg. HH size	Total Pop.	Total HH	Sample HH
Ajnala (III)	Ward No. 2	5.63	1807	321	50
	Ward No. 9	4.73	2197	464	50
Ramdas (V)	Ward No. 1	5.37	693	129	50
	Ward No. 9	4.74	526	111	50
Nangli (III)	Ward No. 1	4.82	20440	4232	100
Chogawan (V)	Ward No. 1	4.82	5416	1100	100
Total Samples					400

Source: Calculated from All India Town Directory, Amritsar, Census of India, 2011

1.11 Chapter Scheme of the study

Chapter 1: 'Introduction' includes the statement of the problem i.e. the relationship between urban processes, emergence of new towns with the quality of urban basic amenities in Punjab with particular focus on Amritsar district. It explained in details the conceptual framework for the study which establishes the link between socio-economic and demographic attributes with quality of urban basic amenities. The Objectives of the study, Research Questions, Database, Methodology and Sample selection for the Primary field survey are mentioned in this chapter. This chapter presents the background of the study and how the study has been undertaken.

Chapter 2: 'Review of Literature' presents the extensive literature review for the study and its related aspects, which is subdivided into various topics based and related to the study and the various linkages has been established. This mainly conceptualizes the problem of the study area. Hence, it throws light on the subject-matter of the study discussed by different scholars of the world and as particular by India emphasized the study region on the various issues pertaining to urbanisation and its related development phenomena with special emphasis on the basic amenities.

Chapter 3: 'Urban Processes and Emergence of New Towns in Punjab (1991-2011)' covers the in-depth study of the trend and pattern in the level of urbanisation and urban growth in Punjab from 1991 to 2011. It also analyzes the pattern of emergence of new towns and their Classification according to their population size. The chapter attempt to explain the reasons behind the emergence of New Towns and its relationship with the infrastructural and civic amenities in the towns. Urbanisation can be sustainable only when the growths of new towns are in sync with the level and qualities of urban amenities provided to the people.

Chapter 4: 'Quality of Urban Amenities in Punjab: A District and Town Level Analysis' focuses on the growth and distribution of selected basic urban amenities among size Classes of towns as well as across the districts. The spatial-temporal analysis from 1991 to 2011 has been done to show the pattern of the growth of basic amenities in urban centres of the Punjab and also covers the distribution aspect of urban amenities across districts. It also studies the factors that affect the level and the growth of urban basic

amenities. It also focuses on the correlation between various socio-economic developmental indicators and basic amenities over a period of time. The composite index of the different urban basic amenities is calculated to determine the level of urban amenities at district level and across the size-classes of towns from 2001- 2011.

Chapter 5: 'Financial Status of Urban Local Bodies in the context of Basic Amenities: A District Level Analysis' studies in details the financial status of the urban local bodies in terms of total revenue and total expenditure on the urban basic amenities. It analysed the revenue of ULBs from various sources like water charges, taxes, non-tax revenue and or grants. It also discusses the different sources of expenditure like on sanitation, sewerage, water supply, roads and other developments etc. The chapter also discusses the relation between high or low revenue and expenditure and quality of urban basic amenities.

Chapter 6: 'Urban Growth, Quality of Urban Basic Amenities and Financial dynamics of ULBs in Amritsar district: A Micro Level Analysis' is the chapter solely based on secondary data. This chapter emphasized on the urbanisation trends and pattern along with the trends in urban growth in the district and its linkages with the quality of urban basic amenities. The relationship between socio-economic characteristics and quality of urban basic amenities have been analysed also the levels of quality of urban amenities in towns of the district. The chapter also looks into the financial position of the ULBs of the district and their revenue and expenditure statement with reference to urban basic services.

Chapter 7: 'A Comparative Analysis of the Quality of Urban Amenities in Old and New Towns of Amritsar district: A Field Based Approach' includes the analyses based on the primary field survey conducted in the four towns of Amritsar District, of which two towns are existing and two towns are newly emerged. 400 samples have been taken from all 4 towns to make a comparison between old and new towns. This chapter analyses the level and distribution of urban amenities provided by the Urban Local Bodies and the people perception about these services. It presents linkages between the availability and accessibility of urban amenities on one hand and socio-economic attributes of the households on the other hand. The pictorial (photos taken during field survey) analysis of the urban basic amenities has also been covered in the chapter.

Chapter 8: 'Conclusions' gives the overall findings of the study and the suggestions to increase the quality of urban amenities. The quality of urban amenities provided by ULB's are critical for the people with Low Income Groups and to make urbanisation 'healthy and sustainable' these groups should be in center for policy formulation.

CHAPTER 2

REVIEW OF LITERATURE

2.1 Introduction

A literature survey presents an overview of the articles, research papers, reports and scholarly writings by various authors, researchers and policy makers. In the present chapter, an in-depth survey of literature have been analysed under various heads. According to the structure of the thesis, the literature survey begins by exploring interpretations on urban processes with particular emphasis on the emergence of new towns. It further explored and analysed the studies on levels and quality of urban basic amenities their linkages with socio-economic attributes, financial positions of urban local bodies (ULBs) with reference to their revenue and expenditure and their effects on urban basic services etc. The focus of the literature survey is to understand the research gaps and conceptual understanding of the linkages under various heads. The present literature survey has been classified under various sections:

1. Issues related to urbanisation and processes of urban growth in India and Punjab
2. Emergence of new towns in India and Punjab
3. Linkages between urbanisation, urban growth and urban basic amenities
4. Quality of urban basic amenities and the role of civic bodies
5. Financial conditions of urban local bodies (ULBs) and its linkages with urban basic amenities

2.2 Issues related to urbanisation and processes of urban growth in India and Punjab

Preston (1979)¹ analysed that it is because of regional imbalances in development that there observed a pattern of rural to urban migration mainly in developing countries of the world. Analysing the nature and pattern of urban population in developed and developing countries it is found that in developing nations the urbanisation rate is not prominent as

¹ Preston, Samuel H. (1979). Urban Growth in Developing Countries: A Demographic Reappraisal. *Population and Development Review*, 5 (2), 195-215.

compared to the rate of growth of urban population. It may be because of the fact that the natural increase rate of population is higher. A primate city in countries tends to be bigger than the other smaller cities as they attract disproportionately a large influx of population. The reasons for the imbalance in the growth of cities extends from cultural to economic and further to political in form of employment and government expenditure are more in large cities etc.

Clark (1998)² described the interdependent urbanisation in modern world as a result of the geographical spread of the 'capitalism' across developed and developing countries. While elaborating the processes and pattern of urbanisation he focused that the reasons for increasing urban population in Asia and Africa was because of '*changing economic order*'. Urbanisation is seen as a cyclic process wherein the towns are converted into big cities owing to changing population composition, in migration, and shift in the economic activities from manufacturing to services.

Chakrabarti (2001)³ mentioned that the projected total urban population of India in 2045 will be more than the total population of Europe. It is mainly because the present urban population of India is not even one-third of its total population but it is continuously increasing due to urban sprawl and increasing rural to urban migration. But the level of urban infrastructure is not increasing at this pace and already mega cities and large towns are under stress. It led to exert pressure on water supply availability, sanitation services, transportation facilities, public health and hygiene, etc. He also analysed the government policies, their strength, shortcomings and further gave suggestions to improve the quality of urban amenities.

Bhattacharya (2002)⁴ analysed the pattern of urbanisation in developing countries particularly with reference to India where urbanisation is loaded with top heavy cities and

² Clark, David (1998). Interdependent Urbanisation in an Urban World: A Historical Overview. *The Geographical Journal*, 1064 (1), 85-95.

³ Chakrabarti, P. G. Dhar (2001). Urban crisis in India: New initiatives for sustainable cities. *Development in Practice*, 11(2), 260-272.

⁴ Bhattacharya, Prabir C. (2002). Urbanisation in Developing Countries. *Economic and Political Weekly*, 37(41), 4219-4228.

large metropolitan centres. It is mainly due to rise in rural to urban migration which not only changes the urban growth dynamics but also the contribution in economic growth through rise in informal sector employment. It leads to rise in informalisation of workforce and also leads to issues of over-urbanisation which is associated with decline in urban basic amenities.

Sridhar (2002)⁵ in his paper was attracted towards the idea that urban amenities are the harbingers of urban growth vis-à-vis economic growth, creation of employment opportunities etc. Therefore the reforms in the delivery of urban civic services according to the need of the people and city demand are necessary for sustainable urbanisation. There is a close relationship between the financial health of the city and provisioning of urban amenities as the water supply and sanitation services deteriorated when the level of public expenditure declines. He considers financial and institutional hindrances are primary in the non-reform towards delivery of urban services. He concluded that privatisation and overlooking of urban amenities are not the answer to good urban amenities. An increasing public investment in civic services in developing countries is a step towards ensuring delivery of urban services.

Clark et al. (2002)⁶ showed the relationship between the economy of the city and its culture how has it evolved and changes after effects of globalization. The phenomena of the industrial-led urbanisation is 'outdated' and in modern cities and towns, urban population is more concerned about the quality of services like supply of water, transport facilities, other civic amenities. Globalization is a major force behind changing the economy and the culture of cities where the provisioning and the quality of urban amenities in terms of urban infrastructure, quality of living captures a central idea which was not the earlier case.

⁵ Sridhar, Kala Seetharam (2002). Reforming Delivery of Urban Services in Developing Countries: Evidence from a Case Study in India. *National Institute of Public Finance and Policy, New Delhi*

⁶ Clark, Terry Nichols, Lloyd, Richards, Wong, Kenneth K., and Jain, Pushpam (2002). Amenities Drive Urban Growth. *Journal of Urban Affairs*, 26(5), 493-515.

Mohan et al. (2004)⁷ explained the patterns and trends in the level of urbanisation of India since ancient times, from the emergence of *Mahajanapadas*. After independence in India, the pace of the urbanisation increases from 17.6 % in 1951 to approx. 24 % in 1981 to further 28 % in 2001 census but still Indian urbanisation has not experienced ‘urban explosion’ as in other developed countries. As compared to the developed countries, India’s urbanisation level is not high but the magnitude in absolute is so high that it is more than the total population of many developed countries. The population growth of large towns in India is increased at the cost of population in medium and smaller towns, observed since 1951 census. The growth of any town and its development is mainly related to the economic activities of the town and the peripheral regions in addition to the increasing influx of rural to urban migration over the period of time.

Haggblade et al. (2007)⁸ analysed the role of non-farm rural economy in economic growth of rural regions and its impact on diversification of economic activities, rural to urban migration, reducing urban congestion, diversifying income sources for the rural population and reducing risks of poverty. Rising income and increase in demand leads to increase in the level of basic amenities like safe drinking water, hygienic sanitation service, drainage facilities as shown by the data.

Kundu (2009)⁹ has studied that after the decade of 1970’s rural to urban stream of migration increased drastically which had not only changed the equation of urbanisation in developing countries but also has to changed scales of production, asymmetry in manufacturing, development in transport as well as in the urban land. This change in pace of migration leads to changes in the demography and economy and led to increase inequality with the rise in poverty. This phenomenon of urban growth in Asian countries

⁷ Mohan, Rakesh, Dasgupta, Shubhagato (2004). Urban Development in India in the Twenty First Century: Policies for Accelerating Urban Growth. *Presentation at the Fifth Annual Conference on Indian Economic Policy Reform, Stanford Centre for International Development.*

⁸ Haggblade, Steven, Hazell, Peter B. R.,and Reardon, Thomas (2007). Transforming the Rural Nonfarm Economy: Opportunities and Threats in the Developing World. *Published at The Johns Hopkins University Press, 2715 North Charles Street, Baltimore, Maryland 21218-4363.*

⁹ Kundu, Amitabh (2009). Exclusionary Urbanisation in Asia: A Macro Overview. *Economic and Political Weekly, XLIV (48), 48-58.*

observed the shift in the emergence of new towns in small and medium category but not in the equal levels of rise in urban amenities. Though various policies have been implemented to increase urban basic amenities but they failed to check the increasing disparity and exclusionary nature of urbanisation.

Vaidya (2009)¹⁰ observed the nature of the Indian urbanisation and observed that it is different from other countries in the sense that the total urban population is increasing at higher pace but the rate of urban growth is decreasing which should not be the case. There is a wide gulf between the magnitude of urbanisation and the level and quality of urban basic services. In the context, government's policy like JNNURM has a critical role in providing urban infrastructure, financing of municipal bodies and institutional settings etc. 'Healthy municipal revenue base and good urban governance' are key for providing the quality of urban amenities to urban population. A standard is needed to be set for the availability of civic amenities like fixed hours of water supply, regular sewerage cleaning and solid waste management etc.

Sankhe et al. (2010)¹¹ analysed the urban dynamics in India and its current and future prospects in terms of urban population, urban growth, emergence of new town, urban infrastructure, urban basic services etc. In India urban phenomenon is '*microcosm*' of the nation i.e. where mainly rich class, industrialists and educated people made their home. On the other hand the urban poor communities and vulnerable populations migrated towards the urban centres are devoid of urban civic services and face poverty. In India economic growth and urbanisation are positively correlated as the urban regions in India contribute more than 70 percent of the total GDP of India mainly because of the fact that it produces scale benefits that boosts productivity. Cities in India on one hand represent every sections of society but the distribution of civic amenities is not equally distributed and cities can serve as a cost-effective vehicle in providing urban amenities to all. Sustainable urban growth is crucial for rural development also because of the forward and

¹⁰ Vaidya, Chetan (2009). Urban Issues, Reforms and Way Forward in India. *working paper no. 4, Deptt. of Economic Affairs, Govt. of India*

¹¹ Sankhe, Shirish, Vittal, Ireena, Dobbs, Richard, Mohan, Ajit, Gulati, Ankur, Ablett, Jonathan, Gupta, Shishir, Kim, Alex, Paul, Sudipto, Sanghvi, Aditya, Sethy, Gurpreet (2010). India's Urban Awakening: Building Inclusive Cities, Sustaining Economic Growth. *Mc Kinsey Global Institute*, 1-234.

backward linkages. India cities faces the issue of low per capita spending on urban services as compared to other developing and developed countries and it need to be increased for sustainable urbanisation.

Denis et al. (2012)¹² analysed the form of the subaltern urbanisation in India and how it have evolved over time. Subaltern urbanisation is the urban settlements which may or may not be denoted by the census of India but are independent in terms of their economic interactions with local economies. It can be the result of the market changes in the economy or history of the place. Indian urbanisation is considered 'subaltern' as 80 percent of urban poor resides in medium and small towns.

Jones et al. (2014)¹³ analysed the processes and system of urbanisation in developing countries. The level of urbanisation is more in developed countries but the growth of urban population is more in developing countries and it also varies from region to region and within region too. The urbanisation of developing countries is mainly derived from rural out-migration which is a result of poverty and lack of work opportunities and hence the urbanisation is described as '*urbanisation of poverty*'. The urbanisation level in developing nations is not positively correlated with the level of urban services and the reasons vary from low level of government expenditure to the failure of the public policies.

Singh et al. (2014)¹⁴ in their paper analysed the macro level trends and patterns of urbanisation in Punjab and mentioned that the unprecedented increase in the urbanisation is not sustainable for the economic progress or for the urban amenities. Punjab has observed the change in its pattern of economic activities as earlier it was agricultural dominated now moving towards the service sector dominated economy. Punjab's urbanisation is mainly concentrated in big cities and towns which observed the shortage

¹² Denis, Eric, Mukhopadhyay, Partha and Zerah, Marie-Helene (2012). Subaltern Urbanisation in India. *Economic & Political Weekly, XLVII (30)*, 52-62

¹³ Jones, Harry, Clench, Ben and Harriss, Dan (2014). The governance of urban service delivery in developing Countries. *Overseas Development Institute*, 1-30.

¹⁴ Singh, Paramjit and Singh, Balwinder (2014). Structure and Pattern of Urbanisation in Punjab: A Macro Level Analysis. *Journal of Punjab Studies, 21(1)*.

in urban basic amenities and urban infrastructure. The rising population in these cities observed the rise in the urban amenities level in different population groups and the disparity level is increasing continuously over the period of time. It leads to the rise of urban poverty vis-a-vis declining basic amenities in slum and low income households.

Mahey et al. (2016)¹⁵ discussed about the linkages between the level of urbanisation and economic growth and development in Punjab. They also studied the factors that led to increasing urbanisation in Punjab and its consequences, reducing share of agricultural activities which is the heart of Punjab's economic progress. Among the determinants of Punjab's urbanisation, Road Distance to headquarters showed the negative correlation and road length in a city impacted urbanisation in positive manner. The levels and availability in urban infrastructure in terms of school, electricity, health facilities have direct positive relation with urbanisation.

2.3 Emergence of New Towns in India and in Punjab

Sivaramakrishnan (1977)¹⁶ pointed out the issues which are key for the policy making related to the emergence of new towns in India by taking the case study of the new towns in Eastern India. New towns should not only new in term of physical location, demographic attributes and economic activities changes but to be new approach to urban planning and design of the towns. The social and community issues along with the governance system to provide basic amenities and other services to the residents are to be the rationale behind the emergence of new towns.

¹⁵ Mahey, Kavita and Tripathi, Sabyasachi (2016). Urbanisation and Economic Growth in Punjab (India): An Empirical Analysis. *MPRA*, Paper No. 71325. Retrieved from <https://mpra.ub.uni-muenchen.de/71325/>

¹⁶ Sivaramakrishnan, K.C. (1976-77). New Towns in India: A Report on a study of selected New Towns in Eastern Region. *A Homi Bhabha Fellowship Award project with support from Indian Institute of Management Calcutta.*

Bhagat, (2005)¹⁷ mentioned the role of difference in growth of new towns in the urban development of the country as urban size is the key determinant that affects the urban population growth. Large cities and towns grow at very rapid pace as compared to the small and medium towns in the early phase of urbanisation later these small and medium towns grow at faster pace due to congestion, pressure on urban infrastructure in large cities. Role of new towns is crucial for the balanced urban population distribution across size class of towns.

Wang et al. (2010)¹⁸ discussed the concept of the emergence of new towns in the light of the site for the accommodation from the densely populated cities. The growing population in middle class category in India and China led to the emergence of the new towns with high quality infrastructure, high urban amenities, more space for housing etc. But the benefits of the new towns only reached upto the limited high class person that evokes socio-economic inequality.

Bhagat (2011)¹⁹ discussed that the urban population in India has increased more than expected i.e. more addition in urban population than rural population for the first time. It is due to the increase in the huge number of new towns i.e. more than 3800 new census towns added in 2001-2011 decade.

Sahasranaman (2012)²⁰ focussed on the creation of the large number of new towns either in the periphery of the metropolitan cities or along the industrial and service corridors with the provisioning of the high quality infrastructure and basic services to lessen the pressure for large towns. The paper suggested a need for land banks and investment

¹⁷ Bhagat, Ram B. (2005). Urban Growth by City and Town Size in India. *Paper to be presented in the annual meeting of Population Association of America.*

¹⁸ Wang, Lan, Kundu, Ratoola and Chen, Xianming (2010). Whom? New Town Development as Planned Suburbanization in China and India. *Research in Urban Sociology, 10*, 319–345

¹⁹ Bhagat, R B (2011). Emerging Pattern of Urbanisation in India. *Economic & political Weekly, XLVI (34)*

²⁰ Sahasranaman, Anand (2012). Financing the Development of Small and Medium Cities. *Economic & Political Weekly, XLVII (24)*

mechanisms for the infrastructure provisioning in small and medium towns which are key for the sustainable urbanisation.

Insa-Ciriza (2012)²¹ mentioned that the New Towns are new in terms of their independency for land use, design for architecture and single master plan for socially diverse plan. New towns development is very expensive in provisioning of the basic amenities to the residents. The news town needs overall development in terms of land use, socio-economic attributes, physical and governance development.

Sharma (2012)²² analysed the urban planning in terms of the provisioning of basic amenities to the people, urban infrastructure in small towns of North India. The mains reasons for the lack of basic amenities in these towns is the neglected attitude of urban local bodies towards small towns, lack of proper planning model according to city size and potentialities. Citizen participation and awareness is the key to 'tap the rich potential' of small towns which can be easily governed.

Chadchan et al. (2012)²³ discussed about the changes in the trends and patterns of urban growth in India in Post reform period of 1991. Liberalization, Globalisation and Privatisation led to open up Indian economy and created more employment opportunities that causes rise in rural to urban migration. Indian urbanisation is marked by the large population concentrated in metropolitan cities with high urban density and low level of urban amenities. Privatisation in urban development sector led to withdrawal of government sector from basic services like housing, water supply, sanitation services and transportation that created an inequality and rise of disparity especially for the low income groups and vulnerable population. The rise in prices of housing led to increase in the number of slums and the slums observed an increase of more than that of the level of urbanisation where more than one fourth of urban population lives in slums.

²¹ Insa-Ciriza, Raquel (2012). Two Ways of New Towns Development: A Tale of Two Cities, *Urban Development*, 219-242.

²² Sharma, Kalpana (2012). Rejuvenating India's Small Towns. *Economic & Political Weekly*, XLVII (30), 63-68.

²³ Chadchan, J. and Shankar, R. (2012). An analysis of urban growth trends in the post-economic reforms period in India. *International Journal of Sustainable Built Environment*, 1, 36-49.

Sultana (2013)²⁴ mentioned that urbanisation is not an individual process but is a result and consequence of many processes i.e. economic, social, political and cultural. The question arises that if urbanisation is the driven process for the economic growth and development then why urban poverty still persists? Poverty leads to exclusion of certain sections of society in form of residential segregation, ghettos establishment and slum development.

Panait (2013)²⁵ analysed that the new towns are not always the case for the urban development by taking the case study of Romanian new towns emerged during socialist period.

Desmet et al. (2014)²⁶ quantitatively analysed the role of megacities in developing countries in their urbanisation. They argued that whether the mega cities are getting too large and at the cost of the medium and intermediate towns and the situation in developed and developing countries. In developing countries as smaller countries become large it implies that large cities becoming small which is not the case in developed countries.

Chatterjee (2014)²⁷ analysed the processes of urbanisation in India with reference to the emergence of new towns. India's urbanisation is marked with regional diversities as Delhi, Goa and Chandigarh have around 100 percent urbanisation as against very low urbanisation in eastern and north eastern India. Emergence of large number of towns in last census has changed the urban dynamics in India as the majority of the newly emerged towns are census towns.

²⁴ Sultana, Parvin (2013). Urbanisation and Exclusion: The Case of Indian Cities. *Urban Panorma*, 12(1), 89-97.

²⁵ Panait, Andreea (2013). New Towns In Modern Urbanism: Concept & History. *Urbanism*, 4(4).

²⁶ Desmet, Klaus and Ross-Hensberg, Esteban (2014). Analyzing Urban Systems: Have Mega-Cities Become Too Large?. Retrieved from <http://www.princeton.edu/~erossi/WBChapterKD%26ERH.pdf>

²⁷ Chatterjee, Mahalaya (2014). Regional Variation in Urbanisation in India and the Emergence of New Towns. *ERSA Conference Papers, European Regional Science Association*.

Kumar (2015)²⁸ analysed the role of metropolitan cities in the Indian urban system. There are more than 50 metropolises in India as per census 2011 which contributes to more than half of the total urban population in the previous decade. Though the level of urbanisation in India is very low but the magnitude in terms of absolute population is so high that it occupies a major contribution in the economic growth and development of country. Indian urbanisation system is an experience three types of phases one is British period, secondly from independence to 1991 and lastly post-independence period. Post independence period marked the urbanisation as economy driven and marked by dominance of population in larger cities.

Mukhopadhyay et al. (2016)²⁹ discussed about the emergence of new towns in India and its impact on the processes of urbanisation. India's "hidden urbanisation" has also recorded a transformation as more than 3800 census towns emerged in 2011 census as compared to only 1362 in 2001. This urban phenomenon is marked with the number of characteristics like lack of basic amenities in census towns, large number of outmigration to large towns and cities. Census towns have huge potential for economic development as well as for sustainable development.

Hasnat et al. (2016)³⁰ focussed on the creation of the new satellite towns to absorb the pressure of the pressure of the big cities. They have taken the case study of Dhaka, largest city of Bangladesh. They recommended the creation of modern infrastructure facilities, high urban basic amenities, high accessibility and public transport system in New Towns to make the urbanisation sustainable.

²⁸ Kumar, Jitendra (2015). Metropolises in Indian Urban System: 1901-2011. *European Journal of Geography*, 6(3), 41-51.

²⁹ Mukhopadhyay, Partha, Zerah, Marie-Helene, Samanta, Gopa and Maria, Augustin (2016). Understanding India's Urban Frontier: What Is behind the Emergence of Census Towns in India?. *Social, Urban, Rural and Resilience Global Practice Group, Policy Research Working Paper 7923*.

³⁰ Hasnat, Md. Mehedi and Haque, Md. Shamsul (2016). Developing Satellite Towns: A Solution to Housing Problem or Creation of New Problems. *IACSIT International Journal of Engineering and Technology*, 8(1).

Glover (2018)³¹ discussed the role of the census towns in the urbanisation of India which is even more crucial in 2011 census. India's urban growth is derived largely by census towns which are governed by rural institutions. Census towns are not governed in a way to provide better basic amenities to all people mainly because of lack of revenue and taxation powers and hence dependent on state govt. for grant-in-aid and other funds.

Roy et al. (2018)³² pointed that census towns has contributed to more than 35 percent of the total urban decadal growth in census 2011 which will be stable for longer period of time. The development of census towns is possible through the regional and spatial policy interventions like housing, safe drinking water, hygienic toilet and drainage services etc.

2.4 Linkages between urban growth and urban basic amenities

Cousins et al. (1992)³³ mentioned the history of urban basic services in India and how it developed with the level of urbanisation. UNICEF undertook the study with collaboration of Ministry of Urban Development in India. Urban basic services consist of various themes and initiatives like firstly to provide safe drinking water, hygienic sanitation and drainage to urban poor. Smokeless *chulhas*, health and educational support are among the essential urban service for the poor. Raising awareness among the urban poor is also a foremost task about the causes and consequences of the healthy and educated life. Targeting the urban poor or vulnerable population or disadvantaged population is not to get rid of their poverty but to make urbanisation sustainable.

³¹ Glover, William J (2018). Living in a Category: A History of India's 'Census Town' Problem from Colonial Punjab. *Economic & Political Weekly*, LIII (2), 55-61.

³² Roy, Shamindra Nath and Pradhan, Kanhu Charan (2018). Predicting the Future of Census Towns. *Economic & Political Weekly*, LIII (49), 71-80.

³³ Cousins, William J. and Soudiere, Marie de la (1992). Urban Basic Services in India - A Preliminary View. *UNICEF Report*.

Bolund et al. (1999)³⁴ mentioned that day by day population is getting urban and it causes pressure on ecosystem and ecology of the area. Urban areas also needs ecosystem both external and internal. This paper analysed how urban population benefitted from internal ecosystem services like street parks, lawns, wetlands, urban forests, lakes, seas and streams. They have huge and positive impact on urban life but are getting diminished due to getting ignored in land use planning and urban planning. They must be considered in town planning as they are central for urban life.

Mathur (2001)³⁵ analysed the demand for the reevaluation of the prices of water supply by urban local bodies and the city bus fare. It has been argued that owing to low pricing of the drinking water supplied the cost incurred remained unmet and hence the quality of services inflicted in vicious circle. Under-pricing not only deteriorates the quality of service but also limits the spatial expansion of services which led to hinder the economic growth and development. The benefit to non-poor households of government subsidies do not solve any purpose i.e. inclusion and good quality of urban amenities. Public expenditure on urban water and sanitation is low and that creates very low scope for the increasing quality of sanitation and water supply services, it led to the negative economic as well as social consequences.

Maiti et al. (2005)³⁶ focused on the increasing metropolitan cities in India and associated problem of environmental degradation. Rapid urban growth and higher rural to urban migration towards metropolitan cities led the cities lacking in basic amenities and degradation of its ecology and environment in form of environmental pollution, deforestation, encroachment over natural capital, urban sprawl towards agricultural land, etc. Solid waste, Suspended Particle Matter (SPM), noise pollution and other associated hazards are at the door to environmental disaster. The lack of urban basic amenities

³⁴ Bolund, Per and Hunhammar, Sven (1999). Ecosystem Services in Urban Areas. *Ecological Economics* (29), 293-301.

³⁵ Mathur, Om Prakash (2001). Coming to Grips with Issues of Pricing Urban Water and Intra-city Bus transport. *Discussion Paper no.5, National Institute of Public Finance and Policy, New Delhi.*

³⁶ Maiti, Sutapa and Agrawal, Praween K. (2005). Environmental Degradation in the Context of Growing Urbanisation: A Focus on the Metropolitan Cities of India. *J. Hum. Ecol.*, 17(4), 277-287.

(piped drinking water, hygienic drainage facilities and safe cooking fuel etc.) is negatively associated with urban environment like polluted water, waste water spills on streets and use of polluted fuel for cooking purpose.

Sridhar et al. (2006)³⁷ described that with the rise in the urban population in India like other developing countries, 'undesirable outcomes' are also increasing. They are in the form of non-availability of safe drinking water, sanitation services and drainage facilities for the total urban population of the country. The basic amenities in any urban area are crucial for healthy standard of living as well as for the sustainable urban growth. The costs of providing these urban services are undercharged and hence it poses a burden on the financial health of the Urban Local Bodies. In case of supply of safe drinking water and hygienic drainage services, the per capita expenditure of the ULB is very low in case of existing population with added problem of increasing population.

Kilroy (2007)³⁸ analysed the pattern of the spatial inequalities among HHs in the urban regions (which works as a functional unit). The foremost explanation in this regard is that the clustering of households happened according to the income-classification so as the rich areas of city have high income group families, it led to evolved a phenomenon of polycentric urban structures. On the other side is the housing of low income Households concentrated in areas of cheap land prices, low level of urban basic services, relatively poor connectivity. The spatial inequalities in cities are not only in terms of income dominant residential pattern but also have ethnic angle for example migrants tends to concentrate at places with their ethnicity dominance.

Turner (2007)³⁹ discussed that the slums and squatter settlement in Latin American countries where there are provisions of better and satisfactory housing because of the policies and programmes of progressive development. In developing countries, the nature

³⁷ Sridhar, Kala Seetharam, Mathur,O.P., Nandy, Anindita (2006). Costs of Urban Infrastructure: Evidence from Indian Cities. *Discussion Paper, National Institute of Public Finance and Policy, New Delhi.*

³⁸ Kilroy, Austin (2007). Intra-Urban Spatial Inequality: Cities As Urban Regions, Background Report. *World Development Report 2009: Reshaping Economic Geography.*

³⁹ Turner, John C. (2007). Barriers and Channels for Housing Development in Modernizing Countries. *Journal of the American Institute of Planners, 33(3), 167-181.*

of economic activities and rising immigration lead to change in housing needs of the population. The government policies should be based on the economic activities and family needs of occupation rather than on the modern housing.

Shaw (2007)⁴⁰ discussed that despite India observed the high economic growth and rise of economic progress but lacked in providing optimum basic amenities to urban population like safe drinking water, hygienic sanitation and sewerage facilities. Though urban growth is continuously increasing but it has failed to attract the same growth in civic services. Unavailability and poor quality of amenities have severe implications for the health and quality of life of people. She also mentioned that education outcomes at primary and secondary levels in urban regions are directly linked with quality of urban amenities.

Aijaz (2010)⁴¹ discussed the impact of increasing population in Indian cities on the basic urban infrastructure which has not been increased in the corresponding manner. It not only negatively affects the economic productivity of urban regions but also impact the urban life and also the sustainable development. Water supply issues like water shortage in three biggest cities of India are highlighted as the present urban infrastructure is not enough to meet the needs of the urban population. Other issues involved are demand supply gap, maintenance of water supply system, inadequate supply of safe drinking water to vulnerable communities in urban areas etc. These issues are more as the city gets bigger like in Mumbai the demand supply gap in drinking water is the highest.

Patnaik (2010)⁴² in the paper discussed the pattern of changes in urban poverty in post reform period from 1993-93 to 2004-05 in terms of people's spending on the different goods and services. As compared to the period from 1983 to 1993 where urban poverty has decreased, from 1993 to 2003 period urban poverty has shown an increasing trend. It

⁴⁰ Shaw, Annapurna (2007). Basic Amenities in Urban India: Analysis at State and Town Level. *Indian Institute of Management Calcutta Working Paper Series Working Paper WPS 61*.

⁴¹ Aijaz, Rumi (2010). Water For Indian Cities: Government Practices And Policy Concerns. *Observer Research Foundation*, 25, 1-6.

⁴² Patnaik, Utsa (2010). Trends in Urban Poverty under Economic Reforms: 1993-94 to 2004-05. *Economic and Political Weekly*, XLV (4), 42-53.

further discusses that urban poverty is clearly visible in large metropolitan cities where most of urban population resides while small towns and cities fared better in terms of urban poverty.

Singh (2011)⁴³ in his study on Punjab analysed the social and economic benefits of the Green Revolution and its ecological consequences. Punjab which is agriculturally developed state with one of the highest cropping intensity has observed the economic growth in agriculture hence increase in Per Capita Income. Ecological losses like deforestation, over exploitation of groundwater and soil pollution are among many negative effects and socio-economic losses like increase in disparity, inequality are also associated with Green Revolution in Punjab.

Desai (2011)⁴⁴ in her book review of “The Politics of Sanitation in India: Cities, Services and the State” mentioned about the state failure to provide access to sanitation in Indian cities. The legacy of colonial era in providing the urban basic amenities is continuing in the independent India as urban poor are devoid of basic urban amenities.

11th Five Year Plan (2007-12)⁴⁵ mention about the direct linkages between the poor civic amenities and poor health conditions and hence it focuses on the drinking water as to be the first priority. Unavailability and inaccessibility of toilets nearby posed hardships, mainly to females, as a result open defecation is widely prevalent in urban areas. Though the plan targeted to provide safe sources of drinking water to all by 2009, but failed in achieving the target mainly due to the fund constraints and poor implementation of the government schemes.

⁴³ Singh, Paramjit (2011). Economic Benefits and Ecological Cost of Green Revolution: A Case Study of Punjab. *Journal of Economic and Social Development*, VII (1), 64-74.

⁴⁴ Desai, Renu (2011). The Sanitation Question in Urban India. *Economic and Political Weekly*, XLI (50), 33-35.

⁴⁵(2012). Chapter-5: Drinking Water, Sanitation and Clean Living Conditions. *11th Five Year Plan (2007-2012)*, Planning Commission of India.

Retrieved from http://planningcommission.gov.in/plans/planrel/fiveyr/11th/11_v2/11th_vol2.pdf

Behailu et al. (2012)⁴⁶ in their paper established the relationship between the quality of water services provided and the willingness to pay more by the households in Ethiopia. It has been found that more than 80 per cent of the respondents responded positively to pay more if the quality of water supplied is ensured as it only increases very little monthly expenses if they pay 10 more percent of the current price.

Parry et al. (2012)⁴⁷ in their study of Srinagar city analysed the availability and deficiency of urban amenities at the ward level. Inequality persists in the distribution of urban amenities as it is clearly manifested from the accessibility of urban amenities by different social groups. The main reason behind the increasing inequality in Srinagar is spurious urban growth and poor planning in distribution of urban basic amenities to all. Equal access to social amenities are crucial and central to sustainable urbanisation.

Das et al. (2012)⁴⁸ analysed the level of urban basic amenities in the towns of North Eastern India, which observed the late expansion of urbanisation as compared to other regions in India because of the complex physiography, political issues and international borders etc. The relation between the provisioning of basic urban amenities and social and economic factors does not find a positive trend. The availability of basic services is even distressing in medium and smaller towns as the more focus of government policies and funds are on larger towns and smaller towns serves only administrative functions.

12th Five Year Plan (2012-17)⁴⁹ mention about the continuous increase of the share of urban areas into the national GDP i.e. from 37 per cent in 1970-71 to more than 62 per

⁴⁶ Behailu, Sileshi, Kume, Abera and Desalegn, Biruck (2012). Household's willingness to pay for improved water service: a case study in Shebedino District, Southern Ethiopia. *Water and Environment Journal*, 26, 429–434.

⁴⁷ Parry, Jahangeer A, Ganaie, Showkat A., Nengroo, Zahoor A. and Bhat, M. Sultan (2012). Spatial Analysis on the Provision of Urban Amenities and Their Deficiencies - A Case Study of Srinagar City, Jammu and Kashmir, India. *Research on Humanities and Social Sciences*, 2 (6), 192-219.

⁴⁸ Das, Bhaswati & Dimpee Nipun (2012). Urbanscape: Access to Basic Amenities Across Towns In North Eastern India. *Urban India*, 32(1), 156-173.

⁴⁹ (2017). Chapter-18: Urban Development. 12th Five Year Plan (2012-2017), *Planning Commission of India*. Retrieved from http://planningcommission.gov.in/plans/planrel/fiveyr/12th/pdf/12fyp_vol2.pdf

cent in 2009-10 which says ‘urban areas as engines of economic growth.’ It mentioned that the growth and development of the agricultural sector are linked to the urban infrastructure services and the level of investment in urban regions. The plan mentions that there are two crucial challenges that Indian urbanisation is facing i.e. increasing number of urban poor and secondly to make way for sustainable urbanisation and ensure availability of basic services.

Kundu (2013)⁵⁰ pointed out the structural fault in government schemes and programmes in making Indian urbanisation slum free and making availability of urban amenities to all. He argued that in 11th Five Year Plan the issue of making Indian cities slum free faces difficulties and it also persisted in 12th Five Year Plan because of the issues regarding the framework of sustainable cities. Rajiv Awas Yojana is a flagship programmes to make cities slum free but it was failed because of the ‘urban biases’ towards large cities and proper implementation issues along with urban land, target of beneficiaries, etc. created uncertainties.

Hashim (2014)⁵¹ discussed about the impact of increasing urbanisation and urban development on urban poor. He correlated the level of economic growth and development with the level of urbanisation across states in India. It is manifested from the study that the high is the levels of urbanisation in the states; more is economic development and better is the urban governance. It is also observed in case of the town level analysis where small towns have very low level of urban amenities and low standard of living that is totally reversed of big cities or higher class of towns. The policy for urban development JNNURM declared to improve the quality of life for urban dwellers but it also had no clear plan for transition of economic activities from secondary to tertiary activities without considering its consequences on urban poor. Urban poor are facing residential, occupational and social vulnerabilities and these vulnerabilities needed to be reflected in our urban policies formulation for development.

⁵⁰ Kundu, Amitabh (2013). Making Indian Cities Slum-Free: Vision and Operationalisation. *Economic and Political Weekly*, XLVII (17), 15-18.

⁵¹ Hashim, S.R. (2014). Urban Development and the Poor. *Social Change*, 44(4), 505–518.

Saxena (2014)⁵² mentioned that Indian urban growth experience since 1951 is not equitable as the larger towns and cities are getting larger in terms of population and on the other hand small and medium towns recorded very low urban population growth. The reforms in this regard were mainly market oriented and it increased the level of inequality and inequitable distribution of basic amenities which did not go into the favour of the poor and marginalised. The new migrants are mainly poor and low income groups and ends up into poor dwelling with little or no basic amenities.

Kumar (2015)⁵³ analysed the issues and challenges related to the housing amenities in urban India. He questioned that with rise in economic growth, nature of economic activities also changed and it led to the rise in the rural to urban migration which created a pressure on cities for more residences. Unless new cities are created, these cities would be under pressure and lack of housing amenities coupled with other basic amenities like safe drinking water, drainage etc. The Prime Minister initiative of creating 100 ‘Smart Cities’ is in this direction.

Kumar (2015)⁵⁴ studied the household’s deprivation and socio-economic exclusion in terms of their access to basic amenities like supply of drinking water, sanitation, drainage facilities and to electricity. Basic amenities are the essential part of a good quality of life. In rural India there observed an improvement in access to basic amenities over a period of time but they also face high level of socio-economic deprivation. The deprivation is in terms of differential in caste groups and income based. The most deprived sections are the poor, low income households, marginalised, Scheduled Castes/ Scheduled Tribes etc. The policy changes and their proper implementation are the need of an hour for the inclusion of the deprived sections as access to basic amenities is a first step towards healthy life.

⁵² Saxena, K.B. (2014). Urban Growth and Exclusion of the Poor. *Social Change*, 44(4), 493–504.

⁵³ Kumar, Arjun (2015). Housing Amenities in Urban India: Issues and Challenges. *Shelter*, 16(1), 11-18.

⁵⁴ Kumar, Arjun (2015). Rural Households’ Access to Basic Amenities in India: Deprivation and Socio-economic Exclusions. *Social Change*, 45(4), 561–586.

Minallah et al (2016)⁵⁵ studied the seventh largest city, Gujranwala of Pakistan in terms of urbanisation processes, urban growth pattern and its inter-linkages with urban amenities. Results of the study uncovers that while the city has marked the progress in education , health and infrastructure levels but there is still a large population that lack in safe drinking water, hygienic toilet facilities and other civic amenities.

2.5 Quality of urban basic amenities and the role of civic bodies

Kundu et al. (1999)⁵⁶ mentioned that the regional disparity in terms of availability of urban amenities in India is very high because of the number of unsolved issues. The top of which is the lack of funds with the urban local bodies to spend on urban basic services. The condition is even poor in backward states like Odisha, Bihar, and Jharkhand to name a few in small and medium towns. The resource scarcity of the government bodies led the private players to invest, but in future it creates a fear of further disparity to rise.

Bhagat (2002)⁵⁷ found two major issues regarding the recent phenomena of urbanisation. Firstly with the expansion of cities in neighbouring rural areas causes blurring up of distinction between rural and urban regions and secondly the role assigned to the rural and urban local bodies also changed. The responsibility of ULBs in the changing urban regions needs to be changed according to the demand and supply equation and the increasing urban expansion into nearby rural regions.

Moore et al. (2003)⁵⁸ analyzed the relation between the increasing global urbanisation and its impact on the health of people. Cities attract large population from small towns and

⁵⁵Minallah, M.N., A. Ghaffar, M. Rafique and M. Mohsin (2016). Urban Growth and Socio-Economic Development in Gujranwala, Pakistan: A Geographical Analysis. *Pakistan Journal of Science*, 68(2).

⁵⁶Kundu, Amitabh, Soumen Bagchi and Debolina Kundu (1999). Regional Distribution of Infrastructure and Basic Amenities in Urban India: Issues concerning Empowerment of Local Bodies. *Economic and Political Weekly*, 34 (28), 1893-1906.

⁵⁷Bhagat, R.B. (2002). Challenges of Rural-Urban Classification for Decentralised Governance. *Economic and Political Weekly*, 37 (25), 2413-2416.

⁵⁸ Moore, Melinda, Philip Gould & Barbara S. Keary (2003). Global Urbanisation and impact on Health. *International Journal of Hygiene and Environmental Health*, 206, 269-278.

mainly from rural areas for the availability and opportunity of better education, better health conditions and employment opportunities. But in the last 3 to 4 decades, it has been observed that unplanned and haphazard urban growth not only led to rise in urban poverty, environmental degradation but also led to decrease in urban economic growth and less investment in health services. Regional urban planning and governance, 'exchange of best practice models' are the key to the sustainable urban future.

Ali et al. (2004)⁵⁹ studied the effect and consequences of urbanisation on health sector and how urban residents perceive the health services and developments in health sector. The study is based on the primary questionnaire in different cities of Malaysia, where more than three-fourth of the respondents opined that corporatisation in health sector had increased the service cost and was exclusionary in nature particularly for urban poor. Awareness and use of means of communication are the need of an hour for the healthy and sustainable urbanisation.

Ompad et al. (2007)⁶⁰ described the role of the social environment in determining the health related aspects of urban population. 'Social Determinants of Health (SDH)' have different effect on different group of people from urban to rural, inter-cities and even intra cities. Among some important SDH, place of residence, Social-Economic Status (SES), education and awareness are the key to good health outcomes in urban regions.

Dowall et al. (2007)⁶¹ studied the role of the 'well-functioned land and housing markets' for the sustainable economic growth which is the foundation of sustainable urban development. In urban centres, the role of land and housing markets are critical in the sense that there is wide gap in people residing in urban areas and the need of housing.

⁵⁹Ali, Osman, Zaleda Md. Isah & Mohd. Rizam Abdul Rahman (2004). The Effect of Urbanisation on the Health of Urban Residents. *Akademika*, 65, 111-124.

⁶⁰Ompad, Danielle C., Galea, Sandro, Caiaffa, Waleska T. and Vlahov, David (2007). Social Determinants of the Health of Urban Populations: Methodological Considerations. *Journal of Urban Health: Bulletin of the New York Academy of Medicine*, 84(1).

⁶¹Dowall, David & Peter Ellis (2007). Urban Land and Housing Markets in the Punjab, Pakistan. *Working Paper, Berkeley Institute of Urban and Regional Development, University of California*

Das (2008)⁶² studied the urban quality of life not only in terms of economic but also in terms of social and environmental factors. The quality of life has two dimensions i.e. objective and subjective quality of life. The objective quality of life i.e. educational outcomes, health conditions in the form of infant mortality rate, better hospitals etc. are not the only parameters of good quality of life rather we need subjective quality in the form of attitude and individual appraisal. 'Subjective quality or happiness' involve three things i.e. life satisfaction, pleasant effects and unpleasant effects. The author concluded with the need for the change in the condition of Guwahati for the betterment of life that included economic, social and physical environment.

Ramachandra et al. (2011)⁶³ discussed the impact of the effectiveness of planning and governance on the delivery of urban services for the Bangalore city. Different governance levels at local, state and Centre are facing the challenges in providing the basic infrastructure services to the people and poor in particular. There is a wide gap in the availability and the delivery of basic urban services at core and periphery of cities. It needs a long-run and bottom up planning and better governance measures for the sustainable and healthy urbanisation which contributes more than 60 percent of our country's GDP.

Mishra et al. (2013)⁶⁴ clearly analyzed the linkages of accessibility and availability of urban civic amenities to the 'basic human needs' and urban poverty. Among the basic urban amenities hygienic latrine facility, safe drinking water and electricity accessibility are critical for any household. The availability of these amenities especially sanitation and sewerage facilities vary according to income and social groups where it has been found that SC/ST are at the bottom in accessibility of basic amenities. It leads to 'multiple deprivations' due to lack of urban amenities like safe drinking water, hygienic toilet facility, electricity availability etc. on one hand and low income of the HHs on the other.

⁶² Das, Daisy (2008). Urban Quality of Life: A Case Study of Guwahati. *Soc Indic Res*, 88, 297-310.

⁶³ Ramachandra, T.V., and H.S. Sudhira (2011). Influence of Planning and Governance on the Level of Urban Services. *The IUP Journal of Governance and Public Policy*, 6(1).

⁶⁴ Mishra, Udaya S, Vachaspati Shukla (2013). Basic Household Amenities in India: A Progress Report. *eSS Current Affairs, Mishra and Shukla, Household Amenities*.

Sivaramakrishnan (2013)⁶⁵ analysed the role of the 74th constitutional amendment act in the metropolitan governance. Metropolitan regions in the country has recorded a drastic change in their growth, role in the expansion of the city and provisioning of the basic services to the residents etc. They are the complex mix of institutional and non-institutional form of governance which are into the hands of the state govt. which failed to kept pace in reforms with the changing dynamics of the metropolitan regions. Hence, there is need to revisit metropolitan governance system in India.

Samanta (2014)⁶⁶ discussed about the governance system in census towns of India. Census towns are the cases of ‘denied urbanisation’ as these towns have been already in urban space through change in demographic attributes and economic activities but denied the basic services in form of amenities and infrastructure as the responsibility is still with rural govt. which lacks expertise and resources to provide the same. There is an urgent need to raise the concern of census towns as for decades census towns lack basic services and continued to do so until some municipal status is given to them.

Prasad (2014)⁶⁷ mentioned the changing role of the urban governance in the non-metropolitan cities of Andhra Pradesh. The author argued that new economic policy has changed the urban governance system in terms of the revenue generation and sources of expenditure where outsourcing, public private partnership etc. It has been observed that the mechanisms have served private interests rather than the interest of the society.

Idiculla (2016)⁶⁸ observed that with the rise in urban growth and city expansion, there is a change in the governance system of the cities where private governance is established like

⁶⁵ Sivaramakrishnan, KC (2013). Revisiting the 74th Constitutional Amendment for Better Metropolitan Governance. *Economic & Political Weekly*, XLVIII (13), 86-94.

⁶⁶ Samanta, Gopa (2014). The Politics of Classification and the Complexity of Governance in Census Towns. *Economic & Political Weekly*, XLIX (22), 55-62.

⁶⁷ Prasad, N Purendra (2014). Changing Structure of Governance in Non-Metropolitan Cities: A Study in Andhra Pradesh. *Economic & Political Weekly*, XLIX (22), 83-92.

⁶⁸ Idiculla, Mathew (2016). New Regimes of Private Governance: The Case of Electronics City in Peri-urban Bengaluru. *Economic & Political Weekly*, LII (17), 102-109.

in Bengaluru. The private governing body is charged with levy property tax and performs municipal functions. It discharges the municipal functions with transparency and with less state interference.

Joshi et al. (2014)⁶⁹ studied the water quality and sanitation related issues in urban slums of Delhi through questionnaire based on primary field survey conducted in July 2013. It has been found that more than 3/4th of the total urban slum population of Delhi did not use any method of water treatment for safe drinking water. It has been coupled with the severe water shortage issues for more than 2 days by which more than 50 per cent slum are suffering. Less than 50 per cent of the households have toilet facility within house. Water samples of more than half of the slum households are found contaminated by bacterial problems. Therefore awareness along with easy and qualitative access to safe drinking water and hygienic toilet facility is the need of an hour.

Halder (2014)⁷⁰ explained the relationship between rapid rate of urbanisation, population explosion and its pressure on the urban infrastructure, basic delivery of services and civic amenities. There is a huge gap between the supply urban basic amenities and the demand from the town dwellers and the situation is even worse for small size class of towns. Basic amenities like safe drinking water, safe cooking fuel, hygienic sanitation and sewerage services are pre-requisite for ensuring better health and to promote socio—economic welfare.

Kapuria (2014)⁷¹ measured the quality of life index in the city of Delhi on the basis of access to basic amenities in the city using a stratified random sample of 330 set of households. The availability and the quality of amenities in the city suggested that the

⁶⁹ Joshi, Ashish, Satish Prasad, Jyoti B Kasav, Mehak Segan, & Awnish K Singh (2014). Water and Sanitation Hygiene Knowledge Attitude Practice in Urban Slum Settings. *Global Journal of Health Science*; Vol. 6(2), 23-34.

⁷⁰Halder, Somenath (2014). Assessment status of amenities and service delivery in class-I town in India (case study of Berhampore town, Murshidabad). *Journal of Geography and Regional Planning*, 7(7), 140-149.

⁷¹Kapuria, Preeti (2014). Quality of life in the city of Delhi: An assessment based on access to basic services. *Soc Indic Res*, (117), 459-487.

differences in the access are primarily influenced by location and within each location they are influenced by the economic conditions of the household. The majority of services like maintenance services (regular trash collection, sewerage maintenance, adequate street-lighting, and condition of roads in locality) and transport services are poor in resettlement colonies, unauthorized colonies and urbanized villages. The bottom up model that uses the level of satisfaction that the household derives with urban services determines the quality of life of people.

Allen (2015)⁷² explained the urban management strategy of the city of Auckland, New Zealand which is based on two premises, ‘livability’ and ‘quality compact city’. The paper argued that the level of better urban amenities play an important role in providing a sense of livability and better quality of life. It is based on primary survey in the city of Auckland where it is found that the quality of urban amenities is one of the deciding factors for the better quality of life in medium density housing typologies. Higher urban amenities and higher quality of life are directly correlated.

Haque (2016)⁷³ studied the levels of availability and accessibility of the infrastructure (social, physical and economic) across size-class of towns in West Bengal based on census data. It has found that there exists a huge disparity in provisioning of infrastructure between Class-I, medium and small towns. The level of development in physical and social infrastructure is only confines to big cities of the state, even in these cities the total provisioning of infrastructure is far from satisfaction and the smaller cities are in dismal condition. Rising in-migration to large cities, high urban growth and huge urban sprawl demanded the proportionate increase in infrastructure in cities which the government bodies failed to provide.

⁷² Allen, Natalie (2015). Understanding the Importance of Urban Amenities: A Case Study from Auckland. *Buildings*, 5, 85-99.

⁷³Haque, Ismail (2016). Infrastructure Development and Access to Basic Amenities in Class-I Cities of West Bengal, India: Insights from Census Data. *Journal of Infrastructure Development* 8(1) 36–84.

Kumar (2017)⁷⁴ discussed about the rise in urban poverty in metropolitan cities of India and Amritsar city is no exception where the urban poverty is more severe as comparing to the villages in Amritsar. Municipal Corporation and other government authorities were not able to bridge the demand and supply gap in the number of houses required and therefore the large poor population ends up in urban slums without basic amenities and civic services like unhygienic sewerage systems.

2.6 Financial conditions of Urban Local Bodies (ULBs) and the quality of urban amenities

Cousins (1992)⁷⁵ in the document on urban basic services in UNICEF mentioned the trends and patterns of urbanisation in Third World countries and its socio-economic consequences. How urbanisation impacted the lives of the people, the level of urban basic amenities, housing condition, urban infrastructure etc. have been studied. It tracks the UNICEF's history of policies and programmes in tackling the problem like urban poverty, lack of urban amenities like water supply, sanitation and drainage etc. UNICEF collaborated with many international organizations like World Bank, WHO to address the urban problems both in terms of urban infrastructure and urban health issues and changes in the health concerns of urban dwellers. Its collaboration with ILO (International Labour Organization) on working and streets children serves as a criterion for healthy and profitable working conditions. It suggested that it is possible for a underdeveloped and developing countries to address the urban problems in regional perspective with the existing resources.

⁷⁴ Kumar, Sandeep (2017). Role of Government for Housing The Urban Poor in Amritsar: Pitfalls and Consequences. *International Journal of Emerging Technologies*, 8(1).

⁷⁵ Cousins, William J (1992). Urban Basic Services in UNICEF: A Historical Overview. *UNICEF History Series, Monograph XIV*.

Dhar et al. (2006)⁷⁶ mentioned about the criterion of defining the urban areas in India and how it is different from the rural areas. The role of rural areas is important in the urban development as rural-urban linkages serves as drivers of economic growth. In India the number of urban settlements and urban population grew in an impressive manner since independence but the level of urban infrastructure has not grown in tandem with the urban growth, nor does it seem to be the priority in policies. Urban development policies must be related to the base for the urban settlement. There must be a vertical and horizontal relationship between rural and urban settlements that serves as an engine of economic growth.

Gupta et al. (2006)⁷⁷ analysed the powers and functions of local self governments in India to tackle the urban problems like poverty, infrastructure and basic amenities. 74th constitutional amendments gave various powers to Urban local self governments to gather and collect funds to address these issues but they are not strengthened enough to provide various urban amenities to whole of population in sustainable manner. In Punjab around ¾th of the urban population lives in Class I and Class II towns particularly and it led to the rise in the deficiency of urban basic amenities like piped water supply, sewerage, solid waste management, urban infrastructure, urban housing and transport services. Urban local bodies should be given more powers and funds to spend on the quantity and quality of urban amenities.

Rahaman et al. (2009)⁷⁸ discussed the deficiency in urban basic services in all the cities of Bangladesh as there is a huge gap between demand and supply of urban amenities. In terms of providing basic urban amenities to all its population civic bodies in developing countries are not self sufficient and faces issues like fund crunching. Urban planners must

⁷⁶ Dhar, V.K. and Sen, Ruchira (2006). Planning for Human Settlements in India-Spatial Perspective. *Working Paper 06-10, National Institute of Urban Affairs.*

⁷⁷ Gupta, JP and Teotia, Major K (2006). Urban Local Self-Government Institution in Punjab: History, Structure, Capacity and Emerging Challenges. *Centre for Research in Rural and Industrial Development.*

⁷⁸ Rahaman, Khan Rubayat and Salauddin, Md. (2009). A Spatial Analysis On The Provision Of Urban Public Services And Their Deficiencies: A Study Of Some Selected Blocks In Khulna City, Bangladesh. *Theoretical and Emperical Researches in Urban Management, Urban Issues in Asia, 1S.*

consider the financial viability of cities in the land planning and in providing basic amenities to all residents.

Rao et al. (2010)⁷⁹ explained the gap in the level of urbanisation in India and the urban infrastructure in terms of sewerage and sanitation, transportation, water supply, housing etc. which are not even adequate, let alone the question of quality of urban amenities. It poses a great challenge as Indian cities contribute a major chunk in country's GDP and these cities are growing bigger. The challenge is not only low financial conditions of cities but the distribution of funds to desired outcomes and also the required funds for urban services is not getting increased. In fact, for the reforms in urban services regional approaches need to be followed as no one system of governance of urban local bodies fits all. Increasing citizen participation and political intent to bring reforms in urban civic services are central for the healthy urban growth.

Parry et al. (2013)⁸⁰ discussed the importance of the urban amenities without which neither the urban population nor urban process can sustain. Urban amenities distribution varies according to the income level of households, financial positions of society and urban policies and programmes mainly for urban poor and vulnerable sections. Srinagar has been taken as the case study for analysis of health disparity and ration depots in which it has been found that 38 per cent of the wards do not have even one health institution. Urban basic services decreases from core of the city towards its peripheral areas and they are areas inhabited mainly by low income households.

Godfrey (2016)⁸¹ discussed about the changing nature of the urbanisation at the global level, where there is a need of change in governance system for the welfare of the

⁷⁹ Rao, M. Govinda and Bird, Richard M. (2010). Urban Governance and Finance in India. *Working paper no.2010-68, National Institute of Public Finance and Policy, New Delhi*

⁸⁰ Parry, Jahangeer Afzal, Kuchay, Nisar Ahmad, Ganaie, Showkat Ahmad & Bhat, M. Sultan (2013). Spatial Analysis Of Urban Amenities In Srinager City Jammu And Kashmir. *Global Journal of Arts Humanities and Social Sciences, 1 (1), 20-31.*

⁸¹ Godfreys, Nick and Zhao, Xiao (2016). Financing the Urban Transition for Sustainable Development: Better Finance for Better Cities. *New Climate Economy, London and Washington, DC.* Retrieved from <http://newclimateeconomy.report/misc/working-papers/>

maximum number of residents. Cities need efficient system of urban development which is pollution free and sustainable.

Borana et al. (2017)⁸² in their analysis of the spatial distribution in the public amenities in Jodhpur city at ward level have found that socio-economic inequalities are primary determinant of the urban quality of life. Inequality is manifested in the availability and accessibility of urban amenities as the wards dominant with migrant population, vulnerable sections of population are devoid of public amenities as compared to the wards dominant with higher income populations. The paper suggested that the Local Planning Authority and their financial condition which are the main drivers of providing public amenities and their equal distributions and the availability of urban amenities must kept pace with rising urban population and urban sprawl.

⁸² Borana, S.L. and Yadav, S.K. (2017). Spatial Inequalities in Accessibility of Public Amenities in Jodhpur City. *International Journal of Advanced Research in Computer and Communication Engineering*, 6 (10), 225-230.

CHAPTER 3

URBAN PROCESSES AND EMERGENCE OF NEW TOWNS IN PUNJAB (1991-2011)

3.1 Introduction

In the 21st century one of the key processes which affect the Asian development is the process of urbanisation and this process varies from country to country. Urbanisation not only involves the transformation of population from rural to urban areas but also the transformation of socio-economic environment and the infrastructural development. It consists of urban growth, migration of population from rural to urban areas and the urban sprawls. According to the *World Urbanisation Prospects 2018 Revision Report* by UN¹, Asia despite being less urbanized than most other regions today is home to 54 percent of the world's urban population followed by Europe and Africa. India is an emerging country of Asia and has always been considered as the major contributor in the urban explosion in Asia due to its high population. Its level of urbanisation has increased from 17.6 percent in 1951 to 31.2 percent of total population in 2011 as according to the census of India 2011. Though this percentage is small but it is of much significance due to the large absolute population residing in the urban regions of India. The prevalence of current hierarchy of urban settlements and spatial structure in present India can be linked to the policies and development in the colonial period (*Kundu, 2011*)². Other than the historical reasons the rapid economic growth in the 21st century, the adoption of policies of globalization, liberalization and privatization have caused the increase of urbanisation in India.

Emergence of the large number of new towns in the last two to three decades is also one of the key factors which led to increase in urbanisation in developing countries. The emergence of new towns in huge number is attributed to the industrialisation process and economic-industrial corridor e.g. east and west dedicated freight corridor with reference to India.

¹ (2018). *World Urbanisation Prospects: The 2018 Revision*. *United Nation*

² Kundu, Amitabh (2011). Trends and processes of urbanisation in India. *Urbanisation and Emerging Population* (6).

The level of urbanisation³ and urban growth pattern are spatially varied in India. The southern states have observed high urbanisation as compared to the other parts of the country like eastern and north eastern regions. On the other hand Ganga and Punjab plains have always been a favorable site for the cities development since time immemorial. Punjab region is situated in the plain areas of five tributaries of river Indus and located in the north western part of the country. It has always been the most favorable site of towns and cities since Indus civilization some 4500 years ago. Among the determinants, geography and economy had been deciding factors in the pre colonial times and then onwards polity combined with technology had become important to the urban process of Punjab (Grewal, Rita)⁴. Agricultural developments in Punjab plains are due to the canal and other methods of irrigation development which had occurred faster than in any other state of India. Industries were also developed but at the slow pace. And this slow industrialization has not had much impact on the urbanisation process in Punjab. The proportion of total population living in urban areas in the state has increased from 21.72 percent to 37.48 percent from 1951 to 2011. Hence the Punjab urbanisation is a case to study. As mentioned by (Singh, 2011)⁵ the most important and interesting feature of urbanisation in Punjab is the fast growth of big towns and the sluggish growth of population in the small and medium towns.

³ In India the 'urban areas' are defined by following criteria:

1. All places with a municipality, corporation, cantonment board or notified town area committee etc
2. All other places which satisfy the following criteria:
 - (i) Minimum population of 5000
 - (ii) At least 75 percent of male working population engaged in non-agricultural activities, and
 - (iii) A density of population of at least 400 persons per square km.

⁴ Grewal, Rita. Urban Patterns in the Punjab Region since Proto-historic Times. *Urban Patterns in Punjab*, 273-300.

⁵ Singh, Gurdas (2011). Growth of urbanisation in Punjab. *International Referred Research Journal, II* (19), 8-10.

This chapter studies the urban processes and the emergence of new towns (both Statutory and Census towns) in Punjab along with the regional trends and patterns of urbanisation, urban growth, emergence and growth of towns with reference to geographical and socio-economic factors. The chapter has been divided into four sections: first section aims to study the temporal pattern in the levels of urbanisation in the state since 1951 followed by the spatial pattern of urbanisation level in the districts of Punjab since 1991. The second section of the chapter aims to study the spatio-temporal pattern of the urban decadal growth in Punjab since 1991 to 2011 followed by the regional variations in urban decadal growth across districts of Punjab. The third section of the chapter analyses the pattern of the emergence of new towns in Punjab, both statutory towns and census towns from 1991 to 2011, the emergence of new towns in districts from 2001 to 2011 and reasons behind the emergence of towns with reference to geographical and economic factors. The last section ends with the findings and conclusion of the present chapter.

3.2 Trends and process of urbanisation in Punjab

Punjab has a long history of urbanisation right from the Indus valley civilization to the colonial times and thereafter in modern India. Owing to its geographical location and the fertile lands many people make Punjab its home which continued to the colonial times where it recorded the increase in level of urbanisation. During British rule with the introduction of railways and the organization of towns and cities got a real boom for the urban processes where large number of towns flourishes as ‘*mandi towns*’ along the railway routes which led to the change in town economy (*Singh et al., 2006*)⁶ Punjab is an agriculturally prosperous state which has a direct link with the urban phenomenon since independence as in 1951 only 21.7 percent of total population resided in urban regions. It increased sharply after 1971 i.e. 23.7 percent urbanisation to around 34 percent in 2001 where total urbanisation in India was 27.8 percent. Post 1971 the impact of the green revolution on the economy of Punjab has been positive both for the economy and for

⁶ Singh, Paramjit and Singh, Balwinder (2011). Structure and Pattern of Urbanisation in Punjab: A Macro Level Analysis. *Journal of Punjab Studies*, 21(1), 69-89. Retrieved from the link-

http://punjab.global.ucsb.edu/sites/secure.lsit.ucsb.edu.gisp.d7_sp/files/sitefiles/journals/volume21/no1/Singh_Singh.pdf

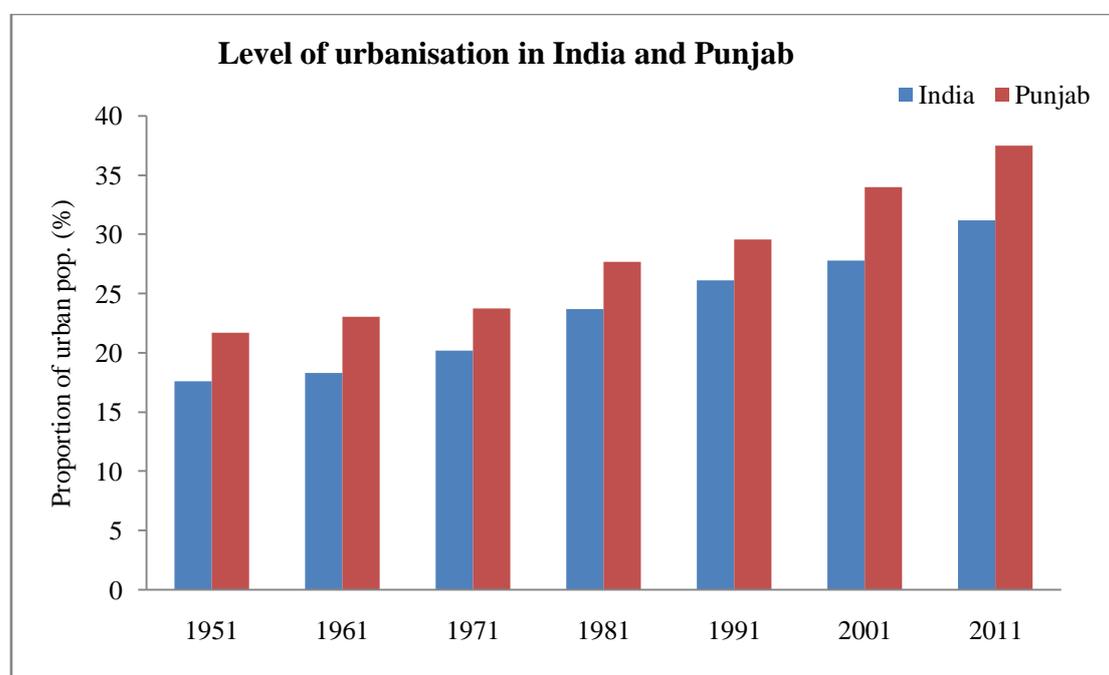
urbanisation in the state in the form of increasing rural to urban migration. In 2011 Punjab recorded more than 37.4 percent of urbanisation which is more than 6 percentage points of total Indian urbanisation.

Table 3.1 Level of urbanisation and urban decadal growth in Punjab from 1951-2011

Census	Level of Urbanisation (percent)	Urban decadal-growth (percent)	Number of Towns
1951	21.72	--	110
1961	23.06	29.06	106
1971	23.73	25.27	106
1981	27.68	44.51	134
1991	29.55	28.95	120
2001	33.95	37.58	157
2011	37.48	26.12	217

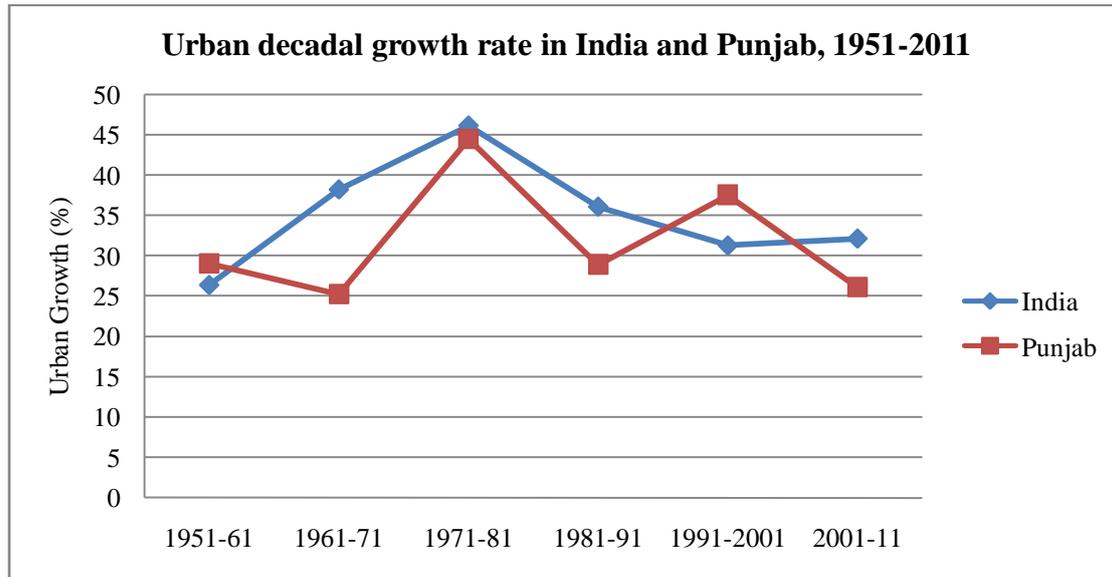
Source: Calculated from Census of India, 1991, 2001 and 2011

Fig. 3.1 Level of urbanisation in India and Punjab, 1951-2011



Source: calculated from Census of India, 1951-2011

Fig. 3.2 Urban decadal growth rate in India and Punjab, 1951-2011



Source: calculated from Census of India, 1951-2011

Urban processes include the level of urbanisation, the decadal urban growth rate, the emergence and growth of towns in the Punjab and India since 1951. As observed in the above *fig. 3.1*, the level of urbanisation in Punjab has been continuously increasing since independence and it is always above than national average till latest census of 2011. The difference between the urbanisation level of India and Punjab has been increasing continuously since 1991 when it was just 3.4 percentage points and in 2011 it was more than 6 percentage points in 2011 (Punjab's urbanisation is 6 percentage points more than of India's urbanisation). The level of urbanisation in Punjab is the sixth highest among the major urbanised states of India i.e. Kerala, Tamil Nadu, Maharashtra, Gujarat and Karnataka. In North- western states, it stands top in the level of urbanisation. It has been clearly evident that Punjab is not only among the major urbanised states of India but the future prospect of urbanisation is also high in terms of urban decadal growth. In 1951 the urban decadal growth is more than 26 percent which has been increased to 44.5 percent in 1981 which was highest of all the times in study period in the state. It is due to the impact of green revolution where use of modern technologies and reducing labour demand led people to move to urban regions and the rise of agro processing industries that led to industrial development in the state.

At the national level the urban decadal growth was lower than Punjab in 1951 but it has increased continuously upto 1981 i.e. approx. 46 percent which is more than that of Punjab urban decadal growth rate. During the period of 1981-91 Punjab has faced socio-political disturbances in the form of riots that led to rise in the violence all over the state over the demand of 'Khalistan'. The period of 1981-91 is called as 'lost decade of Punjab development' (Sivaramakrishnan *et al.*, 2007)⁷. It has impacted the population in urban and rural areas and in this background the urban growth in Punjab has decreased to around 29 percent which is lower than of the national average decadal growth of 36 percent. Post 1991 the urban decadal growth in the state has been increased mainly due to the economic reforms like globalisation, liberalisation and privatisation. The urban decadal growth rose to more than 37.5 percent from 1991-2001 as the changes in economy of the state led to change in socio-economic attributes where young people were influenced by the western culture (Singh *et al.*, 2014)⁸ and consequently increase in the urbanisation process has taken place. Also the development of infrastructure in the form of industrial corridor in Ludhiana, Jalandhar, Amritsar etc., development of communication networks provide better opportunities in the urban areas. The recent 2011 census again shows the decreasing urban decadal growth rate in Punjab to little more than 26 percent, here it is noted that the urban decadal growth rate in Punjab is higher than the total population and rural population decadal growth rate. The urban decadal growth rate in Punjab has decreased substantially from 2001 to 2011 may be because of the fact that the in-migration to the towns and cities of Punjab has decreased from other parts of the country like from Bihar, Uttar Pradesh, Jharkhand, etc. as these states observed increased in rural income and employment because of programmes like MNREGA (Sharma *et al.*, 2012)⁹.

⁷ Sivaramakrishnan, K C., Kundu, Amitabh and Singh, B.N. (2007). Handbook of urbanisation in India. Oxford University Press.

⁸ Singh, Paramjit and Singh, Balwinder (2014). Structure and Pattern of Urbanisation in Punjab: A Macro Level Analysis. *International Journal of Punjab Studies*, 21(1).

⁹ Sharma, S.L., Sandhu, R.S. and Teotia, Manoj, K. (2012). Urban Development in Punjab: Challenges and Strategies. *Institute for Development and Communication, Chandigarh*.

3.3 District level analysis of urbanisation in Punjab, 1991-2011

The regional picture of the urbanisation is interesting as some of the districts like Ludhiana, Jalandhar and Amritsar since 1991 to 2011 topped the district chart in level of urbanisation and other districts are at the bottom like Tarn Taran, Hoshiarpur and Gurdaspur. Therefore it is important to study urban processes at the district level which gives the regional variations in spatial and temporal pattern to understand the clear picture of urban phenomena in the state. *Table 3.2* shows the district-wise level of urbanisation in the state.

Table 3.2 District wise level of urbanisation in Punjab: 1991-2011

Districts	1991	2001	2011
Amritsar	34.08	51.5	53.58
Bathinda	26.98	29.73	35.95
Faridkot	33.21	35.14	35.15
Ferozpur	25.56	25.81	27.23
Gurdaspur	21.98	25.44	28.69
Hoshiarpur	17.11	19.72	21.11
Jalandhar	40.65	47.48	52.93
Kapurthala	25.76	32.67	34.65
Ludhiana	51.22	55.84	59.16
Patiala	31.1	36.39	40.26
Rupnagar	25.77	22.46	25.97
Sangrur	25.43	28.8	31.17
Mansa*		20.68	21.25
Moga*		19.96	22.82
Muktsar*		25.54	27.96
Fatehgarh Sahib*		28.08	30.91
SBS Nagar*		13.8	20.48
SAS Nagar (Mohali)#			54.76
Barnala#			32.02
Tarn Taran#			12.66
PUNJAB	29.55	33.95	37.48
<i>Note: (*) Districts formed in 2001 census</i>			
<i>(#) Districts formed in 2011 census</i>			

Source: Calculated from various census of India, Punjab, 1991, 2001 and 2011.

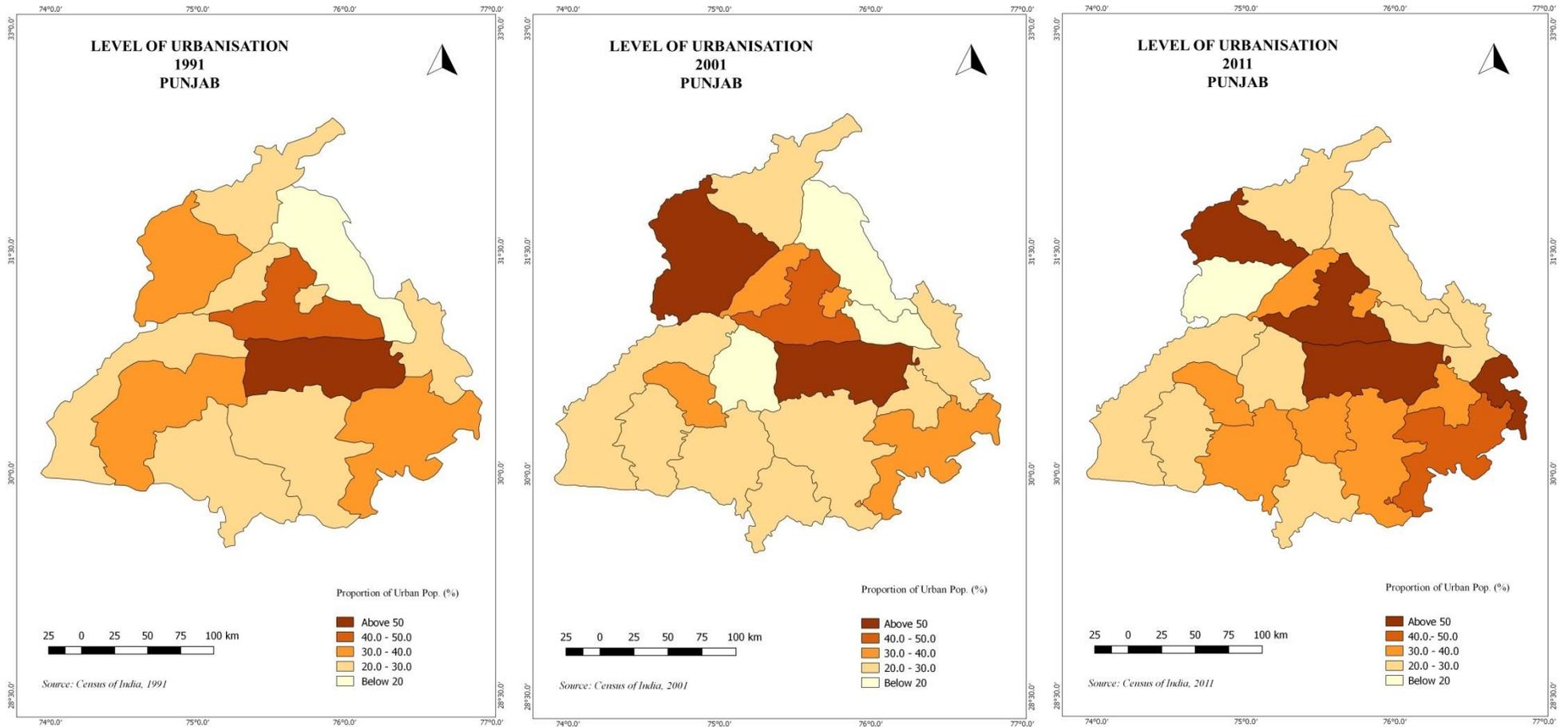
The total number of the district in the state has increased from 12 in 1991 to 17 district in 2001 which further increased to 20 districts in 2011 census, the districts are either carved from other district or merged parts of two district. The creation of the new district headquarter also gives boost to the level of urbanisation owing to new services, allocation of more funds, new infrastructure and better opportunities for the people mainly migrated from rural to urban areas. In 1991 Ludhiana is the only district in the state where every second citizen is an urban resident followed by Jalandhar district which recorded above 40 percent of urbanisation. It is followed by the district like Amritsar and Faridkot where level of urbanisation recorded is more than the state average of 29 percent. In 2001 though Ludhiana district has again observed the highest level of urbanisation but it is followed by Amritsar district which recorded more than 51 percent of the urbanisation with increment of 17 percentage points. The same spatial pattern of urbanisation is recorded in 2011 where Ludhiana observed more than 60 percent urbanisation followed by Amritsar i.e. 53.5 percent. The urbanisation pattern of Amritsar is quite interesting to note as in 1991 the district has only 34 percent urban population to total population which increase drastically to 51 percent in 2001 which is the highest increase in any district and it again increased to 53 percent in 2011 meanwhile a new district i.e. Tarn Taran is carved from Amritsar district which has the lowest level urbanisation in 2011 i.e. only 12 percent of the total population but future prospects of urbanisation in the district is very high in terms of urban decadal growth rate (to be discussed in next section).

In 2011 census the newly created district headquarter SAS Nagar (Sahibzada Ajit Singh Nagar) also known as Mohali recorded around 55 percent urbanisation level which is the second highest district level of urbanisation and it is because of the location advantage to Mohali being in the close proximity to the capital city of Chandigarh. SAS Nagar (Mohali) is also the hub of service industry of the state like software technology, Special Economic Zones (SEZ), telecommunications etc. which pull population from other regions of the state and also from neighbouring state. In 1991 there are 7 out of total 12 districts which have recorded less than state's average level of urbanisation where the lowest was in Hoshiarpur followed by Gurdaspur i.e. only 17 percent and approx. 22 percent respectively. Both the districts are continued at the bottom level of urbanisation in 2001 and 2011 but in 2001 the lowest level of urbanisation is recorded in newly created districts of SBS Nagar (Shaheed Bhagat Singh Nagar), Moga and Mansa i.e. less than 20

percent urbanisation. In 2011 also the lowest level of urbanisation is observed in the newly district of Tarn Taran which is carved from Amritsar district, it has only 12.6 percent population resided in urban areas. Districts along the international border like Fazilka, Ferozpur, Tara Taran, Gurdaspur and Pathankot except Amritsar have less level of urbanisation. Districts in the central part of the state like Jalandhar and Ludhiana have high urban population. Both the districts have the historical inertia, hosiery industries and good connectivity with the rest of the state. SAS Nagar district where the town of Mohali and Chandigarh are situated in close vicinity have observed the drastic increase in the urban population.

It is to be mentioned here that the majority of the districts i.e. 12 out of total 20 districts are less urbanised than state average in 2011, it shows that urbanisation is concentrated in some pockets of industrial development, infrastructure development, growth of service centres and communication networks i.e. districts like Jalandhar, Ludhiana, Amritsar and SAS Nagar (Mohali) district. It seems to be a creation of 'central belt of urbanisation in Punjab' as seen in *maps 3.1, 3.2 and 3.3*. In 1991 there were only Ludhiana district which have more than 50 percent of total population as urban resident which in 2001 added by Amritsar and in 2011 Ludhiana and Amritsar were further added by Jalandhar and SAS Nagar (Mohali) in that club of highest urbanised districts.

Maps 3.1, 3.2 and 3.3 District wise level of urbanisation in Punjab, 1991, 2001 and 2011



3.4 District level analysis of urban decadal growth in Punjab, 1991-2011

The level of urbanisation in Punjab is always higher than urbanisation at the national level but the urban growth rate has always been lower as compared to the national level except in 1991-01 decade. The spatial pattern of urban growth is better studied by analysing district wise variation in urban population growth rate and the various determinants of this urban growth. At the state level the urban growth rate in 1991-01 was 37.5 percent which has decreased to 26 percent in 2001-11. During decade 1991-01 there was twelve districts and it has increased to seventeen districts in 2001-11. In the decade 1991-01 the highest urban growth rate was in the district of Rupnagar i.e. 55.11 percent which was also known as Ropar during Indus valley civilization times. It is followed by Kapurthala and Amritsar district i.e. 47.14 percent and 44 percent respectively. Lowest rate of urban growth was observed in the Firozpur district i.e. 21 percent, situated in the western part of the state sharing border with Pakistan. It is followed by the districts like Faridkot and Hoshiarpur i.e. 25 percent and 30 percent respectively in 1991-2001.

It is important to mention that from 1991-2001 to 2001-11 the urban decadal growth rate has decreased in every district except the districts of Rupnagar, Bathinda and Firozpur where there have recorded an increase of 44.2, 9.5 and 1.6 percentage points respectively. It is observed that in 2001-11 the highest urban decadal growth rate is recorded in Rupnagar district which is more than 99 percent and the district also recorded the highest urban decadal growth rate in previous decade of 1991-2001. Perhaps, the reason being it shares the boundary with the state of Himachal Pradesh, the old inertia as ancient town during Indus valley civilization period, presence of Chandigarh-Ludhiana highway and hence the industrial development which attracts population from surrounding districts and led to high rural to urban migration. It was followed by the newly created district of SBS Nagar i.e. 54.7 percent and Bathinda i.e. 42 percent. Faridkot is the district where lowest urban decadal growth rate is found and followed by Kapurthala i.e. 12 percent and 14.5 percent respectively.

Table 3.3 Decadal urban growth rate (percent) in districts of Punjab, 1991 - 2011

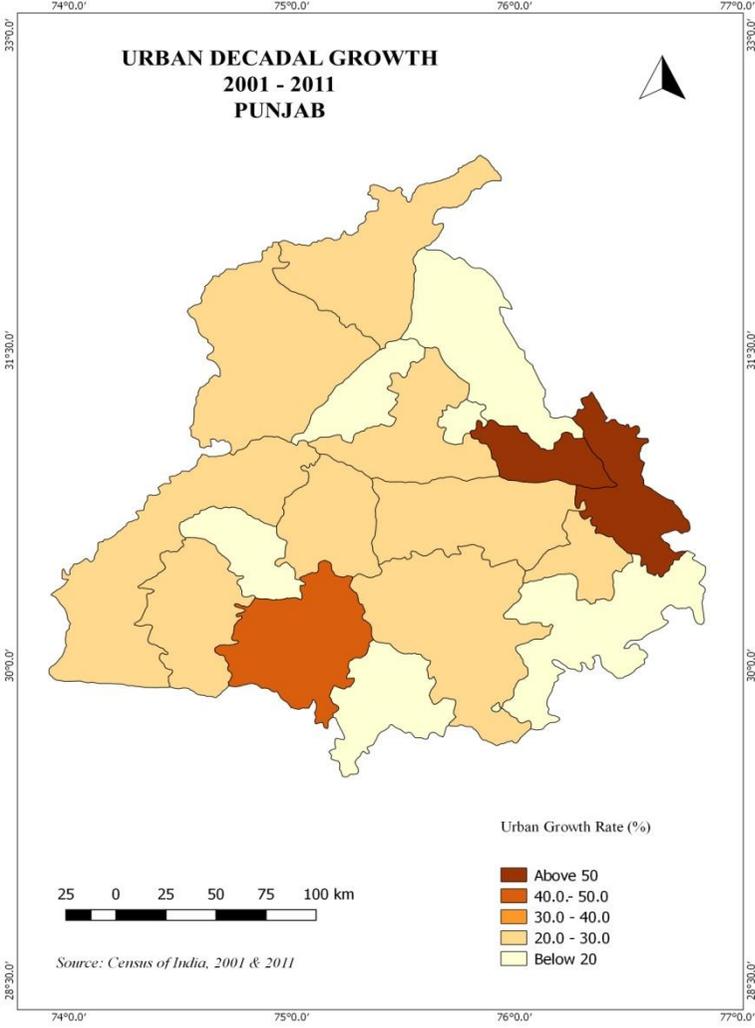
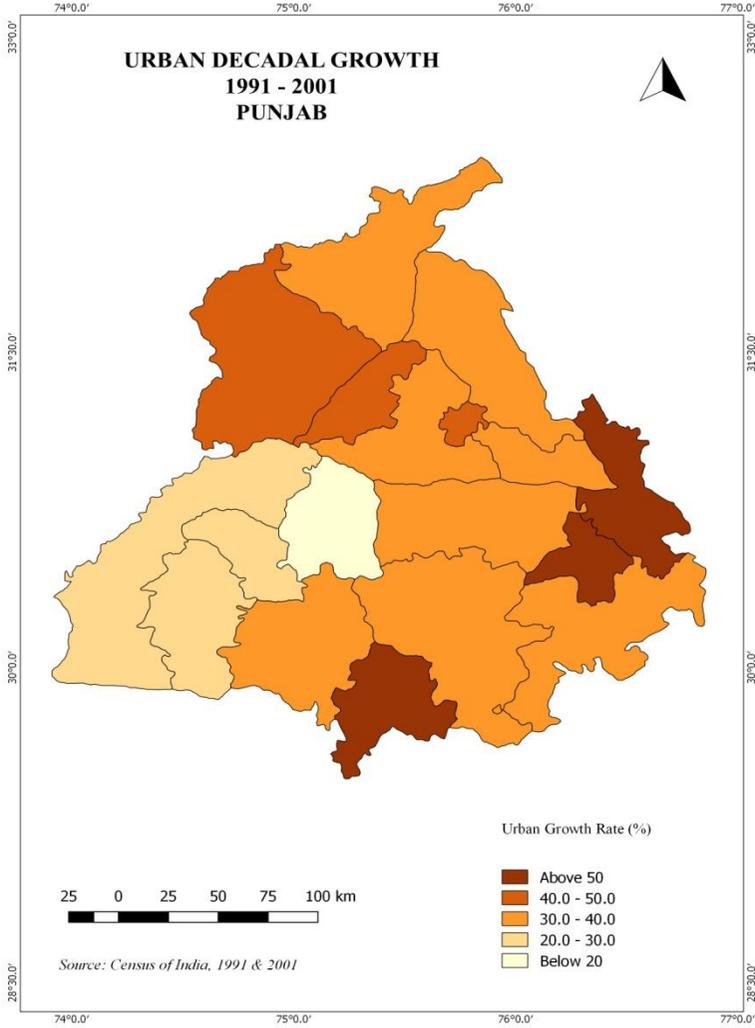
Districts	1991-2001	2001-2011
Amritsar	30.1	20.15
Bathinda	32.36	41.92
Faridkot	24.91	12.13
Firozpur	20.94	22.59
Gurdaspur	38.15	23.19
Hoshiarpur	30.84	14.69
Jalandhar	38.28	24.59
Kapurthala	47.14	14.58
Ludhiana	36.05	22.2
Patiala	38.02	18.39
Rupnagar	55.11	99.34
Sangrur	39.91	20.83
Mansa*		14.87
Moga*		27.21
Muksar*		27.01
Fatehgarh Sahib*		22.76
SBS Nagar*		54.71
PUNJAB	37.58	26.12
<i>Note: (*) indicates the districts formed in 2001 census</i>		

Source: Calculated from various census of India, 1991, 2001 and 2011.

There is observed an inverse relationship between the level of urbanisation and the decadal urban growth rate across the districts of Punjab like in the districts of Rupnagar, Kapurthala and Sangrur in 2001 observed the high decadal urban growth rate and low level of urbanisation. In 2011, Amritsar, Gurdaspur, Jalandhar and Hoshiarpur observed high level of urbanisation and low urban decadal growth rate. For the purpose of studying the spatial variation in the decadal urban growth across the districts of Punjab, five classes have been made from range of below 20 to above 50 which is shown by *Maps 3.4 and 3.5*. In the decade 1991-01 there was three districts which have observed more than 50 percent urban growth rate i.e. Rupnagar, Fatehgarh Sahib and Mansa. In the following decade of 2001-11 only two districts i.e. Rupnagar and SBS Nagar have observed above

50 percent urban decadal growth rate, while the Moga district which had above 50 urban growth rate in previous decade are in lowest class of urban growth rate. Bathinda has come up with a high urban growth rate in this decade (2001-11) and falls in the class range of 40-50. In this decade maximum numbers of districts fall in the class of 20-30 hence overall there has been declined in the urban growth rate in majority of the districts.

Maps 3.4 and 3.5 District-wise decadal urban growth rate, 1991-2001 and 2001-2011



3.5 Emergence of new towns in Punjab

Urbanisation process and urban growth analysis have been done in the previous section which shows that the Punjab is urbanizing at the faster pace as the level of urbanisation is higher than at the national level. Urbanisation involves the rapid migration from rural to urban i.e. small or big towns and the conversion of large rural unit into small towns and small towns into big cities takes place (Singh, 2011)¹⁰. The role of the emergence of new towns is a key for the urban growth and level of urbanisation as it not only a determinant of the high urban growth but vis-à-vis decrease in rural population which automatically becomes urban. In the last decades more than 2000 census towns have been emerged which are basically large villages where non- agricultural economic activities are dominant. *Table 3.4* analyses the temporal pattern of the emergence of new towns in Punjab in six size-classes from 1991-2011 and whether the newly emerged towns are statutory towns¹¹ or census towns¹².

¹⁰ Singh, Gurdas (2011). Growth of Urbanisation in Punjab (1961-2001). *International Referred Research Journal, II (19)*, 8-10.

¹¹ Statutory towns are the settlements with municipality, corporation, notified town area committee and / or cantonment board area. They are governed by different Urban Local Bodies (ULBs).

¹² Census towns are the towns which satisfies the three criteria set by Registrar General of India, i.e.-

- i. Population at least above 5000
- ii. Population density above 400 person per square km
- iii. 75% male workforce in non-farming sector

Table 3.4 Emergence of new towns (statutory and census towns) in Punjab, 1991-2011

Size-class of Towns	Total Towns in Punjab			Statutory Towns in Punjab			Census Towns in Punjab		
	1991	2001	2011	1991	2001	2011	1991	2001	2011
I	10	14	16	10	14	16	0	0	0
II	18	18	24	18	18	24	0	0	0
III	25	36	49	25	34	42	0	2	7
IV	46	54	61	45	51	45	1	3	16
V	14	29	49	11	21	14	3	8	35
VI	7	6	18	6	1	2	1	5	16
TOTAL	120	157	217	115	139	143	5	18	74

Source: Census of India, 1991, 2001 and 2011

From the above table it has been found that in Punjab total numbers of towns have increased from 120 in 1991 to 157 in 2001 and further to 217 towns in 2011 census. From 1991 to 2001, only 37 new towns had emerged which was approx. half the number of towns emerged from 2001 to 2011. It is important here to be noted that in 2001, out of 37 new towns emerged 24 towns were statutory towns and only 13 new census towns emerged. In the last decade i.e. from 2001 to 2011, 60 new towns have been emerged out of which 56 are census towns, which was very high as compared to 2001 where it was only 13 new census towns. It refers that 56 new settlements have been classified as 'urban' mainly because of the change in their demographic and workforce characteristics but they are still governed as rural areas. The number of new statutory towns in 2001 was 24 which decreased to only 4 in 2011, it may be because of the fact that the population structure of the large rural units have changed along with their economic structure but the infrastructure and basic amenities remains at the same level. There are not under obligation of urban governance to provide any services or amenities to the people though considered 'urban' in nature. By distributing the emerged new census towns into different size classes it has been found that the highest increase of census towns in 2011 are in size-class V i.e. 27 new census towns have been emerged. It is followed by 13 new census towns added in class III and 11 new census towns in class VI. Therefore the majority of the newly emerged census towns are either small towns or medium towns. It has been found that from 2001 to 2011 only 4 statutory towns have been emerged in the state which means that only these towns have the urban governance system to provide basic amenities to the people unlike census towns which are under rural administration of 'Gram Panchayat'.

The picture of the emergence of new towns is more clear when we analysed the district-wise emergence of new towns from 2001-2011.

Table 3.5 District-wise emergence of new towns in Punjab, 2001-11

Districts	2001			2011		
	Total towns	Statutory towns	Census towns	Total towns	Statutory towns	Census towns
Amritsar	9	8	1	15	8	7
Bathinda	9	8	1	12	10	2
Faridkot	3	3	0	3	3	0
Fatehgarh Sahib	5	5	0	5	5	0
Firozpur	9	9	0	13	11	2
Gurdaspur	14	11	3	27	10	17
Hoshiarpur	12	9	3	13	9	4
Jalandhar	14	13	1	21	12	9
Kapurthala	7	6	1	9	6	3
Ludhiana	12	11	1	20	11	9
Mansa	5	5	0	5	5	0
Moga	4	4	0	5	4	1
Sri Muktsar Sahib	4	4	0	4	4	0
Patiala	10	8	2	12	9	3
Rupnagar	7	4	3	8	5	3
Sangrur	12	12	0	13	12	1
SBS Nagar	4	4	0	8	4	4
Tarn Taran#	4	4	0	4	3	1
Barnala#	5	5	0	5	5	0
SAS Nagar (Mohali)#	8	6	2	15	7	8
PUNJAB	157	139	18	217	143	74
<i>Note:</i> (#) Districts formed in 2011 census						

Source: All India Town Directory, Census of India, 2001 and 2011

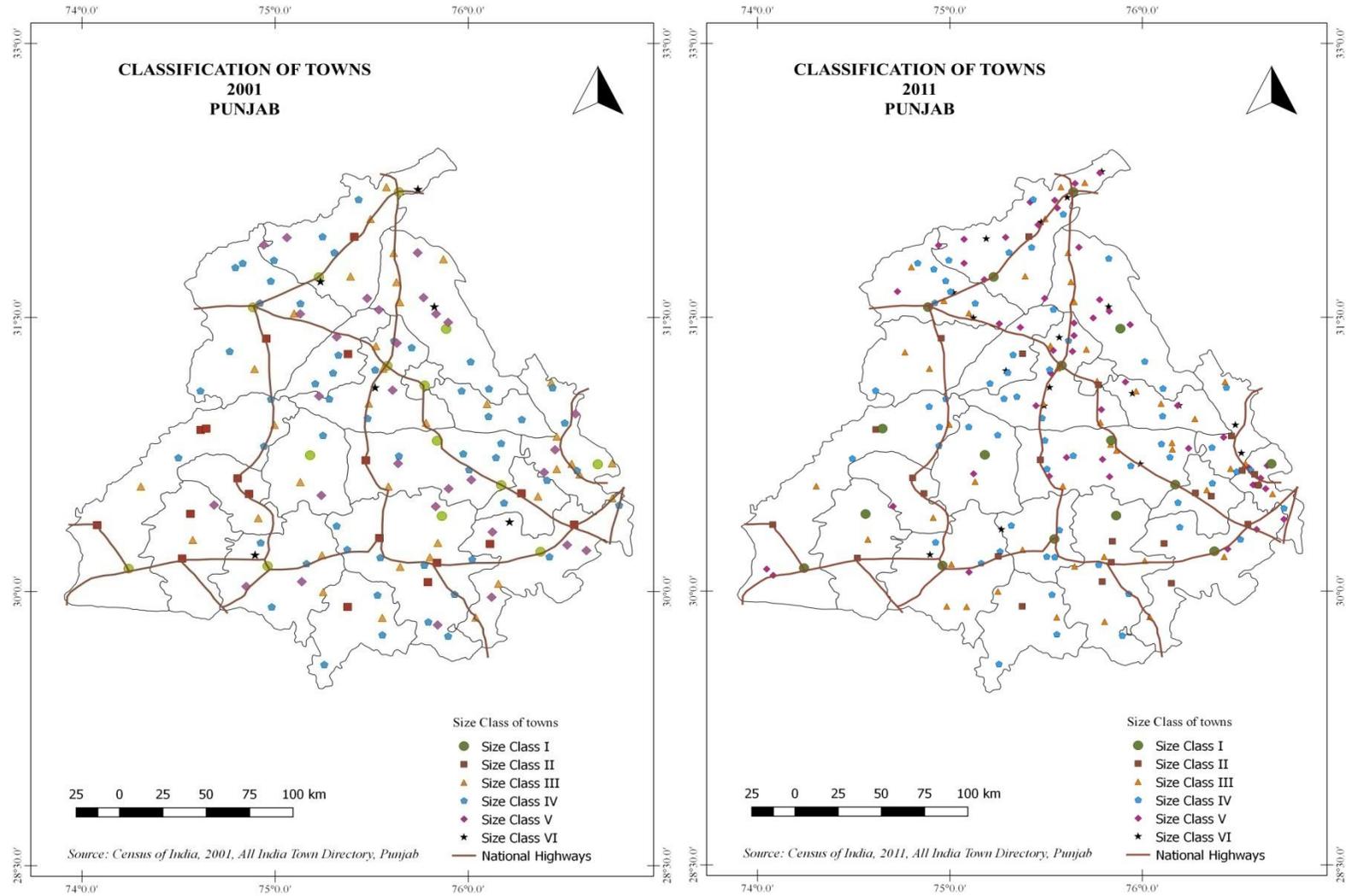
- Note:* 1. Tarn Taran district has been carved out from Amritsar district,
2. Barnala district has been carved out from Sangrur district, and
3. SAS Nagar district has been carved out from Rupnagar and Patiala district.

In 2001 the number of districts had increased from 12 in 1991 census to 17 in 2001 census and the new districts were either carved out of the existing districts or by merging parts of some districts. Accordingly the numbers of towns have also been distributed in new districts. Total number of towns had increased to 157 with addition of 37 new towns from 1991 to 2001. In 2001, Sangrur district has the largest number of 17 towns among all districts in 2001 followed by the districts of Gurdaspur, Jalandhar and Patiala each having 14 towns. In 2001 out of total 157 towns only 18 towns are census towns where majority of towns are statutory towns. The highest number of census towns is recorded in Rupnagar district followed by 3 census towns each in Hoshiarpur and Patiala. It is also important to note that there are 8 districts which do not have even a town in census town category in 2001 census. Moga is the district having 25 per cent of its total towns under Class I category, followed by Ludhiana, Kapurthala and Gurdaspur. The reason is that the urban areas from district of Faridkot, Firozpur and Ludhiana came under the newly carved Moga district and hence observed high proportion of urban population. The districts of SBS Nagar, Fatehgarh sahib, Muktsar, Faridkot and Mansa had not have any town under Class I category in 2001. In this decade also the maximum numbers of towns were in the size class IV i.e. 54 towns in this category followed by in class III towns i.e. 36. It has been observed that 2001 followed same pattern where large number of towns falls in medium class towns (class III and IV) i.e. 90 towns out of total 157 towns which is slightly lower than 1991.

In 2011 the numbers of districts have increased to 20 where 3 new districts of Tarn Taran (carved out from Amritsar), SAS Nagar (carved from Rupnagar and Patiala district) and Barnala (carved out from Sangrur) are formed. The numbers of towns have increased to 217 including 2 new towns of class I have been added to total of 16 towns. The newly added towns of class I are Sri Muktsar Sahib, Barnala and Firozpur while Phagwara town which was in class I category in 2001 reclassified as class II town in 2011. All new class I towns are district headquarter of newly created districts. Gurdaspur, Ludhiana and Firozpur have two towns each in size class I. But the proportion of towns in class I category is highest in Muktsar district followed by Moga and Barnala. Districts of Rupnagar, Tarn Taran, Mansa, Faridkot, Fatehgarh sahib, SBS Nagar and Kapurthala do not have any class I town in 2011. In 2011, there are 56 new census towns (out of total 60 towns emerged) have been emerged which is a major development in urban processes of

the state as it has been observed for the first time since independence. Gurdaspur is the district which has recorded the highest increase of 14 new census towns from 2001 to 2011. It is followed by the districts like Jalandhar and Ludhiana where 8 new census towns in each district have been emerged from 2001 to 2011. The newly carved district i.e. SAS Nagar (Mohali) also recorded addition of 8 new census towns in 2011 census. On the other hand in 2011, there are 5 districts where there is not even a single census town is present and they are Faridkot, Fatehgarh Sahib, Mansa, Barnala and Sri Muktsar Sahib. The *Maps 3.6 and 3.7* shows the classification of towns according to size classes on district maps of Punjab for 2001 and 2011.

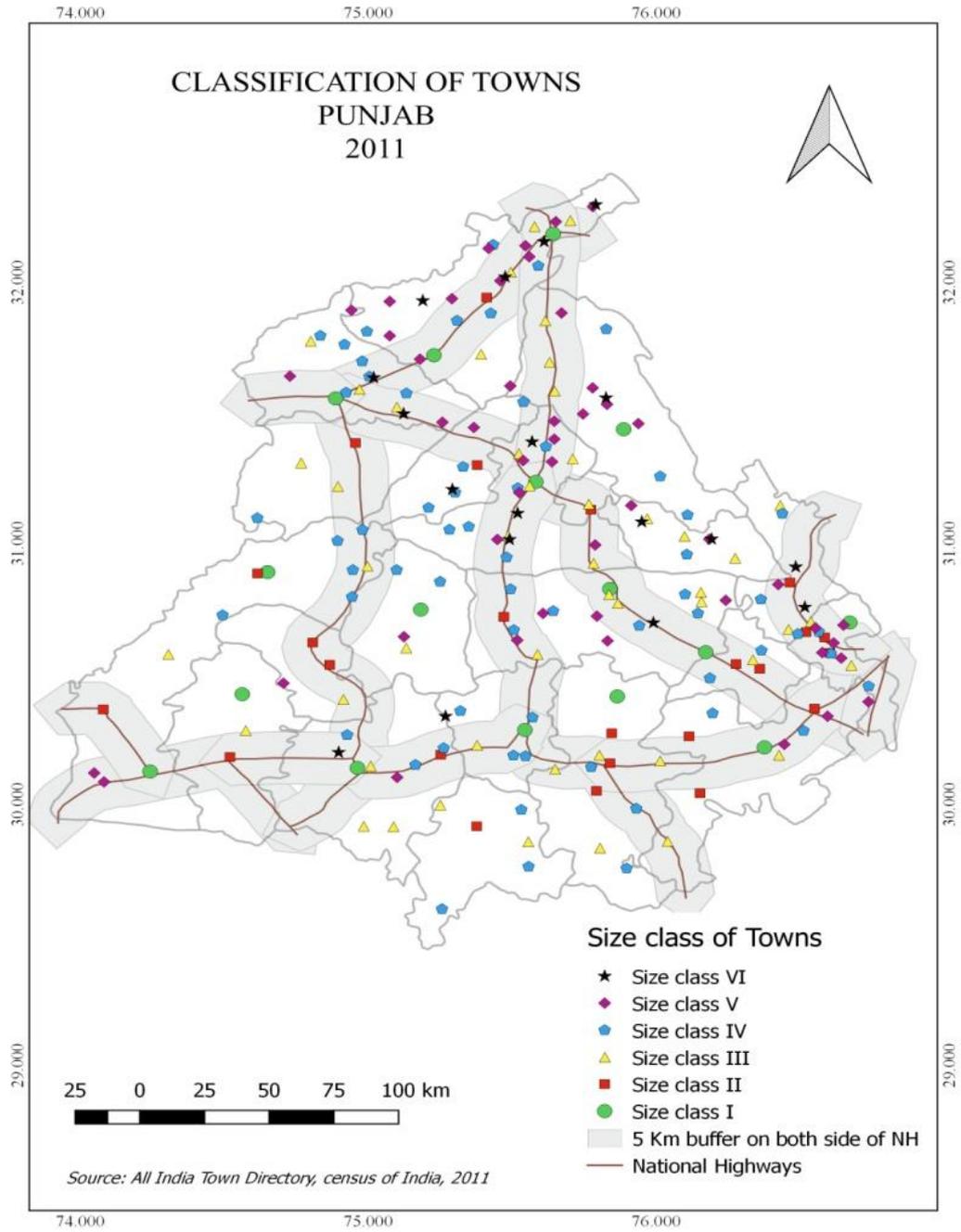
Maps 3.6 and 3.7 District wise classification of towns in Punjab, 2001 and 2011



The pattern that has been observed in the classification of towns from 1991 to 2011 is that in the census year 1991 the majority of the towns were concentrated in size class IV followed by III and II which has been continued in 2001 census but the pattern of the distribution of the towns had got changed in 2011 census as now the towns are almost equally distributed among classes III, IV and V which signify that there emerge a new pattern of evolution of all classes of towns in 2011 unlike 1991. The proportion of small towns of class VI and V have increased from 1991 to 2011 as they constituted nearly 6 percent and 11 percent respectively of the total towns in 1991 whose proportion has increased to 8 per cent and 23 percent respectively in 2011. Hoshiarpur, Gurdaspur and Amritsar have largest proportion of small towns i.e. of size class V and VI from 1991 to 2011. The proportion of medium towns (II and III size class towns) contribute maximally in the total number of towns in the Punjab as the whole and also in a large number of districts in 1991 and 2001 but this pattern has changed in 2011 as now the proportion of class III and IV are approx. equal. In 2001 proportion of towns of size class III and IV were approx. 60 percent of total towns but it got decreased in 2011 to approx. 50 percent, it may be said here that this decrease is at the cost of the increase of small towns of size class V and VI from 22 percent in 2001 to approx. 31 percent in 2011. The proportion of town in size class I to total towns has declined in the state with 8.3 percent in 1991 to 7.4 percent in 2011.

The above analysis of the pattern and trend in the size classes of towns in Punjab reveals that the proportion of large towns has not increased in the study period but the proportion of the medium and small towns have increased. This shows that new towns are continuously emerging in the state. The significance of this is that the emergence and classifications of towns are going in the right policy direction which strengthened the distributional aspects of various services in towns.

Map 3.8 Buffer of 5 km around National Highways to show the proximity of different size classes of towns in Punjab, 2011



The classification of towns as per their population, i.e. size classes (I to VI) are shown through the maps from 2001 to 2011 across all the districts. As seen from *Maps 3.6 and 3.7* the majority of the towns are located in the highly urbanised districts like SAS Nagar, Ludhiana, Jalandhar and Amritsar which is the central belt of urbanisation in Punjab while the border districts has seen the lowest number of towns due to strategic and security reasons. It is also to be noted that majority of the large towns are also located in the central belt and also in the highway corridor of the state shown in *map 3.8*. There are total 16 class I towns in 2011 and 13 of these towns are in the 5 km corridor of National Highways and only 3 towns i.e. Muktsar, Firozpur and SBS Nagar are located outside the 5 km buffer of national highways. It is to be noted here that Muktsar and Firozpur are at the international border towns which have national security significance. Similarly 19 towns out of total 24 towns of class II are also located in national highway corridor of class II. The classification of small towns is seen outside the corridor of the NH and majority of these towns are census towns.

After analysing the above distribution of size classes of towns, it has been seen that 37 new towns in various classes had emerged during 1991-01 and 60 new towns both as census and statutory have emerged in 2001-2011. *Table 3.6* presents the emergence of new towns class wise in Punjab during 2001-11. In Punjab overall maximum number of new towns emerged in the class V category i.e. 30 followed by in class II category with 14 towns. It signifies that the emergence of large numbers of small towns have occurred in the last decade. There is not as single class I town emerges during this period, while only one town emerged in class II category and this shows that the towns of large sizes have not come up in 2001-11. The majority of the new towns emerged in the highly urbanised central belt of Punjab. While the southern districts has the low number of towns which are of medium and small size classes but these district also recorded less or no emergence of new towns (*Map 3.9*).

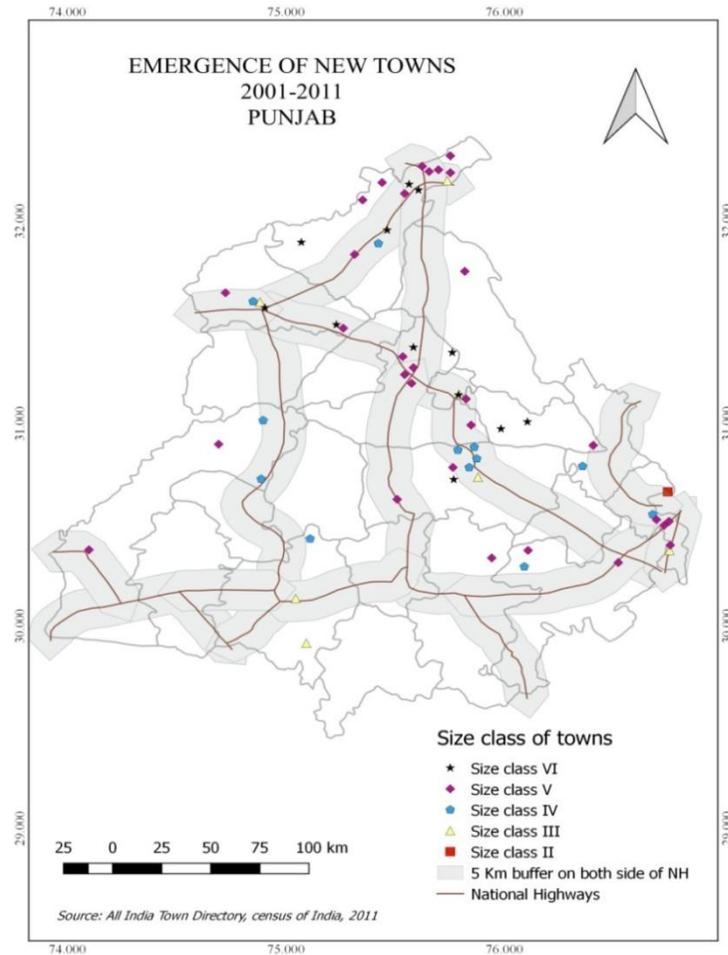
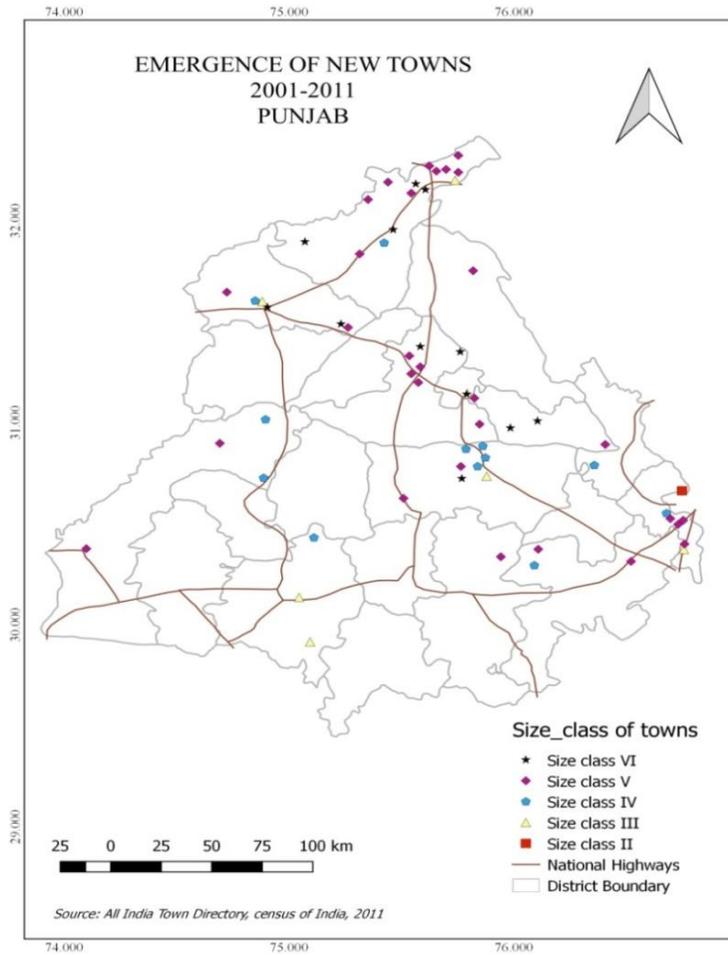
Table 3.6 District wise emergence of new towns in Punjab during 2001 - 2011

Districts	Total	Size- Classes of Towns				
		II	III	IV	V	VI
Amritsar	6		1	1	2	2
Bathinda	3		2	1		
Firozpur	4			2	2	
Gurdaspur	13		1	1	7	4
Hoshiarpur	1				1	
Jalandhar	7				5	2
Kapurthala	2		1			1
Ludhiana	7		1	4	2	
Moga	1			1		
Patiala	2			1	2	
Rupnagar	2					2
Sangrur	1				1	
SAS Nagar	7	1	1	1	4	
SBS Nagar	4				2	2
Total	60	1	7	12	28	13

Source: Calculated from Census of India, PCA, 2011

The district wise analysis of the emergence of new towns reveals that in the border district of Gurdaspur, maximum number of towns i.e. 13 towns have emerged. Among all the classes, seven towns in class V are new in Gurdaspur. In this district one big town is present and hence the large numbers of towns are in small and medium category. SAS nagar has come up with the emergence of class II town i.e. Naya Gaon town and four towns in class V. *Map 3.10* shows the new towns in districts with a buffer of 5 km around National Highways. It reveals that maximum number of new towns have emerged along the National or state highways. In Gurdaspur majority of new towns have developed along the border parts. Emergences of new small and medium towns are a need of an hour as the pressure on infrastructure in large cities is increasing, haphazard urban sprawl make the cities unsustainable. The emergence and development of the small towns are not only crucial for sustainable development but also provide a linkage for the economic growth and development to rural hinterland.

Maps 3.9 and 3.10 Emergence of New Towns and Buffer of 5 km around NH in Punjab, 2001-11

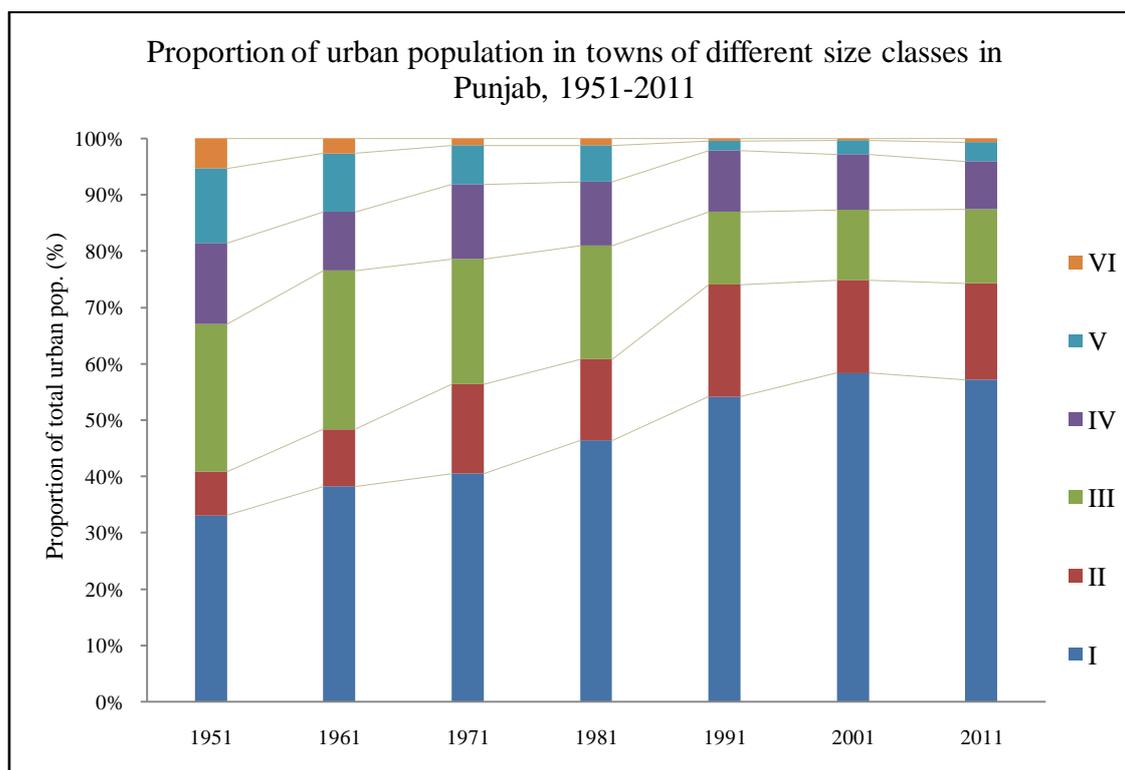


In *Map 3.10* a buffer of 5 km around National Highways has been created on the map of the emergence of new towns in Punjab from 2001-11. It has been found that majority of the new towns has been emerged around the 5 km periphery of the national highways. In districts like Amritsar, all 6 new towns have been created in 5 km periphery of the national highways along with all 7 towns in Jalandhar district and 5 towns in SAS Nagar. Out of the 60 new towns emerged in Punjab from 2001-11 only 12 towns are outside the periphery of the 5 km from the national highways. It is also to be mentioned that the majority of the towns emerged in Punjab from 2001-11 are census towns without the municipal authority responsible for providing basic urban amenities. Therefore it is inferred that the towns are emerged due to the change in demographic characteristics, economic activities and not because of the creation of municipal authorities. It affects the urban basic services and the infrastructure services in the newly emerged towns.

3.6 Growth of population in different size classes of towns, 1951-2011

The growth of population in the different size classes of towns is an important determinant of the urban growth in the region. Development of new towns in the region is happened in many ways i.e. according to the primate city rule, rank size rule, binary rule and in step wise manner. Primate city concept was given by Mark Jefferson in 1939. It is the largest city in an area and has disproportionately higher population than the other cities in the urban hierarchy. Rank size rule was given by G.K. Zipf in 1949 in which he arranged the different cities according to their population in order to create urban size hierarchy. He said that in such distribution there are few large cities, large number of medium size towns and largest number of smaller towns. It is the result of the balanced development of cities. In binary pattern two or more cities are larger than the predicted pattern and in stepped order there are series of levels and steps in the form of cities, towns and conurbations.

Fig. 3.3 Proportion of urban population in different size classes in Punjab, 1951-2011



Source: calculated from All India Town Directory, Census of India, 1991, 2001 and PCA for 2011

Growth and proportion of population in different size classes of towns in Punjab from 1951 to 2011 have been shown in the above *table 3.10* and *fig. 3.3*. The number of class I towns has increased from three in 1951 to sixteen in 2011 and in the same manner the percentage of population residing in class I towns had been increasing drastically since 1951 to 2001 i.e. from 33 percent to more than 57 percent of total urban population. Similarly in class II towns the proportion of total urban population has increased from 7 percent in 1951 to approx. 20 percent in 1991 which declined to 17 percent in 2011. This huge increase in the proportion of population of class I and class II towns has been compensated by the decrease of population in all size classes from III to class VI. In class III there has been more than 26 percent of total population resided in 1951 which just decreased to 13 percent in 2011, and in the same fashion population share of class IV has decreased from 14.4 percent to 8 percent in the same period. The urbanisation structure of Punjab is ‘top heavy’ i.e. more than 74 percent of total urban population resides in class I and class II towns which is even continuously increasing as seen from above figure.

But in the last decade from 2001 to 2011, the proportion of total population in class I had declined from 58.3 percent in 2001 to 57 percent in 2011. This shows that there is a declination in the growth of population in large towns. Though in class II and III the proportion of total urban population has increased in the last decade but the increase is very less i.e. increased by 0.5 and 0.8 percentage points. In class III and class IV categories the proportion of population to total population had been decreasing since 1951 from 26 and 14.4 percent in 1951 respectively to 12.5 and 9.8 percent in 2001 respectively. In 2011 the class II, class III, class V and class VI categories recorded the increase in the proportion of population by 0.6, 0.7, 0.8 and 0.4 percentage points respectively, while the growth and proportion in class I and class IV category have reduced.

Table 3.7 Growth of urban population in different size Classes of towns in Punjab, 1951-2011

Census	Number of towns in each size classes						Proportion of urban population (%) in towns of each size classes						
	I	II	III	IV	V	VI	I	II	III	IV	V	VI	Total Towns
1951	3	2	17	21	30	25	33.11	7.73	26.17	14.44	13.18	5.37	98
1961	4	4	23	23	34	17	38.25	10.15	28.11	10.44	10.38	2.67	106
1971	5	8	22	31	30	11	40.52	15.84	22.2	13.32	6.84	1.28	106
1981	7	9	28	35	41	14	46.38	14.39	20.24	11.28	6.5	1.21	134
1991	10	18	25	46	14	7	54.16	19.91	12.92	10.82	1.72	0.47	120
2001	14	19	35	54	28	7	58.38	16.45	12.5	9.82	2.52	0.33	157
2011	16	24	49	61	49	18	57.17	17.07	13.2	8.48	3.35	0.73	217

Source: calculated from All India Town Directory, Census of India, 1951 to 2001 and Primary Census Abstract for 2011

Across the classes in 1991, 2001 and 2011 more than 74 percent of the urban population are residing in the class I and class II which are the large towns. Table 3.7 shows that though the huge number of emergence of new towns are in the small towns categories of class IV, class V and class VI but the proportion of population is higher in large towns and is continuously increasing. But there shows an increase in the proportion of urban population in small and medium towns though very marginally increased. There are the large number of census towns which emerged in 2011 and also led to increase in urban population but these towns are unable to absorb the population pressure of large towns of class I and II and Punjab's urbanisation is still 'top heavy'. The distribution of population

in urban centres in Punjab followed distorted 'rank size rule' type distribution of population i.e. in 2011 highest population is concentrated in Ludhiana M. Corp i.e. more than 16 lakhs followed by 11.5 lakhs in Amritsar M. Corp and more than 8.6 lakhs in Jalandhar.

3.7 Conclusions

Urbanisation is inevitable in the modern world. The state of Punjab which is geographically located on the plain region is the international border state of India and is characterized by the presence of army personnel, the vibrant culture and economy of the state attract the migrant population as the labourer from the other states of India. In this context it is important to understand the various dynamics of urbanisation happening in the state so it would be helpful to make the urbanisation sustainable. The key findings of the present chapter are as:

- Though the level of urbanisation of Punjab is increasing since 1951 from 21.72 percent to 37.48 percent in 2011 and this is far greater than the urbanisation level at the national level but it is not equivalent to the economic development of the state. Spatial variation in the level of urbanisation in Punjab across the districts reveals that there is the huge variation as the district of Ludhiana, Jalandhar and Amritsar and SAS Nagar have more than 50 percent of the urbanisation while district of Tarn Taran has only around 12 percent of urbanisation level.
- The highly urbanised districts like SAS Nagar, Ludhiana, Jalandhar and Amritsar form a central belt of highest urbanisation in the state. The southern districts have lower urbanisation and northern districts are catching up in the urban processes.
- The zigzag pattern has been observed in the context of urban decadal growth rate in Punjab from 29 percent in 1951-61 to around 25 percent in 2001-11. It is mainly lower than the urban growth rate at India level. It is higher in the newly formed districts of Punjab like SBS Nagar, Rupnagar etc. Districts with high level of urbanisation like Amritsar, Ludhiana and Jalandhar recorded comparatively low urban decadal growth rate in 2001-11. The future prospects of urbanisation in

Punjab is good as the districts having low urbanisation recorded high growth rate e.g. Rupnagar (99 percent) and SBS Nagar (54.7 percent) etc. and also the highly urbanised districts recorded positive growth rate like Jalandhar (24 percent), Ludhiana (22 percent) etc.

- There is an addition of 60 new towns in 2011 census as compared to only 37 towns emerged in 1991-2001. Out of the 60 new towns that have been created after 2001, 56 are the Census towns and only 4 new towns are statutory towns. Maximum number of towns emerged in the Gurdaspur district followed by Ludhiana. Large numbers of class V and class VI towns have been emerged in the state as compared to the large towns of size classes I and II.
- Out of 60 newly emerged towns around 50 towns are in close periphery of the national highways as seen from the 5 km buffer around the national highways which emphasizes the towns are emerged out of demographic and economic activities reclassification rather than urban governance as priority.
- The growth of population across the size classes of towns reveals that the proportion of population in class I and class II towns are larger and it is continuously increasing over the period in the state while the population in the small towns is decreasing continuously which is not good for sustainable urbanisation. Analysis of the above pattern of towns shows that urban population of big towns are continuously increase which may pose the pressure on their resources, on infrastructure, basic amenities, shortage of land and burden on the urban local government to provide the basic amenities etc.
- At the same time the small towns (size classes IV, V and VI) are emerging in the large number but there is no marked increase in their contribution of total urban population and hence in total urbanisation. Hence to make the urbanisation eco-friendly and sustainable it is required that policies should be oriented towards the development of all types of towns like large, medium and small towns equally with special emphasis on the development of small and medium towns as they are the absorbers of the population from rural regions and lessen burden on bid cities.

India is at the early stage of the urbanisation if we look at the proportion of urban population to the total population i.e. 31.2 percent of the total resident lives in urban areas, but the magnitude of absolute urban population is much higher that it needs a regional study of urban processes. Though Punjab has higher levels of urbanisation than India but still more than 60 percent population resides in rural settlements. Punjab observed rapid rate of urbanisation in the last decade along with it 60 new towns have emerged from 2001 to 2011, 56 of them are census towns. But the fact is that the urban decadal growth in the state is dwindling and is below the national average. Also the important question here is that whether the rises in level of urbanisation due to natural increase, rural to urban migration, urban sprawl led to the proportional increase in urban basic amenities which is essential for economic and human development. Therefore next chapter looks into the question of the quality of urban amenities in districts of Punjab and across size classes of towns in Punjab.

CHAPTER 4

QUALITY OF URBAN AMENITIES IN PUNJAB: A DISTRICT AND TOWN LEVEL ANALYSIS

4.1 Introduction

Urbanization is a continuous process and it is inevitable with the increasing economic development in the world. As reported by UN's *World Urbanization Prospects: The 2018 Revision report*¹ globally more people are living in the urban areas than the rural areas i.e. approx. 4.2 billion people resides in urban areas in 2018. The report also mentioned that world over three countries i.e. India, China and Nigeria are expected to have more than 35 percent of the growth in the world's urban population between 2018 and 2050. The above statistics shows the increasing importance of urbanization and need to study this holistically. As more and more people are migrating towards the urban areas, the demand for the basic infrastructure and basic urban amenities increases. The availability, accessibility and affordability of the urban amenities are right of every resident. *Sustainable Development Goal (SDG) 11*² strives for inclusive, safe, resilient and sustainable cities and human settlements. It also aspires to manage the spurious urbanisation by addressing the challenges of unaffordable housing, providing safe drinking water, safe cooking fuel and public transport etc.

Availability of basic amenities like safe housing, safe drinking water and hygienic sanitation facilities also indicate the quality of life of the people along with economic development. But the rapid urban population growth and high urban density are creating a huge stress on the existing land, housing and infrastructure facilities like water, sewerage, solid waste management and electricity and this also puts pressure on the provisioning of services like health, education, public distribution systems, toilet facilities and sewerages etc. The supplies of these basic needs of the urban dwellers are not at par with demands which is creating a huge deficiency gap (Saini, 2014)³. The lack of basic amenities has an important effect on the quality of life of the residents, on their health and in achieving

¹ (2018). *World Urbanization Prospects: The 2018 revision*. United Nations, New York.

² (2018). *The Sustainable Development Goals Report 2018*. United Nations, New York. Retrieved from <https://unstats.un.org/sdgs/files/report/2018/TheSustainableDevelopmentGoalsReport2018-EN.pdf>

³ Saini, Sakshi (2014). Urbanisation, city expansion, access to basic household amenities: the case of informal settlements of Delhi. *Global Journal of Finance and Management*, 6 (3), 197-202.

other capabilities like education, human resources development, work efficiency and skills learning etc. (Shaw, 2007)⁴. 11th FYP chapter-8 draft⁵ observed the lack of urban amenities in Indian towns due to lack of urban planning, lack of funds for urban services like sanitation, sewerage, water supply and transportation system for sustainable urban development. Urban basic amenities are critical for increasing urban growth mainly in newly emerging towns. It is the quality of urban amenities which derives economic and human development.

The previous chapter has observed that urbanisation is increasing at the rapid pace in India and particularly in Punjab where the level and the growth of urbanisation is more than that of national average. In Punjab the rate of urbanisation is higher than it is among the top six urbanised states of India. The growth of towns and emergence of 60 new towns in last decade had boosted the level of urbanisation in the state. As the urbanisation increased and more people moves towards urban region it is also necessary that basic amenities for healthy and productive living should be increased correspondingly. With the lack of basic amenities to the urban population, urbanisation processes is not sustainable but even hazardous. Therefore it is imperative to study, analyze and understands the provisions of basic amenities in the Punjab which is a border state and rapidly urbanizing.

This chapter attempts to analyse the distribution and accessibility of urban basic amenities by considering six indicators i.e. safe drinking water source, safe cooking fuel source, safe lighting source, toilet facilities within HH premises, hygienic toilet and hygienic drainage waste water service to the households at the district level and across size classes of towns. The chapter has been divided into five sections: First section of the chapter studies the distribution of basic amenities to the urban HHs at the district level in 2001 and 2011. It provides in-depth understanding of how urbanised districts have different quality of urban amenities than the low urbanised districts. The second section of the

⁴ Shaw, Annapurna (2007). Basic Amenities in Urban India: Analysis at state and Town level. *Indian Institute of Management Calcutta, Working paper series, working paper WPS 616*, 1-33.

⁵ (2012). Chapter 11: Urban Infrastructure, Housing, Basic services and poverty alleviation. *Eleventh Five Year Plan 2007-12, Planning Commission report*, 394-422. Retrieved from

http://planningcommission.nic.in/aboutus/committee/strgrp11/str11_hud1.pdf

present chapter analyses in details the distribution and availability of the six chosen basic amenities for urban households in all districts of the state and present their comparison for 2001 and 2011. The section also analyses in details the distribution, availability and accessibility of the six chosen basic amenities indicators among different size classes of town i.e. in class I to class VI from 1991 to 2011. It compares the provision of urban amenities in large, medium and small towns. The third section of the chapter analyses the Levels of quality of urban amenities at the town level through composite index derived using Principal Composite Index (PCA). It discusses the high, medium and low level of urban amenities in different towns and shows a comparison between 2001 and 2011. Section four of the present chapter discusses the determinants of the urban basic amenities i.e. socio-economic determinants and how are the correlated with the availability and distribution of urban basic amenities. The last section of the chapter provides the concluding remarks.

4.2 Availability and distribution of urban basic amenities: A district level analysis, 2001-2011

The availability and affordability of various urban basic amenities like electricity as a source of lighting, safe sources of drinking water to the HHs, hygienic toilet facilities within HH premises, safe sources of cooking fuel like LPG/PNG and hygienic drainage facilities for the outlet of the waste water are imminent for the good and healthy living and for better quality of life (*Bhagat, 2011*)⁶. This section analyses in details the availability and distribution of six urban basic amenities in districts of Punjab in 2001 and 2011 census.

⁶ Bhagat, R.B. (2011). Urbanization And Access To Basic Amenities In India. *Urban India*, 31 (1), 1-14.

Table 4.1 Availability of basic amenities in Urban Households among districts of Punjab, 2001

Districts	Safe source of Drinking Water (percent)	Safe sources of Cooking fuel (percent)	Safe source of Lighting (percent)	Availability of Bathroom within HH premises (percent)	Hygienic Toilet facilities (percent)	Hygienic Drainage facilities (percent)
Gurdaspur	97.15	65.8	97.16	77.3	58.62	34.12
Amritsar	99.31	58.51	95.94	80.01	59.54	54.62
Kapurthala	99.78	69.68	97.91	84.35	60.99	51.14
Jalandhar	99.54	66.67	98.49	87.94	69.18	57.01
Hoshiarpur	98.44	67.46	96.57	83.83	70.91	39.59
SBS Nagar	98.97	51.31	96.04	85.92	62.17	28.25
Rupnagar	98.69	76.63	96.25	88.29	64.63	55.11
Fatehgarh Sahib	98.78	58.98	98.07	84.78	69.91	53.13
Ludhiana	99.45	60.18	96.79	82.96	74.43	50.74
Moga	99.09	60.12	95.87	80.76	69.15	19.83
Ferozpur	98.48	60.94	95.7	78.5	61.14	29.7
Muktsar	98.38	57.35	95.09	75.38	67.8	28.3
Faridkot	98.8	62.62	93.82	77.24	70.44	29.98
Bathinda	98.3	66.23	95.03	84.13	65.9	32.8
Mansa	99.24	62.38	94.13	78.97	66.35	23.78
Sangrur	98.88	50.79	96.55	80.94	65.4	26.48
Patiala	97.6	73.39	97.47	87.2	70.65	50.71
PUNJAB	98.88	63	96.63	82.76	67.04	44.97

Source: Census of India, H-8, H-9, H-10, H-11 Tables

Table 4.2 Availability of basic amenities in Urban Households among districts of Punjab, 2011

Districts	Safe source of drinking water (percent)	Safe source of cooking Fuel (percent)	Safe source of Lighting (percent)	Availability of Bathroom facilities within HH (percent)	Hygienic toilet (percent)	Hygienic drainage (percent)
Gurdaspur	97.88	83.4	98.18	81.17	81.19	36.38
Kapurthala	99.55	85.13	99	90.35	92.74	58.56
Jalandhar	99.57	81.55	99.16	91.8	94.24	72.37
Hoshiarpur	98.83	83.67	98.13	85.88	87.44	44.65
SBS Nagar	98.77	73.18	97.76	83.57	82.67	33.35
Fatehgarh Sahib	98.65	76.96	98.94	90.15	90.24	57.08
Ludhiana	99.42	80.88	98.74	90.07	93.42	71.13
Moga	98.14	76.64	96.96	84.02	87.86	45.1
Firozpur	98.73	75.81	97.53	78.89	83.52	44.43
Muktsar	98.28	75.14	97.56	75.63	84.87	47.15
Faridkot	97.27	78.63	97.33	80.41	86.79	27.14
Bathinda	98.37	77.87	97.62	82.58	85.07	48.29
Mansa	97.63	70.65	97.12	79.49	75.98	29.14
Patiala	99.15	85.86	99.12	92.92	93.45	63.71
Amritsar	98.9	78.57	98.49	86.93	89.97	68.88
Tarn Taran	98.78	75.23	97.48	77.47	85.51	53.17
Rupnagar	98.41	82.96	97.4	89.74	90.35	49.29
SAS Nagar	99.28	85.93	98.09	92.44	89.67	60.54
Sangrur	98.68	73.68	98.72	87.39	87.43	32.96
Barnala	98.99	73.15	97.85	80.98	82.09	24.69
PUNJAB	98.94	80.17	98.41	87.3	89.52	57.63

Source: Census of India, HH-6, HH-7, HH-8, HH-9 and HH-10 tables

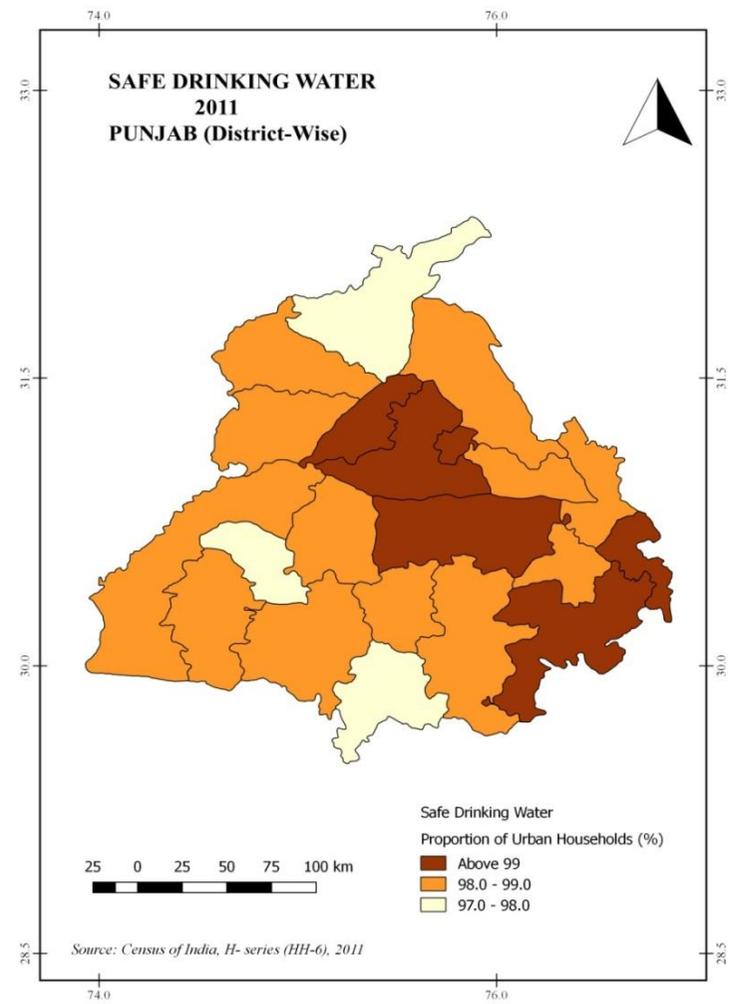
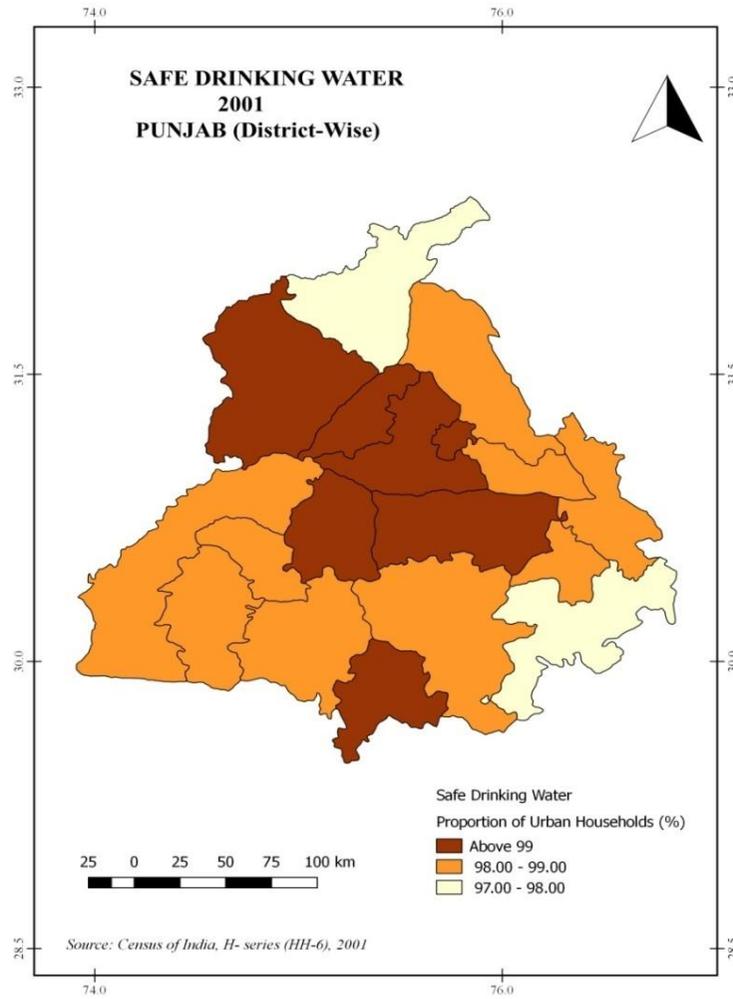
4.2.1 Safe drinking water

According to *WaterAid India*, 'In India, over one lakh people dies of water-borne diseases annually. The country faces a huge challenge in ensuring safe water supply'. *WHO* analysed that though there are many perennial rivers flowing in the state of Punjab but still lakhs of urban dwellers are not having access to safe drinking water as the water is either not available at the premises or if available, it is not treated i.e. contaminated.

Safe sources of drinking water consist of tap water, hand pump and tube well and they are essential for any HH among all the amenities as they are very basis of life. But it is still among the far from the reach of many people in urban India. In Punjab though more than 98 percent of urban HHs have access to safe drinking water in 2001 and 2011 but still more than 30 thousand urban HHs are devoid of access to safe drinking water. *Map 4.1 and 4.2* shows the proportion of urban HHs having safe sources of drinking water supply at the district level in 2001 and 2011. There observed a different pattern for the availability of safe drinking water to urban HHs in 2001 and 2011. In 2001 more than 99 percent of urban HHs has access to safe drinking water in districts like Kapurthala, Jalandhar, Ludhiana, Amritsar etc., it is to be noted that these district are highly urbanised in the state. In 2011 the pattern changes as along with Kapurthala, Ludhiana and Jalandhar addition of Patiala, SBS Nagar districts with high proportion of safe drinking water but in the districts like Amritsar and Mansa it has declined to 98 percent and in Moga it is decline to 97 percent of total urban HHs. In 2001 the districts with highest urbanisation has also highest access to safe drinking water but the pattern changed in 2011 where low urbanised districts also added to highest access to safe drinking water. It is noted here that in 2011 safe drinking water includes only tap water from treated source which was not available separately in 2001 census and hence some districts shows decline in the availability of safe drinking water in 2011.

In 2001 in district of Patiala and Gurdaspur only less than 97 percent of urban HHs has access to safe drinking water which in 2011 has increased to more than 99 percent in Patiala and 97.8 percent in Gurdaspur. In 2011, Faridkot and Mansa recorded the lowest availability of safe drinking water to urban HHs i.e. below 98 percent of all urban HHs. In 2011 both the districts have observed lowest rate of urban decadal growth rate i.e. 14 and 12 percent respectively. In 2001 and 2011 Gurdaspur is the only district which continued

Maps 4.1 and 4.2 Proportion of urban HHs having availability of safe drinking water in districts of Punjab, 2001-2011



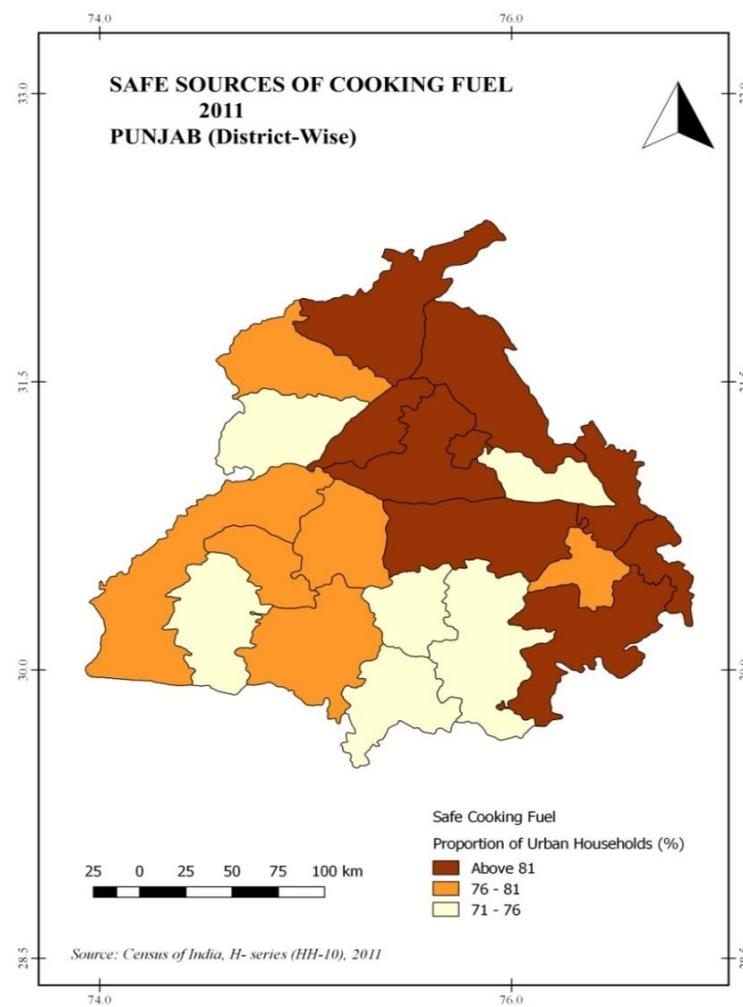
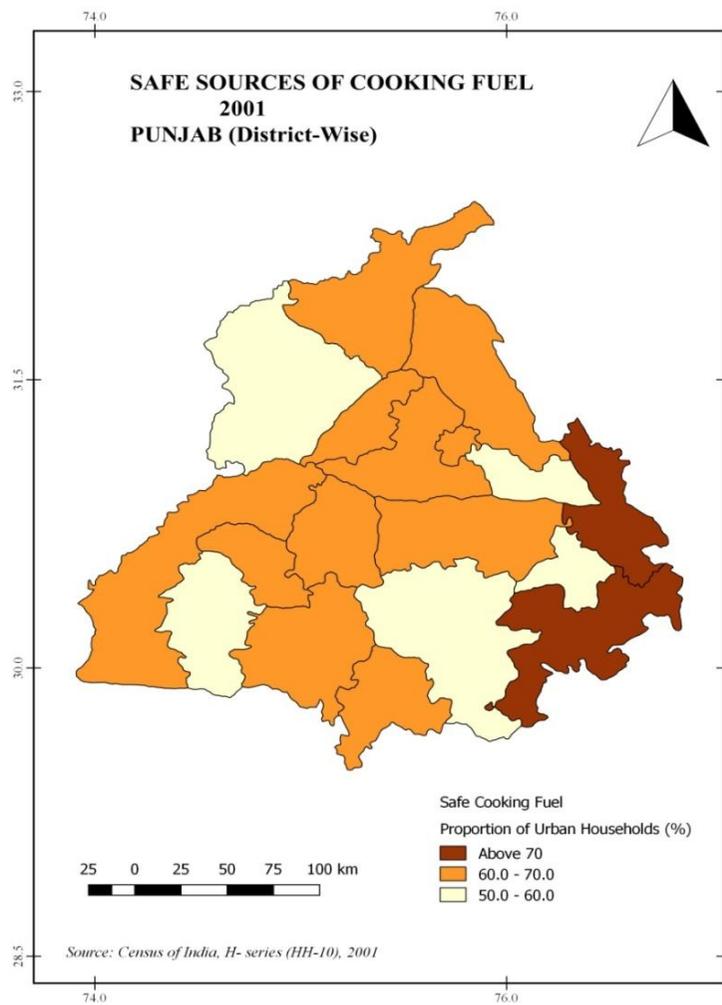
to observe less than 98 percent of urban HHs having access to safe drinking water supply. In both the maps of 2001 and 2011, majority of the districts falls in 98 to 99 percent category of urban HHs accessed safe drinking water supply and it shows that though the access to safe drinking water is more than 97 percent in urban Punjab but still lakhs of people are devoid of this minimum need.

4.2.2 Safe Cooking Fuel

Map 4.3 and 4.4 shows the proportion of urban HHs having access to safe cooking fuel sources. In 2001, in urban Punjab only 63 percent of urban HHs uses safe cooking fuel like LPG or electricity while 37 percent i.e. 4.46 lakh urban households uses unsafe and polluted cooking fuels like kerosene, firewood etc. which is very critical as it is directly relates to the health of the residents particularly to women and children. Even the scenario in some districts is more depressing as 10 districts falls below the state average of 63 percent of urban population accessibility to safe cooking fuel. It is even worst for the districts like Sangrur, SBS Nagar, Amritsar, Muktsar and Fatehgarh Sahib where more than 40 percent of urban households do not have access to safe cooking fuel sources.

In 2011, in Punjab more than 80 percent urban HHs uses safe cooking fuel which has increased from just 63 percent in 2001 and it is reflected in the pattern of districts also in 2011. The highest proportion of urban HHs are in districts of SAS Nagar, Patiala, Kapurthala, Gurdaspur, Hoshiarpur, Rupnagar and Jalandhar i.e. more than 81 percent of total urban population as shown in map of 2011 (*dark brown colour*). In Ludhiana district more than 80 percent of urban population has access to safe cooking fuel which is more than the total proportion of urban HHs in Punjab. Whereas on the other hand there are 7 districts which are at the bottom in accessing to safe cooking fuel i.e. 71-76 percent and they are Mansa, Barnala, SBS Nagar, Sangrur, Muktsar, Tarn Taran and Firozpur. It clearly shows that there is an increase in the number of districts which have more than state average of 80 percent HHs using safe cooking fuels which is due to the awareness by urban authorities towards clean cooking fuel and state and central govt. intervention for LPG availability to HH.

Maps 4.3 and 4.4 Proportion of urban HHs having availability of safe cooking fuel in districts of Punjab, 2001-2011

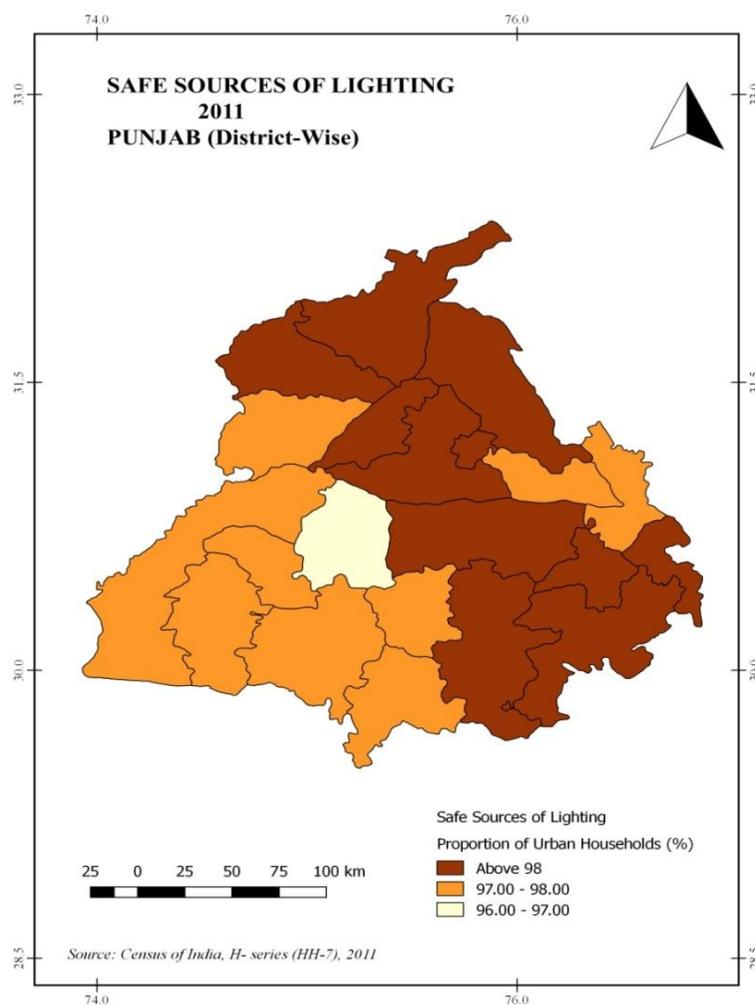
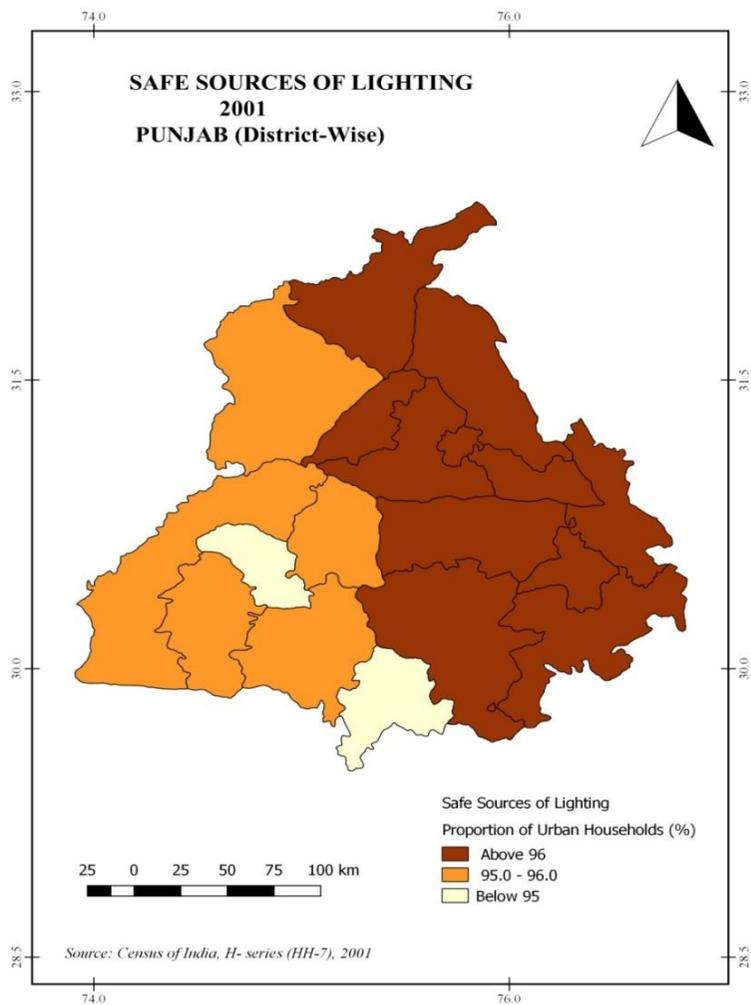


In 2011 the districts which are highly urbanised shows high access to safe cooking fuel like SAS Nagar, Ludhiana and Jalandhar along with districts with high urban growth like Rupnagar and Kapurthala. In 2001, south- eastern region of the state where districts like SAS Nagar and Patiala have the highest proportion of urban HHs having availability to safe cooking fuel which was added by the highest urbanised districts like Jalandhar, Ludhiana, Kapurthala and Amritsar (central belt of high urbanisation) in 2011. More than 80 percent of HHs having access to safe cooking fuel is also found in the northern districts like Gurdaspur and Hoshiarpur in 2011. On the other hand the southern states of Punjab like Mansa, Sangrur, Barnala and Muktsar have lowest proportion of urban HHs accessing safe cooking fuels i.e. below 50 percent in 2001 and also at the bottom end in 2011 i.e. below 75 percent of total urban HHs.

4.2.3 Safe Source of Lighting

In 2001, more than 96.6 percent of total urban households in Punjab have access to safe sources of lighting i.e. electricity, solar energy, etc. *Map 4.5 and 4.6* shows district wise proportion of urban HHs having access to safe lighting sources. It is clearly seen that the districts like Hoshiarpur, Kapurthala, Jalandhar and SBS Nagar (located in *Doaba region*) and eastern districts e.g. Sangrur, Patiala, Ludhiana, Fatehgarh Sahib, Ropar and SAS Nagar (*Malwa region*) observed the highest proportion of urban HHs having safe sources of lighting in 2001 and 2011 both i.e. more than 96 percent and 98 percent respectively. Mansa and Faridkot are the only districts in 2001 where the proportion of urban HHs is less than 95 percent to the total urban HHs. In 2011 the proportion of urban HHs using safe lighting sources have increased to more than 98 percent from 96 percent in 2001 and it is clearly visible in the districts in *map 4.6* where the lowest proportion of urban HHs uses safe lighting sources is 96.9 percent which is more than that state average of 2001. In 2011 there are 3 districts i.e. Jalandhar, Patiala and Kapurthala where the proportion of urban HHs having safe sources of lighting are more than 99 percent.

Maps 4.5 and 4.6 Proportion of urban HHs having availability of safe lighting sources in districts of Punjab, 2001-2011



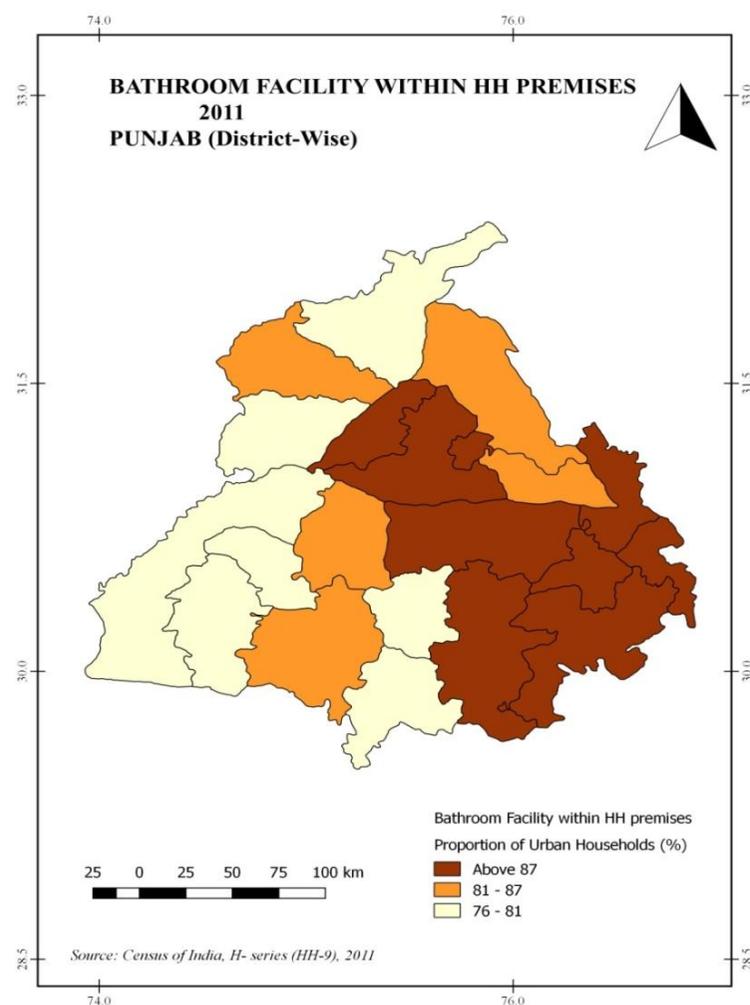
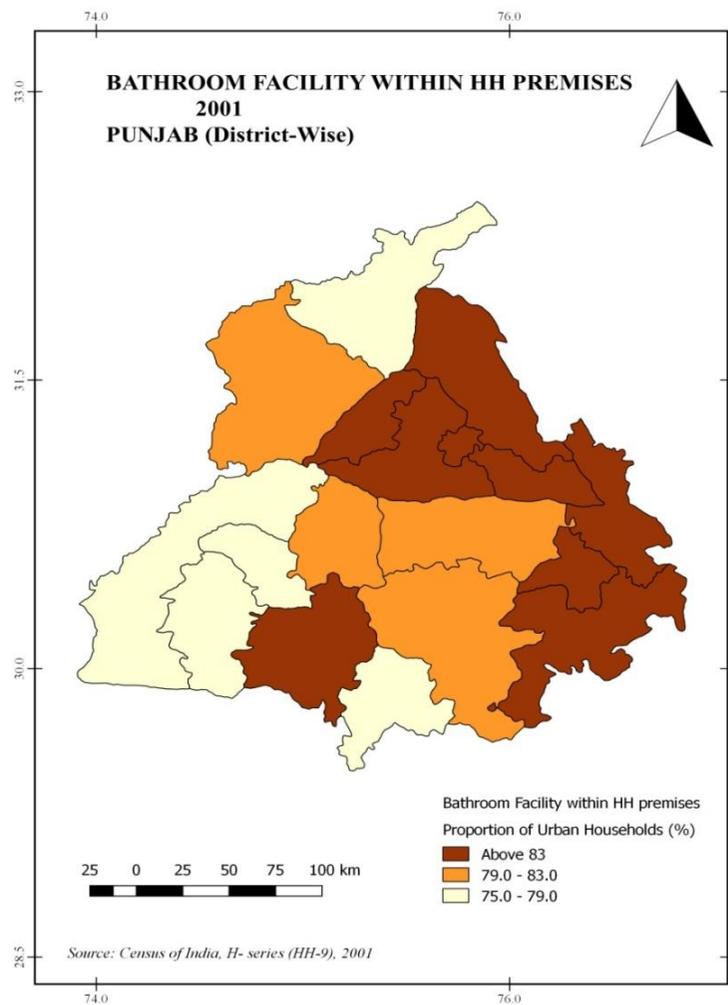
The northern and southeastern districts of the state have the maximum proportion of urban HHs having safe sources of lighting in both 2001 and 2011. The region also includes the highest urbanised belt of Punjab state. On the other hand, south western districts which are also border districts like Mansa, Faridkot, Firozpur and Fazilka, etc. have lowest proportion of urban HHs accessing safe lighting i.e. below 95 percent of total urban HHs.

Though there is an increment in the proportion of HHs using safe source of lighting from 98 percent but still there is a tough task for the ULBs and state government to cover more than 33 thousand urban households which still uses 'unsafe' sources of lighting particularly in slums and very low income group (LIG) residential areas.

4.2.4 Bathroom facility within HH premises

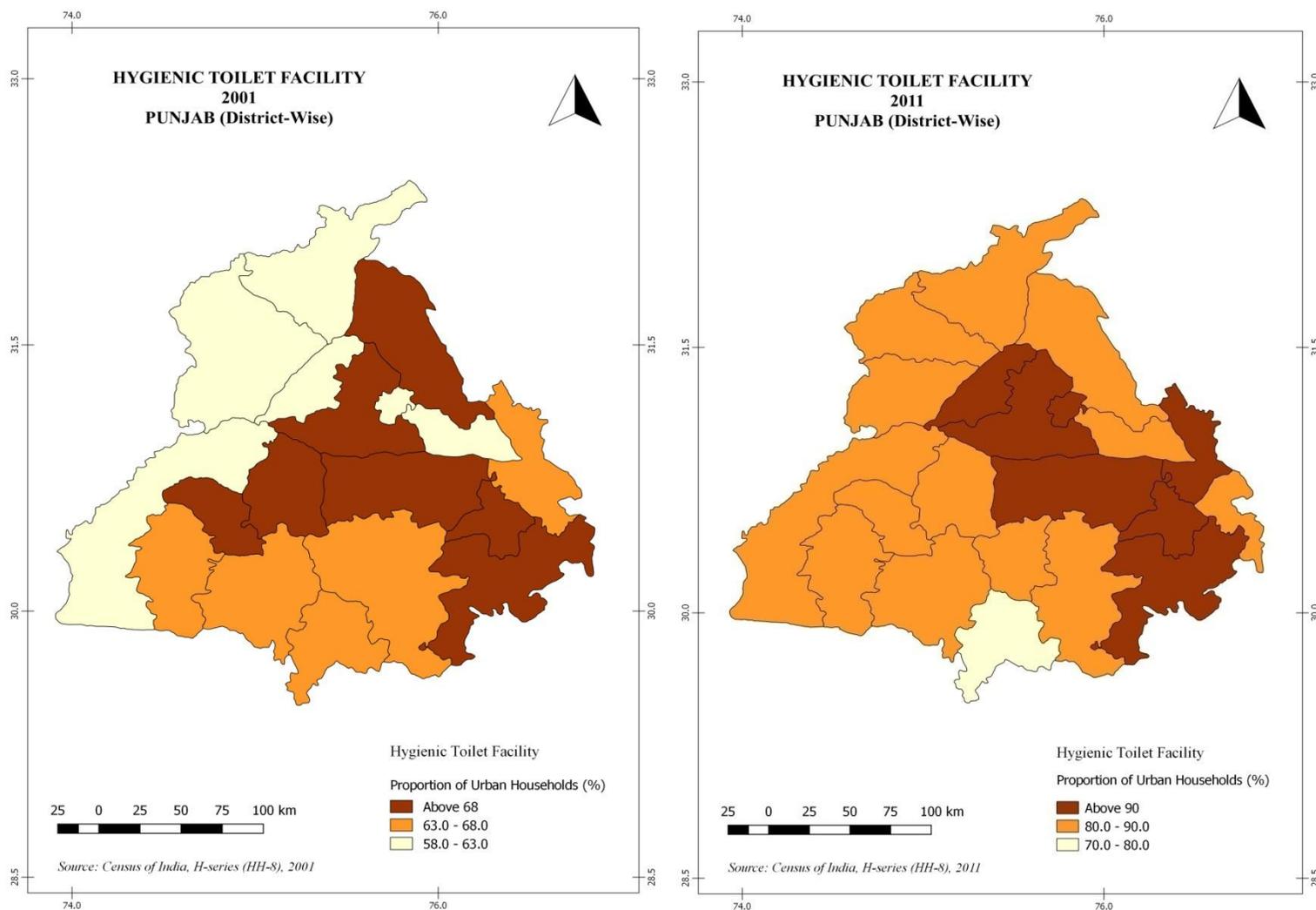
Bathroom availability in the HH is crucial for the sanitation services and is also important for the privacy and secrecy of the residents. Bathroom with roof and brick wall is still being considered a costly affair in poor urban residences. Therefore it provides an important link to sanitation, health and hygiene of the HHs. *Map 7 and 8* has shown the proportion of urban HHs having bathroom facility within HH premises. The availability of bathroom facility within HH premises have increased from 82.7 percent of total urban HHs in 2001 to 87 percent in 2011. But there is a spatial variations in the availability of bathroom in HH premises across districts of Punjab as in 2001, the districts like Rupnagar, Jalandhar and Patiala have more than 87 percent of urban HHs having bathroom in HH premises while on the other hand districts like Muktsar, Faridkot, Firozpur, Mansa and Gurdaspur have less than 79 percent of urban HHs with bathroom facility within HH premises.

Map 4.7 and 4.8 Proportion of urban HHs having availability of bathroom facility within HH premises in districts of Punjab, 2001-2011



In 2011, the districts of Patiala, SAS Nagar, Jalandhar, Kapurthala, Fatehgarh Sahib and Ludhiana have observed more than 90 percent of urban HHs having bathroom within HH premises while in 2001 there was not even a single district which had more than 88 percent of HH having bathroom within premises. In 2001 Muktsar district which was having lowest proportion of urban HHs with bathroom facility also stands at bottom in 2011 where no increase in proportion of urban HHs having toilet within HH premises have been found. In 2011, districts like Tarn Taran (new district carved out from Amritsar), Mansa and Ferozpur have less than 80 percent of urban HHs having access to bathroom facility within HH premises. In 2011 districts like Barnala, Gurdaspur and Faridkot also have more than 80 percent of urban HH accessed to bathroom within premises and they were the district having lowest access to bathroom facility within HH premises in 2001. It is noted that the districts like Patiala, SAS Nagar (Mohali), Fatehgarh Sahib, Kapurthala and Ludhiana are the districts showing highest increase in the growth of urban HHs having access to bathroom services within HH premises and they are also at the highest in availing the facilities in 2001 and in 2011. While the districts like Muktsar, Mansa, Gurdaspur and Fazilka are at the bottom in having bathroom facilities within HH premises both in 2001 and 2011 as shown in *Map 4.7 and 4.8*. It has clearly been observed that the border districts i.e. districts shares international border with Pakistan have low proportion of urban HHs having access to bathroom facilities within HH premises.

Map 4.9 and 4.10 Proportion of urban HHs having availability of hygienic toilet facility in districts of Punjab, 2001-2011

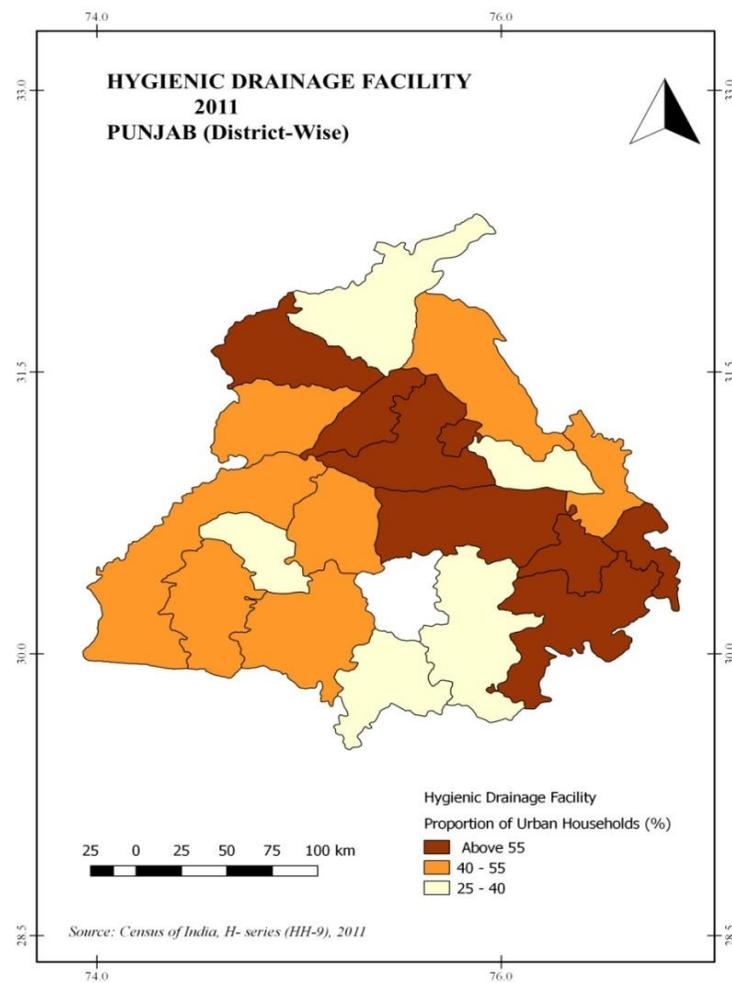
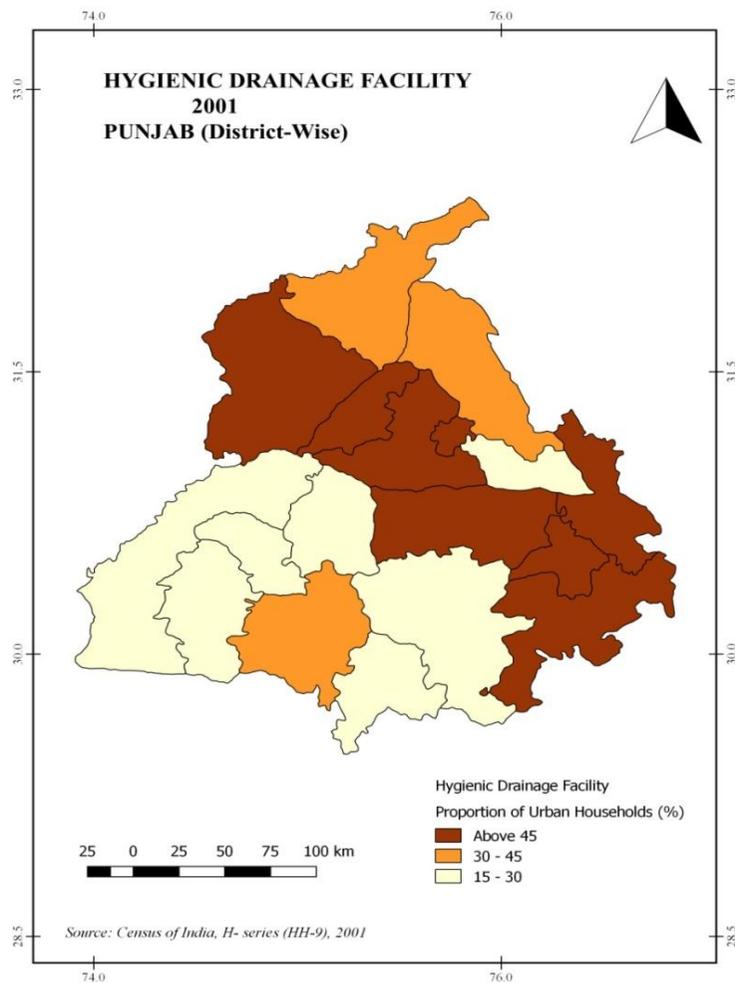


4.2.5 Hygienic Toilet facilities

Map 4.9 and 4.10 depicted the access to hygienic toilet facilities by urban HHs in the districts of Punjab in 2001 and 2011. The access of hygienic toilet facilities in urban Punjab has increased from 67 percent of total urban HHs in 2001 to more than 89 percent in 2011 but it varies district-wise. The increase is impressive owing to the programmes and policies of the state and central government and also increasing awareness among the public. In 2001 the district with the highest proportion of urban HHs having access to hygienic toilet facilities are Ludhiana i.e. more than 74 percent of the total urban HHs and it was followed by districts of Hoshiarpur and Patiala (both have more than 70 percent of urban HHs having hygienic toilet services). Faridkot, Fatehgarh sahib, Muktsar, Moga and Jalandhar are the districts where more than 68 percent of total urban HHs have hygienic toilet services. On the other hand, the districts like Amritsar and Gurdaspur are the only districts which have less than 60 percent of urban HHs with hygienic toilet facilities. It is followed by districts of Kapurthala, Firozpur and SBS Nagar (Nawashahr) where less than 63 percent of total urban households have hygienic toilet facilities.

In 2011 there are 6 districts which have more than 90 percent of total urban HHs having access to hygienic toilet facilities i.e. Jalandhar, Patiala, Ludhiana, Kapurthala, Rupnagar and Fatehgarh sahib. Here Kapurthala marked the highest increase from lowest in 2001 to top 5 in 2011 by increase of more than 32 percent points. It is followed by the districts of Amritsar and SAS Nagar where both have high proportion of urban HHs having hygienic toilet facilities are more than that of state average of 89 percent. It is noted that in 2001 Amritsar was at the bottom in availing hygienic toilet services which shows the growth of more than 30 percent points from 2001-11. The picture is different for the district of Mansa which has just 75 percent of total urban HHs availing hygienic toilet facilities. Also there are districts like Gurdaspur, Barnala, SBS Nagar, Muktsar and Firozpur which have less than 85 percent of total urban HHs availing hygienic toilet services.

Maps 4.11 and 4.12 Proportion of urban HHs having availability of hygienic drainage facility in districts of Punjab, 2001-2011



4.2.6 Hygienic Drainage system

From 2001-2011 urban Punjab have done well in the availability of hygienic drainage facilities to the households which increased from 44.9 percent of the total urban HHs in 2001 to more than 57 percent in 2011. There observed a growth of more than 12 percent points from 2001-2011 but still more than 6 lakh urban households are using unhygienic drainage system i.e. open drainage system. It is even more distressing when we analysed the district wise picture of urban HHs using hygienic drainage system for waste water outlet. In 2001 there are only 7 districts which have more than that of 47 percent urban HH uses closed drainage system i.e. Jalandhar, Rupnagar (both above 55 percent), Amritsar, Fatehgarh Sahib, Kapurthala, Ludhiana and Patiala. In 2011, on the other hand Mansa and Moga are the districts which have just below 25 percent of urban HHs uses closed drainage system for waste water outlet. There are the districts of Faridkot, Firozpur, Muktsar, SBS Nagar (Nawashahr) and Sangrur which have less than 30 percent of urban HHs having closed drainage system. It is shown by *Map 4.11 and 4.12*.

In 2011 the overall accessibility to closed drainage for the urban HHs has increased and it is clearly shown by *Map 4.12*. Though the state average has increased impressively in availability of hygienic drainage but the disparity across districts has also increased. In the districts of Jalandhar and Ludhiana more than 70 percent of total urban HHs which are followed by Amritsar, Patiala and SAS Nagar which have more than 60 percent of urban HHs have accessed to hygienic drainage system. Kapurthala and Fatehgarh sahib are the districts where more than 55 percent of urban HHs having hygienic drainage system. On the other hand districts like Barnala, Faridkot and Mansa have less than 30 percent of urban HHs having closed drainage for waste water outlet. Sangrur, Gurdaspur and SBS Nagar are the districts which have less than 40 percent to the urban HHs with closed drainage system.

In 2001 the highly urbanised districts observed high proportion of urban HHs with closed drainage system similar to other quality of urban basic amenities like safe cooking fuel. The pattern of the high and low availability of hygienic drainage system to urban HHs in 2011 is somewhat similar to 2001 where central belts of high urbanised districts are having high availability of closed drainage system for waste water outlet. While the southern districts like Fazilka, Faridkot, Muktsar and Moga are at the bottom in having

hygienic drainage system in 2001 but have improved their access in 2011. The districts like Sangrur, Mansa and Barnala continued at the bottom in access to hygienic drainage system for the HHs in both 2001 and 2011 as shown in *map 4.11 and 4.12*.

4.3 Distribution of basic amenities among size classes of towns: 1991-2011

This section discusses the distribution and availability of six chosen urban basic amenities among different size classes of towns from 1991 to 2011. As observed from the district level analysis of the urban amenities that highly urbanised districts have higher availability of basic amenities for the HHs as compared to the low urbanised districts. But the distribution of basic amenities also varies according to size and magnitude of population in towns, as large towns (towns of size classes I) in any district have different trend and pattern of availability of basic amenities as compared to small towns (towns of size classes V and VI). Therefore this section presents the analysis on quality of urban amenities across size classes of towns.

4.3.1 Sources of Safe Drinking Water

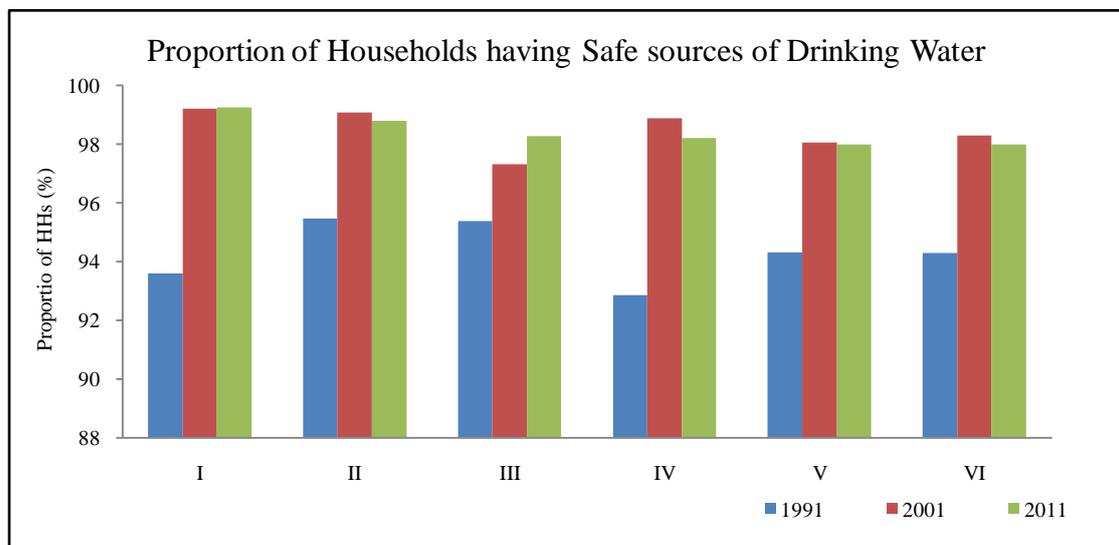
Sources of safe drinking water refers to all the sources of water supply to the households which are not prone to contamination includes piped tap water, hand pumps and tubewells or borewells, protected springs for water supply, covered wells (as the data mentioned in 2011 census). While the sources of water supply which are not safe for drinking are the sources which are prone to contamination like surface water, water tanker mainly untreated and water supply from ponds, lakes etc.

The inconsistent supply of water mainly in urban areas means that most of the households have to store water in different forms of containers which can lead contamination of water and prone to water borne diseases. There is a supply side constraint in the availability and distribution of safe water supply as suggested by many studies. In Punjab, the main issue regarding water crisis is related to issues of distribution of clean water and affordability rather than the availability of water to the households.

The study of safe drinking water is important to analyze as more than 60 percent of contaminated diseases are waterborne. It also includes the fact that the problem like

shortage of water supply with other urban amenities are gaining attention because these facilities are directly linked to the quality of life and more to the development of the urban areas. Keeping this perspective in view, the availability and distribution of different sources of drinking water are shown in the following figure in different size-classes of towns in Punjab from census 1991 to 2011.

Fig. 4.1 Proportion of households having safe sources of drinking water among towns of different size classes in Punjab, 1991-2011



Source: Calculated from various Census of India, H-series (HH-6), 1991, 2001, and 2011

- ❖ *Safe sources of Drinking water* include households using tap water, hand pump water and water supply from tubewells.

There are various sources of drinking water covered by census of India like tap water, hand pump and tubewells which are considered as the safe sources unlike wells i.e. particularly uncovered, ponds, lakes and various untreated sources of water. In the 1991 census, in size-class I towns tap water are the biggest sources of drinking water as more than 66 percent of the households uses it followed by drinking water from hand pumps and tubewells which are used by 27 percent of households. Both are treated as the safe sources of drinking water which consists of around 93 percent of the total households. But here the disturbing thing is that in all towns of class I having population more than 1 lakh, 6 percent of the households uses well water as their main source for drinking water which is considered as the contaminated water source. Among size Class I towns

although there is an increase in the use of the tap water by 6 percentage points to 71 percent of the total households in 2001 but a negligible increase in the percentage of households using tubewells and hand pumps as water sources are observed. Impressively 2011 census marked the significant increase in the source of safe drinking water i.e. tap water that has shown an increase to 83 percent of the total households with a decline largely occurred in the use of hand pumps and tubewells for drinking purpose. It is also marked that there is a marginal increase in the well water used by the households in 2001 in Class I. But in the class II and III categories towns during 1991 census, it is observed that households which use tap water are only 52 and 56 percent respectively. While there is huge increase of 15 percentage points in the category of households using water from hand pumps and tube wells and this increase may be contributed from the decrement of the tap water as a drinking water source. In 2011 census there are only a little more than 2 percent of total households using a contaminated source of water in Class II and Class III towns.

In case of the Class IV and V towns there represented a different scenario than that of the large towns, as in these towns there marked a decline in the households using tap water from 1991 to 2001 i.e. from 57 percent to 52 percent of total households. But in 2011 it has increased to 61 percent of total households using tap water as a main source of drinking water. It has been seen that more than 30 percent of drinking water supply is from the hand pumps and tubewells and also from the well water which is unsafe source of drinking water as mentioned by UNICEF. The negative side is that there is an increase in the households in size class IV and V towns i.e. approx. 2 percent using 'other sources' of drinking water which are considered contaminated alike the large towns in which it is less than 1 percent. In class VI towns, the households using tap water as a source of drinking water has decreased from 62 percent to 41 percent from 1991 to 2011. The 'other sources' of water like springs, ponds, lakes and rainwater etc have been increased marginally to 1.5 percent in class VI towns and it is considered as contaminated source of water largely responsible for many water borne disease.

In all the towns in Punjab across all size classes it is found that more than 98 percent of total HH uses safe sources of drinking water as per 2011 census data but still it is important to find that whether the tap water is treated regularly, is there any leakages in

the supply of drinking water and the quality of drinking water supplied by ULBs etc. which is covered through the primary survey in chapter 6.

The importance of the water supply can be attributed from *12th Five Year Plan* of the Planning Commission of India as “ water must be treated and managed like an economic asset not like a commodity in granted and must be conserved in the same way as any other resource. It must be taken as a responsibility for any government or non government agency whether they use water for drinking, washing, for irrigation or any other purpose”.

4.3.2 Sources of Safe Cooking Fuel

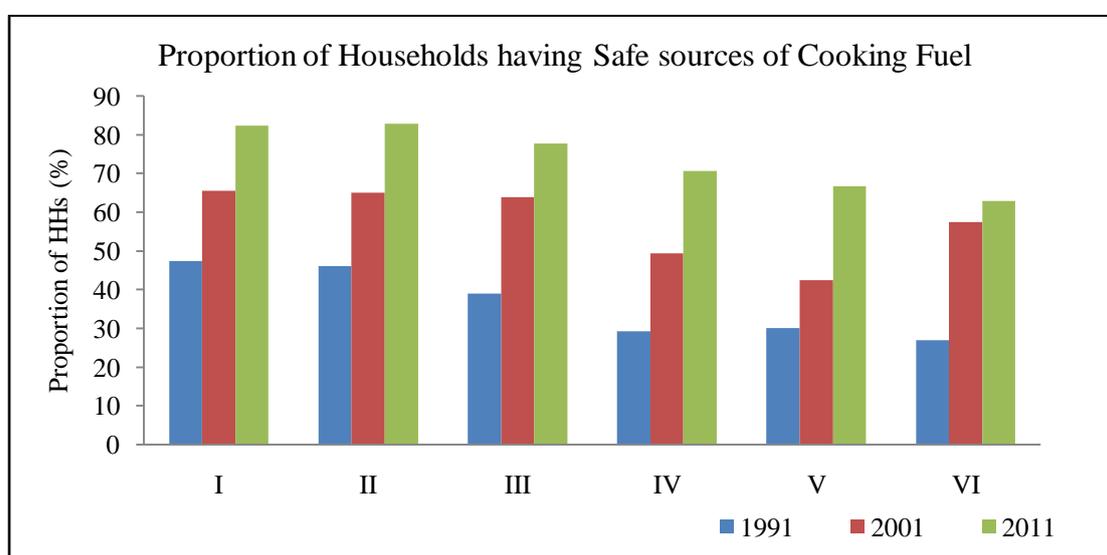
Though the modern fuels like LPG and electricity are the main source of cooking fuels in urban India but more than 35 percent of urban HHs still uses biomass, kerosene, firewood and crop residue for cooking purpose. The use of unsafe cooking fuels is not only a risk to the environmental degradation in form of indoor and outdoor air pollution but also put health risks to the member of households mainly to women and children which are more vulnerable. The use of unsafe cooking fuel led to ‘Households Air Pollution (HAP)’ as it emits high level of pollutants like carbon monoxide, PM 2.5 that are directly associated with adverse effects on health (*Ozoh et al., 2018*)⁷. The nature of the exposure to indoor air pollution and its consequences on health depends on the interactions between the sources of pollution. The type of fuel used in cooking has consistently been the most important predictor of this exposure (*United Nations, 2003*). The use of firewood, kerosene and crop residue are among the main cooking fuel for low and even middle income HHs mainly because the cost incurred on safe cooking fuel is high and beyond the affordability of these HHs.

In Punjab, the sources of cooking fuel have been studied in all towns across size classes from 1991 to 2011 census. It has been found that in 1991 in class I towns, only 48 percent of total HHs used safe sources of cooking fuel which has increased to more than 65

⁷ Ozoh, Obianuju B., , Tochi J. Okwor , Olorunfemi Adetona , Ayesha O. Akinkugbe, Casmir E. Amadi , Christopher Esezobor, Olufunke O. Adeyeye, Oluwafemi Ojo, Vivian N. Nwude and Kevin Mortimer (2018). Cooking Fuels in Lagos, Nigeria: Factors Associated with Household Choice of Kerosene or Liquefied Petroleum Gas (LPG). *Int. J. Environ. Res. Public Health*, 15 (641).

percent in 2001 and further increased to 82 percent of total HHs in 2011. It has to be noted that in the last decade particularly after various studies conducted by WHO, UNICEF and FAO etc. on the ill effects of the unsafe cooking fuel on the health, economy and to the development of the country there is more emphasis on the safe cooking fuel by developing countries. Therefore in large towns more funds have been disbursed by central and state govt. for adopting LPG for cooking purpose. The same trend and pattern is seen in class II towns where even more than 83 percent HHs use safe sources of cooking fuel as recorded in 2011.

Fig. 4.2 Proportion of HHs using safe sources of fuel for cooking in towns of different size classes in Punjab, 1991-2011



Source: Calculated from various Census of India, H-series (HH-10), 1991, 2001, and 2011

❖ *Safe cooking fuel* includes households using LPG/PNG, electricity, biogas.

The trend of safe sources of cooking fuel since 1991 to 2011 is that the proportion of HHs using safe cooking fuel sources decreased from large to medium and further decreased in small towns. It shows that large towns are getting more attention by policy makers and hence more funds for promoting safe sources of cooking fuel. Also there are vary less choices left with the HHs in large towns for fuelwood and biomass collection as compared to small towns where large options available for cooking fuel like biomass, fuelwood etc. from nearby fields. In class III and IV towns there is consistent increase in

proportion of HHs use safe cooking fuel since 1991 and it has been increased up to more than 76 percent and 71 percent HHs respectively uses safe sources of cooking fuel in 2001 and 2011 respectively.

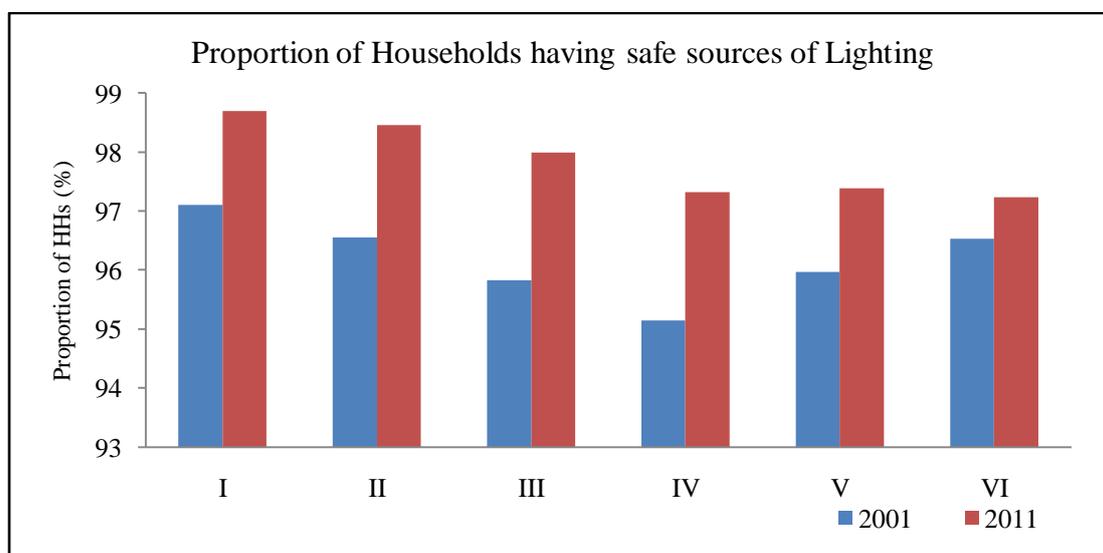
In small towns of size class V and VI where only less than 30 percent of HHs uses safe cooking fuel sources in 1991 it has increased to 41 percent and 58 percent of total HHs respectively in 2001 and it has further increased to 66 percent and 62 percent respectively in 2011. But still, around 40 percent of total HHs use biomass, fuelwood and kerosene which are more prone to indoor air pollution, health risks to residents, women and children in particular.

4.3.3 Safe sources of Lighting

Electricity is the most important source of lighting in the towns of Punjab and it is considered as one of the government's responsibility in the state. Electricity is a clean source of lighting unlike Kerosene, different oils and 'other sources' of lighting used by the households. (Kundu, 2002)⁸ in her study of Ahmedabad found the positive correlation between electrification on one hand and urban growth and urban density, etc. on the other hand. Therefore big towns and larger cities are better equipped with the electrification rather than small and medium towns. The data on the sources of lighting which census of India has provided is of 3 types: electricity, kerosene and solar energy and 'other sources' in 2001 and 2011 census. But in 1991 census only the data for electricity is given unlike 2001 and 2011, therefore the figure below compares the safe sources of lighting for 2001 and 2011 among size classes of towns.

⁸ Kundu, Debolina (2002). Provision Of Infrastructure And Basic Amenities: Analyzing Institutional Vulnerability. *Manak Publications, New Delhi*, 133-177.

Fig. 4.3 Proportion of HHs using safe sources of lighting in towns of different size classes in Punjab, 2001-2011



Source: Calculated from Census of India, H-series (HH-7), 2001 and 2011

❖ *Safe source of lighting* includes households using electricity, solar energy.

It is observed from the above figure that the towns across Punjab are having a more dependable source of lighting i.e. electricity which is used by more than 95 percent of households irrespective of the size category of towns in 2001. This percentage of households has further increased to above 97 percent across the board in all size categories of towns in 2011. While the contribution of kerosene as the source of lighting to households is not much but it reflects the use by more than a percent of households in all size categories of towns in 2001 and in 2011 census. Kerosene generally treated as “source of lighting for poor” available at subsidized rates to the people unlike other sources of lighting.

The use of solar energy by the households must be encouraged by the government initiatives and also by different community participation programmes as it is a renewable source of energy and Punjab is also having a good prospects of solar energy. Solar energy can be considered as ‘future energy source’. The climate and location of Punjab provide a favourable condition for harnessing the solar as well as the wind energy as the sources of lighting. Even some international organizations mentioned that government must provide for the cheap and easy accessibility of these sources for purpose like street lighting etc.

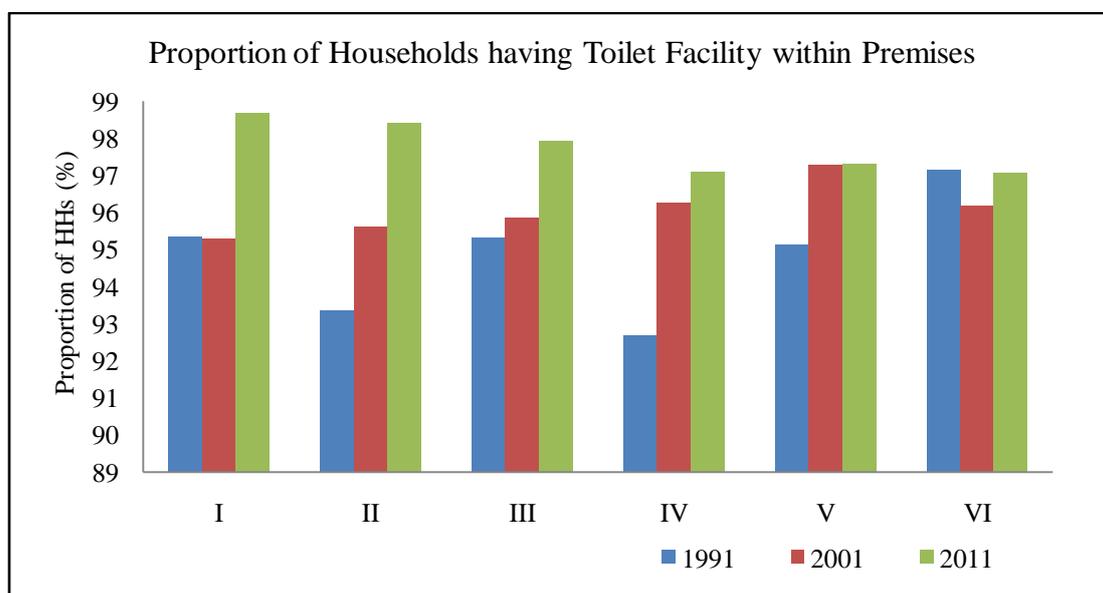
4.3.4 Sanitation and Sewerage Facilities

Sanitation is broadly defined to include management of human excreta, solid waste and drainage. The ESI India study focussed on the safe management of human excreta and associated hygiene behavior. This is not to discount the importance of the other aspects, but to focus on the key dimensions that cause a substantial health burden on Indians, especially poor people and children. Children and the poor households are the sections of society which suffered the most due to the poor sanitation.

The United Nations-World Health Organization Joint Monitoring Programme for Water Supply and Sanitation defines ‘improved sanitation’⁹ as the means that hygienically separate human excreta from human contact and hence reduces health risks to humans. Inadequate sanitation is thus due to the lack of improved facilities (toilets, conveyance and treatment systems) and hygienic practices (for example, hand washing, proper water handling, personal hygiene and so on) that exposes people to human excreta and thus to disease-causing fecal-oral pathogens through different transmission pathways. The data provided in the census on sanitation and sewerage amenities like households having toilet facilities within HH premises are shown from the following figure for the period of the 1991 census to 2011 census.

⁹ UN-WHO JMP (2008, 2010) lists systems that flush or pour-flush to piped sewer system, septic tanks or pit latrines; or ventilated improved pit (VIP) latrines, pit latrines with a slab or composting toilets as ‘improved’ sanitation arrangements. ‘Unimproved’ facilities include open defecation, bucket or hanging latrines, open pit latrines or those without a slab, and facilities draining into or open areas (that is, not to piped sewer system septic tank or pit latrine); and shared toilets. In addition, unhygienic practices further expose people to health risks.

Fig. 4.4 Proportion of HHs having toilet facilities within HH premises among towns of different size classes in Punjab, 1991-2011



Source: Calculated from Census of India, H-series (HH-8), 1991, 2001 and 2011

There presenting the impressive figures of the availability of toilet facilities within HH premises ranging from 92 percent of the total households in 1991 to the level of 98 percent of the total households in 2011. But the question arises that still more than 2 to 3 percent of total HHs in urban areas of Punjab defecate in open or to some public toilets. In large towns, the toilet facilities increased from 95 percent to the highest level of more than 98 percent of the total households in Class I towns and from 93 percent to 98 percent among the towns of size class II. Large towns of size class II shows the highest increase of 4 percentage points in the toilet availability within HH premises. On the other hand in the Class V towns, the households having toilet facilities increased from 95 percent to 97 percent of the total households from 1991 to 2001 but it shows no increase in the period between 2001 and 2011 census as it remains same.

In the size Class VI towns it has been found that there marked the marginal decrease in the proportion of the households having toilet facilities within the premises from 1991 to 2001 i.e. from 97 percent to 96 percent respectively. It is noted that in 1991, the proportions of households in VI class towns with toilet facilities is highest among all the six size-classes of towns but since then it show a decreasing trend for size class VI unlike in all other categories where it increased continuously. Also there is large number of

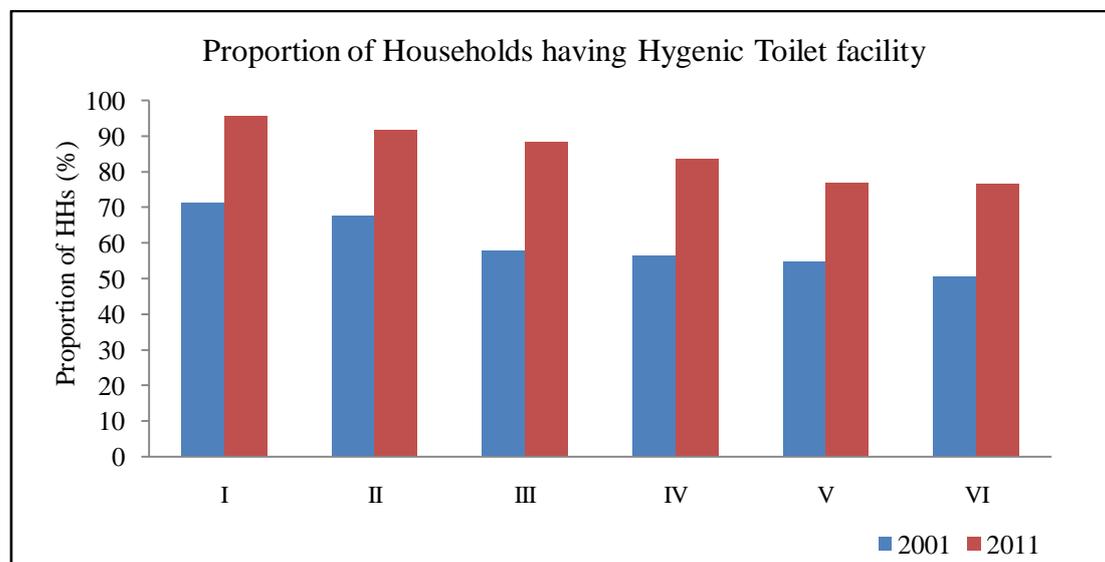
census towns added in Punjab from 2001-2011 in which there are not proper urban governance system and hence lack in urban sanitation. As discussed earlier that the mere presence of latrines are not enough to provide adequate sanitation facilities but the further classification of the types of toilet facilities into different categories like pit latrines, water closet and other latrines are also important so it is imperative to discuss the sanitation condition among the towns from 2001 to 2011.

In urban regions we are experiencing the increase in the sanitation and sewerage facilities over a period of time but the increase in the hygienic and proper sanitation is not in pace with the increasing urbanisation and urban growth. There are many studies of urban sanitation focus on the mismatch of the urban growth processes and urban amenities like drinking water supply, sources of cooking fuel, hygienic toilet facilities and sewerage facilities to the HHs (Wankhade, 2014)¹⁰. Marginalised and low income groups which are mainly from rural to urban migration end up with low and poor urban services are the real sufferers of this mismatch. Among many other deficiencies, safe drinking water, proper housing, etc. hygienic sewerage and healthy workplace is of the utmost concern because of the fact that low income groups are not in position to afford hygienic toilet facilities. Also it has been found that lack of proper planning and failure of govt. policies to target beneficiaries left people in unhygienic sanitation and sewerage conditions. The crisis in sewerage and sanitation has clear links with the unbalanced urban development and poor provision of wastewater infrastructure. Along with this increase disease incidence, health risks and associated economic burdens have disproportionate impacts on the poor and vulnerable (Regional Plan, 2021)¹¹.

¹⁰ Wankhade, Kavita, Krishnachandran Balakrishnan and Vishnu M.J. (2014). Urban water supply and sanitation in India. *IIHS RF paper on Water supply and sanitation*.

¹¹ Sewerage, solid waste management, drainage and irrigation. *Regional Plan, 2021*.

Fig. 4.5 Proportion of HHs having hygienic toilet facilities in towns of different size classes in Punjab, 2001-2011



Source: Calculated from various Census of India, H-series (HH-8), 2001 and 2011

- ❖ *Hygienic toilet* facilities include households having pit latrines¹², water closet latrines.

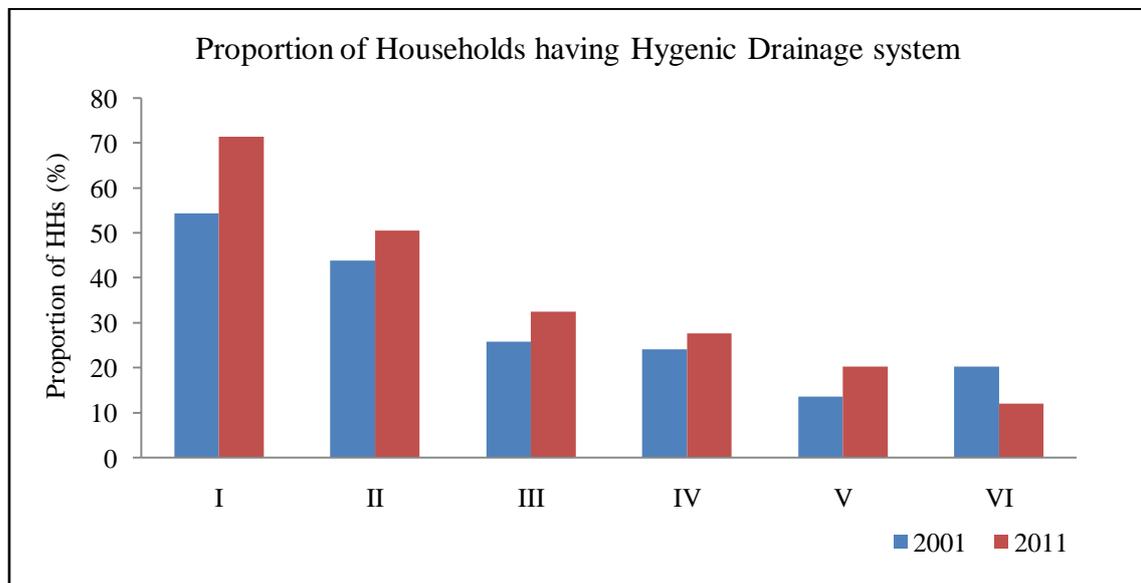
In all towns of Punjab across all size classes there are atleast 75 percent of HHs in 2011 have hygienic toilet facilities within HH. Though it varies across towns as large towns in class I and II have more than 90 percent HHs having hygienic toilet services in 2011 but small towns of class VI towns have just 76 percent HHs with hygienic toilet services. Hygienic toilet facilities consist of both pit latrines and water closet latrines. The proportion of households having pit latrine have decreased across all size classes over a period of time from 2001 to 2011. As in 2001 census there is a decline in the households having a pit latrine from 20 percent to 4 percent in 2011 but there is a huge increase in the households having water closet latrines from 52 percent to 91 percent. As mentioned that there is also a decline in pit latrines among Class II and III from 18 percent to 11 percent and from 25 percent to 11 percent respectively. But this decrease is compensated by an increase in water closet latrines which has increased significantly i.e. from 50 percent to 85 percent and from 33 to 77 percent in Class II and III towns respectively. In size Class

¹² According to the census of India pit latrines are defined as the dry latrines.

VI towns households using pit latrines have decreased but not in the same ratio as that of big towns Class I and II. Households in Class V and VI towns experienced an increase from 32 to 67 percent households using water closet latrines. The households having no latrines are more in small and medium towns than that of the large towns like in 2011 it is highest among Class V and VI towns which is 22 and 23 percent respectively while it is 4 percent and 6 percent of households with no latrine facility in class I and class II towns.

The sewerage condition is closely associated with that of the sanitation facilities as it has a close association with the types of bathroom and latrines that the households use. Therefore different question emerges for the types of connectivity for the waste water outlet like how is it managed by the households, whether it is covered or open drainage, or not available at all? The following *figure 4.6* shows the different types of connectivity for waste water outlet available at household level.

Fig. 4.6 Proportion of HHs having a hygienic Drainage system in towns of different size classes in Punjab, 2001-2011



Source: Calculated from Census of India, H-series (HH-9), 1991, 2001 and 2011

- ❖ *Hygienic drainage system* includes households with closed waste water outlet system.

Due to inadequate waste water disposal arrangements, effluents overflowing the septic tanks (of household latrines) find their way into waste water channels/drains that are constructed in the streets and lanes. Waste water generated in the household's kitchen, bathrooms and cattle sheds also flow into the water drains (Singh *et al.*, 2007)¹³. There is a clear pattern observed that the proportion of the households using closed drainage system for a waste water outlet is decreasing from class I to class VI i.e. HHs in class I towns has highest access to hygienic drainage system and class VI has lowest among all size classes of towns. In the class I towns more than 50 percent of total HHs used the closed drainage for the waste water outlet in 2001 census which indicates the better and proper sewerage conditions in the bigger towns as compares to the small and medium sized towns. The same pattern is repeated in the census 2011 where more than 71 percent of HHs used closed or hygienic drainage for waste water outlet and there is an increasing across all size classes of towns in terms of households using a closed drainage system from 2001 to 2011. Closed drainage system for waste water outlet is preferred over the open drainage system and of course over no drainage system at all for the HHs. In the 2011 census, class I towns observed more than 70 percent of the households using the closed drainage system but the unfortunate part of the story is that still there are more than 8 percent of the households which do not have any sewerage facilities at all, the waste water is either collected in the open place or there are examples also showing that the waste water collected or are thrown in the lane outside the house especially in the slum region of the big towns. It is unfortunate that even in large towns of size class I and II more than 30 percent of HHs uses unhygienic drainage system with improper waste water outlet and it is not only hazardous for the HH uses it but for other HHs in locality i.e. 'negative externalities' and many studies mentioned that majority of these HHs are either slums, migrated population HHs other marginalised and low income group households.

On the contrary, small towns of size class V and VI have less proportion of households that do not have any drainage system (no drainage system) may be because of the availability of the free land for open drainage system which is clear from the highest number of households using open drainage system i.e. 70 percent and 83 percent

¹³ Singh, Gurmail And Swaran Singh (2007). Diaspora Philanthropy in Action: An Evaluation of Modernisation in Punjab Villages. *Journal of Punjab Studies*, 14 (2), 225-248.

respectively in these towns. It is also noted that there is an increase in proportion of the households in all the size class of the towns using any form of drainage system (closed or open drainage system) but there is an increase in proportion of households having no drainage system at all in size class IV towns i.e. from 9 percent to 12 percent from 2001 to 2011. The wastewater discharged by the households with no facility for waste water outlet are accumulated the water in the nearby surroundings that causes serious health risks and many water borne diseases like Jaundice and Cholera, etc.

The overall scenario of urban Punjab across size class of towns resulting from inadequate arrangements for safe water supply, poor sanitation facilities owing to lack of proper households and community level arrangements for defecation should alarms the policy makers and the community itself to take proper actions. Disposal of waste water and bio-wastes, poor condition of lanes and by-lanes, unscientific management of animal dung and other dumped waste openly cry for attention of the policy makers, aid agencies and all those who are concerned with the well-being of Punjab.

4.4 Levels of quality of urban basic amenities in towns of Punjab: 2001-2011

The quality of urban basic amenities has been discussed in the above section for all the districts and across all size classes of towns in Punjab for 2001 and 2011. All the six indicators for the quality of urban amenities have been analysed individually like safe sources of drinking water, safe cooking fuel, safe lighting sources, hygienic toilet and drainage services for all towns and urban HHs in the districts but it showed that some districts are having higher proportion of urban HHs with safe drinking water sources but lacked behind in safe cooking fuel sources or hygienic toilet services. Therefore it doesn't give a real and composite picture of the levels of quality of urban basic amenities or say which towns or districts have good level of urban amenities or low levels of urban amenities hence a composite index has been prepared using Principal Component Analysis (PCA) method to rank the towns according to the availability and accessibility of urban basic amenities.

A composite index using PCA has been prepared separately for all towns i.e. 157 and 217 towns in 2001 and 2011 respectively. In 2001 all the urban amenities indicators have been reduced to a composite index using PCA where there are two components having Eigen

values more than 1 which explains more than 70 percent of the total variance and first component is taken as a composite index to analyse the levels of quality of urban basic amenities. Whereas in 2011 only first component have Eigen value more than 1 and hence first component is taken to analyse the levels of quality of urban basic amenities across all towns. The level of urban basic amenities in all the towns of Punjab in 2001 and 2011 has been categorized into three levels as:

1. High level of urban amenities- composite index value more than 1
2. Medium level of urban amenities- composite index value from 0 to 1
3. Low level of urban amenities- composite index value less than 0

All the towns of the state in 2001 and 2011 have been categorised according to the above levels (high or medium or low amenities), so all the towns in various size classes are grouped into different levels of urban amenities (*see Table 3 and Table 4 in Appendices*).

Table 4.3 Number of towns in Punjab categorised to different levels of quality of urban basic amenities, 2001

2001		LEVELS OF URBAN AMENITIES ON THE BASIS OF URBAN AMENITY INDEX		
Size classes of towns	Total towns	HIGH	MEDIUM	LOW
I	14	3	11	0
II	18	6	9	3
III	36	3	22	11
IV	54	6	12	36
V	29	1	4	24
VI	6	2	1	3
TOTAL	157	21	59	77

Source: derived from Census of India 2001, HH-6, HH-7, HH-8, HH-9 and HH-10 by Principal Component Analysis (PCA) based composite Index

In 2001 among all 157 towns, 14 towns are of size class I of which 3 towns i.e. SAS Nagar, Patiala and Jalandhar are having high level of urban amenities. The majority of class I towns (11 out of total 14) are having medium level of urban amenities. It is noted that no town from size class I is in low levels of urban amenities. The same pattern is

observed for size class II towns where 15 towns out of total 18 towns come in high or medium level of urban amenities. While the pattern changes for class III towns where only 3 towns are in high level category of urban amenities and 22 towns are in medium level of urban amenities followed by 11 towns have low level of urban amenities. In class IV towns, 36 towns out of total 54 towns fall in low level of urban amenities followed by 12 towns in medium level and only 6 towns in high level of urban basic amenities. In small populated towns of class V, 24 towns out of total 29 towns fall under low level of urban amenities and only one town falls in high level of urban amenities and same pattern is observed for class VI towns where 3 towns out of 6 towns have low level of urban amenities. It is mentioned that 2 towns i.e. Sheikhpura in Ludhiana district and Sansarpur town in Jalandhar district are in high level of urban amenities. Towns having medium and low level of urban amenities are mainly census towns.

From the *table 4.3* it is seen that the majority of the towns of Punjab has low and medium level of urban basic amenities. It is noted here that most of the towns in low category of urban basic amenities are from small towns of size class V and VI and also from size class IV. It shows that for the sustainable urban development in the state there is an immediate need to focus on small towns in terms of urban infrastructure and urban basic amenities.

Table 4.4 Number of towns in Punjab categorised to different levels of quality of urban basic amenities, 2011

2011		LEVELS OF URBAN AMENITIES ON THE BASIS OF URBAN AMENITY INDEX		
Size classes of towns	Total towns	HIGH	MEDIUM	LOW
I	16	6	10	0
II	24	9	14	1
III	48	4	32	12
IV	61	7	19	35
V	49	2	16	31
VI	18	1	4	13
TOTAL	217	29	95	92

Source: derived from Census of India 2011, HH-6, HH-7, HH-8, HH-9 and HH-10 by Principal Component Analysis (PCA) based composite Index

There are 60 new towns emerged from 2001-2011 in Punjab to total 217 in 2011. In the *table 4.4*, the number of towns according to their different levels of urban amenities is arranged across all size classes. It is observed that out of 16 towns in size class I, 6 towns come into high level of amenities topped by SAS Nagar (Mohali) followed by Patiala, etc. It is noted that High level of urban amenities category is mainly consists of towns having municipal corporations i.e. district headquarters, municipal councils with an organized system of amenities funding, proper staff for urban services unlike census towns though this category listed 8 census towns. There is not a single town from size class I that falls into low level of urban amenities. The pattern of the level of urban amenities in size class II towns is alike size class I towns where 23 out of 24 towns falls into high (9) and medium (14) level of urban amenities.

The pattern changes in class III and class IV towns where majority of towns fall into medium and low level of urban amenities as for size class IV, 35 towns of total 61 towns come into low level of urban amenities. In medium level of urban amenities the towns are mainly municipal councils and nagar Panchayat except Bathinda Corp. which is the only municipal corporation in medium level of urban amenities. In small towns of class V and VI categories most of the towns come in the low level of urban amenities i.e. 31 out of 49 and 13 out of 18 towns respectively. Out of total 67 towns in class V and VI category only 3 towns have high level of urban amenities i.e. Sifipind, Akalgarh and Dhaki towns and all three are census towns. In low levels of urban amenities majority of towns are Census Town (CT) which do not have proper funding structure (revenue and expenditure on urban infrastructure), proper staff for providing urban services, awareness among the urban dwellers regarding safe drinking water supply, safe cooking fuel, hygienic toilet and drainage services etc.

From *table 4.4* it is clearly seen that the highest number of towns i.e. 95 towns in 2011 come under category of medium level of urban basic amenities. It is followed by 92 towns comes under the category of low levels of urban basic amenities. While in 2001 also majority of towns were in low level category but it intensified in 2011 where majority of towns fall under medium level of urban basic amenities. It is also noted here that the more number of towns from all size classes of towns have been increased in high level category of urban basic amenities except size class VI towns, where 1 town has decreased in 2011 as compared to 2001 in high level of urban basic amenities.

Table 4.5 New towns in Punjab categorised according to different levels of quality of urban basic amenities, 2011

New Towns emerged in 2011		LEVELS OF URBAN AMENITIES ON THE BASIS OF URBAN AMENITY INDEX		
Size classes of towns	Total Towns	HIGH	MEDIUM	LOW
II	1		1	
III	7	1	4	1
IV	12	1	2	9
V	28	1	8	19
VI	13	1	2	10
TOTAL	60	4	17	40

Source: derived from Census of India 2011, HH-6, HH-7, HH-8, HH-9 and HH-10 by Principal Component Analysis (PCA) based composite Index

As observed in 2001 and 2011, the level of urban basic amenities in majority of small towns (towns of size classes V and VI) falls under Low level of urban amenity index among all the towns. Similarly *table 4.5* shows the levels of urban amenities in New Towns which emerged in 2011. Out of the total 60 new towns only 4 towns have high quality of urban amenities which is in all size classes from III to VI. There is only one new town from size-class II (Naya Gaon) which falls in medium level of urban amenities. It is clearly seen that 40 new towns out of total 60 are having Low level of urban amenities (Urban Amenity Index value below 0). It is to be noted here that majority of these towns are Census towns, which do not have urban governance system to provide basic amenities to the residents. These towns are basically under rural administration and governance system, just have demographic and economic attributes of ‘urban area’ according to Census of India. The quality of urban amenities in new towns is covered in details through primary survey in *Chapter 7*.

4.5 Determinants of the quality of urban basic amenities in large and small towns of Punjab, 2011

The quality of urban basic amenities determined by many factors like the financial condition of the urban local bodies (ULBs) in terms of the income and expenditure, per capita income and expenditure on urban basic services, socio-economic attributes of the HH, geographical factors of the region etc. Among all the determinants of the quality of urban amenities socio-economic condition of the HHs are important in the sense it directly affects the quality of urban basic amenities. The social attributes of the urban population consists of population composition in terms of gender, social groups, literacy rate, female literacy rate and economic attributes include work participation rate, female work participation rate directly determines the quality of urban basic amenities in terms of safe drinking water, safe cooking fuel and hygienic toilet etc. As the majority of urban poor are engaged in informal economic sector and hence have low quality of urban amenities (Chaudhari, 2015)¹⁴. This section analysed the determinants of the quality of urban basic amenities by selecting six indicators i.e. proportion of SC population in percent (Census of India, 2011)¹⁵, total literacy rate, female literacy rate, total work participation rate, female work participation rate and proportion of ‘other workers’¹⁶ in total workers. ‘Other workers’ share the largest contribution in the urban areas and hence are chosen as an indicator for determinant of urban amenities.

Correlation coefficient has been calculated to understand the relationship between the socio-economic characteristics of the towns and quality of urban amenities. The correlation coefficient has been calculated using Karl Pearson correlation coefficient formula. The correlation between socio-economic characteristics of the towns and quality of urban amenities has been calculated separately for large towns and small towns. It is

¹⁴ Chaudhari, Sumita (2015). Urban poor, economic opportunities and sustainable development through traditional knowledge and practices. *Global Bioethics*, 26 (2), 86–93.

¹⁵ According to census 2011, Punjab has the highest proportion of SC population to its total population i.e. 31.94% of the total population. In Amritsar district more than 28% of the total population is SC population.

¹⁶ According to census 2011, ‘other workers’ are workers which are not engaged in agricultural labour, Households industries and as cultivators. Examples of other workers are govt. workers, business person etc.

because the social characteristics and economic activities in the large towns are different from small towns where large number of towns is census towns without any urban local authority responsible for providing basic amenities.

Table 4.6 Correlation between the socio-economic characteristics and the quality of urban basic amenities in the large towns of Punjab, 2011

Correlations- 2011 large towns						
		Safe Drinking Water	Safe Cooking Fuel	Safe Lighting	Hygienic Drainage	Hygienic Toilet
Proportion of SC pop. (%)	Pearson Correlation	-.356*	-.330*	-.373*	-.419**	-0.128
	Sig. (2-tailed)	0.028	0.043	0.021	0.009	0.445
Total Literacy Rate	Pearson Correlation	0.168	.826**	.326*	.325*	-0.039
	Sig. (2-tailed)	0.313	0	0.046	0.046	0.814
Female Literacy Rate	Pearson Correlation	0.143	.830**	.336*	.385*	0.048
	Sig. (2-tailed)	0.392	0	0.039	0.017	0.776
	N	38	38	38	38	38
Total WPR	Pearson Correlation	0.298	0.066	-0.098	0.22	-0.2
	Sig. (2-tailed)	0.069	0.695	0.56	0.184	0.23
Female WPR	Pearson Correlation	0.048	.509**	-0.152	0.29	0.277
	Sig. (2-tailed)	0.775	0.001	0.361	0.077	0.093
Proportion of Other Workers (%)	Pearson Correlation	.375*	0.284	0.309	0.235	-0.21
	Sig. (2-tailed)	0.02	0.084	0.059	0.155	0.206
*. Correlation is significant at the 0.05 level (2-tailed).						
**. Correlation is significant at the 0.01 level (2-tailed).						

Source: Census of India 2011, All India Town Directory, Punjab

From the *table 4.6* it is clearly seen that high proportion of SC population in the large towns are directly negative correlated to all the indicators of urban basic amenities. High proportions of SC population have low level of literacy, low level of work participation rate and they are also living in poor residential areas of the towns. The proportion of SC population is also negative correlated with hygienic drainage system in large towns (-4.2) followed by safe lighting (-.37) and safe drinking water (-.36) i.e. as the proportion of the SC population in the town increases the quality of urban basic amenities decreases. Other than hygienic toilet facilities in large towns which is also negatively correlated but insignificant, all other basic amenities indicators are significantly negative correlated with proportion of SC population in large towns.

Literacy and educational attainment by the population are the important indicators for the progress and development of society. High literacy rate not only create awareness about the well being of the people but also for the health and hygiene development. It is also seen from the correlation between the literacy rate and urban basic amenities as all indicators of quality of urban basic amenities are positively correlated like safe cooking fuel (.82), safe lighting (.32) and hygienic drainage (.32) along with other urban basic amenities indicators except hygienic toilet facilities where it is negatively correlated though it is insignificant i.e. -0.03. Similarly, female literacy rate is also seen positively correlated with quality of urban amenities. Female literacy rate is closely associated with some urban amenities indicators like safe cooking fuel as largely women are responsible for cooking food and from the above table a highly positive correlation between the two can be seen. Similarly female literacy rate is significantly positive correlated with hygienic drainage (.38) and hygienic toilet facilities (.34) also.

Work participation rate is the key determinant of the quality of urban amenities as it provides the needed income to spend on the quality of urban amenities like safe drinking water, hygienic toilet facilities and hygienic drainage facilities etc. Total work participation rate is positive correlated with urban basic amenities like safe drinking water, safe cooking fuel and hygienic drainage services while it is insignificant negatively correlated with safe lighting and hygienic toilet facilities. Female WPR is both a driver and outcome of the development in the society (Verick, 2018)¹⁷. Women increase in work

¹⁷ Verick, Sher (2018). Female labor force participation and development. *IZA World of Labor*, 2 (87).

participation increases the income of the family and hence quality of urban basic amenities of the HHs. Except with safe lighting, female WPR is highly positive correlated with all urban basic amenities in large towns and highest being with safe cooking fuel (.51). ‘Other workers’ have significant positive correlation with all urban basic amenities indicators, highest being with safe drinking water (.37) followed by safe lighting (.30) while hygienic toilet facility is negatively correlated i.e. -0.2 which is insignificant as toilet facilities to the HHs are seen to be the responsibilities of the govt. authorities.

Table 4.7 Correlation between the socio-economic characteristics and the quality of urban basic amenities in the small towns of Punjab, 2011

Correlations- small towns 2011						
		Safe Drinking Water	Safe Cooking Fuel	Safe Lighting	Hygienic Drainage	Hygienic Toilet
Proportion of SC pop. (%)	Pearson Correlation	-0.194	-0.19	0.117	-0.058	-0.093
	Sig. (2-tailed)	0.115	0.123	0.344	0.642	0.454
Total Literacy Rate	Pearson Correlation	.260*	.600**	.250*	.315**	0.109
	Sig. (2-tailed)	0.034	0	0.041	0.01	0.382
Female Literacy Rate	Pearson Correlation	.304*	.671**	.345**	.303*	0.19
	Sig. (2-tailed)	0.012	0	0.004	0.013	0.124
Total WPR	Pearson Correlation	-.254*	-.342**	-.311*	-0.073	-0.01
	Sig. (2-tailed)	0.038	0.005	0.01	0.558	0.934
Female WPR	Pearson Correlation	-.285*	-0.207	-0.113	-0.136	0.004
	Sig. (2-tailed)	0.02	0.093	0.362	0.274	0.972
Proportion of Other Workers (%)	Pearson Correlation	.319**	.402**	-0.034	.315**	-0.041
	Sig. (2-tailed)	0.009	0.001	0.786	0.009	0.74
*. Correlation is significant at the 0.05 level (2-tailed).						
**. Correlation is significant at the 0.01 level (2-tailed).						

Source: Census of India 2011, All India Town Directory, Punjab

The above table shows the correlation between the socio-economic characteristics and the quality of urban amenities in small towns i.e. size classes IV, V and VI in 2011. It has been found that the proportion of SC population in small towns alike large towns are significantly negatively correlated with all indicators of the quality of urban amenities like safe drinking water, safe cooking fuel, hygienic toilet and hygienic drainage facilities. Although in small towns high proportion of SC population is positively correlated with safe lighting but it is insignificant (0.11). In small towns there observed a residential segregations particularly in small census towns which have been converted from large villages to towns. Alike large towns, in small towns also literacy rate and female literacy rate both are positively correlated with all the indicators of the quality of urban amenities like safe cooking fuel in particular i.e. 0.60 with literacy rate and 0.67 with female literacy rate followed by safe drinking water and hygienic drainage system along with safe lighting sources and hygienic toilet facilities.

Total WPR and urban amenities correlation in small towns is different from large towns as observed in above table where there is significant negative correlation between total WPR and all indicators of the quality of urban amenities like safe drinking water, safe cooking fuel, safe lighting i.e. -.25, -.34 and -.31 respectively and also negative relationship with hygienic toilet and drainage facilities though insignificant. Female WPR is also directly negatively correlated with all urban amenities except hygienic toilet facilities where it shows no relationship between the two (0.01). It is to be mentioned here that Punjab has the lowest female work participation rate and in urban areas it is even low as only 11.6 % females are workers in small towns as against the 11.9% female WPR in urban Punjab in 2011.

The proportion of 'other workers' to total workers shows a significant positive correlation with safe cooking fuel, safe drinking water and hygienic toilet facilities which is encouraging as other workers are mainly non-agricultural and non-households workers where income have a major positive impact on access to urban amenities to the HHs. However 'other workers' proportion is negatively correlated with safe lighting and hygienic drainage services in small towns where it is considered a public task and should be provided to all by municipalities.

4.6 Conclusions

The quality of urban basic amenities (safe drinking water, safe cooking fuel, safe light, hygienic toilet and drainage services) for HHs is discussed and analysed at the district level from 2001 to 2011 and also at the towns level (size classes I to VI) from 1991 to 2011. The major findings of the present chapter are:

- In 2001 the districts with highest urbanisation has also highest access to safe drinking water but the pattern changed in 2011 where low urbanised districts also added to highest access to safe drinking water. It is noted here that in 2011 safe drinking water includes only tap water from treated source which was not available separately in 2001 census and hence some districts shows decline in the availability of safe drinking water in 2011.
- In 2011, in Punjab more than 80 percent urban HHs uses safe cooking fuel which has increased from just 63 percent in 2001 and it is reflected in the pattern of districts also in 2011. In 2001, south- eastern region of the state where districts like SAS Nagar and Patiala have the highest proportion of urban HHs having availability to safe cooking fuel which was added by the highest urbanised districts like Jalandhar, Ludhiana, Kapurthala and Amritsar (central belt of high urbanisation) in 2011. On the other hand the southern states of Punjab like Mansa, Sangrur, Barnala and Muktsar have lowest proportion of urban HHs accessing safe cooking fuels i.e. below 50 percent in 2001 and also at the bottom end in 2011 i.e. below 75 percent of total urban HHs.
- In 2011 there are 3 districts i.e. Jalandhar, Patiala and Kapurthala where the proportion of urban HHs having safe sources of lighting are more than 99 percent. The northern and southeastern districts of the state have the maximum proportion of urban HHs having safe sources of lighting in both 2001 and 2011. The region also includes the highest urbanised belt of Punjab state. On the other hand, south western districts which are also border districts like Mansa, Faridkot, Ferozpur and Fazilka, etc. have lowest proportion of urban HHs accessing safe lighting i.e. below 95 percent of total urban HHs.
- In 2011, the districts of Patiala, SAS Nagar, Jalandhar, Kapurthala, Fatehgarh Sahib and Ludhiana have observed more than 90 percent of urban HHs having

bathroom within HH premises while in 2001 there was not even a single district which had more than 88 percent of HH having bathroom within premises. In 2011, districts like Tarn Taran (new district carved out from Amritsar), Mansa and Ferozpur have less than 80 percent of urban HHs having access to bathroom facility within HH premises. It has clearly been observed that the border districts i.e. districts shares international border with Pakistan have low proportion of urban HHs having access to bathroom facilities within HH premises.

- The access of hygienic toilet facilities in urban Punjab has increased from 67 percent of total urban HHs in 2001 to more than 89 percent in 2011 but it varies district-wise. In 2011 there are 6 districts which have more than 90 percent of total urban HHs having access to hygienic toilet facilities i.e. Jalandhar, Patiala, Ludhiana, Kapurthala, Rupnagar and Fatehgarh sahib. Here Kapurthala marked the highest increase from lowest in 2001 to top 5 in 2011 by increase of more than 32 percent points. It is noted that in 2001 Amritsar was at the bottom in availing hygienic toilet services which shows the growth of more than 30 percent points from 2001-11. The picture is different for the district of Mansa which has just 75 percent of total urban HHs availing hygienic toilet facilities.
- From 2001-2011 urban Punjab have done well in the availability of hygienic drainage facilities to the households which increased from 44.9 percent of the total urban HHs in 2001 to more than 57 percent in 2011. The pattern of the high and low availability of hygienic drainage system to urban HHs in 2011 is somewhat similar to 2001 where central belts of high urbanised districts are having high availability of closed drainage system for waste water outlet. While the southern districts like Fazilka, Faridkot, Muktsar and Moga are at the bottom in having hygienic drainage system in 2001 but have improved their access in 2011.
- Among all the indicators of the quality of urban amenities, safe drinking water sources in urban Punjab decreased from 2001 to 2011 i.e. from 98 percent of all HHs to 87 percent. It is also reflected clearly in medium and small populated towns in 2011 i.e. proportion of HHs with safe drinking water supply decreased in size classes IV and VI towns.
- Use of safe cooking fuel sources in urban Punjab has increased significantly from 54 percent of total urban HHs in 2001 to more than 72 percent in 2011. There is a clear pattern that the highest access to safe cooking fuel is in large towns of class I

and II and it decreased in medium and small towns being the lowest in class VI towns. In towns of class IV, V and VI the access to safe cooking fuel is lower than the state's average.

- Safe lighting sources (lighting from electricity, solar energy) in urban Punjab was accessed by more than 95 percent of the total HHs in 2001 which was further increased to more than 97.6 percent of total urban HHs. The highest growth is found in class III and IV towns followed by large towns of class I and II towns and the lowest growth in use of safe lighting sources is in small towns of V and VI.
- Hygienic toilet facilities in the urban HHs in Punjab have increased by 21 percent points to 79 percent of total HHs in 2011. The highest access to hygienic toilet facilities is in large towns of class I and class II in 2011 i.e. more than 90 percent of total urban HHs, lowest access being in small towns of class V and VI towns. The highest growth in HHs with hygienic toilet facilities is recorded in class III and class VI towns.
- Hygienic drainage facilities (closed drainage) is the worst faring amenities among others taken for urban Punjab as only 29.4 percent of urban HHs in 2011 have hygienic drainage services and that was only 25.6 percent of total urban HHs in 2001. There is a larger disparity across size classes of towns as more than 70 percent of urban HHs have accessed to closed drainage as compared to less than just 20 percent of total urban HHs accessed closed drainage in class V and VI towns. Even in class VI towns there observed a decrease in hygienic drainage to HHs from 20 percent in 2001 to 12 percent in 2011 because majority of class VI towns are newly emerged census towns with no proper authority to look after drainage services.
- The analysis of the level of quality of urban basic amenities (PCA based Composite Index) in 2001 shows that among all the 157 towns, 14 towns are of size class I of which 3 towns i.e. SAS Nagar, Patiala and Jalandhar are having high level of urban amenities followed by majority of class I towns (11 out of total 14) are having medium level of urban amenities. It is noted that no town from size class I is in low level of urban amenities. In small populated towns of class V, 24 towns out of total 29 towns fall under low level of urban amenities and only one

town falls in high level of urban amenities and same pattern is observed in class VI towns where 3 towns out of 6 towns have low level of urban amenities.

- The analysis of the level of urban amenities in 2011 gives the picture that out of 16 towns in class I, 6 towns come into high level of amenities topped by SAS Nagar (Mohali) followed by Patiala. There is not a single town from class I that falls into low level of urban amenities. The pattern changes in class III and class IV towns where majority of town falls into medium and low level of urban amenities as 35 towns of total 61 towns comes into low level of urban amenities for size class IV towns. In small towns of class V and VI most of the towns come in low level of urban amenities i.e. 31 out of 49 towns and 13 out of 18 towns respectively.
- While analysing the determinants of urban basic amenities in towns of Punjab in 2011. There found a negative significant correlation between proportion of SC population in large towns and accessibility, availability and quality of all urban basic amenities particularly safe drinking water, safe cooking fuel and hygienic drainage. In small towns also there observed a negative correlation between high proportion of SC population and quality of urban amenities but less significant as compared to large towns.
- Literacy rate and female literacy rate both have a positive significant relationship with all indicators of urban amenities in large and small towns. Female literacy are closely positively associated with safe drinking water and safe cooking fuel as observed from the analysis.
- There found a totally different pattern in the correlation between total WPR and availability of urban basic amenities as in large towns there found a positive correlation between the two except with safe lighting while there is direct negative relationship between the two in small towns.

The quality of urban basic amenities in the district or towns depends on multiple economic and social factors. The important socio-economic factors are total literacy rate, female literacy rate, work participation rate, female work participation rate. Among the economic factors the revenue and expenditure of the urban local bodies is core in the provisioning for the quality of urban amenities. Total income of the urban local bodies (ULBs), total expenditure by ULBs on basic amenities like on safe water supply, hygienic sanitation and sewerage services, etc and per capita expenditure on urban basic amenities

are necessary for better quality of basic amenities in the towns. Therefore, next chapter (chapter 5) studied the financial conditions of ULBs in details in the districts of Punjab to understand the capability and financial health of ULBs and in turn the urban basic amenities provided by them to the population.

CHAPTER 5

FINANCIAL STATUS OF URBAN LOCAL BODIES IN THE CONTEXT OF BASIC AMENITIES: A DISTRICT LEVEL ANALYSIS

5.1 Introduction

In the previous chapter, the distribution and the availability of the quality of urban basic amenities have been analysed in towns and districts of Punjab from 2001 to 2011. It has been found that the quality of urban amenities like safe water supply to the households, hygienic sanitation and sewerage services vary according to size classes of towns. Large towns of size classes I and II have high quality of urban amenities as compared to the medium and small towns. Similarly in the districts which are more urbanised and have large cities and towns located there recorded better quality of basic urban amenities as compared to low urbanised districts and small towns. There are many determinants of the quality of urban basic amenities for e.g. socio-economic status of the HHs, type of the town (commercial, industrial, historical etc.), geographical location of the town, financial condition of the ULBs responsible for providing urban basic services. Among other factors the total revenue of the ULBs, per capita expenditure and the share of its expenditure on basic amenities hold the key in provisioning and supply of high level of urban basic amenities. The components of the revenue and expenditure determine the pattern and structure of urban basic amenities. Further, per capita Income and expenditure and the priority of expenditure under various heads determine growth and development of urban services. Therefore the present chapter looks into the financial status of ULBs in the Punjab. This chapter is divided into four sections. The first section of the chapter reviews the urban governance system in India and the role of municipalities in providing urban basic services to people. It is followed by a brief review of the urban governance system in Punjab. The second section presents the total revenue and total expenditure analysis of the ULBs in the state till 2017-18. This section also discusses the different sources of revenue and expenditure and the growth of revenue and expenditure to understand what proportion of total revenue and expenditure is spending on urban basic amenities. Third section analyse the sources of revenue and expenditure of the ULBs and their growth at the district level to explain the temporal and spatial pattern of share of revenue and expenditure in urban basic amenities. The last section of the chapter presents concluding remarks.

5.2 Urban Governance in India

The origin and formation of the local self government in India had a very deep connection to ancient times, found mention in records of *Kautilya* and *Magasthese* etc. During British rule, Viceroy Lord Ripon gave some powers to the municipal government in 1882, for which he is known as ‘father of local self government’. Independent India made many reforms in local self government where initially local self government has been allotted to the state list of functions. The *National Commission on Urbanisation* had been set up in 1985 to suggest reforms in urban issues like planning and management, urban basic amenities provisioning and to improve municipal organization. The 74th CAA, 1992 is landmark step to strengthen the municipal govt. in India. Under article 243Q, the Indian constitution provides for the three tiers of the municipalities in urban areas for every state. They are:

1. *Nagar Panchayat* : area in transition from rural to urban areas
2. *Municipal Council* : small urban areas, and
3. *Municipal Corporation* : larger urban area

It is under the state govt. to declare any area as transitional, small or large urban area on the basis of total population, density of population, generation of revenue by local govt., person engaged in non-agricultural activities or any other factor.

The 74th CAA (1992) provides for the levy of taxes, funds by the Municipalities. The state govt. by law can give powers to impose taxes, non-taxes revenues, duties, tolls and fees and grants in aid from the consolidated funds of the state etc. Urban local bodies (ULBs) financing has assumed greater importance post Liberalisation, Privatisation and Globalisation reforms as afterwards urban areas recorded higher growth rate not only in terms of population but also in economic growth (*Nallathiga, 2008*)¹. Municipal Finances includes the revenue and expenditure of the urban local bodies and the sources of the revenues (taxes like property taxes, non-tax revenue like fine etc., grants from

¹ Nallathiga, Ramakrishna (2008). Trends and Perspective of Urban Public Finance in Select countries and India. *ICFAI Journal of Urban Policy*, III (1), 16-32.

government, other grants etc.) along with how urban local bodies spends the revenue on different sources (administration, lighting, water supply, sanitation and drainage etc.) The constitution of India provides federal form of governance and hence it clearly divides the different sources of revenue for both central and state government. But the revenue base for urban local bodies (ULBs) are not clearly stated, it still depends on the state government. The 74th Constitutional Amendment Act (1992) gave constitutional status to functionalities of ULBs² in India in a three tier structure and gave the power to collect revenue for ULB is at the discretion of state government. It is the main reason for the variations in revenue base for different states. (Vaidya, 2009)³ mentions that ULBs generally consists of the revenue base of their 'own resources' like taxes, non-taxes, market borrowings, grants from states and loans from state government. (Pethe et al., 2006)⁴ analysed that the condition of the finances of urban local bodies are closely related to the evolution and structure of finances of ULBs. There is a heterogeneous structure in the sources of revenue and expenditure barring some compulsory component of ULB finances. The heterogeneity is not only at the state level but also at different level of bodies as the Municipal Corporations are doing well in terms of income generation and expenditure on urban amenities as compared to the Municipal Councils and Nagar Panchayats. It is mainly because of the fact that in recent time urban areas contributed majorly in the economic growth and development.

² The functional domain of the urban local bodies lies in the Schedule 12 of the 74th Constitutional Amendment Act, which provides for among many are:

1. Public health, sanitation and solid waste management.
2. Provision to provide urban basic amenities
3. Water supply for domestic, commercial and industrial purpose.
4. Public amenities like street lighting, public conveniences, etc.
5. Roads, bridges, etc.
6. To safeguards the interest of weaker sections of society including physically and mentally challenged.

³ Vaidya, Chetan (2009). Urban Issues, Reforms and Way Forward in India. *Working Paper No. 4, Deptt. of Economic Affairs, Govt. of India.*

⁴ Pethe, Abhay and Lalvani, Mala (2006). Towards economic empowerment of urban local bodies in Maharashtra. *Economic and Political Weekly*, 635-641.

Indian constitution clearly lays down the tax structure between Centre and State government also the revenue base of ULBs are under the state govt. In 74th CAA which came into effect in 1993 provides to ULBs the responsibilities for water supply and its maintenance, sanitation and drainage facilities, public health, slum up gradation, urban planning, social and economic planning etc. The power to give the revenue sources of the ULBs lie at the hands of state government as the bases of revenue sources for ULBs are not mentioned in the Act. After the CAA, municipalities have been given the powers and responsibilities of socio-economic development of towns and there was a corresponding increase in the fiscal scale for them. The constitutional provision for this is to set up a State Finance Commission every five year by the state government to review the revenue and expenditure of the municipalities and make recommendations on the same. It is in the form of the distribution of net proceeds of taxes between state government and municipalities, grant-in-aid for the municipalities and taxation powers to be given to the municipalities. In addition to it the central govt. through Finance Commission can also make recommendations for the aid and financial support to municipalities from the Finance Commission.

5.2.1 Urban Local Governance in Punjab

In Punjab, ULBs are governed by the Punjab Municipal Act, 1994 and Punjab Municipal Corporation Act, 1994 where these acts came into being on the lines of the 74th constitutional Amendment Act, 1992 which implies its functions and finances. The Statutory towns are notified by the State Government.

Table 5.1 Different categories of urban local bodies constituted by Punjab government under the provisions of Punjab Municipal Act.

S. No.	Class of Urban Local Bodies	Population	Total Income (Rs.)
1	Municipal Corporation	3 lakh and above	2 crore and above
2	Municipal Council Class- I	50,000 to 3 lakh	50 lakh to 2 crore
3	Municipal Council Class- II	10,000 to 50,000	15 lakh to 50 lakh
4	Municipal Council Class- III	Upto 10,000	Upto 15 lakh
5	Nagar Panchayat	5000 and Above	More than 150 per head

Source: District Census Handbook, Amritsar, Census 2011

The section 4 of the Punjab Municipal Act, 1911 lays down the specifications of local areas to be smaller urban areas or transitional areas and constitution of Municipal Council and Nagar Panchayat. Under this section, the State Government may having regard to population of area, the density of population therein, the revenue generated for local administration, the percentage of employment in non-agricultural activities, the economic importance or such other factors, as it may deem fit, specify by notification in the official gazette any area to be transitional area or a smaller urban area for the purpose of this Act.

5.3 Analysis of Income and Expenditure of ULBs in Punjab

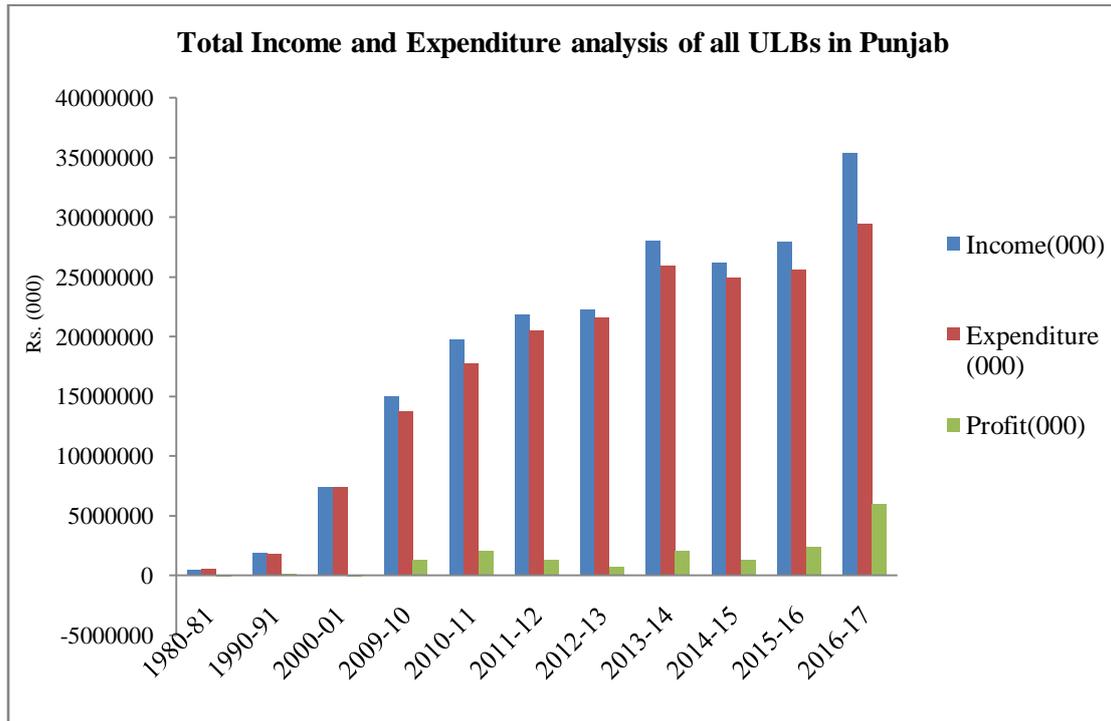
The growth of cities in terms of economic, physical and demographic development has created fiscal pressure on municipalities to provide urban services therefore the study of trends and pattern of income and expenditure become necessary. A buoyant source of revenue gives the required funds for financing the service requirements of the people in the region. In the *table 5.2*, trends in total income and expenditure and their growth rates over the period of time (1980-81 to 2016-17) are analysed for all the ULBs in Punjab and from this the relationship between income and expenditure has been established to understand the financial mobilization happening in ULBs of Punjab.

Table 5.2 Total Income, growth in income, total expenditure and growth in total expenditure for all ULBs in Punjab

Year	Total Income (Rs. in 000)	Growth rate of Total Income (percent)	Total Expenditure (Rs. in 000)	Growth rate of Total Expenditure (percent)	Savings (Rs. in 000)
1980-81	506184	-	527717	-	-21533
1990-91	1894312	274.23	1776873	236.71	117439
2000-01	7356912	288.37	7357000	314.04	-88
2009-10	15005506	103.96	13748013	86.87	1257493
2010-11	19758820	31.68	17737201	29.02	2021619
2011-12	21799951	10.33	20538260	15.79	1261691
2012-13	22279017	2.20	21551373	4.93	727644
2013-14	28006468	25.71	25908223	20.22	2098245
2014-15	26131124	-6.70	24870554	-4.01	1260570
2015-16	27867782	6.65	25518999	2.61	2348783
2016-17	35345833	26.83	29387798	15.16	5958035

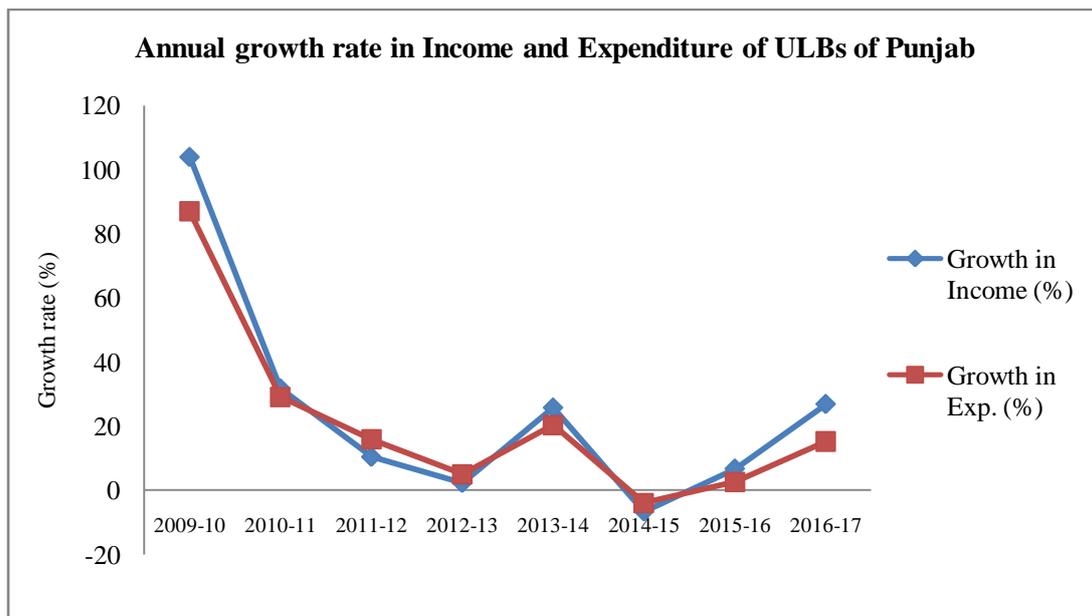
Source: calculated from Statistical Abstract, Punjab, 2012-2017

Fig. 5.1 Growth of total income and total expenditure in all ULBs of Punjab



Source: Statistical Abstract, Punjab, 2012-2017

Fig. 5.2 Annual Growth of total income and total expenditure in all ULBs of Punjab



Source: Statistical Abstract, Punjab, 2012-2017

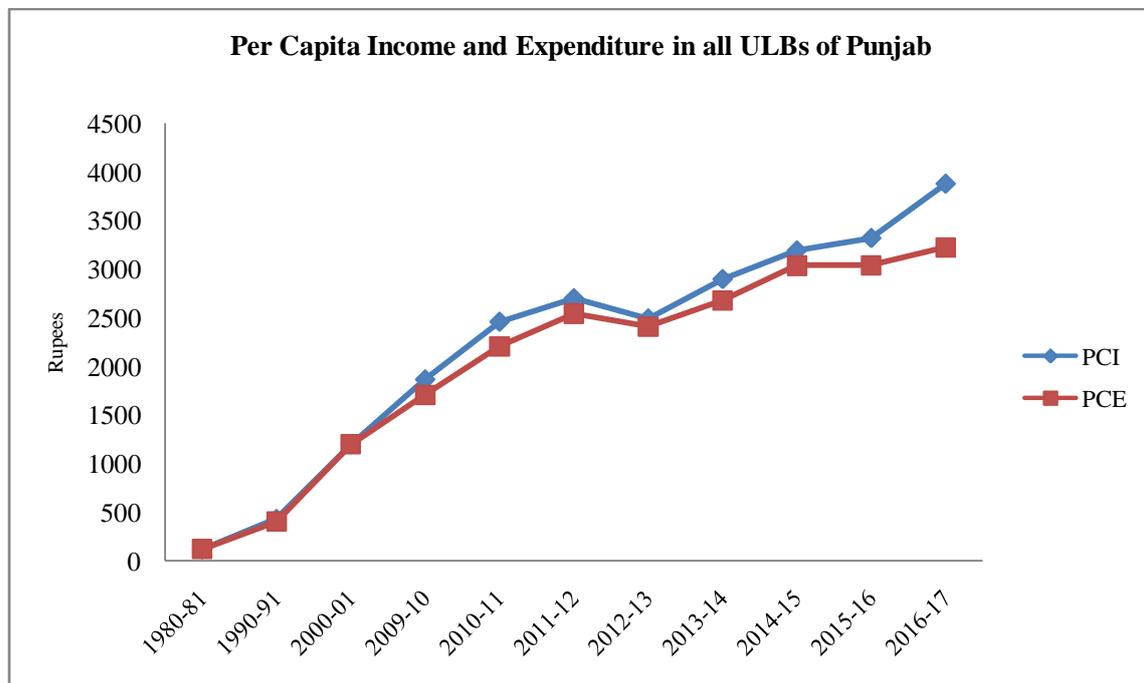
The table shows that during the period from 1980-81 to 2016-17 total income has observed an increasing trend with an exception in the year 2014-15 in which it has declined. It also indicates the percentage growth rate of income over the period which is showing a positive trend except in the year 2014-15 where it was negative. But the rate of growth of total income is higher in the initial years such as 288 percent in 2000-01 which has declined to only 2.2 percent in 2012-13, now it has improved to 6 percent in 2015-16 and further to 26.8 percent in 2016-17. It signifies that though the population growth increases and correspondingly the growth in demand for basic amenities but there is not optimum growth in revenue of ULBs. The variation in the growth rate of income is because in certain years the funds are not released on time to these bodies which generated high growth rate in next year as more fund released. The sources of income of ULBs are from the taxes and non taxes and grants received from the state and central government, etc. It has been recorded that there is a decline in the contribution of taxes to total revenue of ULBs. The lower contribution from the taxes is mainly due to weak levy and collection of taxes by these bodies. The share of grants in the total revenue of ULBs has increased and these grants are the major source of their income. But a grant always comes with condition on spending which takes away autonomy from ULBs. There are ample of literature available suggested alternative sources of revenue (user charges, public private partnership and market borrowings etc.) for ULBs to make the provisioning of services by ULBs regular and sustainable in the backdrop of decreasing income of ULBs. The state government is trying to bridge the revenue gap faced by ULBs by making grants-in-aid and tax sharing arrangements for them.

The *table 5.2* also highlighted the total expenditure of all the ULBs in Punjab and its growth rate in percentage during the period from 1980-81 to 2016-17. The total expenditure has consisted of two components, revenue expenditure and capital expenditure. As shown in the *table 5.2*, total expenditure has increased from 5 lakh thousand rupees in 1980-81 to 25 lakh thousand rupees in 2013-14 which implied that the total expenditure has increased to five times in 30 years, but it has decreased in the year 2014-15 to 24.8 lakh thousand rupees then again started increasing in following years i.e. more than 29 lakh thousand rupees in 2016-17. The percentage growth in total expenditure has increased from 236 percent in 1990-91 to 314 percent in 2000-01, and then it started falling in the next years and reached to 4.9 percent in 2012-13 and in 2014-15 it has recorded negative growth i.e. -4 percent and in later years it began to rise by 4

percent in 2015-16 and further to 15 percent in 2016-17. These high and low in the expenditure pattern are may be due to reliance of ULBs for fund on the upper tier government i.e. mainly for the grants by the state or central government. There is a lag of time between the fund granted and funds realized to ULBs.

It can be analysed from the relationship between total income and total expenditure (*fig. 5.1*) that years 1980-81 and 2000-01 where the total expenditure is more than total income which may be due to that ULBs expenditure on urban amenities and other infrastructural services is more than that of their capacity and hence a sign of better developmental works and pro-people policies. On the other hand, it also signifies that there is fund crunch on part of ULBs to spend on the urban basic amenities and other services. But since 2000-01 total income is more than total expenditure which signifies that the urban local bodies are not utilizing the total funds in a proper way in providing basic services to people. It directly has a negative impact on the provisioning of urban amenities and the quality of urban amenities and hence people are devoid of basic services. On one hand there is an increasing demand of more taxation powers and funds by urban local bodies and on the other hand they are not able to spend the given amount of resources in proper manner and it led to inefficient use of funds which lay 'waste'. It not only devoid people in getting urban services but also negatively impact infrastructural services to get the importance they needed for sustainable urban development.

Fig. 5.3 Per capita income and per capita expenditure in all ULBs of Punjab, 1980-81 to 2016-17



Source: Statistical Abstract, Punjab, 2012-2017

The fig. 5.3 shows the trends of the per capita income (PCI) and per capita expenditure (PCE) in the urban local bodies of Punjab from 1980-81 to 2016-17 where it could be said that both PCI and PCE have increased manifold. PCI in 1980-81 was only Rs. 117 which rose to Rs. 430 only in 1990-91 but after 74th constitutional amendment, 1992 and post economic reforms PCI have increased exponentially from Rs. 1198 in 2000-01 to more than Rs. 3877 in 2016-17. Though there shown a decline in PCI from 2011-12 to 2012-13 but it further increases consistently. PCE trend looks similar to that of the PCI as after 74th CAA, 1992 and economic reforms PCE increased upto 2011-12 by more than double over 2000-01 but hereafter it declined and again since 2012-13 it shows a continuous increase. It is important here to mention that there is no gap between PCI and PCE from 1980-81 to 2000-01 but afterwards the gap increased and again came almost equal in 2012-13. But after 2012-13 the difference between PCI and PCE is continuously increasing which is all time highest in 2016-17 i.e. PCI is Rs. 650 more than PCE. It simply means that the per capita expenditure is decreasing even income of the people is increasing which is depressing picture for the provisioning of urban basic services. The pattern and trend focuses on the priority of the ULBs in spending the sanctioned and

released funds which is under-utilised at the cost of poor and marginalised who are devoid of basic services mainly in small towns as we have seen in *chapter 4*.

5.3.1 Sources of revenue and expenditure of ULBs of Punjab: 2012-2017

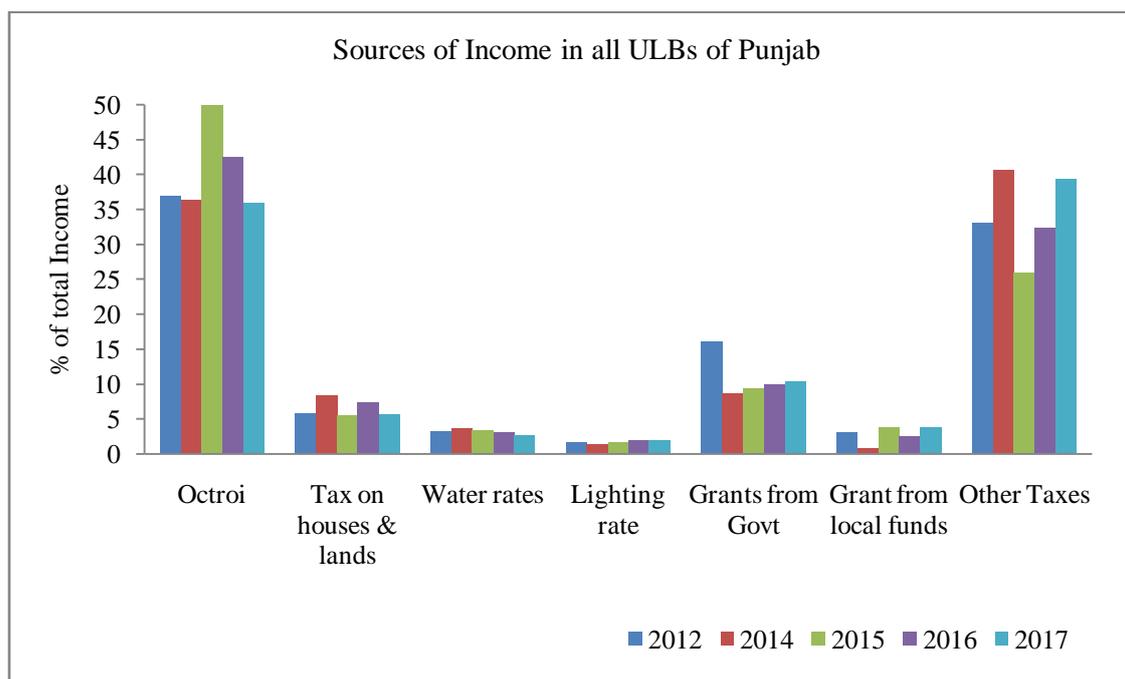
The revenue of the urban local bodies in India consisted of a number of sources like revenue raised by the municipalities (tax and non-tax revenue), assignments, devolutions, and grant in aid from central and state governments and grants from Finance Commission. Among all the revenue sources, Octroi⁵ is the highest contributor to the total revenue base for the ULBs of Punjab. In financial year 2012 and 2014 it constituted more than 36 percent to the total income while in 2015 it increased to a little more than 50 percent of the total income which is the highest for any financial year since 2012. It shows a decreasing trend of octroi contribution to the total ULBs revenue since 2015 as in financial year 2016 it decreased to 42 percent and further to 36 percent in 2017 which is lowest in all the last 7 financial years. It is to be mentioned here that octroi has been subsumed into Goods and Services Tax (GST) after 101st Constitutional Amendment Act (CAA), 2016.

It is manifested from the *fig 5.4* that as the octroi share is decreasing in total income and the share from ‘other taxes’⁶ showed an increasing trend since 2015 in which it was the lowest. In 2012 ‘other taxes’ contributed around 33 percent of the total income of all ULBs of Punjab which increased to 40.7 percent in 2014. But in 2015 financial year it has shown the lowest share in total revenue i.e. only 26 percent, it is noted that in this year the octroi contribution is the highest to total revenue base. Other taxes observed an increasing trend since 2015 and in 2017 financial year it is highest i.e. around 40 percent.

⁵ Octroi: it is the tax levied by the urban local body on the entry of goods for consumption or for use within the boundary of a local body.

⁶ ‘Other Taxes’: it refers to all those taxes which are not included in the taxes counted in Fig. 5.3 like taxes on animals and vehicle, taxes on professional and trade, tolls on roads and ferries, rent of lands, houses, bungalows, sarais etc., receipt from market and slaughter houses, fees from educational institutions, etc.

Fig 5.4 Different sources of income in all ULBs in Punjab, 2012-2017



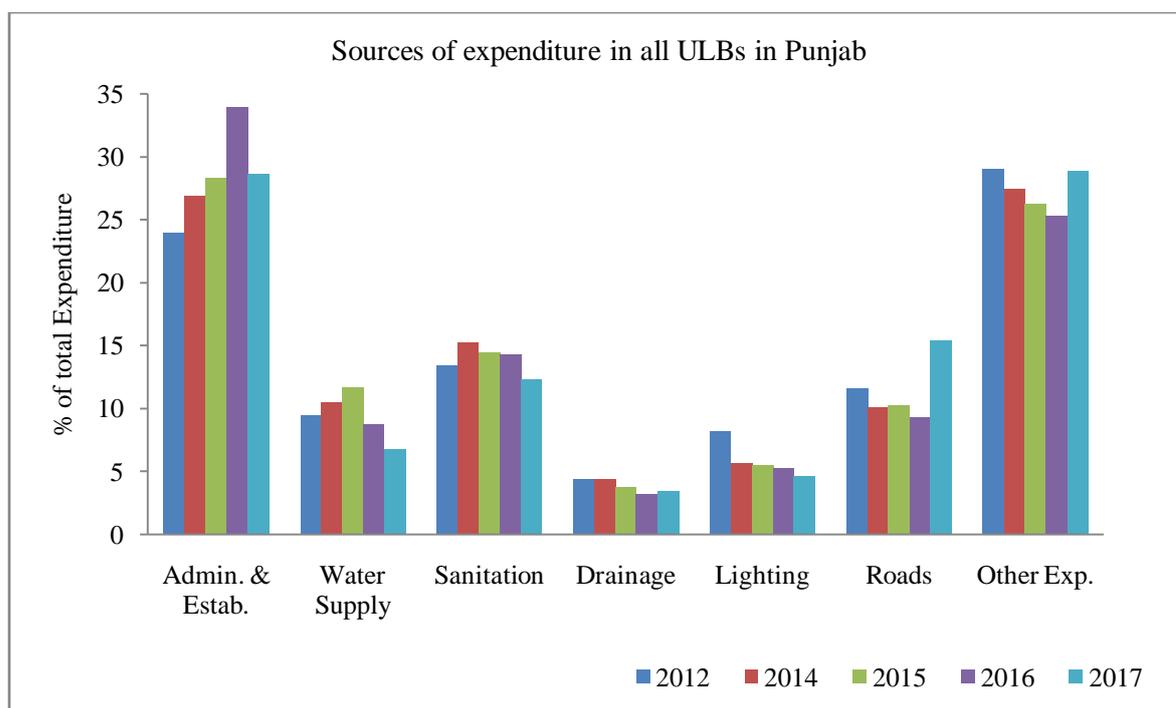
Source: calculated from Statistical Abstract Punjab, 2012-2017

Income from taxes on houses and lands and from property and entrepreneur⁷ marked fluctuating trends in its growth since 2012 when it was around 5.8 percent of all revenue, it raised to more than 8 percent in 2014 and again it decreased to 5 percent in 2015. In 2016 it again increased to more than 7 percent of total income but again it decline to less than 6 percent. Water charges contribution remain balanced since 2012 as it is around 3 percent of all the taxes though it is highest in 2014 when it was 3.6 percent and in 2017 it was lowest in all years i.e. 2.6 percent of all the taxes. Though marginally but water rates had shown a decreasing trend of its contribution to total revenue base. The trend in case of lighting rate is opposite as it showed a marginal increasing trend but maintained more or less a balanced contribution of more than 1.5 percent in all these financial years. In 2017 it is the highest i.e. 1.9 percent from 1.6 percent in 2012.

⁷ Income from property and entrepreneurship: This records the income receivable by the Municipal Committees/Corporations from departmental Commercial Undertakings as well as the net rent, interest and dividend accruing to them from the ownership of building or financial assets.

Grants from govt. and ‘grants from local funds’⁸ are the major constituent of total revenue base and if there is a lack of revenue with ULBs it is compensated either by grants by govt. or local funds or fund transfer by central or state govt. In 2012 the grants share in total revenue was highest at 20 percent which declined to less than 10 percent in 2014 but thereafter it shown an increasing trend and in 2017 both grants contributed around 14 percent of all revenue of ULBs in Punjab.

Fig 5.5 Different sources of expenditure in all ULBs of Punjab, 2012-17



Source: calculated from Statistical Abstract Punjab, 2012-2017

Expenditure is an important function of quality of urban amenities at household level and also provisioning of urban services at town level. The expenditure of a municipality decides the priority of an ULB on which it spends its resources e.g. to provide basic urban services to the people of the municipality. The largest proportion of the ULB’s expenditure is on administration and establishment charges which even show the increasing trend from 2012 to 2016 i.e. from 24 percent to 34 percent as shown in *fig. 5.5*.

⁸ ‘Grants from local funds’ means that the grants given by the Punjab state govt. through Punjab Municipal Funds Act, 2006. The fund constitutes the 10 percent of the total VAT (Value Added Tax) collected by the state govt.

But it has decreased from 34 to 28.6 percent in the period 2016 to 2017. The highest expenditure on administration and establishment shows that as the emergence of new towns led to the increase in the initial establishment of infrastructure and its maintenance in the municipalities. The expenditure on administration and establishment is inversely related to 'other expenditure'⁹. From 2012 to 2016 administration and establishment expenditure increased and on the other hand 'other expenditure' shown decreasing pattern and in 2017 administration and establishment expenditure is decreased but 'other expenditure' shown an increase to 29 percent of the total expenditure.

The second most priority of the ULBs is the establishment, maintenance and management of sanitation services on which the ULBs spend 13 percent of the total expenditure in 2012 which increased to 15 percent in 2014 but since 2015 it showed a decreasing trend i.e. from 14.4 percent in 2015 to 14.2 percent in 2016 and further decreased to the lowest of all years to 12.3 percent in 2017. It is not the encouraging trend as sanitation services should be the foremost priority for its proper functioning and needs regular management. The same trend of decreasing expenditure is observed on drainage services from 2012 to 2017. The expenditure on drainage is about 4.4 percent in 2012 to 3.7 percent in 2015 and further to 3.4 percent in 2017 of the total expenditure of all ULBs of Punjab.

Water supply is the essential function of ULBs and the expenditure on water supply records a increasing trend from 2012 to 2015 i.e. from 9.4 percent to 11.6 percent but from 2015 to 2017 it observed a decreasing trend i.e. 8.7 percent in 2016 and 6.7 percent in 2017 of the total expenditure. Expenditure of ULBs on lighting observed a decreasing trend continually from 2012 to 2017. It has decreased to half since 2012 as in 2012 it was more than 8 percent of total expenditure and decreased to 5.5 percent in 2015 and further decreased to 4.6 percent of total expenditure of all ULBs in Punjab in 2017.

From the above analysis it can be inferred the expenditure on the administration and establishment along with expenditure on roads has increased in the study period which shows the focus of the govt. on urban infrastructure projects. On the other hand, the ULBs

⁹ 'Other expenditure' means the expenditure which are not part of the expenditures mentioned in fig. 5.4 like expenditure on public safety like fire; expenditure on hospitals; market slaughter houses; public instructions, interest on loans, advances, investments, deposits, payment to sinking funds, etc.

expenditure in recent years on urban basic amenities has shown a decreasing trend especially after 2015 like on water supply, sanitation, drainage and lighting (all indicators shown in figure 5.4). It includes the drastic decrease in water supply and lighting funds to ULBs of the state despite of the targeted schemes of the central and state govt. for water supply, sanitation and drainage etc. in urban areas.

The overall picture of the sources of revenue and expenditure has been analysed in details for all ULBs of the state. The next section analysed the district wise variations in the sources of revenue and expenditure from 2012 to 2017.

5.4 Financial domain of the ULBs in Punjab: a district level analysis

ULB comprised of fiscal powers in form of both tax and non tax revenues like property tax, octroi, advertisement tax, entertainment tax, taxes on animals, tax on non-motorised vehicles, professional taxes, etc. ULBs need resources to meet the expenditure and responsibility on them but the status of the finances of ULBs are not adequate to meet the operational expenditures because of inflexibility and low tax buoyancy. To meet the fiscal gap, state government takes various measures like grant-in-aid and tax sharing arrangement. (Mathur *et al.*, 2006)¹⁰ mentioned that there is a need of the clear cut sharing arrangement between state government and ULBs as it is between centre and state government.

5.4.1 Trend and patterns in sources of revenue in districts of Punjab, 2012-2017

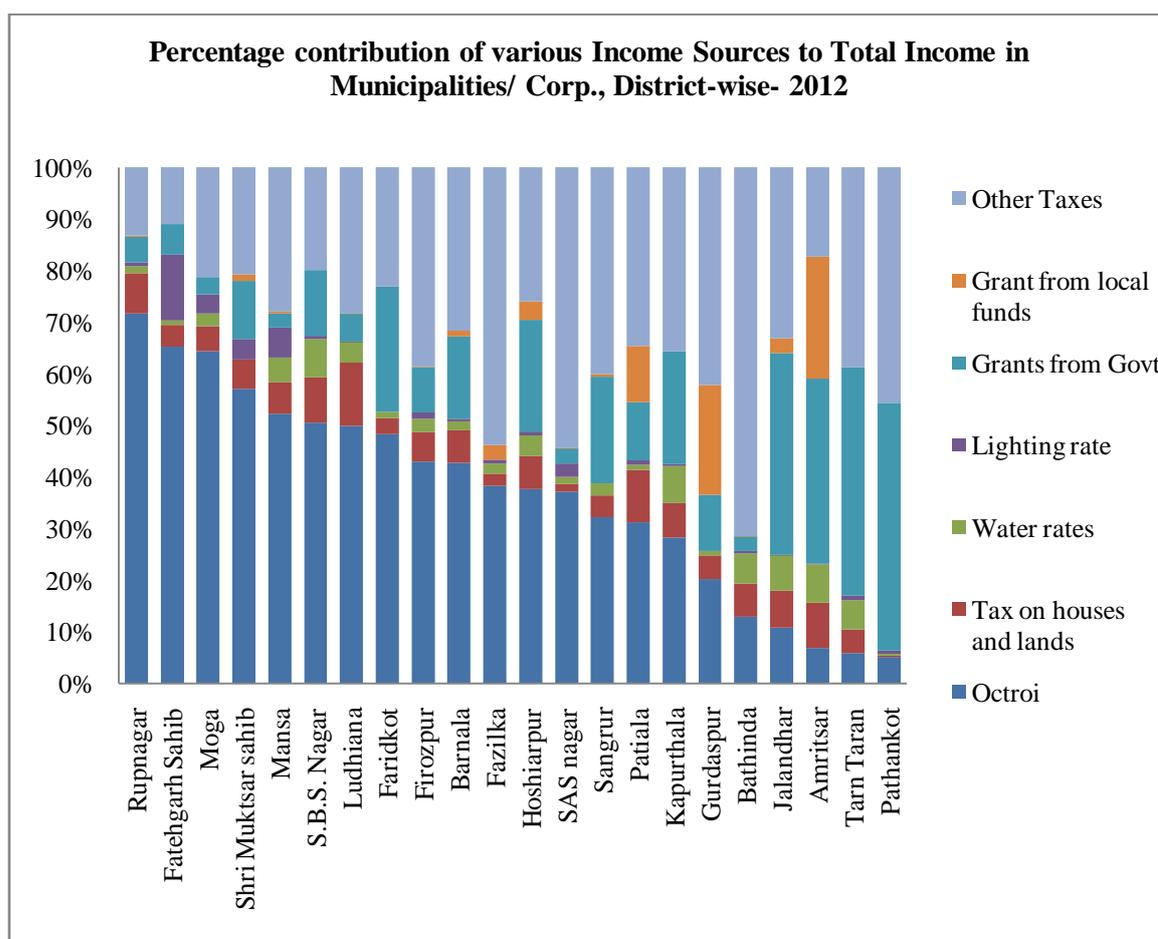
The growth and development of urban infrastructure services and basic urban amenities are positively related with the growth in the revenue and expenditure by ULBs. This section analyses the growth in the revenue of the ULBs across the districts and where this revenue comes from i.e. various sources of revenue. Among the various sources Octroi,

¹⁰ Mathur, Om Prakash and Peterson, George (2006). State Finance Commissions and Urban Fiscal Decentralisation in India. *The Urban Institute, UDAID, Washington, D.C.*

Retrieved from https://pdf.usaid.gov/pdf_docs/Pnadm716.pdf

land and property taxes followed by grants from government constituted as the largest contributor in the total revenue as shown in the previous section of this chapter. The scenario varies at the district level which is shown in the *fig. 5.6* below.

Fig. 5.6 Contribution of various income sources in total income of Municipalities in districts of Punjab, 2012



Source: Calculated from Punjab Statistical Abstract, 2011-12

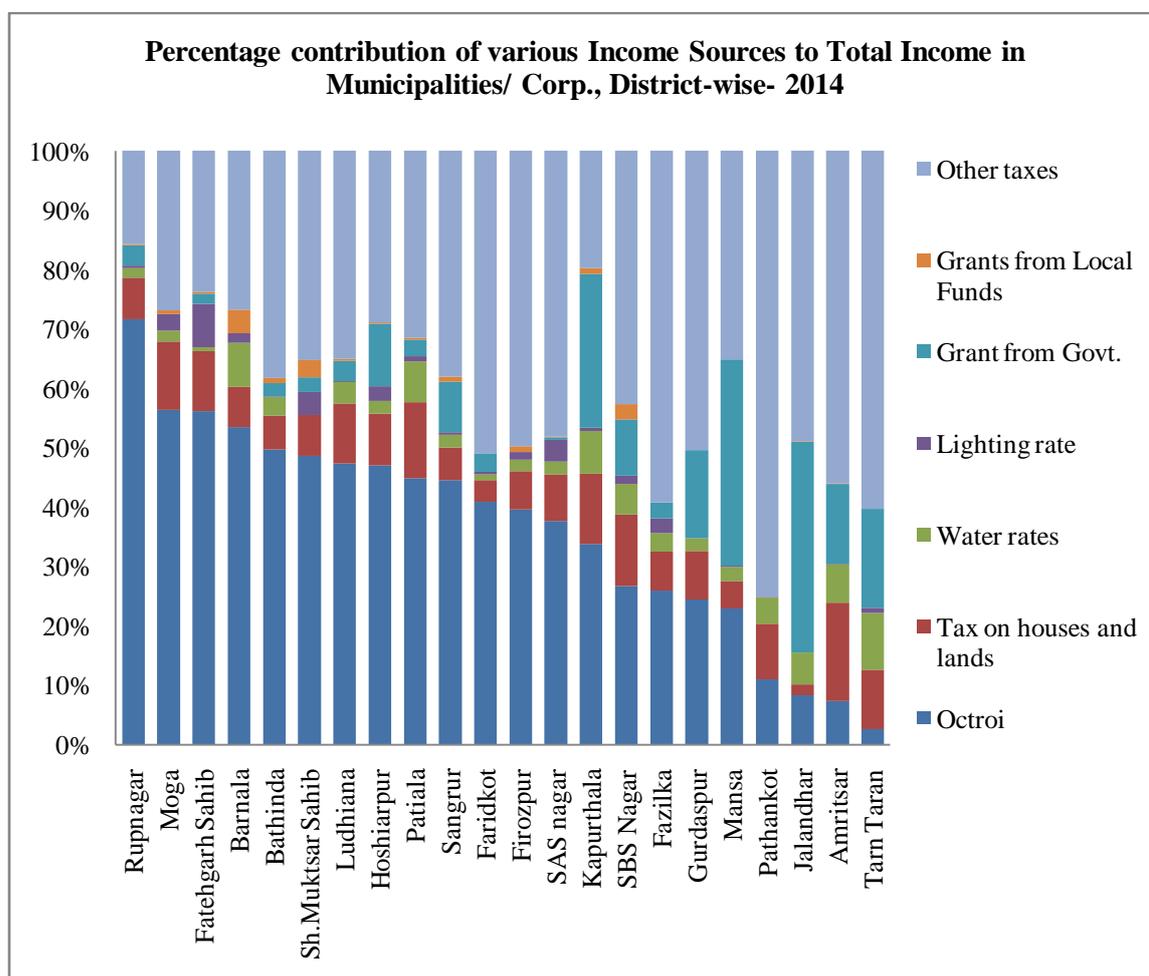
Among the various source of revenue in 2012, Octroi is the major contributor of revenue sources among most of the district. Octroi is defined as the tax which is levied by the municipality on the products or goods entered into a city for daily consumption. There are 6 districts where octroi contributed more than 50 percent of the total revenue. In the district of Rupnagar octroi share is more than 71 percent which is highest and it is followed by Fatehgarh Sahib, Moga, Shri Muktsar Sahib, Mansa and SBS Nagar. In all these districts, the share of land and property tax contribution is around 5 percent of total revenue. Among these districts, in SBS Nagar and Shri Muktsar Sahib the contribution

from Grants from govt. is more than 10 percent. Around 20 percent of the total taxes from these six districts are from 'other taxes' like from pounds, hackney carriages licenses, licenses for sale of spirit and drugs, receipt from market and fines etc.

On the other hand in the districts of Pathankot, Tarn Taran and Amritsar octroi merely contributed around 6 percent, and major contribution in these districts came from Grant from govt. i.e. around 40 percent followed by water rates and land and property taxes barring Pathankot district where water rate contribution is less than 1 percent of the total revenues. In districts of Amritsar, Tarn Taran, Jalandhar and Bathinda the water rates contribution is more than 6 percent in the total revenue. It is noted that in the districts where the share of Octroi in the total revenue base in the ULBs are less, it is compensated by state govt. in the form of the 'Grants from Govt.' or to say that ULBs with low octroi share gets more funds in the form of Grants from govt. and also from the water charges and lighting charges from the residents.

The ULBs in the districts in which the octroi contribution ranges from 30 to 50 percent are Ludhiana, Faridkot, Firozpur, Barnala, Fazilka, Hoshiarpur, SAS Nagar, Sangrur and Patiala. Among these districts Ludhiana and Patiala are the only districts in which ULBs share from Taxes on house and lands share in total revenue are more than 10 percent, it may be because of the fact that ULBs in both the districts have observed the high rate of urban growth in recent times and the demand of the land grew. Also ULBs in both the districts have developed connectivity in terms of roads and rails and therefore industrial development occurs and hence increases in demand for land. Except ULBs in Fatehgarh Sahib where the contribution of lighting charges is more than 12 percent in total revenue base, it is followed by Mansa where lighting contribution is more than 5 percent in total Income of ULBs, the ULBs of all other districts have observed 1 to 3 percent from lighting in total revenue. It is even less in case of Ludhiana, Faridkot and Jalandhar where lighting contribution is less than 1 percent.

Fig. 5.7 Contribution of various income sources in total income of Municipalities in districts of Punjab, 2014



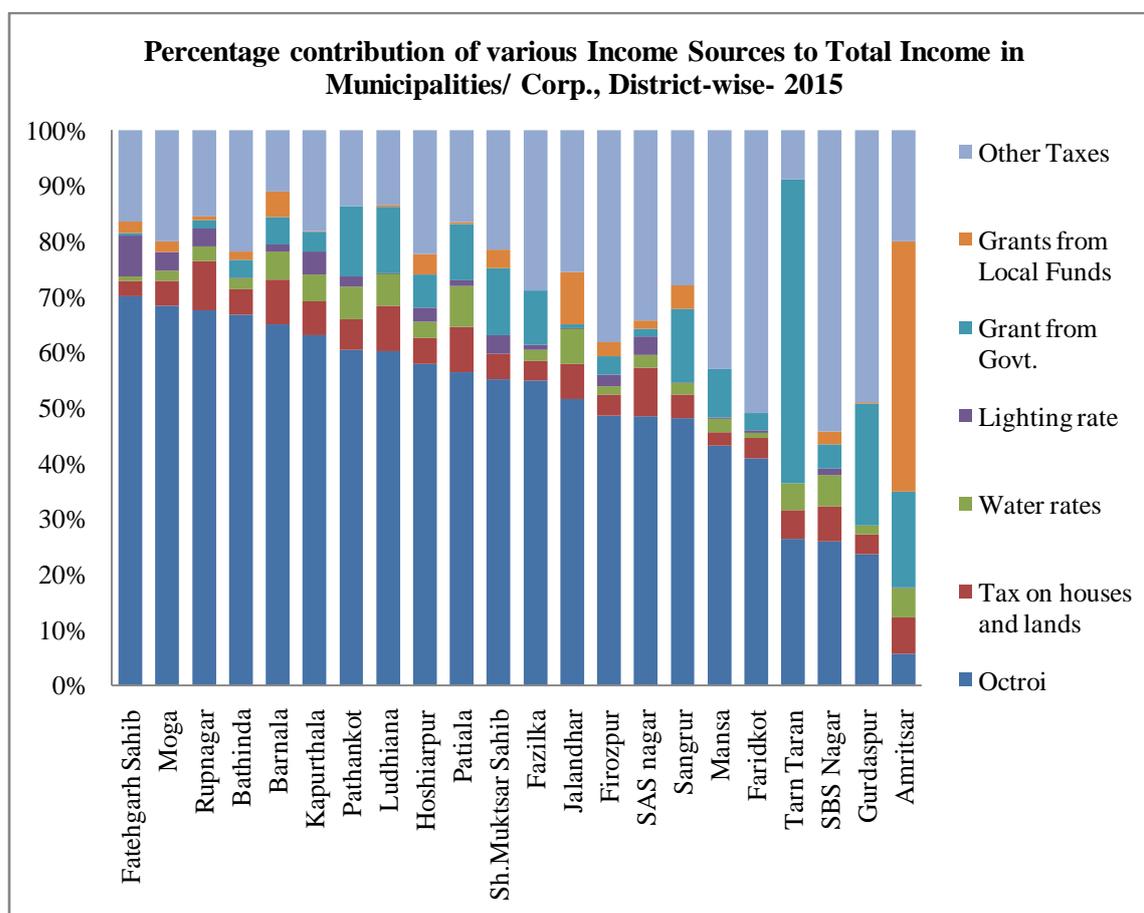
Source: Calculated from Punjab Statistical Abstract, 2013-14

Octroi and the taxes on houses and lands followed by the grants from government constitute a major source of revenue for the ULBs in majority of the districts in 2014. ULBs in Rupnagar district have 70 percent of its revenue came from octroi as it is the headquarter of the district and other municipal councils are located on border with neighboring state of Himachal Pradesh which led to the transportation of goods into ULBs. Octroi in Rupnagar is followed by the taxes on houses and lands and grant from govt. which in total with octroi comprises 85 percent of the total revenue base. Similarly in the ULBs of other districts like Moga, Fatehgarh Sahib, Barnala and Bathinda octroi share in total revenue is more than 50 percent of the total revenue. In Moga, octroi is followed by Taxes on houses & land and Water and lighting rate which are approx. 11 percent, 1.8 percent and 2.8 percent respectively. In districts of Tarn Taran, Amritsar,

Barnala and Patiala, water rates contributed to about 9.6 percent, 6.6 percent 7 percent and 6.9 percent respectively in total revenue of ULBs in the districts. The water rates contribution is 0 and negligible i.e. less than 1 percent in ULBs of district like sh. Muktsar Sahib, Fatehgarh Sahib and Faridkot. Among all the districts, ULBs in Fatehgarh Sahib have more than 7 percent of revenue comes from lighting which is highest. It is followed by Sh. Muktsar Sahib and SAS Nagar which have more than 3.6 percent contribution from lighting rate.

On the other hand ULBs in districts like Tarn Taran, Amritsar, Jalandhar and Pathankot octroi contribution in total revenue base is less than 10 percent. In Tarn Taran contribution by grants from govt. (16 percent) is followed by taxes on houses & land (10 percent) and water (9 percent). It is also the case in the ULBs in Amritsar district. It is to be noted that district Tarn Taran is carved out from the Amritsar district in 2006 and hence the funds and expenditure of ULBs of both the districts are alike. In the ULBs of the districts like Jalandhar and Mansa 'Grants from Govt.' has more than 35 percent contribution in the total revenue followed by ULBs in Kapurthala district i.e. 25 percent.

Fig. 5.8 Contribution of various income sources in total income of Municipalities in districts of Punjab, 2015



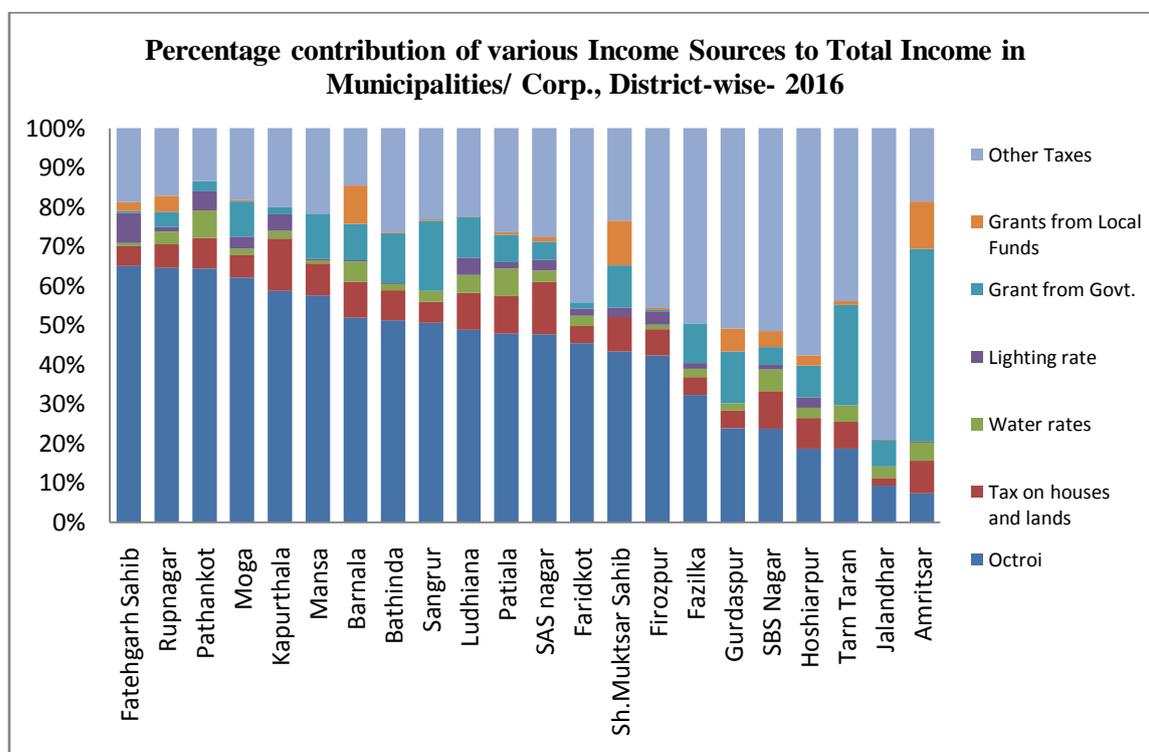
Source: Calculated from Punjab Statistical Abstract, 2014-15

The ULBs of Fatehgarh Sahib district got its more than 70 percent of revenue from octroi which is followed by lighting rate that comprises more than 7 percent of the total revenue base. ULBs of the districts of Moga, Rupnagar, Bathinda, Barnala, Kapurthala and Pathankot have more than 60 percent of their income sources from octroi. It is followed by the taxes in houses & lands in the ULBs of all these districts like 8.7 percent in Rupnagar, 8 percent in Barnala and in the range of 4 to 5 percent in Moga, Bathinda, Kapurthala and Pathankot. It is noted that in the ULBs of all these districts only in Pathankot district more than 12 percent of the total income came from the Grants from Govt. ULBs of the Amritsar district have less than 5 percent of octroi contribution in the total income base. Also on the lowest side of the contribution from octroi are the ULBs of the districts of Tarn Taran, SBS Nagar and Gurdaspur where the contribution from octroi are 26 percent, 25 percent and 23 percent respectively in 2015. ULBs of Amritsar district

observed a very unique pattern where more than 45 percent of the total income of ULBs came from Grants from Local Funds while in the ULBs of all other districts it comprises only less than 4 percent not only in 2015 but also in 2012 and 2014 financial years.

There is also a different case observed in the study of the income sources of the ULBs of Tarn Taran district as more than 54 percent of the total income of the ULBs of the district came from Grants from Govt. It is followed by the ULBs of Gurdaspur district where there is only 22 percent contribution from Grants from Govt. On the other hand ULBs of districts of Moga, Fatehgarh Sahib and Jalandhar have their contribution from Grants form Govt. less than even 1 percent of the total income. The contribution from Water rates in the total income is maximum i.e. a little more than 7 percent in the ULBs of the Patiala district. It is followed by the ULBs of the Jalandhar, Pathankot, Ludhiana, Amritsar, SBS Nagar and Barnala where income from water rates is more than 5 percent of the total income. While in other districts ULBs it ranges between 1 and 2 percent.

Fig. 5.9 Contribution of various income sources in total income of Municipalities in districts of Punjab, 2016



Source: Calculated from Punjab Statistical Abstract, 2015-16

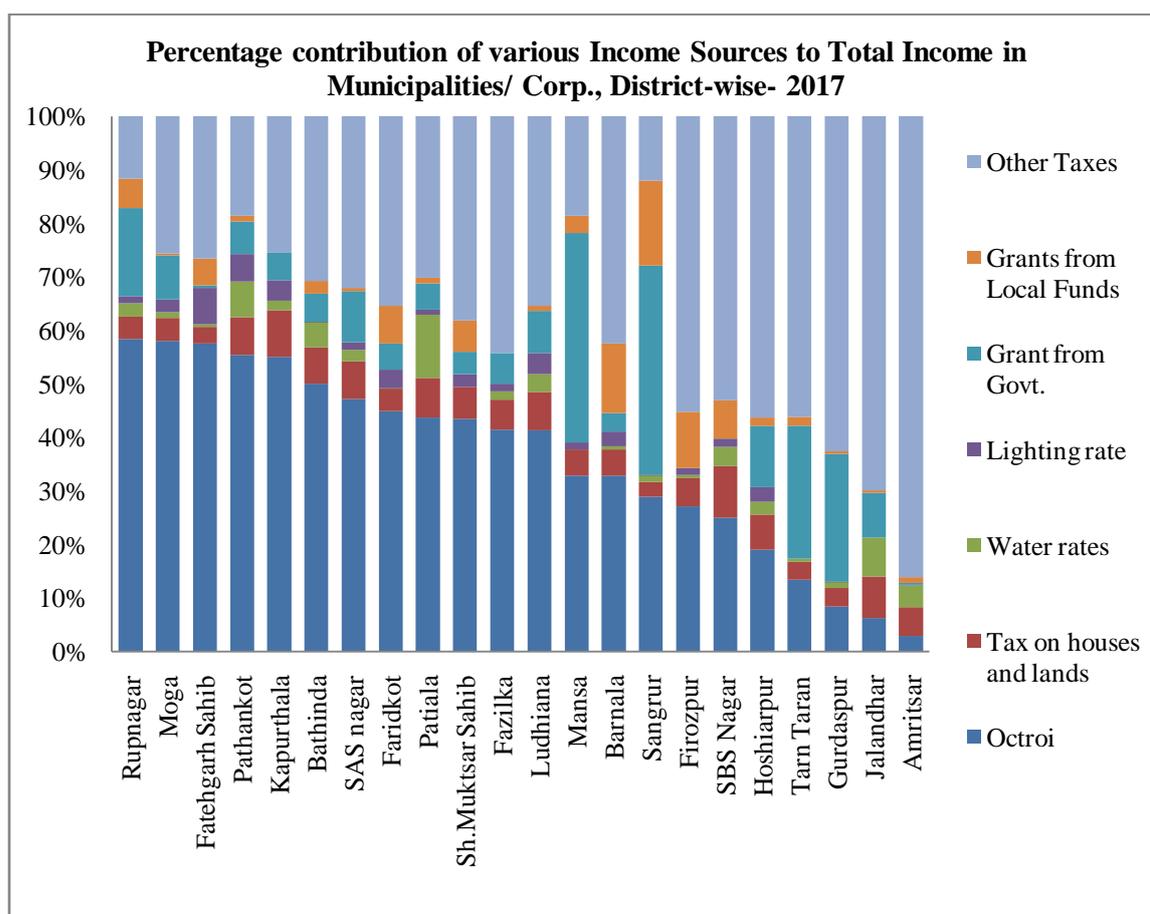
In 2016 financial year, the source of income for ULBs of Punjab is the highest from octroi i.e. more than 42 percent of the total income followed by Grants from Govt. i.e. a little above 10 percent and Taxes on houses & lands contributed above 7 percent of the total revenue base. It has changed from 2015 where the second highest source of income was taxes on houses& lands unlike in 2016 where it is Grants from Govt. Sources of income varies district wise (as shown in *fig. 5.9*) as there are total 4 districts where more than 60 percent of the total income comes from octroi and they are Fatehgarh Sahib, Rupnagar, Pathankot and Moga. It is followed by the ULBs in districts of Kapurthala, Mansa, Barnala, Bathinda and Sangrur where octroi contribution is more than 50 percent of the total revenue base. On the other hand the contribution by octroi is the lowest in the ULBs of district Amritsar and Jalandhar i.e. 7 percent and 9 percent respectively. In Amritsar and Jalandhar the trends is continued since 2014 when octroi contribution is at the lowest side of total revenue base. In the ULBs of the districts of Tarn Taran and Hoshiarpur the contribution of octroi is less than 20 percent of the total income. It is followed by SBS Nagar and Gurdaspur in which octroi contribution is less than 30 percent.

‘Taxes on Houses and lands’ share is the highest in total income of the ULBs in the districts of Kapurthala and SAS Nagar i.e. 13 percent in both the districts. It is followed by the ULBs in districts of SBS Nagar, Barnala, Ludhiana and Patiala in which taxes on houses & lands contribution is more than 9 percent of the total income of the ULBs of these districts. Jalandhar is the district where there is the lowest share of 1.6 percent from taxes on houses & lands in total income. The share of income from water rates is highest in the ULBs of the districts of Patiala and Pathankot i.e. around 7 percent to the total income of the ULBs. It is followed by the ULBs of the districts like Barnala and SBS Nagar in which the water rates contribution is more than 5 percent. On the contrary in the ULBs of the districts of Sh. Muktsar Sahib, Fatehgarh Sahib and Mansa the water rates share is lowest i.e. less than a percent to total income.

The 49 percent of the total revenue of ULBs of Amritsar district came from ‘Grants from Govt.’ which is an exception as in no other district its contribution is more than 25 percent in 2015. In Amritsar, Grants from govt. in addition with grants by local funds contributed around 60 percent of the total income. Amritsar is followed by Tarn Taran where grants by govt. share in total income of ULBs are more than 25 percent. Govt.

grants contribution is lowest in the ULBs of districts of Fatehgarh Sahib, Faridkot, Pathankot and Kapurthala i.e. .5 percent, 1.5 percent, 2.6 percent and 3.8 percent respectively in 2016.

Fig. 5.10 Contribution of various income sources in total income of Municipalities in districts of Punjab, 2017



Source: Calculated from Punjab Statistical Abstract, 2016-17

The trend in the share of octroi in total income decreased for Punjab from 2016 to 2017 from more than 42 percent to 36 percent. Also this trend is manifested in the district wise analysis of the different sources of income for example in 2017 there is not a single district where the contribution of octroi is more than 60 percent to the total income as there was in 2016. In the ULBs of 5 districts the contribution of Octroi to total income is more than 55 percent like in Rupnagar, Moga, Fatehgarh Sahib, Pathankot and Kapurthala. It is followed by the ULBs of the districts of Bathinda, SAS Nagar and Faridkot wherein the octroi contribution is more than 45 percent of the total income. On

the other hand the ULBs of the districts like Amritsar, Jalandhar and Gurdaspur observed less than 10 percent share of octroi in the total revenue base of the ULBs, even in Amritsar octroi share to total income is lowest i.e. about 2.8 percent of total income. And there are only 2 districts of Tarn Taran and Hoshiarpur wherein the octroi contribution ranges from 10-20 percent of the total income. The ULBs of the district of Patiala, Sh. Muktsar Sahib, Fazilka and Ludhiana have octroi share more than 40 percent of their total revenue which is more than that of ULBs of Punjab as whole i.e. 36 percent in 2017.

Grants from govt. share to total income for ULBs of Punjab increased marginally from 2016 to 2017 by 10 percent to 10.4 percent respectively. District wise picture of ULBs presents a different pattern as the ULBs of the district of Mansa and Sangrur observed that more than 39 percent of the total income came from Grants from Govt. It is followed by the ULBs of the district like Tarn Taran and Gurdaspur where the contribution from Grants by Govt. is more than 20 percent of the total income i.e. 24.7 percent and 23.8 percent respectively. Also the ULBs of Rupnagar district shared more than 16 percent of total income from govt. grants. All other district's ULBs have contribution of less than 10 percent from govt. grants. The lowest is observed in the ULBs of Ferozpur, SBS Nagar, Amritsar and Fatehgarh Sahib wherein there is less than 1 percent contribution from govt. grants.

The ULBs of the districts of SBS Nagar, Kapurthala, Pathankot, Jalandhar, Bathinda and Hoshiarpur have more than that of ULBs of Punjab's average of 5.7 percent from Taxes on houses & lands and SBS Nagar having the highest contribution of more than 9.6 percent. Sangrur followed by Fatehgarh Sahib observed the lowest contribution from Taxes on houses & land i.e. 2.7 percent and 3 percent respectively. The ULBs of the Patiala district has observed more than 11 percent of total income coming from water rates which is highest, and Patiala ULBs are followed by ULBs of Jalandhar, Bathinda and Amritsar i.e. 7 percent, 4 percent and 4 percent respectively. In the ULBs of Fatehgarh Sahib followed by Pathankot the contribution of lighting charges to total income is 6.8 percent and 5 percent respectively.

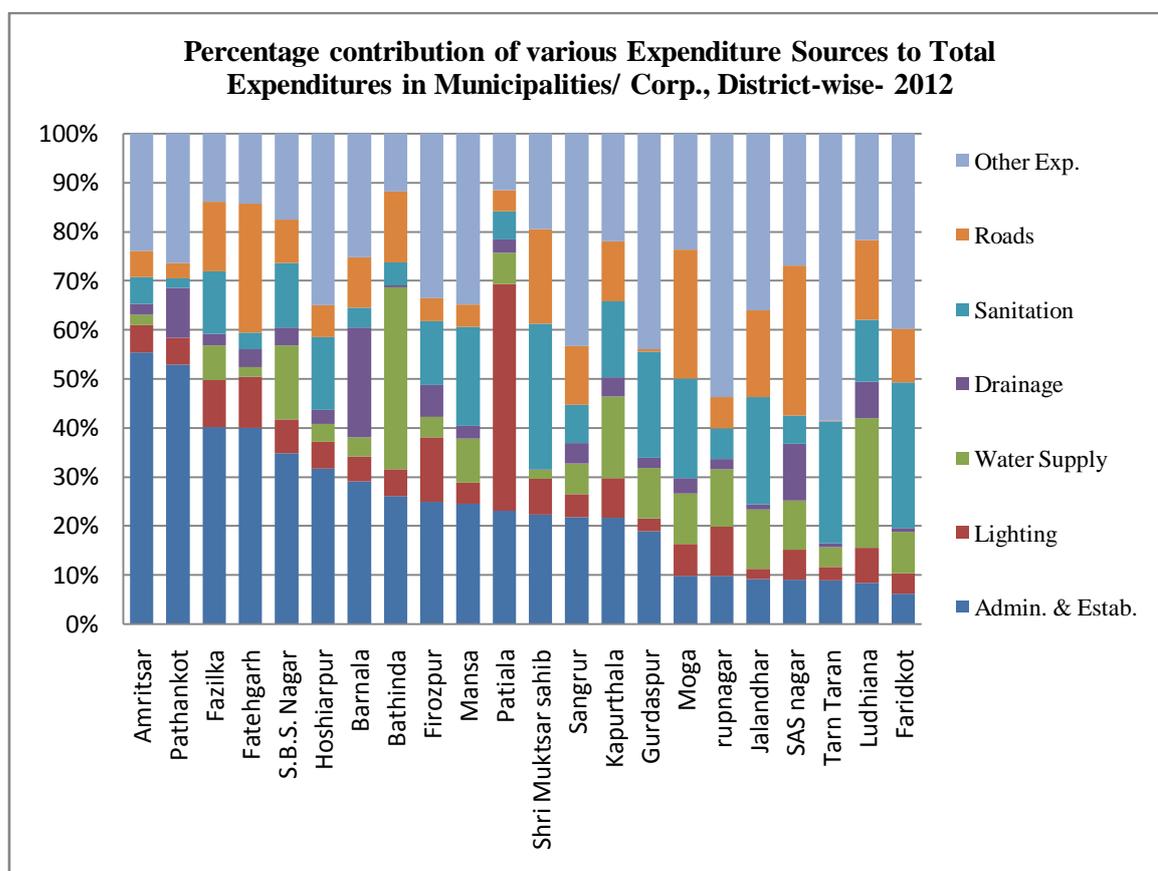
5.4.2 Trend and patterns in the sources of expenditure in districts of Punjab, 2012-2017

In the same way as revenue, expenditure and its various sources are also analysed at the district level for the financial years 2012 to 2017. The expenditure is divided into various heads as mentioned below:

1. Administration and Establishment
2. Lighting
3. Water supply
4. Sanitation
5. Drainage
6. Roads and
7. Other expenditures.

The expenditure on the urban basic amenities like on lighting, water supply, sanitation and drainage are critical for the minimum basic standards especially for the urban poor and marginalised sections. As the urban growth increased in the towns and cities may be because of the increase of urban population or in-migration to towns and/or new towns emerged it puts pressure on the available urban amenities, therefore it is the responsibility of the ULBs for provisioning of these services. It can be done either by increasing expenditure for new services or spend funds for the maintenance of the present amenities which require funds to spends on these amenities.

Fig. 5.11 Contribution of various expenditure sources in total income of Municipalities in districts of Punjab, 2012

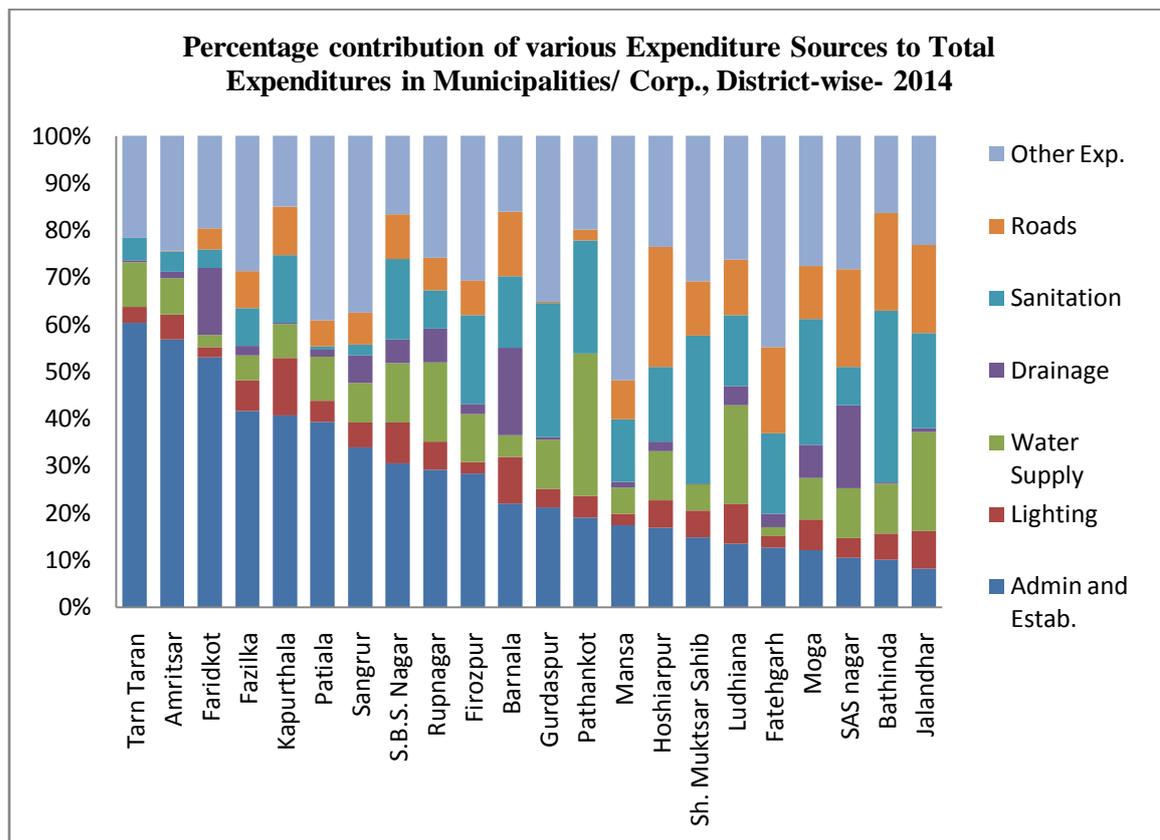


Source: Calculated from Punjab Statistical Abstract, 2011-12

It is found that in four districts i.e. Amritsar followed by Pathankot the expenditure on ‘administration and establishment’ are more than 50 percent. In Amritsar the expenditure on sanitation and lighting charges are around 5 percent of the total expenditure as expenditure on sanitation services required for the slum population and in small ULBs. It is followed by the water supply expenditure which is 2 percent in Amritsar and less than a percent in Pathankot, it may be because water supply establishment is already in place in ULBs and also it needs little amount for the maintenance of the water supply sources. In the districts of Fazilka and Fatehgarh Sahib, expenditure on ‘administration and establishment’ is more than 40 percent of the total expenditure of ULBs because of the fact that Fazilka district has been created in 2011 and it require administration and establishment funds to set up a headquarter of the district. Expenditure on administration and establishment is followed by lighting expenditure i.e. around 10 percent of the total expenditure and expenditure on roads in Fatehgarh Sahib is more than 26 percent of the

total expenditure in 2012 and it is more than 14 percent in Fazilka. Sanitation expenditure is more than 12 percent in Fazilka as in newly created district sanitation services is the top priority and have been overhauled and maintained for all the residences and also at the public places like bus stops etc. and it is less than 2 percent in Fatehgarh Sahib. Patiala has recorded highest expenditure on lighting that is more than 46 percent of the total expenditure because of the emergence of new towns in 2011 census which required huge funding and expenditure on lighting services in all ULBs of the district. In case of expenditure on water supply of the total expenditure Bathinda topped with more than 36 percent of the total expenditure followed in Ludhiana and Kapurthala.

Fig. 5.12 Contribution of various expenditure sources in total income of Municipalities in districts of Punjab, 2014



Source: Calculated from Punjab Statistical Abstract, 2014-15

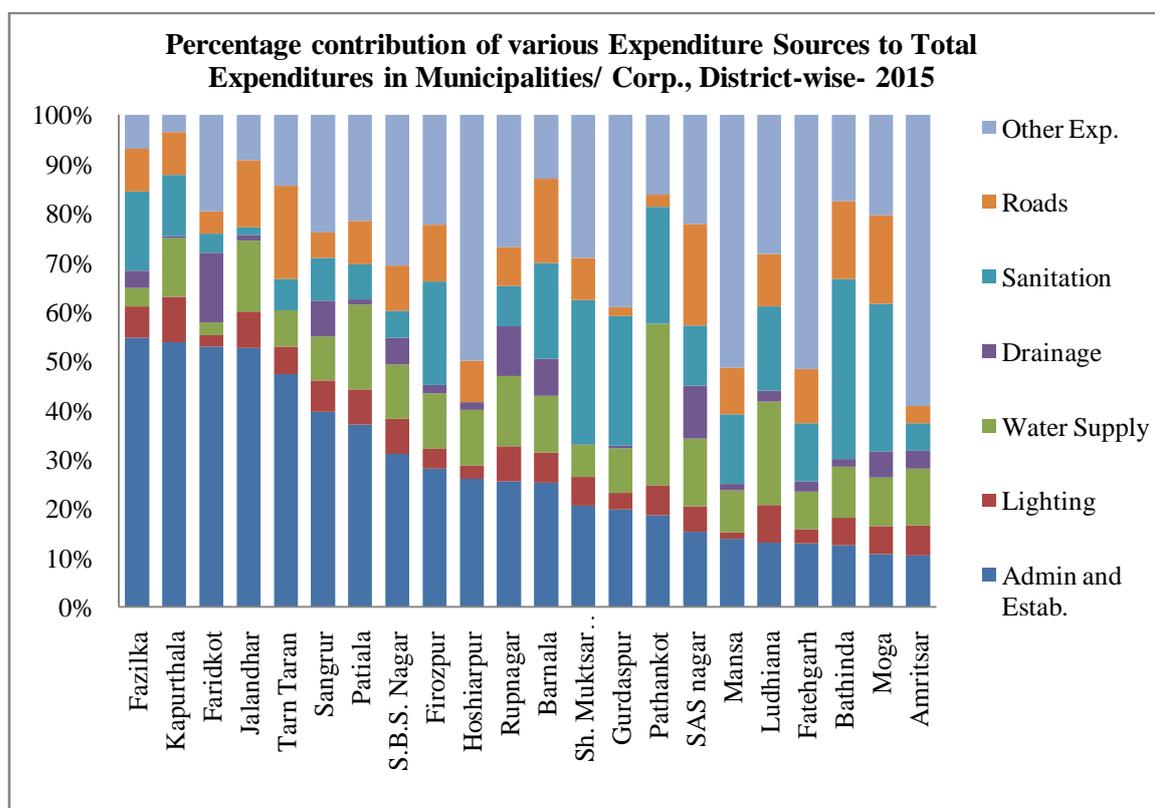
From the above fig. it has been shown that the districts of Amritsar, Tarn Taran and Faridkot have more than 50 percent of the expenditure of their ULBs on Administration and Establishment i.e. 66 percent, 56 percent and 52 percent respectively. In the ULBs of

these districts it is followed by the water supply, sanitation and lighting expenditure. The lowest expenditure on 'administration and establishment' is from the ULBs of the district of Faridkot i.e. only 6 percent of total expenditure.

Of the total expenditure more than 30 percent spends on water supply in the ULBs of Pathankot district followed by Jalandhar and Ludhiana in which the expenditure on water supply was 21 percent. Rupnagar and SBS Nagar spend around 12 percent of the total expenditure on water supply. In the ULBs of the districts of Fatehgarh and Faridkot, there is a little expenditure of less than a percent on water supply. On drainage, ULBs of Barnala district spend more than 18 percent of the total expenditure it is followed by the ULBs in the districts like SAS Nagar and Faridkot i.e. 17 percent and 14 percent respectively. While the expenditure on drainage is lowest in the ULBs of the district of Pathankot, Sh. Muktsar, Bathinda and Kapurthala i.e. it is less than 1 percent of the total expenditure. In 2014 in all ULBs of Punjab more than 15 percent of the total expenditure spends on sanitation services. District wise it varies as in the districts of Bathinda and Sh. Muktsar Sahib it is 36 percent and 31 percent respectively on sanitation services, it is followed by Gurdaspur (28 percent) and Moga (26 percent). On other side the expenditure on sanitation services is lowest in ULBs of districts of Patiala i.e. .67 percent. There is less than 5 percent expenditure on sanitation services in ULBs of districts like Sangrur, Faridkot, Tarn Taran and Amritsar.

In the ULBs of Faridkot there was more than 14 percent of the total expenditure on drainage followed by sanitation in 2014. On the other hand Jalandhar, Bathinda and SAS Nagar have the lowest expenditure on the administration and establishment i.e. 8 percent, 9 percent and 10 percent respectively. The highest expenditure of the ULBs in these districts is on Sanitation i.e. 36 percent in Bathinda followed by 17 percent on drainage in SAS Nagar. In the ULBs of Jalandhar district the highest expenditure is on water supply i.e. 21 percent followed by 20 percent on sanitation and 18 percent on Roads of the total expenditure in 2014.

Fig. 5.13 Contribution of various expenditure sources in total income of Municipalities in districts of Punjab, 2015



Source: Calculated from Punjab Statistical Abstract, 2014-15

The expenditure on ‘Administration and Establishment’ in 2015 in all ULBs of Punjab is around 28 percent of the total expenditure but it varies district wise. Expenditure on ‘Administration and Establishment’ of the ULBs in the districts like Fazilka, Kapurthala, Faridkot and Jalandhar is more than 50 percent of the total expenditure. In the ULBs of the district of SAS Nagar, Ludhiana, Mansa, Fatehgarh Sahib and Moga the expenditure on Administration and Establishment is only less than 15 percent and it is even less in ULBs of Amritsar district i.e. only 10 percent of the total expenditure.

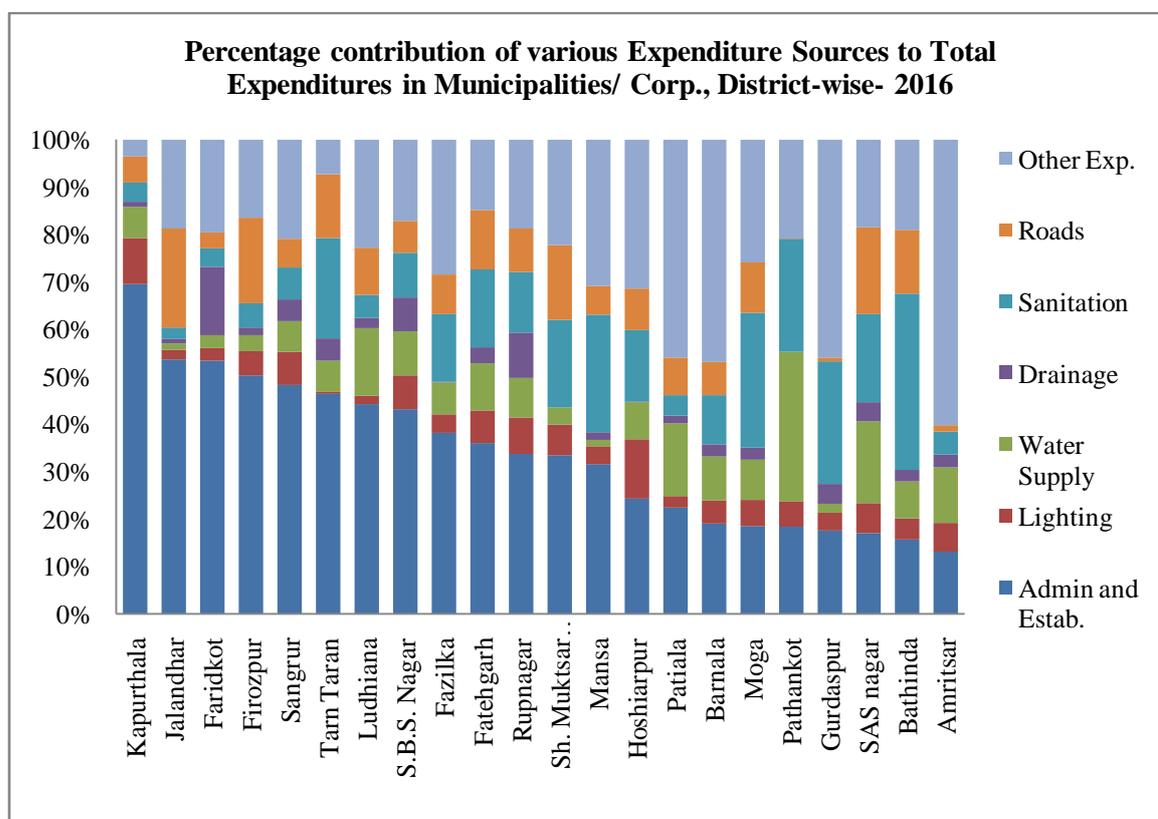
The 11.6 percent of the total expenditure of Punjab was on the water supply services in 2015. The district wise ULBs scenario is different as the ULBs of the district which spends highest on water charges are Pathankot i.e. 32.8 percent followed by Ludhiana 21 percent. The ULBs of the Patiala, Rupnagar and Jalandhar spend more than 14 percent of the total expenditure on water supply services. While the ULBs of the district like Faridkot and Fazilka spend lowest on water supply services i.e. 2 and 3 percent

respectively. All ULBs of other districts spends state's average of 11 percent on water supply services.

Sanitation expenditure in ULBs of Punjab in 2015 is 14.4 percent of total expenditure which is second largest expenditure. ULBs of Bathinda spend largest on sanitation services i.e. 36.6 percent of the tot expenditure and it is followed by Moga and Muktsar both i.e. 29 percent of the total expenditure. The ULBs of Gurdaspur and Pathankot district also spends more than 21 percent of the total expenditure on sanitation services. In the ULBs of Fazilka district more than 16 percent of the expenditure is on sanitation services which is followed by expenditure on roads and lighting i.e. 8 percent and 6 percent respectively. On the other hand, the ULBs of the Hoshiarpur district have not even a single percent expenditure on sanitation services. The expenditure on sanitation services is low also in ULBs of the districts like Jalandhar, Faridkot, SBS Nagar and Amritsar i.e. below 5 percent of the total expenditure.

Drainage is the area where the expenditure is lowest among all other sources of expenditure i.e. only 3 percent in Punjab in 2015. Only the ULBs of 3 districts spend more than 10 percent of the total expenditure on drainage, they are Faridkot, Rupnagar and SAS Nagar i.e. 14, 10, 10 percent respectively. The ULBs of 3 districts has more than 5 percent of total expenditure on drainage and they are Barnala, SBS Nagar and Moga. The ULBs of other district spend less than 3 percent on drainage services. Tarn Taran, Pathankot, Sh. Muktsar Sahib, Kapurthala and Gurdaspur are the districts which have expenditure on drainage services less than a percent of total expenditure in 2015.

Fig. 5.14 Contribution of various expenditure sources in total income of Municipalities in districts of Punjab, 2016



Source: Calculated from Punjab Statistical Abstract, 2015-16

In the ULBs of Punjab in 2016 the highest expenditure is on administration and establishment i.e. around 34 percent of the total expenditure it is followed by expenditure on sanitation services, roads and water supply i.e. 14 percent, 9 percent and 8 percent respectively. The ULBs of the district of Kapurthala spend more than 69 percent of the total expenditure in administration and establishment it is followed by the ULBs of the districts of Jalandhar, Faridkot and Firozpur where expenditure in administration and establishment is more than 50 percent of the total expenditure. In the ULBs of districts of Sangrur, Tarn Taran, Ludhiana and SBS Nagar the expenditure on administration and establishment is more than 40 percent of the total expenditure. On the contrary ULBs in the Amritsar district have lowest expenditure on administration and establishment i.e. only 13 percent of the total expenditure. It is followed by ULBs of districts of Bathinda, SAS Nagar, Gurdaspur, Pathankot, Moga and Barnala which spends less than 20 percent of the total expenditure on administration and establishment charges.

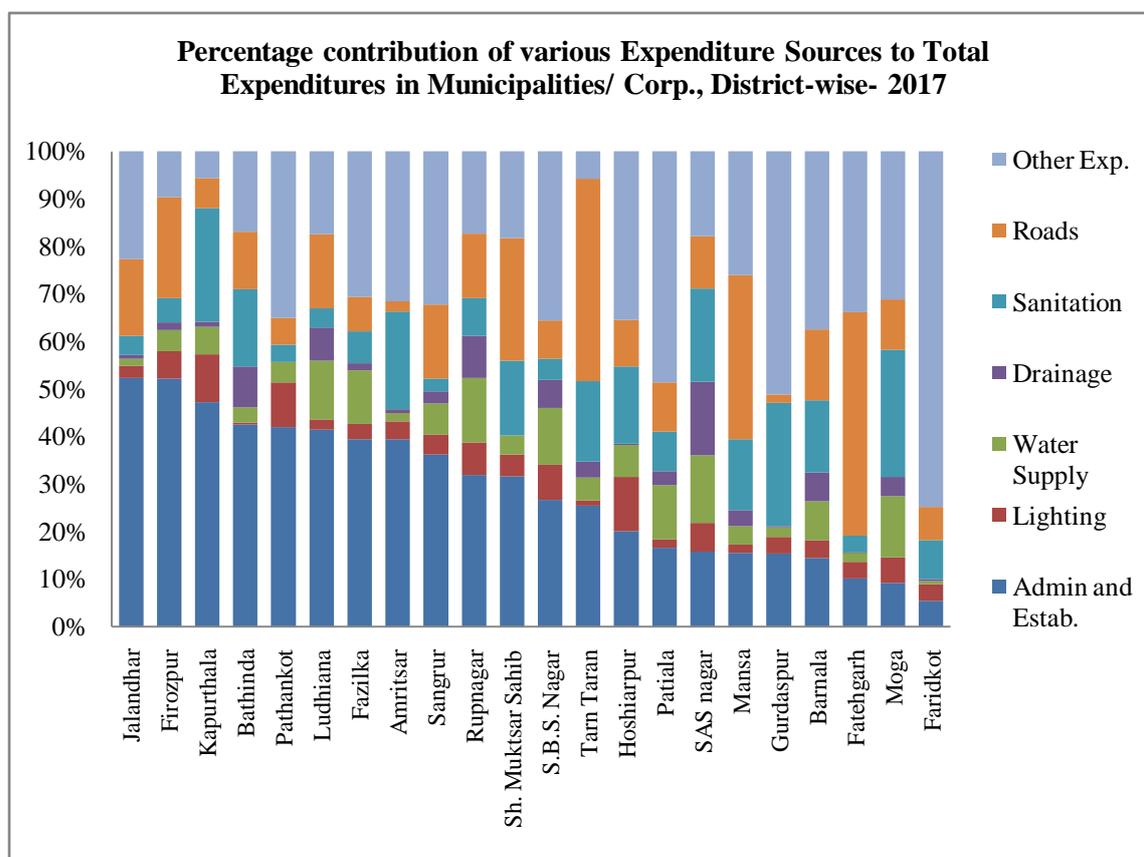
Water supply expenditure of the ULBs of Pathankot district is more than 31 percent of total expenditure. It is followed by ULBs of districts of SAS Nagar and Patiala where the expenditure on water supply is more than 15 percent of total expenditure. Ludhiana and Amritsar are districts where there is more than 10 percent expenditure on water supply. On contrary of it ULBs of districts like Jalandhar and Mansa have only a percent of their total expenditure spend on water supply. It is followed by Faridkot and Firozpur which spend only around 3 percent of the total expenditure on water supply.

The average expenditure by all ULBs of Punjab on lighting is just 5.2 percent. The ULBs of Hoshiarpur district spends more than 12 percent of total expenditure on lighting which is highest among all district's ULBs. It is followed by ULBs of Kapurthala district which spend more than 9.8 percent of total expenditure on lighting in 2016. On the other hand ULBs of districts of Ludhiana and Tarn Taran spent less than just 2 percent of total expenditure on lighting.

The expenditure on sanitation services is the second largest in Punjab which is 14.2 percent of total expenditure for ULBs and it varies district wise. The highest expenditure on sanitation services is in the ULBs of the district of Bathinda which spent more than 37 percent of the total expenditure. It is followed by Moga, Gurdaspur, Mansa and Pathankot which spend more than 23 percent of the total expenditure on sanitation services. On the contrary there are ULBs of district of Jalandhar which spends only 2.5 percent on sanitation services and it is followed by Faridkot, Kapurthala, Patiala and Amritsar where the expenditure on sanitation services was less than 5 percent of the total expenditure.

It is noted that among all the ULBs of all districts Faridkot is the only district where ULBs spend more than 14 percent of the total expenditure followed by the ULBs of Rupnagar district which spends around 9 percent of total expenditure on drainage. The ULBs of all other districts spend less than 5 percent on expenditure and it is even none in Pathankot, Sh. Muktsar sahib and Fazilka.

Fig. 5.15 Contribution of various expenditure sources in total income of Municipalities in districts of Punjab, 2017



Source: Calculated from Punjab Statistical Abstract, 2016-17

In all the ULBs of Punjab 28.6 percent of the total expenditure comes from Administration and establishment followed by expenditure on roads, sanitation and water supply i.e. 15 percent, 12 percent and 6.7 percent respectively in 2017. The pattern of expenditure of ULBs at district level varies. In the ULBs of the districts of Jalandhar and Firozpur more than 52 percent of the expenditure is on administration and establishment. It is followed by Kapurthala, Bathinda, Pathankot and Ludhiana wherein more than 40 percent of the total expenditure is on the administration and establishment. The ULBs of Fazilka and Amritsar districts stand more than 39 percent of expenditure on administration and establishment charges. On the other hand the ULBs of Moga and Faridkot district observed less than 10 percent of the total expenditure on administration and establishment. It is followed by ULBs of Barnala and Fatehgarh Sahib which spent 15 percent on administration and establishment.

The expenditure on water supply in the ULBs of the SAS Nagar and Rupnagar districts was highest among all the districts which is 14 percent and 13 percent respectively out of total expenditure. It is followed by the ULBs of the district of Moga, Ludhiana, SBS Nagar, Fazilka and Patiala wherein more than 12 percent expenditure of total expenditure is on water supply. On the contrary the ULBs of Faridkot district spends less than 1 percent on water supply which is lowest in all district ULBs. It is followed by Jalandhar, Gurdaspur and Fatehgarh Sahib in which expenditure on water supply is less than 2 percent of total expenditure.

In the ULBs of Hoshiarpur and Kapurthala district the expenditure on lighting is highest among all ULBs, which is more than 11 percent in both the districts. And expenditure on lighting is lowest in ULBs of district of Bathinda i.e. less than 1 percent of total expenditure.

Sanitation and drainage services are one of the major responsibilities of the urban local bodies and in Punjab more than 15 percent of total expenditure is spent on sanitation and drainage services. The ULBs of Moga and Gurdaspur district observed around 26 percent of the total expenditure on sanitation services. It is followed by Kapurthala and Amritsar where 25 percent and 23 percent respectively expenditure on sanitation services. The ULBs of the districts of Sangrur, Pathankot and Fatehgarh Sahib observed the lowest expenditure on sanitation services i.e. 2.5 percent, 3.5 percent and 3.5 percent respectively. Expenditure on drainage services is highest in the district of SAS Nagar i.e. more than 15 percent followed by Rupnagar and Bathinda i.e. both 8.5 percent of total expenditure. The lowest expenditure on drainage services in the ULBs is observed in the districts of Pathankot, Sh. Muktsar Sahib and Fatehgarh Sahib where there is no expenditure i.e. no expenditure at all. Also the ULBs of district of Amritsar, Jalandhar, Gurdaspur, Faridkot and Hoshiarpur observed less than 1 percent expenditure on drainage.

5.5 Conclusions

It is an established idea by researchers, academicians, policymakers, administrators and by public in general etc. that the robust finances of the urban local bodies are central to the economic development and growth of the country. (Thakur *et al.* 2011)¹¹ analysed in details the positive role of municipal finances in urban services, urban infrastructure, service delivery system, urban planning and development. Robust and effective revenue generations for the municipalities are critical for the sustainable town development. In the light of the present chapter analysis, it can be said that there need a reform in the revenue system to increase the fiscal base, autonomy and awareness for better service delivery and hence quality of urban basic amenities. The major findings of the present chapter are as:

- The total revenue of the ULBs of Punjab has increased by more than five times from 1980-81 to 28.6 billion in 2013-14. After the immediate fall in total revenue in 2013-14, it increased again to more than 35 billion in 2016-17. Since 1990-91 the growth rate in total revenue is continuously decreasing to 2.2 percent in 2012-13, even it was negative in 2014-15.
- The total expenditure of ULBs in Punjab by continuously increasing except from 2013-14 to 2014-15 when there recorded a negative growth rate of -4 percent.
- The per capita income has more than doubled from 2009-10 to 2016-17 which is encouraging for the revenue of the ULBs in the state. But the depressing part is that per capita expenditure has not increased correspondingly i.e. it is less than double from 2009-10 to 2016-17. PCI was always higher than PCE from 2009-10 to 2006-17. The gap between the PCI and PCE is continuously increasing since 2013-14 and it is highest in 2016-17.
- Among all the sources of revenue, octroi constitutes the highest share which increased from 2012 i.e. 50 percent of total revenue in 2015 but since then it shows a declining trend and come down to 36 percent of total revenue base in

¹¹ Thakur, Debdulal, Halen, A.K., Chowdhury, Samik, Mehrotra, Seema, Rakshit, Rita and Sarkar Chandana (2011). Municipal Finances Matters: India Municipal Finance Report (IMFR) ABD TA 7334 IND. *National Institute of Public Finance and Policy*

2017. On the other hand, grants from govt. share have been increased continuously from 2013 to more than 10 percent in 2017, also lighting rate proportion have increased marginally over the period.

- The highest source of expenditure in Punjab since 2012 is administration and establishment which is more than 50 percent in 2015 which afterwards has decreased. The critical condition of the expenditure sources is that total expenditure decreased on water supply, sanitation and also on lighting, which shows that basic amenities is not the priority for the ULBs. The low spending by the ULBs on basic urban amenities is one of the key factors for the poor condition of services in towns and cities.
- Annual expenditure on basic amenities like water supply, sanitation services, drainage services, lighting charges are far below the minimum levels that must be incurred for delivering, maintenance and sustainability of these services at basic minimum levels.
- District wise analysis of the sources of revenue from 2012 to 2017 shows that octroi constitutes by more than 50 percent in more than half of the districts and these districts are not high urbanised and even do not have high quality of urban amenities (see previous chapter on quality of urban amenities). On the other hand the districts where octroi contribution is less than 10 percent of the total revenue are Amritsar, Jalandhar, Tarn Taran and Gurdaspur. It is concluded that in all these districts over the period from 2012-17 grants from govt. constitutes a major sources of revenue. It signifies that majority of chunk of revenue depends on state govt. transfers which is not a consistent sources which negatively hampers the expenditure by ULBs.
- The tax domain of the municipalities in terms of the revenue base have not registered any change as most of the taxes and non-taxes which municipalities have jurisdictions are either not in use or have low level of productivity. It refers that in changing towns and cities economy and socio-economic realities, the revenue base is obsolete.

- There is a clear trend and pattern for increasing the transfers from central govt. and state govt. and also dependency of the ULBs on Grants from govt. and grants from local funds. It states that transfers when used for balancing the inefficiencies of internal functioning of the urban local body leads to ‘zero sum game’¹².
- The priority of the expenditure of the majority of the districts are on administration and establishment which constitutes above 50 percent of total expenditure in districts like Amritsar, Tarn Taran, Pathankot and Faridkot from 2012-15, all districts are border districts and 3 districts among them are newly created district headquarter and hence huge funds required for administration infrastructure. The pattern changes since 2015 when ULBs of Amritsar districts drastically on administration and establishment and increase its expenditure on water supply and sanitation. Other districts which have lowest expenditure on administration and establishment are Moga, Fatehgarh Sahib and Bathinda; all these districts have highest expenditure on sanitation followed by roads and water supply.

The financial and functional domain of the urban local bodies have been discussed in this chapter where revenue and expenditure temporal pattern and spatial pattern in the districts have analysed and it is found that some districts are different in total revenue trends than others like Amritsar observed a different sources of revenue and expenditure than other districts. In *chapter 3 and 4* also it is mentioned that Amritsar observed a different pattern of urbanisation like urban growth, emergence of new towns along with the quality of urban amenities is higher than other districts and also the revenue and expenditure pattern in ULBs of Amritsar is unique. Therefore, Amritsar district has been chosen for the primary survey case to study HH level urban amenities and their relation with socio-economic attributes. The next *chapter 6* presents a micro level study of the urbanisation its linkages with quality of urban amenities and how the levels of urban amenities is determined by municipal finances.

¹² (2013). Approach to the Finances of Municipalities: A Report to the 14th Finance Commission. *Working Group of State Urban Development Secretaries on Issues before the 14th Finance Commission*”, MoUA and NIUA, New Delhi.

CHAPTER 6

URBAN GROWTH, QUALITY OF URBAN BASIC AMENITIES AND FINANCIAL DYNAMICS OF ULBs IN AMRITSAR DISTRICT: A MICRO LEVEL ANALYSIS

6.1 Introduction

The urban processes and the quality of basic amenities are closely linked. The quality of urban amenities is determined by multitude of factors like social, economic, administrative and financial among many others. The previous chapters analysed the urban processes, quality of urban amenities and its levels and determinants in Punjab and spatial and temporal pattern across districts. In chapter 5 the financial status of the ULBs which is key determinant of urban basic amenities has been analysed in depth at the macro level (state level). This chapter presents the detailed discussion on the same indicators at micro level which gave the ground picture of urban amenities and its associated factors. This chapter has been divided into five sections: The first section analyses the urban processes at the sub-district level and in the towns of Amritsar district i.e. spatio-temporal variations in urbanisation, urban growth with special emphasis on the emergence of new towns using secondary data. It also shows the link between the emergence of new towns in Amritsar district and the road network (national highways and state highways) and its corridor in state and district. The second section of the chapter deals with the availability, accessibility and quality of urban basic amenities in all the towns of Amritsar district on secondary data from census. The third section of the chapter brings out the level of urban amenities in all towns of Amritsar district to rank the towns on the basis of their quality of urban amenities and to discuss difference in ranking of old and new towns in the level of urban amenities. A fourth section of the present chapter gives an in-depth analysis of the financial situation of the ULBs in the district in terms of growth in revenue and expenditure, per capita income and per capita expenditure variations. It also discusses the expenditure on various sources like on urban basic services. The last section concludes with the findings of the study.

6.2 Urban dynamics in Amritsar district: A micro level Analysis

From the study of urban processes in Punjab it has been seen that border districts along the Pakistan border has generally low level of urbanisation except Amritsar. This makes this district an important case study to analyze the factors responsible for this development. According to census 2011, it is the second most populous district in Punjab after Ludhiana situated in the north western part of the state and the one of the border district which shares common boundary with the neighbouring country of Pakistan.

Amritsar city is an important religious centre since ancient times hence along with pilgrimage the traders also used to come and consequently this district has been a hub for trade and commerce. Development of roads and railways are remarkable and this led to the progress of infrastructure development for industries, education and agriculture and hence slowly the urban population has also started growing.

6.2.1 Trends and patterns of Urbanisation and Urban Growth

Urbanisation is an inevitable phenomenon which is both a driver and outcome of the economic growth and development. Punjab is fastly getting urbanised as compared to all India average urbanisation. As we have seen in previous chapters there are spatial variations in the urbanisation pattern in the state where, according to 2011 census, some districts have more than 50 percent of urbanisation (Ludhiana, SAS Nagar, Amritsar etc.) while some have very low urbanisation i.e. just 12 percent (Tarn Taran). It is interesting to analyse the urban processes in Amritsar district to understand the micro level pattern of urbanisation and urban decadal growth.

Table 6.1 Level of urbanisation and urban decadal growth in Amritsar district

Census	Level of urbanisation	Urban decadal growth
1971	29.17	--
1981	32.97	34.77
1991	34.08	18.32
2001	51.5	30.1
2011	53.58	20.15

Source: Census of India, District Census Handbook, 2001 and 2011

The above table clearly shows that urbanisation level in Amritsar has shown a gradual increase since 1971. It was recorded 29 percent in 1971 that increased to 34 percent in 1991. From 1991 to 2001 the increase in urban population is highest and the level of urbanisation increased to more than 51 percent. In 2011 around 54 percent of the residents live in urban regions of the district. As compared to the state's average, its level of urbanisation is higher in all census years since 1971. Urbanisation in Punjab is 37.4

percent in 2011 while in Amritsar it is 53.5 percent. As discussed in *chapter 3*, Amritsar is the third highest urbanized district of Punjab after Ludhiana and SAS Nagar. It is quite linked to see the urbanisation variation in Amritsar district won studying the tehsil-wise (sub-districts) pattern it is seen that majority of urban population is concentrated in Amritsar II tehsil because it consists of Amritsar Municipal Corporation and Nangli town (newly created II class town in 2011), which is the only urban agglomeration (UA) exist in the district. Amritsar II tehsil is the most urbanised tehsil of the district with more than 84 percent urbanisation in 2011.

Table 6.2 Tehsil-wise (sub-district) level of Urbanisation and urban decadal growth in Amritsar district

Tehsils	Level of urbanisation (%)		Urban decadal growth (%)	
	2001	2011	1991-2001	2001-11
Ajnala	9.5	10.67	147.37	29.2
Amritsar -I	18.31	18.48	41.7	10.2
Amritsar- II	82.95	84.13	---	19
Baba Bakala	7.62	12.17	134.18	82.7

Source: Census of India, District Census Handbook, 2001 and 2011

The number of tehsils in Amritsar was seven according to the 2001 census and they were Ajnala, Amritsar-1, Amritsar-II, Baba Bakala, Tarn-Taran, Patti and Khadur Sahib. This number has decreased to four in 2011 census. The three tehsils i.e. Tarn Taran, Patti and Khadur Sahib carved out to form new district of Tarn Taran. *Table 6.2* depicts the spatial variation in the level of urbanisation across tehsils in Amritsar district for the period of 2001 and 2011. Over the period the level of urbanisation has increased in all tehsils across districts. In 2011, Amritsar-II tehsil is the highly urbanized tehsil with more than 84 percent urbanisation followed by Amritsar-I with 18.48 percent urbanisation. In 2001 the Ajnala Tehsil was the third highest urbanized tehsil but in 2011 Baba Bakala became third highest urbanized tehsil in Amritsar. In Amritsar-II largest number of towns are present i.e. 4 as compared to the other tehsils and one among them is Amritsar Municipal Corporation (AMC) which captures the highest urban population of the district hence the urban population is high in this tehsil.

The previous analysis in this study has shown that the level of urbanisation in Amritsar has always been greater than the level of urbanisation in Punjab. Amritsar is one of the highly urbanized and economically developed districts of Punjab. The Amritsar municipal corporation is the major commercial and cultural hub in the hearth of Punjab. This district is also served as the gateway to the Pakistan and central Asia hence the importance of region is getting the attention of policy maker to make the urbanisation of the city sustainable. Though the level of urbanisation is higher, the decadal urban growth rate in the district has declined from 30 percent in 1991-2001 to 20 percent in 2001-11. *Table 6.1* presents the trend of decadal urban growth rate in Amritsar district. In 1971-81 it was 34.77 percent and in the following decade it had been declined to 18.32 percent. The zigzag pattern is followed in the case of urban growth rate trend. In the decade 1991-2001 the growth rate of urban population has increased to 30.1 percent and then afterwards it has declined to 20.15 percent. It may be due to the fact that the high urban growth regions in the district have been carved as separate district of Tarn Taran.

Tehsils (sub-districts) wise pattern shows a different scenario of urban decadal growth rate as recorded in *table 6.2*. Amritsar tehsil of 1991-01 decade was divided into two tehsils namely Amritsar-I and Amritsar-II. There was a high rate of urban growth in all the tehsils of Amritsar. Ajnala recorded the highest i.e. more than 147 percent followed by Baba Bakala i.e. 134 percent and Amritsar tehsil i.e. lowest 44.7 percent. In the decade of 2001-11 urban growth has declined in each tehsil of the district. Baba Bakala has recorded the highest urban growth rate of 82.7 percent in 2001-11. It is followed by Ajnala i.e. 29 percent and Amritsar-II tehsil i.e. only 19 percent urban decadal growth.

6.2.2 Emergence of towns in Amritsar district

In the previous section, the level of urbanisation and urban growth of Amritsar district has been discussed. Amritsar is one of the highly urbanized districts and it has increased tremendously after 1991 and its location along the border with Pakistan made it an interesting case to study the determinants of urban processes there. In the present section special focus is given to Amritsar district regarding the distribution of towns and their population growth across size classes for the period 1991-2011 (as *shown in table 6.3*). It has also analysed the population decadal growth rate of the towns. Total number of towns in the district has increased from 7 in 1991 to 15 in 2011. There is only one class I town

in all the years and i.e. Amritsar Municipal Corporation. Only 2 new towns have been added from 1991 to 2001 i.e. Ajnala and Budha Theh and they are statutory towns (NP) and census town respectively. However in the last decade (2001-11) 6 new towns have been emerged and they all are census towns. In 2011, the largest numbers of towns are in size class IV and there is no town under size class II. There is the addition of one town each in class III and class V in 2011 and two towns emerged in class VI.

Table 6.3 Distribution of towns and their population growth across size classes of towns of Amritsar district, 1991-2011

				Towns in each size class					
Census	Total Towns	Statutory Towns	Census Towns	I	II	III	IV	V	VI
1991	7	7	0	1	0	0	3	1	2
2001	9	8	1	1	0	1	5	2	0
2011	15	8	7	1	0	3	6	3	2

Source: Census of India, All India Town Directory, Punjab, 1991, 2001 and 2011

From the above table, it has been observed that in 1991 there were not a single census town in the district i.e. all 7 towns were statutory which have established urban governance system. In 2001 only 1 town was census town i.e. Budha Theh and other 8 towns were statutory. The pattern has totally changed in 2011 where all the 6 newly emerged towns are census towns which are formed due to changes in their demographic composition and economic activities rather on the basis of established urban governance mechanism in form of municipal government. It has severe implications on the provisioning of urban basic amenities in these towns as they are governed by rural administration and govt. system.

Map 6.1 and 6.2 Classification of towns in Amritsar district in 2001 and 2011

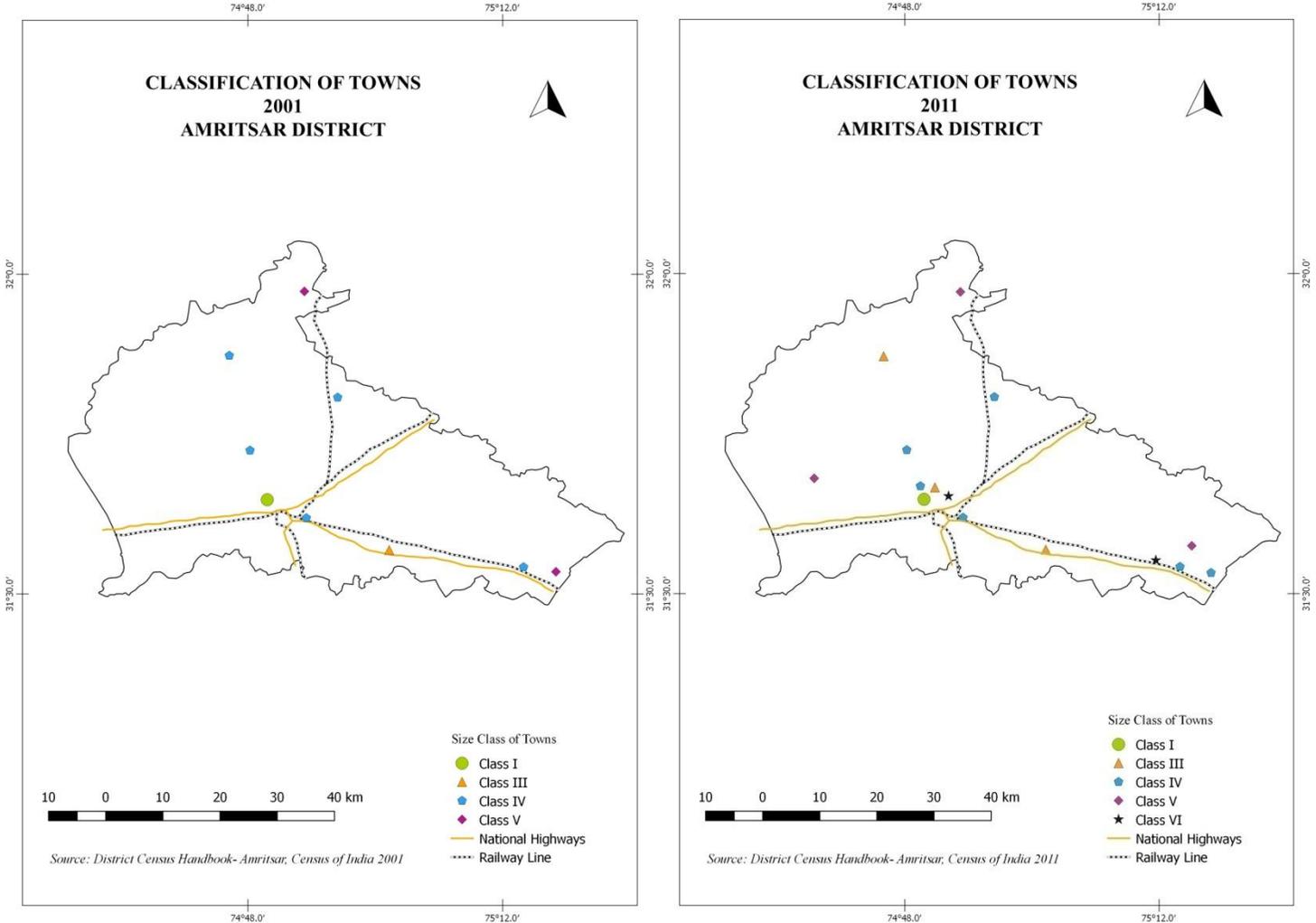


Table 6.4 New towns emerged in Amritsar district from 1991-2011

1991-2001			2001-2011		
Name of town	Population	Size class	Name of town	Population	Size class
Ajnala (NP)	18589	IV	Nangli (CT)	20440	III
Budha Theh (CT)	8731	V	Kathanian (CT)	10679	IV
			Baba Bakala (CT)	8946	V
			Chogawan (CT)	5416	V
			Khilchian (CT)	4588	VI
			Mudal (CT)	3882	VI

Source: Census of India, All India Town Directory, Punjab, 1991, 2001 and 2011

New towns in a region can be emerged from conversion of small town into large town or the conversion of village into census town or statutory town established by the law. From 1991-2001 two new towns emerged i.e. Ajnala (NP) and Budha Theh (CT). Ajnala town is a statutory town in size class IV while Budha Theh is a census town of size class V which was the only census town in 2001. During census 2001 to 2011, 6 new census towns (Chogawan, Kathanian, Nangli, Mudal, Khilchian and Baba bakala) have been added in the district. Among the newly added towns in the district, Nangli is the most populous in class III while Mudal town with 3,882 is the least populous town in the district in 2011.

Table 6.5 Proportion of urban population in each size classes of towns

Census	Proportion of Total pop. in each size class of towns				
	I	III	IV	V	VI
1991	92.47	NA	5.22	1.19	1.12
2001	90.38	2.15	6.17	1.31	NA
2011	86.86	5.30	5.65	1.56	0.63

Source: Census of India, All India Town Directory, Punjab, 1991, 2001 and 2011

Map 6.3 Emergence of New Towns in Amritsar district, 2001-11

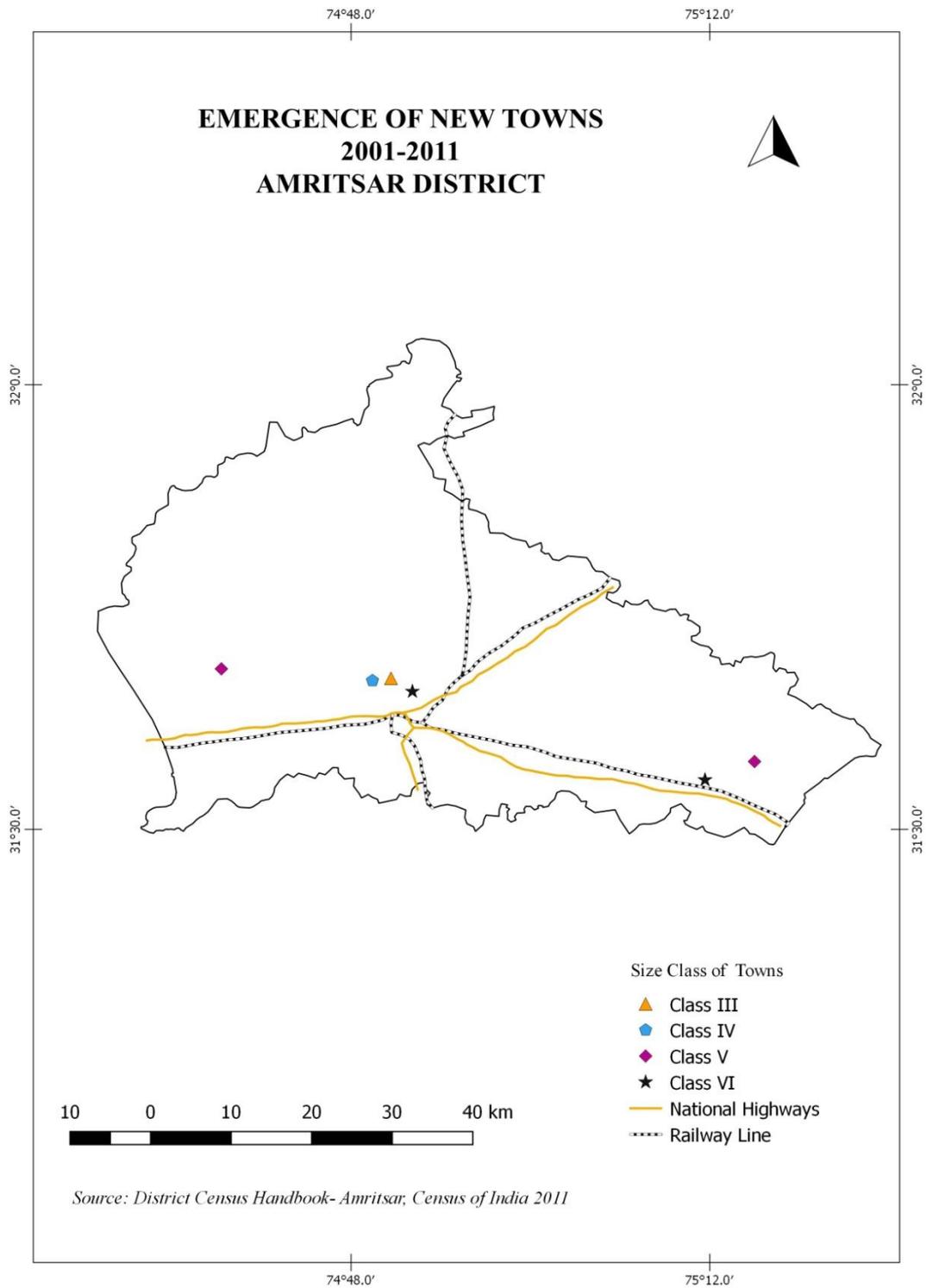
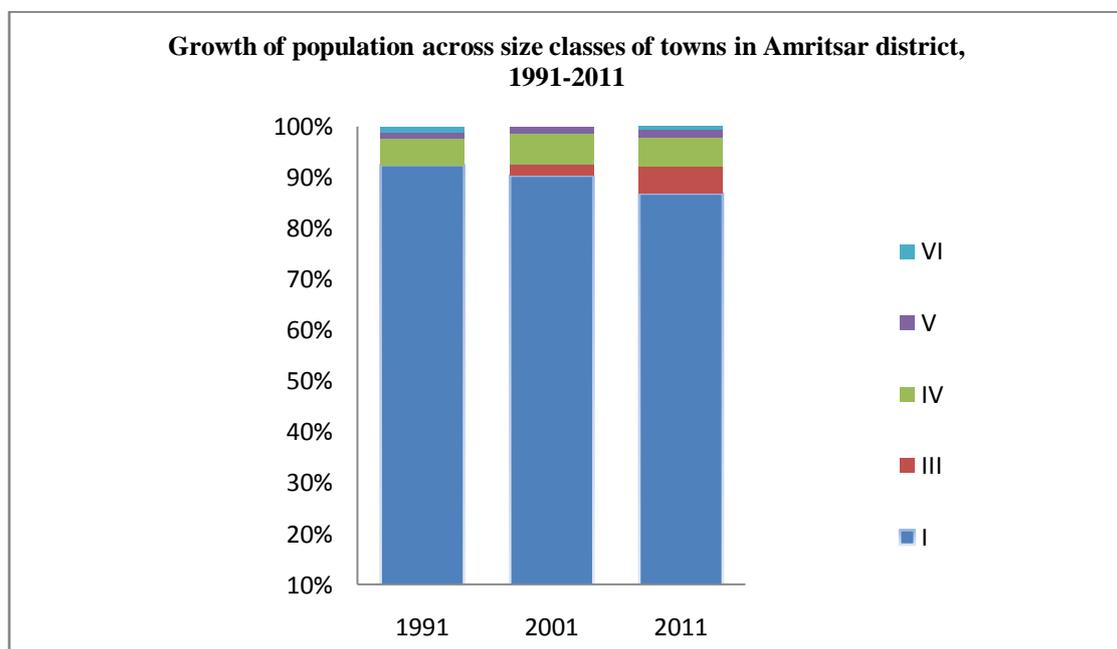


Fig. 6.1 Proportion of population across size classes of towns of Amritsar district, 1991-2011



Source: Census of India, All India Town Directory, Punjab, 1991, 2001 and 2011

As shown in the above figure, the urbanisation in Amritsar district is top heavy as class I town (only one) i.e. Amritsar municipal corp. captures more than 90 percent of the total urban population. Its population is increasing due to population inertia. It can be said that Amritsar Municipal corp. is a 'Primate City' which captures the majority of population. In Amritsar there is not any town of size class II (population from 50,000 to 1 lakh) from 1991 till 2011. From the figure it is observed that the proportion of population in size class I has been decreasing from 1991 to 2011 i.e. 92 percent to 86 percent respectively. The decrease in population proportion of class I town has been compensated by increase in population proportion of medium and small towns of size class III and IV. The share of population of size class III towns in total population has increased from 2 percent in 2001 to 5.3 percent in 2011. Similarly there is also marginal increase in share of population of other small towns of size classes V and VI in 2011. Though there are 11 towns in size class IV, V and VI but they share less than 8 percent of the total urban population.

Table 6.6 Decadal growth rate of population in towns of Amritsar district

S. No.	TOWN	Pop. Decadal Growth Rate (%)	
		1991-01	2001-11
1	Amritsar (M Corp.+OG)	41.63	15.47
2	Jandiala (M CI)	23.54	22.65
3	Rayya (NP)	38.47	14.84
4	Majitha (M CI)	21.27	11.63
5	Raja Sansi (NP)	21.66	17.43
6	Ramdas (M CI)	21.28	10.71
7	Amritsar Cantt. (CB)	217.38	-14.41
8	Ajnala (NP)		13.55
9	Budha Theh (CT)		25.75
10	Kathanian (CT)		
11	Nangli (CT)		
12	Baba Bakala (CT)		
13	Chogawan (CT)		
14	Khilchian (CT)		
15	Mudal (CT)		

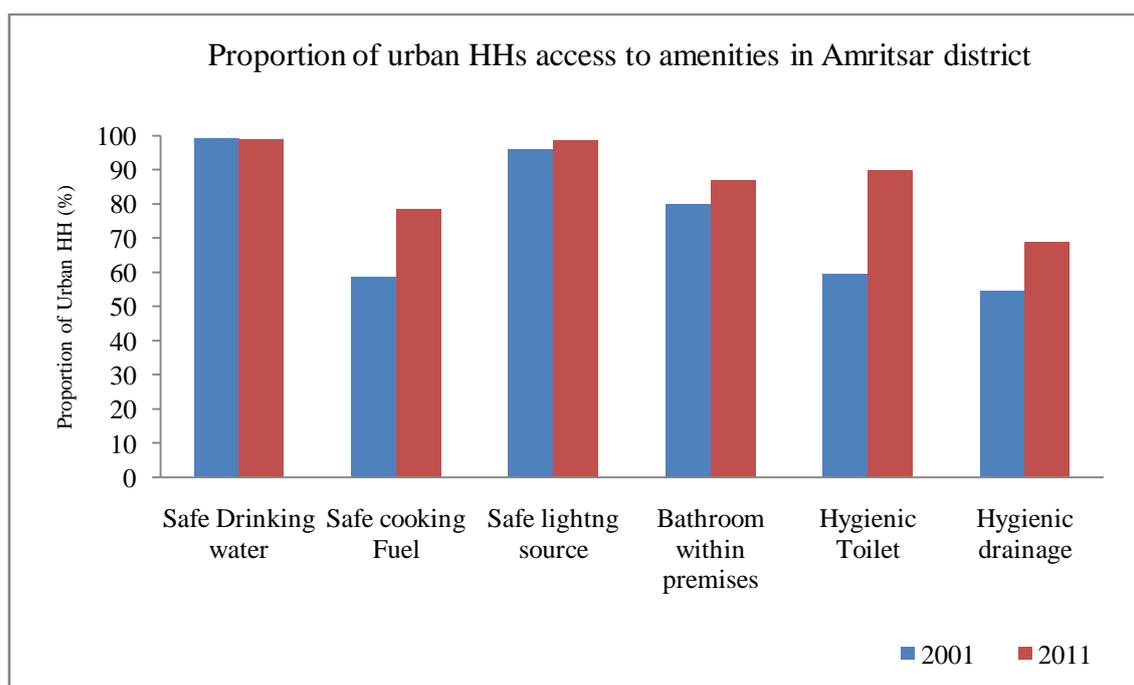
Source: calculated from census of India, All India Town Directory, 2001 and 2011

The growth of population across size classes of towns has shown that the large towns captures majority of the total urban population. The above *table 6.6* shows the population decadal growth rate from 1991-01 and 2001-11. In 2001 all the towns of the district show population growth of more than 21 percent with Amritsar Cantt town has the highest population growth rate of more than 217 percent from 1991 to 2001 but it has recorded negative growth rate of 14 percent in 2011 census. It is followed by Amritsar M. corp. having 41 percent growth rate in 2001. In 2011 the average growth rate of all towns is low as compared to 1991-01 as seen that the highest growth of the town is in Budha Theh town i.e. 25 percent followed by Jandiala municipal council i.e. 22.6 percent.

6.3 Quality of basic amenities in urban HHs of Amritsar district and across size classes of towns, 2001-11

This section deals with the availability of urban basic amenities in households of Amritsar district and also across size-class of towns. With more than 53 percent of urbanisation in 2011 and growing at the decadal growth rate of more than 20 percent from 2001-11 in Amritsar. With this background where increasing urban population puts pressure on the urban infrastructure to provide basic services to the people, it is a challenge for the govt. and urban local bodies in particular to ensure the availability and accessibility of basic amenities to all urban residents. Hence, it is important to analyse the level and distribution of urban amenities in districts and across size class of towns, from 2001 to 2011.

Fig. 6.2 Proportion of HHs having different urban amenities in Amritsar district, 2001-11



Source: Census of India: HH-6, HH-7, HH-8, HH-9 and HH-10

Safe drinking water supply to the HHs is the most important need for the healthy life. In urban areas of Amritsar, more than 99 percent of total HHs have access to safe drinking water supply both in 2001 and 2011. Though in 2011 it has shown a marginal decrease and it can be attributed to the urban population in the district which increased by more than 2 percentage points and also 6 new census towns added, which don't have equal safe water supply as in statutory towns.

The proportion of urban HHs having safe sources of cooking fuel in 2001 was 58 percent of the total urban HHs which shows an increasing trend i.e. more than 78 percent of urban HHs in Amritsar now have access to safe cooking fuel like LPG/PNG, biogas etc. It is noted that in the towns agricultural land and bare fields have been converted to built-up areas and this results into declination of the collection of firewood by marginalised and low income urban HHs. It is also added that in the 6 new census towns added biogas is used for cooking fuel which is a safe source of cooking fuel.

Safe source of lighting in urban regions of Amritsar district has increased substantially from 95 percent of all HHs in 2001 to more than 98 percent in 2011. Safe sources of lighting don't only include electricity but also includes solar energy but urban HHs mostly used electricity for the lighting purpose. But the issue lies in the number of hours the HH is provided electricity and the timings of lighting. During the primary field survey in four towns of Amritsar district it has also been found that though majority of the HHs have electricity connection but because of the electricity cuts many poor HHs use kerosene as a source of lighting, and high income HHs use 'diesel based electricity generator' which is unsafe and environment polluter also.

Sanitation and sewerage are critical not only for the healthy living of the people but also for the economic development and sustainable urban development. In Amritsar where more than half of the population resides in urban areas, the pressure on municipal bodies is huge in providing the basic sanitation and sewerage services which are not in sync with the urban growth. The proportion of urban HHs having bathroom facility within HH premises are 80 percent in 2001 which has increased substantially to 86 percent of total urban HH in 2011. There are more than 14 percent of urban HHs which are still without bathroom within HH premises and they are mainly found in smaller towns of class V and class VI where less than 60 percent of urban HHs have bathroom facility within HH

premises. Also the newly emerged towns are census towns without any ULBs responsible for sanitation services. Another indicator for the hygienic sanitation service is the availability of hygienic toilet facility to the HH. The proportion of urban HHs having hygienic toilet facility have increased from 59 percent in 2001 to more than 89 percent of the total HHs. But it is alarming situation that there are still more than 10 percent of urban HHs in the district which do not even have access to the hygienic toilet services, which is the foremost responsibility of the state government. Even there are many policies and programmes by central or state government to tackle the problem of open defecation but increasing rural to urban migration led to rise in slum population and lack of proper regional planning model forced people out of the basic urban services standards which is a basic human right of every person.

The proportion of urban HHs having hygienic sewerage system has shown an increasing trend i.e. from 54 percent in 2001 to more than 68 percent of total urban HHs in 2011. It is the closed water drainage system for waste water outlet which is still not accessed by more than 32 percent of urban HHs. It is particularly the responsibility of the ULBs to provide financial expenditure on the drainage facilities. It is noted that in all new census towns emerged in 2011 that the hygienic drainage facilities is less than 10 percent of all urban HHs except in Nangli where it is more than 44 percent of all urban HHs.

The above discussion on urban basic amenities in urban HHs of the district does not give the picture of urban amenities across size classes of towns which are critical to understand the variations in access of urban amenities in large and small towns. Therefore, the *table 6.7* and the following figures bring out the pattern of accessibility and availability of urban basic amenities in all towns of the district for 2001 and 2011.

Table 6.7 Proportion of urban households having different urban amenities across towns in Amritsar district, 2001-2011

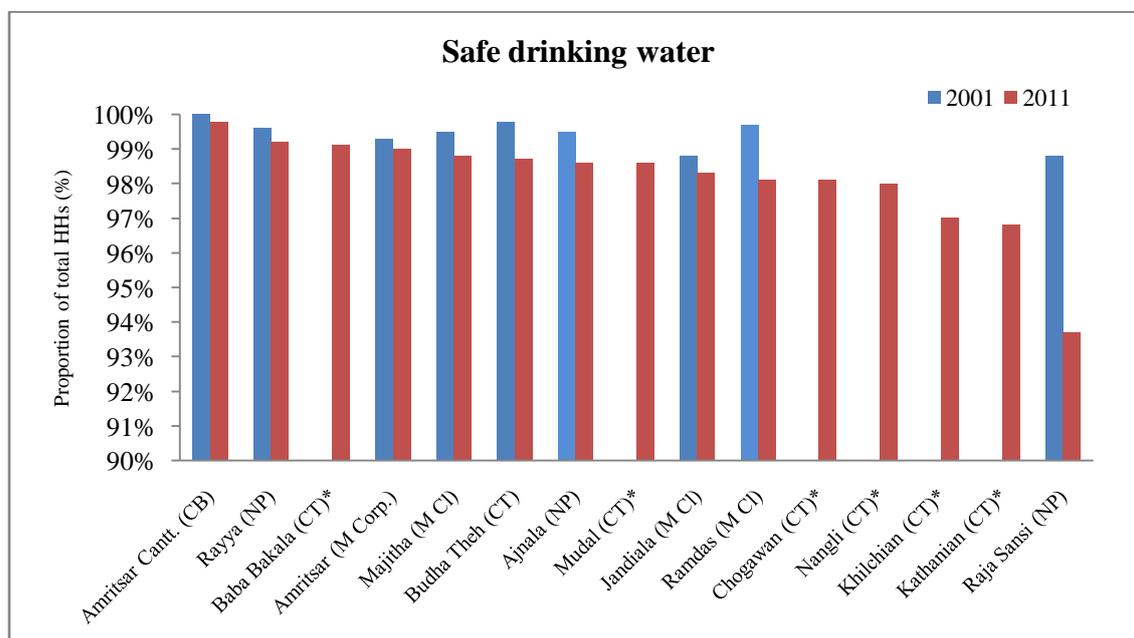
Name of Town	Size-class	Safe Drinking water		Safe Cooking Fuel		Safe Lighting		Bathroom within HH premises		Hygiene Toilet		Hygiene Drainage	
		2001	2011	2001	2011	2001	2011	2001	2011	2001	2011	2001	2011
Amritsar (M Corp.)	I	99.3	99.0	60.6	80.1	96.3	98.7	81.5	88.6	61.9	92.2	59.4	74.6
Jandiala (M CI)	III	98.8	98.3	52.1	71.6	96.8	94.3	69.5	76.2	47.4	57.2	13.3	7.4
Ajnala (NP)	III	99.5	98.6	41.6	76.5	92.1	97.3	67.3	80.9	46.6	75.7	9.6	2.7
Nangli (CT)*	III		98.0		68.2		97.7		75.9		76.13		44.8
Rayya (NP)	IV	99.6	99.2	42.8	80.1	92.4	99.4	66.2	79.7	50.7	92.7	31.7	86.7
Majitha (M CI)	IV	99.5	98.8	27.3	59.9	89.6	97.1	62.8	64.9	39.3	48.5	3.9	6.2
Raja Sansi (NP)	IV	98.8	93.7	38.6	64.1	90.6	98.0	70.3	71.6	33.1	69.7	19.8	17.8
Budha Theh (CT)	IV	99.8	98.7	49.5	73.9	97.5	97.6	79.5	84.4	47.4	91.2	45.9	25.2
Kathanian (CT)*	IV		96.8		50.0		91.9		66.1		82.2		0.0
Amritsar Cantt. (CB)	IV	100.0	99.8	77.8	92.7	99.9	99.9	91.8	93.9	53.4	93.9	87.8	96.3
Baba Bakala (CT)*	V		99.1		48.4		95.8		62.1		75.6		9.8
Ramdass (M CI)	V	99.7	98.1	28.0	39.1	93.1	94.5	55.7	57.2	18.9	57.2	4.1	2.7
Chogawan (CT)*	V		98.1		42.0		95.8		61.9		74.1		13.7
Khilchian (CT)*	VI		97.0		55.6		97.5		77.1		89.7		3.4
Mudal (CT)*	VI		98.6		40.5		91.5		44.2		50.6		4.5

Note: () Newly emerged towns in 2011 census*

Source: All India Town Directory, Census of India, 2001 and 2011

There were only 9 towns in the district in 2001 which have increased to total 15 towns, where all the newly emerged towns are census towns. It is to be mentioned here that out of the 15 towns, 8 towns are statutory and 7 are census towns. All the 15 towns are analysed according to their different level of urban amenities for all six indicators as mentioned in the above table.

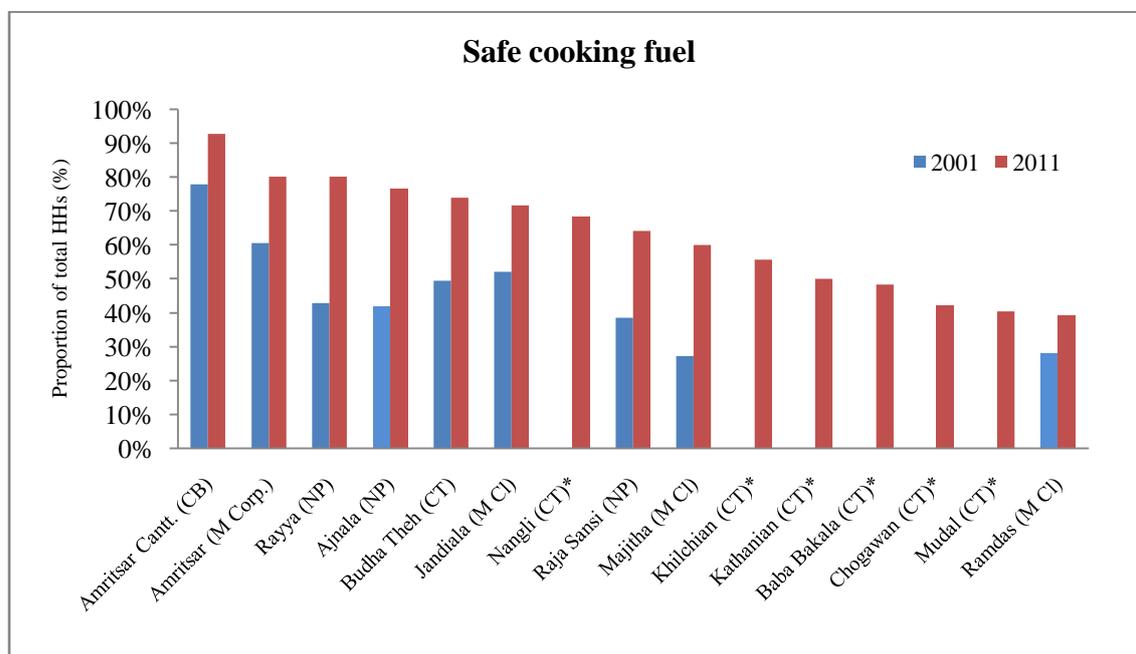
Fig. 6.3 Proportion of HHs having safe drinking water in all towns of Amritsar district, 2001-11



Source: All India Town Directory, Census of India, 2001 and 2011

The fig. above shows that all the towns of Amritsar district in 2001 have more than 99 percent of HHs with sources of safe drinking water and it is even higher in Amritsar Cantt town where all HHs (100 percent) have access to safe drinking water. In 2011 there observed a decreasing pattern of safe drinking water availability to all HHs in all towns. Though there is a decrease in the access to safe drinking water by HHs but still all towns across all size classes have more than 97 percent of HHs with access to safe drinking water supply except in Raja Sansi town of size class IV where it is lowest i.e. 93 percent in 2011. The proportion of slum population in all the towns have been increased from 2001-11 i.e. Majitha town has highest slum population among all towns i.e. 44 percent of total population followed by Raja Sansi town. The decrease in HHs with safe drinking water in all towns may be linked to high slum population and low income. The above figure has also shown that 4 newly emerged towns i.e. Chogawan, Nangli, Khilchian and Kathanian (all are census towns) have lowest access to safe drinking water.

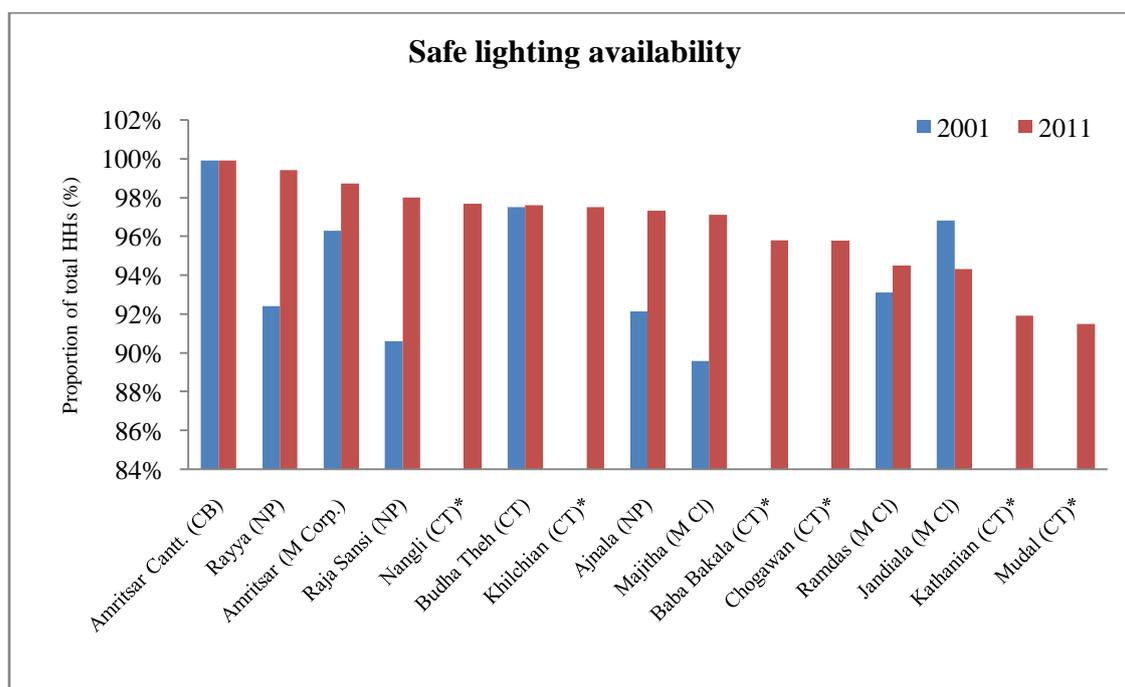
Fig. 6.4 Proportion of HHs having safe cooking fuel in all towns of Amritsar district, 2001-11



Source: All India Town Directory, Census of India, 2001 and 2011

Fig 6.4 shows that Amritsar Cantt has the highest proportion of urban HHs using safe sources of cooking fuel i.e. 77.8 percent in 2001 which has increased to 92.7 percent in 2011. It is followed by large towns of class I i.e. Amritsar Corp. and Jandiala Municipal council of class III having 80 percent and 71 percent of all HHs respectively in 2011. The lowest proportion of urban HHs with safe cooking fuel is in Majitha municipal council i.e. 27 percent followed by 28 percent in Ramdas municipal council in 2001. In 2011 all the towns have shown an increasing trend where Ramdas continued to be lowest at only 39 percent of HHs accessed to the safe sources of cooking fuel followed by Mudal census town and Chogawan census town. It is mentioned that the towns with least access to safe cooking fuel are the newly emerged census towns except Ramdas municipal council.

Fig. 6.5 Proportion of HHs having safe lighting in all towns of Amritsar district, 2001-11

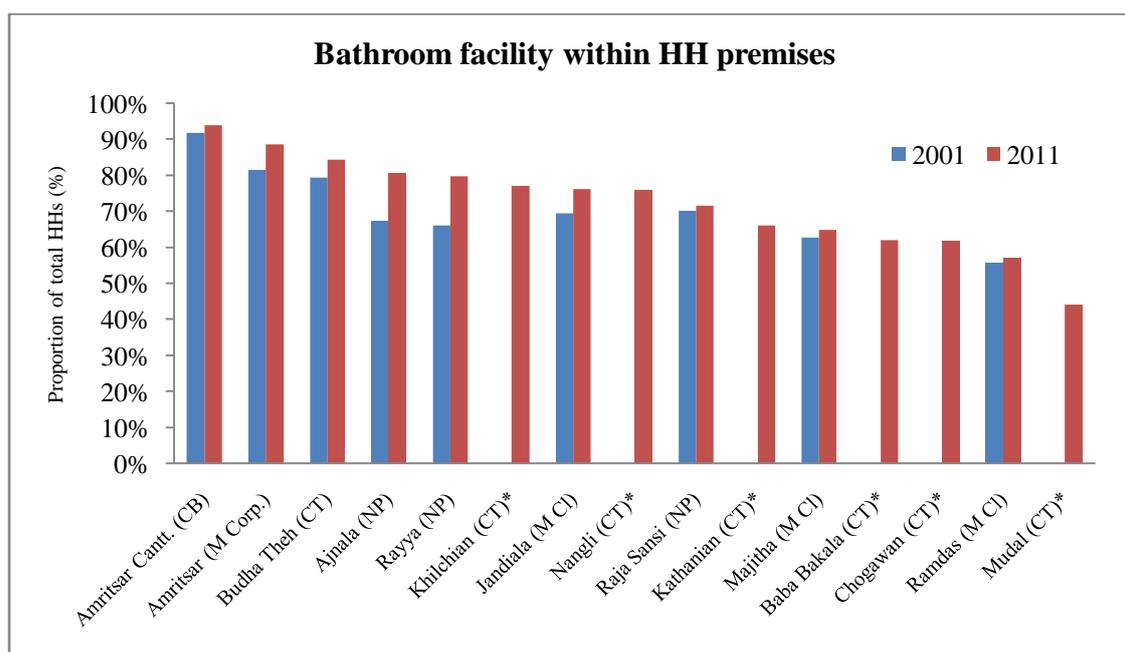


Source: All India Town Directory, Census of India, 2001 and 2011

Safe lighting source is accessed by more than 90 percent of all HHs among all towns of Amritsar district across all the size classes. In 2001, the highest proportion of urban HHs having safe access to lighting is found in Amritsar Cantt town followed by Amritsar Corp. and Jandiala municipal council, this trend was also continued in 2011. Again the towns with least proportion of HHs having access to lighting are the newly emerged towns of Mudal and Katharian census towns i.e. more than 9 percent of HHs do not have access to safe lighting. It has also been found that the proportion to safe lighting has been increased from 2001 to 2011 in all the towns except Jandiala (M CI) which recorded a decrease of 2 percentage points.

To assess the quality of sanitation services in towns of Amritsar, three indicators have been chosen at the HH level i.e. availability of bathroom facility within HH premises, hygienic toilet facility for the HH, hygienic i.e. water closet drainage service available to the HH. All indicators have been analysed for 2001 and 2011.

Fig. 6.6 Proportion of HHs having bathroom within HH premises in all towns of Amritsar district, 2001-11

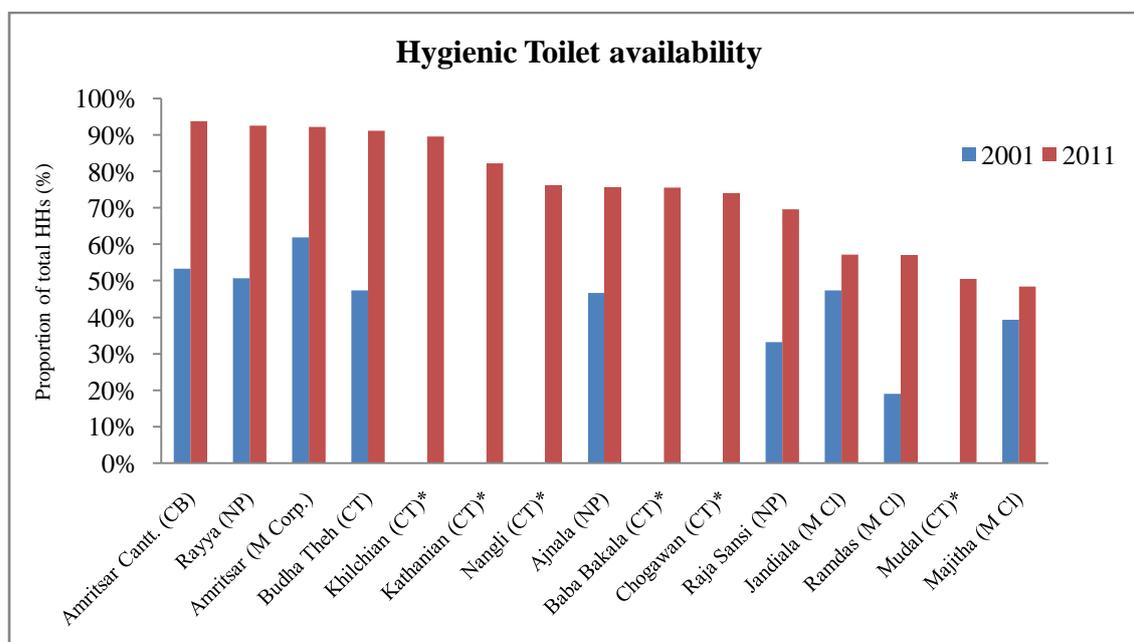


Source: All India Town Directory, Census of India, 2001 and 2011

From 2001 to 2011 all the towns in Amritsar district showed an increase in proportion of HH having bathroom within premises. In 2001 the highest proportion of HHs having bathroom within premises was in Amritsar Cantt town i.e. more than 91 percent which is continued in 2011 i.e. 94 percent. It is followed by Amritsar Corp. town having more than 80 percent HHs have bathroom within premises in 2001 that increased to more than 88 percent in 2011. Large towns of size classes I to III have more than 75 percent of HH having bathroom within HH premises which is decreased in smaller towns of size class V and VI. The exception being is the Budha Theh census town where the proportion of HHs having bathroom within premises increased from 74 percent in 2001 to more than 84 percent in 2011. Mudal census town and Rayya NP town have lowest proportion of HHs with bathroom facility within premises i.e. 44 percent and 57 percent respectively. From 2001 to 2011 all towns have recorded an increase in the number of HHs with availability

of bathroom facility within HH premises and it is crucial for healthy living and maintaining privacy of the HH residents.

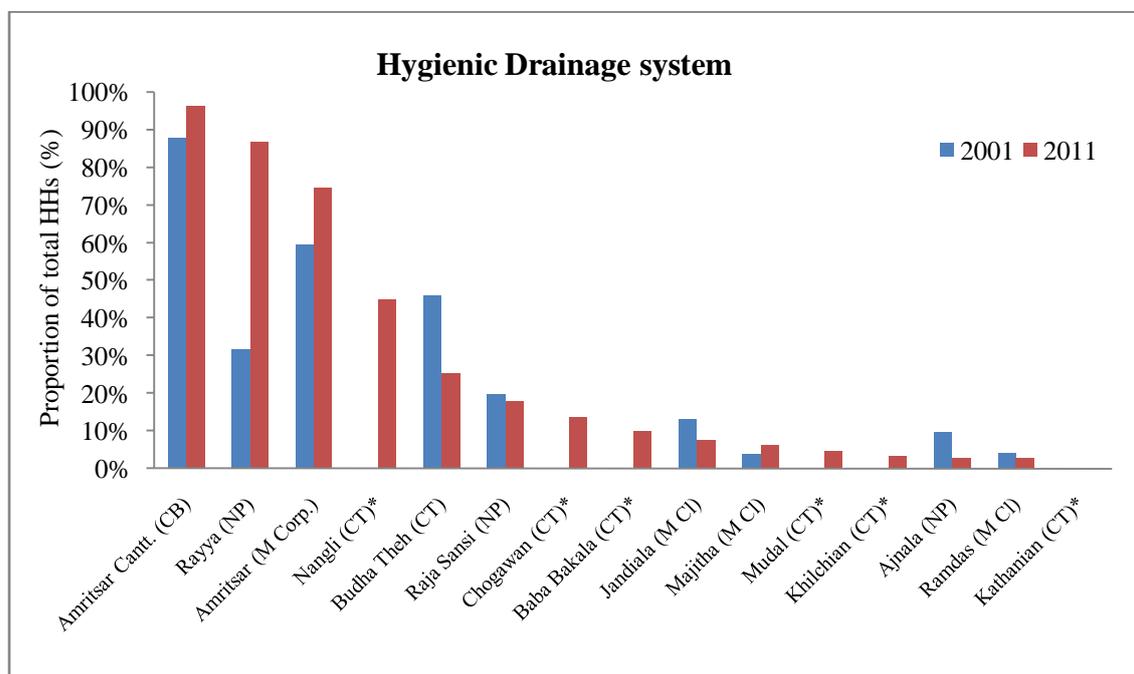
Fig. 6.7 Proportion of HHs having hygienic toilet facilities in all towns of Amritsar district, 2001-11



Source: All India Town Directory, Census of India, 2001 and 2011

The proportion of urban HHs having hygienic toilet facilities in Amritsar district increased to 89 percent in 2011 from 50 percent in 2001. In 2001 the towns with highest proportion of HHs under hygienic toilet facilities are Amritsar Corp. i.e. 61 percent followed by Amritsar Cantt with 53 percent. The same trend continued in 2011 census wherein both the towns have more than 90 percent HHs have access to hygienic toilet facilities. It is noted that in 2011 towns other than Amritsar corp. and Amritsar Cantt also have more than 90 percent of HHs with hygienic toilet facilities that are Rayya NP (IV), Budha Theh CT (V) and Khilchian CT (VI). It is to be mentioned that smaller towns in 2011 unlike in 2001 have shown increase in proportion of HH with access to hygienic toilet services. The towns with lowest proportion of HHs having hygienic toilet facilities are smaller towns in size classes VI in 2001 i.e. Ramdas where only 18 percent HHs in 2001 and the trend continued in 2011 i.e. Mudal followed by Ramdas where just 50 percent and 57 percent respectively HHs have access to hygienic toilet facilities.

Fig. 6.8 Proportion of HHs having hygienic drainage in all towns of Amritsar district, 2001-11



Source: All India Town Directory, Census of India, 2001 and 2011

Hygienic drainage system or water closet drainage is showing dismal picture for urban Amritsar as only 54 percent of urban HH have access to it in 2001 and it has increased by only 14 percent points to 68 percent in 2011. It means that more than 32 percent of urban HHs in Amritsar district still have open drainage for waste water disposal which not only harmfully impact that HH but also have negative externality for the locality and other residents particularly to women and children, it also negatively impact the environment. In 2001, Amritsar Cantt followed by Amritsar Corp have the highest proportion of HHs having hygienic drainage services i.e. 88 percent and 60 percent respectively and both are statutory towns. These towns are followed by Jandiala CT and Rayya NP towns. This trend is continued in 2011 in Amritsar Corp and Amritsar Cantt towns but the highest growth in hygienic drainage is in Rayya NP town of size class IV where it has increased from 31.7 percent in 2001 to more than 86 percent in 2011. Kathanian CT does not have even a percent of HHs with hygienic drainage services. All small towns in size classes V and VI have less than 10 percent urban HHs with hygienic drainage services in 2011 i.e. Baba Bakala, Ramdas, Chogawan, Khilchian and Mudal (all are Census Town in 2011). It is even followed by large population towns in size class III i.e. Jandiala and Ajnala towns.

6.4 Levels of Urban Amenities in towns of Amritsar: 2001-2011

In the previous section, the quality of urban basic amenities for all six indicators have been analysed individually at the district level and across size classes of towns for 2001 and 2011. It has been observed that some towns have high accessibility of HHs with safe drinking water like Amritsar Cantt town followed by Rayya town while Amritsar Cantt followed by Amritsar M. Corp topped the list of HHs having safe cooking fuel in 2011. Similarly in Raja Sansi town the proportion of HHs with hygienic toilet services are more than 71 percent but it lacks in hygienic drainage system for waste water outlet i.e. just 17 percent. Some towns stand topped in safe drinking water but lack in hygienic toilet or otherwise, hence there is need to have an index to compare the levels of urban basic amenities across the towns to get the composite picture. Therefore for measuring the level of urban basic amenities, composite index on basis of PCA (Principal Component Analysis) has been calculated for 2001 and 2011 separately. The three levels of urban basic amenities derived on basis of composite index (Urban Amenity Index) are:

1. High level of urban basic amenities : Index value above 1
2. Medium level of urban basic amenities : Index value between 0 to 1
3. Low level of urban basic amenities : Index value below 0

Table 6.8 Level of urban amenities in towns of Amritsar district, 2001

LEVEL OF URBAN BASIC AMENITIES IN TOWNS OF AMRITSAR DISTRICT, 2001								
HIGH			MEDIUM			LOW		
TOWN	CLASS	Urban Amenity Index value	TOWN	CLASS	Urban Amenity Index value	TOWN	CLASS	Urban Amenity Index value
Amritsar Cantt.	IV	1.81235	Amritsar Corp.	I	0.6867	Jandiala	III	-0.52532
			Budha Theh	V	0.15643	Rayya	IV	-0.88852
						Ajnala	IV	-1.2231
						Raja Sansi	IV	-1.32173
						Majitha	IV	-1.97161
						Ramdas	V	-2.15491

Source: calculated from Census of India: HH-6, HH-7, HH-8, HH-9 and HH-10

In 2001 there are nine towns existed in Amritsar district out of which only one was of size class I category i.e. Amritsar Corporation which recorded a medium level of urban amenities in the town with PCA value less than 1 i.e. 0.68. The highest level of urban amenities in Amritsar district was observed in class IV town of Amritsar Cantt that is more than two times that of second largest towns of Amritsar district. It may be because of the fact that the cantonment area is governed by both civil and defence authorities and the responsibilities are clearly demarcated between the two and also these are focus areas for both central and state govt. in terms of funds disbursement. Low level of urban amenities was observed in highest number of towns i.e. in six towns out of total nine towns and they are across size class III to V. Ramdas town recorded the lowest level of urban amenities which is even observed during the primary survey conducted for the HHs urban amenities. Ramdas is followed by Majitha and Raja Sansi where low level of urban amenities is observed.

Table 6.9 Levels of urban amenities in towns of Amritsar district, 2011

LEVEL OF URBAN BASIC AMENITIES IN TOWNS OF AMRITSAR DISTRICT, 2011								
HIGH			MEDIUM			LOW		
TOWN	CLASS	Urban Amenity Index value	TOWN	CLASS	Urban Amenity Index value	TOWN	CLASS	Urban Amenity Index value
Amritsar Cantt. (CB)	IV	1.86	Nangli* (CT)	III	0.05	Ramdas (M CI)	V	-1.94
Amritsar (M Corp.+ OG)	I	1.19	Budha Theh (CT)	IV	0.33	Ajnala (NP)	III	-0.09
Rayya (NP)	IV	1.16				Jandiala (M CI)	III	-1.04
						Raja Sansi (NP)	IV	-0.46
						Kathanian* (CT)	IV	-1.08
						Majitha (M CI)	IV	-1.34
						Chogawan* (CT)	V	-0.95
						Baba Bakala* (CT)	V	-1.12
						Khilchian* (CT)	VI	-0.42
						Mudal* (CT)	VI	-1.83

Source: calculated from Census of India: HH-6, HH-7, HH-8, HH-9 and HH-10

There are total of six new towns added in 2011 census from 2001 and all are census towns. The highest level of urban amenities in 2011 is in Amritsar Cantt which is added by Amritsar Corp. of class I and Rayya nagar Panchayat of class IV town. It is noted that the Rayya nagar Panchayat observed a highest increase in the level of urban amenities from 2001 to 2011 may be because of the political influence of Rayya constituency and many prominent ministers are from the constituency which in return led to more funds disbursement and growth in urban infrastructure of the town. The newly emerged town in class III i.e. Nangli observed medium level of urban amenities followed by Budha Theh as was observed in 2001 too. Nangli being in close proximity to Amritsar Corp. and as the result of it, development of urban infrastructure causes the real estate, industries to come up in proximity to Amritsar city led the growth of urban amenities in Nangli towns, also seen during primary survey on urban amenities in Nangli town. Low level of urban

amenities is recorded in small towns from class V and class VI categories, lowest being in Ramdas followed by new census town Mudal. It is noted that all the newly emerged towns in 2011 except Nangli have observed the low level of urban amenities like in Mudal, Khilchian, Chogawan, Baba Bakala and Kathanian. In Chogawan town the same is observed through a primary survey conducted for the quality of urban amenities at the HHs level.

6.5 Financial Dynamics of ULBs in Amritsar district: 2012- 2017

There are the multiple determinants of urban basic amenities and important among them are socio-economic attributes, administrative structure, political will and financial conditions of the urban local bodies (ULBs). Financial dynamics of the ULBs in terms of the sources of revenue generation and expenditure priorities like on urban basic amenities are the key determinants for higher accessibility and availability of urban basic services. A buoyant source of income can provide the much needed funds to fulfill the service and amenities requirements of the people in a region. Similarly per capita expenditure led to increase in the quality of urban basic services vis-à-vis urban infrastructure and development.

6.5.1 Trend, pattern and growth of revenue and expenditure in ULBs

This section analysed in details the total income and expenditure, their growth over the period and per capita income and per capita expenditure for all the ULBs in Amritsar district.

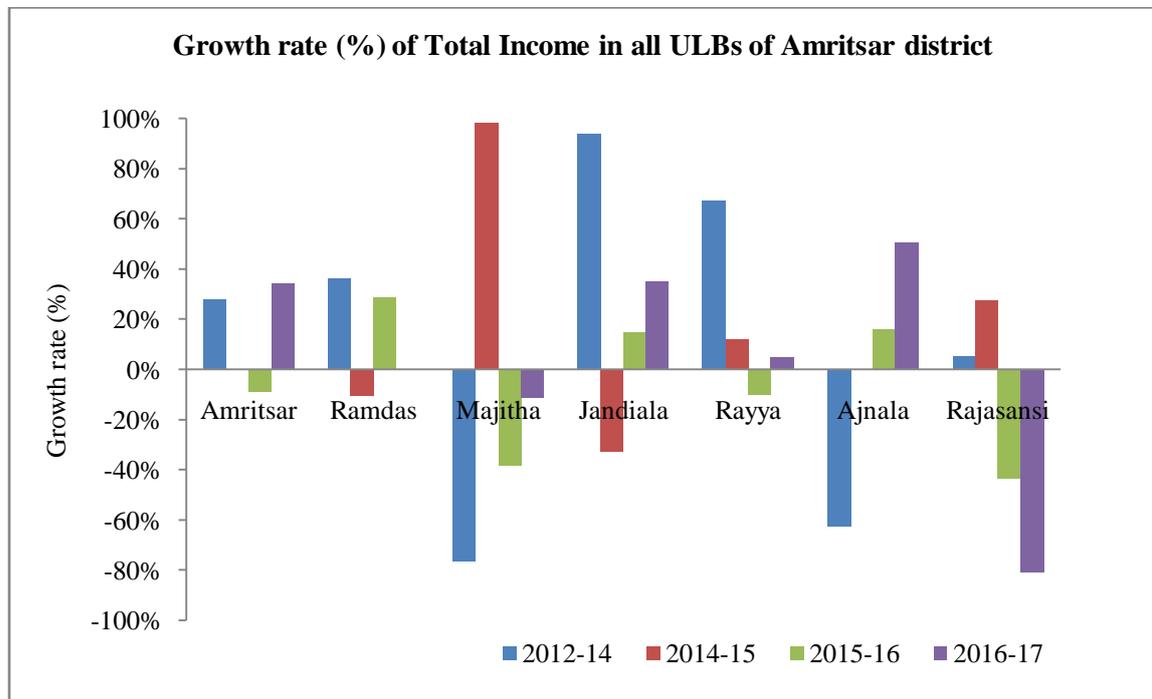
Table 6.10 Total income and growth in total income from 2012 to 2017 in all ULBs of Amritsar district

Name of ULBs	Total Income (Rs in 000)					Growth rate (percent) of Total Income			
	2012	2014	2015	2016	2017	2012-14	2014-15	2015-16	2016-17
Amritsar Corp.	2052537	2627010	2620591	2386909	3207861	27.99	-0.24	-8.92	34.39
Ramdass	4409	6016	5385	6933	45312	36.45	-10.49	28.75	553.57
Majitha	43527	10236	20277	12462	11058	-76.48	98.09	-38.54	-11.27
Jandiala	50075	97142	65183	74819	101076	93.99	-32.90	14.78	35.09
Rayya	18937	31718	35544	32052	33571	67.49	12.06	-9.82	4.74
Ajnala	74588	28078	28087	32585	49100	-62.36	0.03	16.01	50.68
Rajasansi	48873	51441	65645	37047	7113	5.25	27.61	-43.56	-80.80

Source: calculated from Statistical Abstract, Punjab, 2012-2017

The above table has presented the changing pattern of percentage growth rate of total income of ULBs of Amritsar district during the period of 2012 to 2017. It is found that in the all the ULBs, growth rate is inconsistent over the period of time. As in Amritsar Corporation, it is showing that in 2012-14 growth rate is 27 percent but in 2014-15 the growth rate of total income decline marginally by just -0.24 percent and further it even got worse in 2015-16 period where the growth rate dipped to -8.9 percent. But in 2016-17 it has shown positive growth and increased to 34 percent over 2015-16, where the absolute increase in the total income of Amritsar Corporation is Rs. 820952 thousand. In Ramdas it has been highlighted that the growth rate of total income declined from 36 percent in 2012-14 to negative growth rate of -10.4 percent in 2014-15. Since 2014-15 the growth rate in total income of Ramdas municipal council shown an increasing trend by more than 28 percent in 2015-16 and further the highest increase ever in any ULB in the district by more than 553 percent growth rate with absolute increase of Rs. 38379 thousand in 2016-17.

Fig. 6.9 Growth rate of total income in all ULBs of Amritsar district



Source: calculated from Statistical Abstract, Punjab, 2012-2017

In Majitha, a town of size class IV during 2012-14 there was negative growth rate of -76 percent in total income and in next year i.e. 2014-15 it has positive growth of 98 percent in total income of the municipality by adding more than Rs. 10 million but again in 2015-16 it has been found that there is a declining trend in total income with a negative growth rate of -38 percent in 2015-16 which is continuing in 2016-17 i.e. -11 percent which is less than over previous year. In Jandiala towns it has been found that growth rate has declined from 93 percent in 2012-14 to negative growth rate of -32 percent in 2014-15 but since 2014-15 it shows a positive trend of growth rate of total income by more than 14 percent increase in total income in 2015-16 which further increase to more than 35 percent of the total income in 2016-17.

The growth rate of total income in Rayya municipality has shown a declining trend from 67 to approx. -10 percent from 2012-14 to 2015-16. But in 2016-17 there is an increase in the total income which raised the growth rate in total income of Rayya municipality by more than 4.7 percent as compared to previous year.

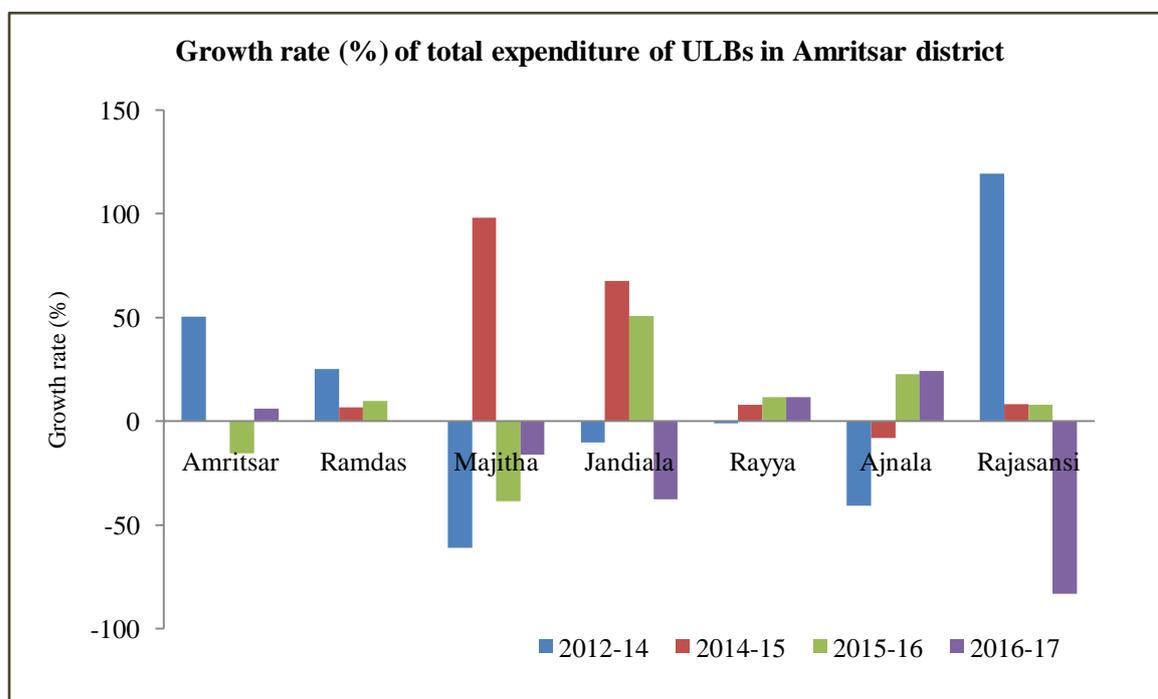
In Ajnala since 2012-14 the growth rate of total income has been showing an increasing trend which started from negative growth rate of -62 percent in 2012-14, which increased to marginally 0.03 percent in 2014-15 and further increased to 16 percent in 2015-16. This increasing trend of growth rate of total income also continued in 2016-17 where it has been increased by more than 50 percent as compared to 2015-16. The *table 6.10* has presented that in Rajasansi Nagar Panchayat (NP) during 2012-14 and 2014-15 increasing growth rate has been found i.e. 5 percent and more than 25 percent respectively. But in 2015-16 and 2016-17 the growth rate shows a negative trend of -43 percent which is further declined to less than -80 percent in 2016-17. Rajasansi observed the lowest growth rate in total income in 2016-17 among all the ULBs in Amritsar district. The negative growth rate in income led to decrease in expenditure which may led to decline in the level of providing services to people of the region.

Table 6.11 Total expenditure and Growth rate of total expenditure in all ULBs of Amritsar district, 2012-2017

Name of ULBs	Total Expenditure (Rs. 000)					Growth rate (percent) of Total Expenditure			
	2012	2014	2015	2016	2017	2012-14	2014-15	2015-16	2016-17
Amritsar Corp.	1730282	2597970	2591326	2188707	2320246	50.15	-0.26	-15.54	6.01
Ramdas	4386	5482	5839	6400	873095	24.99	6.51	9.61	13542.11
Majitha	26260	10213	20210	12373	10347	-61.11	97.89	-38.78	-16.37
Jandiala	48374	43295	72530	109185	67827	-10.50	67.53	50.54	-37.88
Rayya	29338	29025	31261	34882	38892	-1.07	7.70	11.58	11.50
Ajnala	49739	29478	27033	33109	41031	-40.73	-8.29	22.48	23.93
Rajasansi	17164	37648	40655	43779	7213	119.34	7.99	7.68	-83.52

Source: calculated from Statistical Abstract, Punjab, 2012-2017

Fig. 6.10 Growth rate of total expenditure in all ULBs of Amritsar district



Source: calculated from Statistical Abstract, Punjab, 2012-2017

The above table has presented an analysis of changing trend in growth rate of total expenditure of all ULBs in Amritsar district during the period of 2012 to 2017. The pattern of growth rate of expenditure shows a positive as well as negative trend in all ULBs with an exception of Ramdas which has showed only positive trend. In Amritsar M. Corp. town the growth rate of total expenditure is 50 percent during 2012-14 which declined to negative growth rate of -0.26 percent and further declined to a negative growth rate of -15 percent in 2015-16 year but in 2017 it was increased to 6 percent growth in total expenditure. The table indicated that Ramdas is the only municipality which shows positive trend of growth rate without declining in total expenditure and it has shown an outstandingly immense growth rate of 13542 percent in 2016-17. The absolute increase in total expenditure of Ramdas from 2016 to 2017 is Rs. 866695 thousands. This is the highest growth in any ULBs in total expenditure. In Majitha it is found that during 2012-14 year it has negative growth rate of -61 percent in total expenditure and in next year 2014-15 it has shown positive trend of 97 percent in a total expenditure of Rs. 20210 thousands. Though since 2014-15 there is a negative trend in growth in total expenditure to -38 percent but this negative trend in total expenditure has declined to -16 percent in 2016-17.

The table has shown a negative growth rate of -10 percent during 2012-14 period in Jandiala and it has been increased astoundingly in 2014-15 to more than 67 percent growth in expenditure. In 2015-16 also it has shown an increasing trend in growth rate of expenditure but this growth is lower i.e. 50 percent in total expenditure. There is an exception during 2016-17 in which there is a negative growth rate in total expenditure i.e. 37 percent. In Rayya Nagar Panchayat initially it has shown a negative growth rate in total expenditure of -1 percent in 2012-14 but afterwards it has observed a positive trend in the growth rate of expenditure i.e. 7.7 percent in 2014-15 which are further increased to more than 11 percent in 2015-16 and again to more than 11.5 percent in 2016-17.

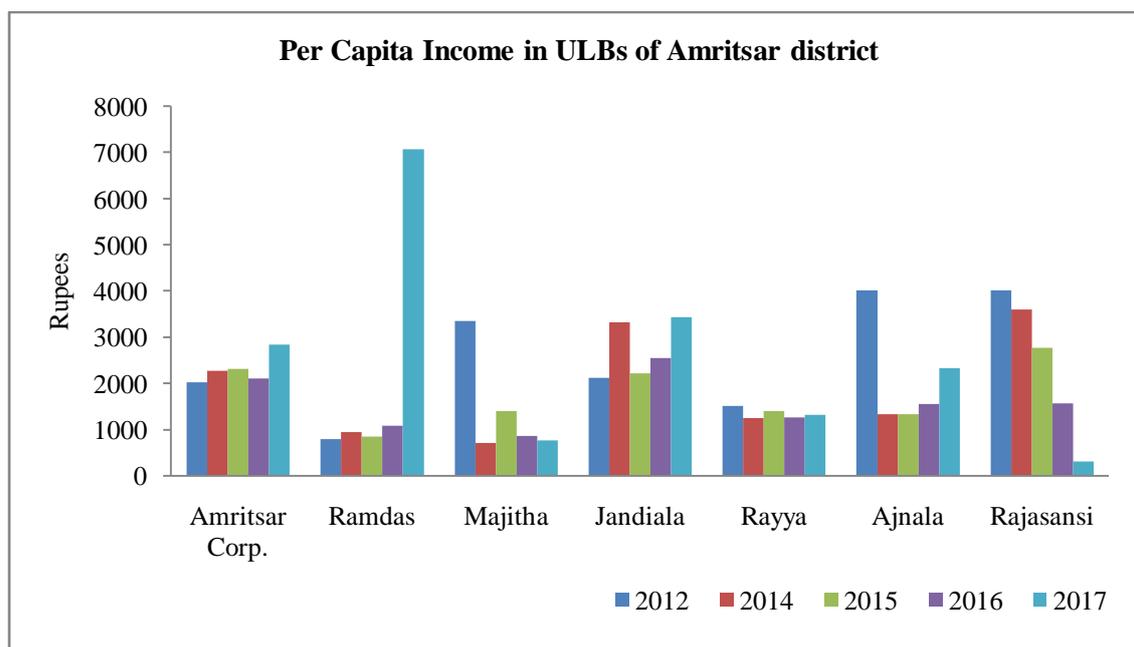
In Ajnala at first there observed a negative growth rate in total expenditure of -40.7 percent in the 2012-14 and also negative growth rate in 2014-15 i.e. -8.2 percent. Afterwards in Ajnala nagar Panchayat there is a positive trend in growth rate of total expenditure i.e. more than 22 percent in 2015-16 which is also maintained at more than 23 percent of growth rate in 2016-17. The trend in growth of expenditure has observed a different phenomenon of consistent decline since 2012-14. Rajasansi has one of the high

growth rates of expenditure i.e. 119 percent during 2012-14 period. But it is declining continuously to less than 8 percent in 2014-15 and further declined to 7.6 percent in 2015-16. The growth rate in expenditure drastically decreased in 2016-17 and it fell down negatively to -83.5 percent.

6.5.2 Trends in the PCI and PCE in all Urban Local Bodies (ULBs)

Per capita income or expenditure is the important indicator to reflect the financial strength of the urban local bodies because of the fact that the total income or the growth in income or expenditure may be higher for Municipal Corporation than municipal council or Nagar Panchayat but it can be lower income or expenditure per person. Per capita expenditure represented the capability of the ULBs in providing the urban basic amenities to the people.

Fig. 6.11 Total Per Capita Income in all ULBs of Amritsar district, 2012-2017



Source: calculated from Statistical Abstract, Punjab, 2012-2017

The above table is representing the changing pattern of per capita income during the period of 2012 to 2017 in all the ULBs of the Amritsar. The sources of income of ULBs are taxes assigned to these and grants received from the state and central government. The fluctuations in the income of these bodies are mainly due to lag of approval and release of

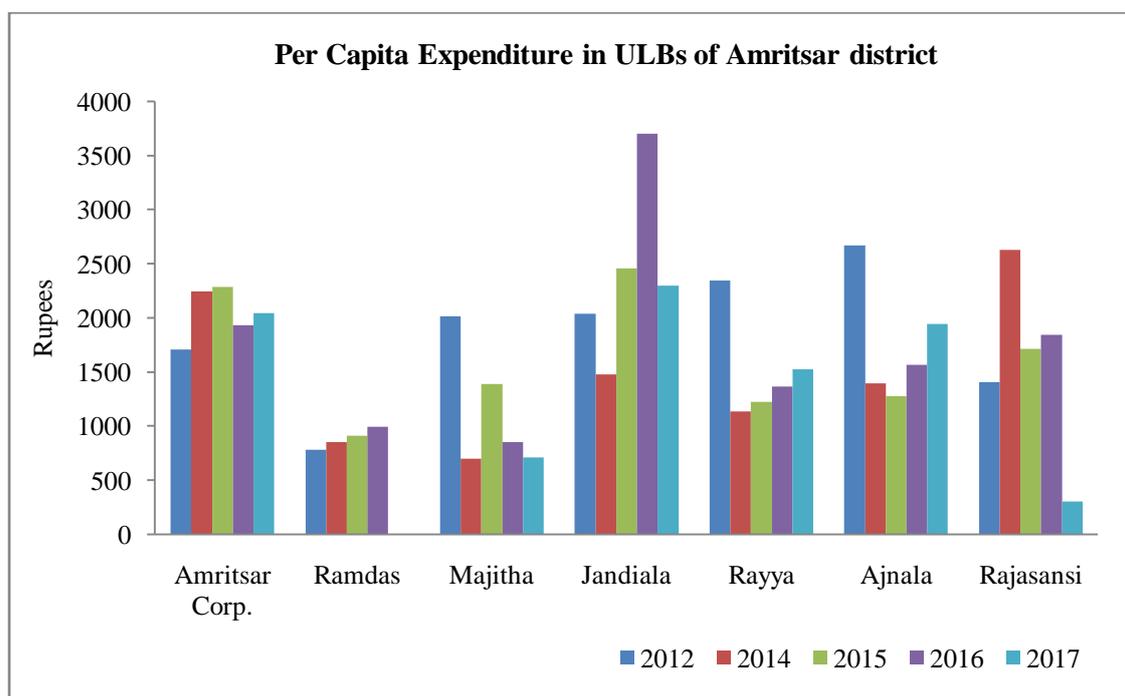
funds from the government. The pattern of per capita income in Amritsar Corporation is showing an increasing trend over the period of time from 2012 to 2017 except in the 2016 year when it has decreased marginally. In financial year 2017 the per capita income of Amritsar corporation is the highest i.e. Rs. 2832. The per capita income of Amritsar Corporation in 2017 is less than that of Jandiala and Ramdas ULBs but higher than that of other ULBs in Amritsar district. Ramdas is a Municipal Council mentioned in 2011 census. In Ramdas there observed a fluctuations in the per capita income as firstly it has increased from Rs. 789 in 2012 to 940 thousand rupees in 2014 and then declined to Rs. 840 in 2015 it further increased to more than Rs. 1082 in 2016 and then increased to Rs. 7075 in 2017. It is noted that the per capita income of Ramdas Municipal council is the highest among all the ULBs of Amritsar district in 2017.

The data table highlighted that in Majitha municipal council, per capita income has declined drastically from Rs. 3349 in 2012 to Rs. 705 in 2014, later in 2015 it has increased to Rs. 1398 but since 2015 it has shown a declining trend and end up with the per capita income of Rs. 760 in 2017. It is the second lowest per capita income among all ULBs after Rajasansi Nagar Panchayat (NP).

In Jandiala municipal council it is found that from 2012 to 2014 PCI has increased from Rs. 2113 to Rs. 3323 but in next year i.e. in 2015 it has declined by more than Rs. 1000 to Rs. 2212 and afterwards it has shown an increasing trend. In 2017 PCI of Jandiala Municipal Council was Rs. 3431. The pattern of per capita income in Rayya Nagar Panchayat has observed a declining trend of PCI though with less variations across years as it has reduced from Rs. 1514 in 2012 to Rs. 1317 in 2017.

In Ajnala Nagar Panchayat (NP) Per capita income is indicating a declining trend in initial year of 2012 i.e. from Rs. 4009 to Rs. 1330 in 2015, but afterwards it is showing a increasing trend of PCI from Rs. 1330 in 2015 to Rs. 1543 in 2016 and further the highest increase of Rs.800 i.e. Rs 2300 in 2017. In Raja Sansi Nagar Panchayat (NP), there is continuously a declining trend of PCI from 2012 to 2017 and the PCI of Rajasansi NP is lowest among all the municipalities of Amritsar district in 2017. In 2012 PCI was more than Rs. 4000 which declined to Rs 2700 in 2015 and to the lowest of just Rs. 300 in 2017.

Fig. 6.12 Total Per Capita Expenditure in all ULBs of Amritsar district, 2012-2017



Source: calculated from Statistical Abstract, Punjab, 2012-2017

Per capita expenditure is an indicator which shows the actual level of services being provided per person. The above table shows the trend of per capita expenditure in ULBs of Amritsar during the period of 2012 to 2017. It is found in the above table that in Amritsar Municipal Corporation per capita expenditure has increased from Rs. 1707 in 2012 to Rs. 2288 in 2015, but in 2016 it has declined to Rs. 1932 and in year 2017 again it increased to Rs. 2048. Thus it is analysed in Amritsar that there is not much variation found in per capita expenditure over the period. The trend of PCE in the last two year is increasing but still it is less than in 2012 and other municipalities in the district. The table highlighted that in Ramdas municipal council per capita expenditure have shown a rising trend over the period of time with a manifold increase particularly in the year 2017 when it has increased from Rs. 999 in 2016 to Rs. 136335 because of higher allocation of funds for developmental works like construction of roads and water projects etc. in the area by the government.

In Majitha municipality declining trend is observed in PCE as it decreased from Rs. 2019 in 2012 to Rs. 704 only in 2014 but again it has shown an increasing trend in 2015 when it has increased to around Rs.1400. In 2016 it decreased to around Rs. 850 and further

decreased to Rs.713 only. The non-release of funds on time and the demands send by municipalities are not in sync with priority of state govt. led late release of grants to ULBs. It has a direct negative impact on the provisioning of urban amenities and the quality of urban services. As it is shown in the data table that in Jandiala municipality per capita expenditure has declined from Rs. 2042 in 2012 to Rs. 1481 in 2014 but in following year's expenditure is increasing up to 2016 i.e. Rs. 3706 except in 2017 when it declined to Rs. 2302 which is still larger than the PCE in 2012. In Rayya nagar Panchayat (NP), the per capita expenditure declined initially i.e. from 2012 to 2014 by more than half i.e. Rs. 2347 in 2012 to Rs. 1139 2014. Since 2014 the PCE in Rayya is continuously increasing from Rs. 1227 in 2015 to Rs. 1369 in 2016 and further increased to Rs. 1526 in 2017 which is encouraging for providing urban amenities to people.

In Ajnala Nagar Panchayat, it is observed that per capita expenditure has declined from Rs. 2673 in 2012 to Rs. 1280 in 2015. But since 2015 it has shown an increasing trend i.e. Rs. 1569 in 2016 and further increased to more than Rs. 1944 in 2017. The trend of per capita expenditure in Rajasansi nagar Panchayat (NP) highlighted the fluctuations in PCE as it has increased initially from Rs. 1409 in 2012 to Rs. 2633 in 2014, but later it has declined to Rs. 1716 in 2015 and again it increased marginally to Rs. 1848 in 2016. But after 2016, PCE in Rajasansi NP has declined to the lowest in all years and among all ULBs to only Rs. 304 in 2017. Thus the analysis of the table reveals that the trend of expenditure in ULBs indicates the reliance of these on upper tier government for fund.

6.6 Conclusions

Urbanisation and quality of urban amenities are closely linked in Punjab as highly urbanised districts observed high levels of basic amenities in their availability and distribution. Similarly the large towns of size classes in I and II have highest levels of urban amenities as compared to small and medium towns in Punjab. But there are spatial variations in the urban processes and access to basic amenities along with variations in revenue generation and expenditure priorities. This chapter analysed the urban scenario in the Amritsar district, temporal & spatial pattern in basic amenities across size class of towns and how it changes with financial dynamics of ULBs. The key findings of this chapter are as:

- The trends of urbanisation in Amritsar district shows that it is increasing since 1951 and it is greater than the state level since independence and in 2011 it is more than 53 percent of the total population. Amritsar observed a drastic increase in its urbanisation from 34 percent in 1991 to 51.5 percent in 2001 which also increased to around 54 percent in 2011 but at a slower rate. The district, Tarn Taran which is carved out from Amritsar district recorded lowest urbanisation in the state in 2011.
- Urban decadal growth rate has recorded a sharp increment from 18 percent in 1981-91 to more than 30 percent in 1991-2001 but afterwards it recorded a declining pattern since last two decades in Amritsar district to only 20 percent in 2001-11.
- The emergence of new towns in Amritsar district showed that six new towns have been created and all new towns are the Census towns. The new towns emerged are one in size-class III followed by one town each in size-class IV and V and two new census towns in class VI.
- In Amritsar district more than 99 percent of total urban HHs have accessed to drinking water in 2001 and 2011. Safe cooking fuel access to the urban HHs in Amritsar district have increased from 59 percent in 2001 to more than 79 percent in 2011 and safe cooking fuel access to urban Amritsar is second lowest among all other amenities. Sanitation services in Amritsar have increased in terms of

hygienic toilet accessibility to urban HHs increased from 60 percent in 2001 to 90 percent in 2011. Though the hygienic drainage access to urban HHs in Amritsar is lowest i.e. less than 70 percent of urban HHs in 2011 which has increased from 53 percent in 2001.

- Among all towns of Amritsar in 2001 and 2011, Raja Sansi NP (size class IV) have least access to safe drinking water i.e. 93 percent in 2011 as all other towns have more than 98 percent HHs with access to safe drinking water. The newly emerged towns have less than 50 percent of urban HHs accessed to safe drinking water except Nangli (class III Census town) and Khilchian (class VI Census town) i.e. 68 percent and 55 percent of HHs having access to safe drinking water respectively.
- The highest growth in accessing safe cooking fuel by urban HHs is in Amritsar Cantt followed by Amritsar Corp. The lowest growth is in Ramdas town (Municipal Council) and it has also lowest access i.e. only 39 percent of total urban HHs has access to safe cooking fuel.
- Amritsar Cantt is the town in all the towns of Amritsar district followed by Amritsar Corp. have the highest proportion of urban HHs accessed to bathroom facilities within premises, hygienic toilet and drainage services. The lowest access to hygienic toilet services is in Mudal town (class VI newly emerged Census town) i.e. only 44 percent in 2011 followed by Ramdas town (Nagar Panchayat). In access to hygienic drainage services, among the newly emerged towns (all Census Towns), Nangli (III class) has highest access followed by Chogawan town (VI class) i.e. 66 percent and 13 percent respectively, all other towns have less than 10 percent HHs accessed hygienic drainage. It is noted that Kathanian town (IV class) have not a single percentage of urban HHs with access to hygienic drainage services.
- In analysing the level of urban amenities in the towns of Amritsar district in 2001 it is found that the highest level of urban amenities in Amritsar district is observed in class IV town of Amritsar Cantt which is more than two times that of second highest town in term of level of urban amenities. Low level of urban amenities is

observed in large number of towns, i.e. six towns out of total nine towns that are found across size classes III to V.

- The level of urban amenities in 2011 is highest again in Amritsar Cantt but in 2011 it is accompanied by Amritsar Corp. of class I and Rayya nagar Panchayat of class IV. The newly emerged town in class III i.e. Nangli observed medium level of urban amenities followed by Budha Theh as was observed in 2001 too. Low level of urban amenities is recorded in all small towns from class V and class VI categories lowest being in Ramdas followed by new census town Mudal in 2001.
- In terms of the total revenue and total expenditure, underspending of total revenue is observed for all ULBs of Amritsar district. It shows that the level of access to urban amenities by households decreases if the ULBs spend less on basic urban services.
- Unlike other districts octroi is not the major contributor of the total revenue in Amritsar district but grants from govt. and grants from local bodies are the major contributor. Similarly in expenditure sources, Amritsar district stands different as major expenditure is on administration and it was from 2012 to 2015 and simultaneously expenditure increased on sanitation by five times in last 6 years.

This chapter is based on the secondary data from census of India which presents an in-depth analysis of the micro urban phenomenon and how it is different from state level picture. After 1991, urbanisation in Amritsar got paced and it increased to around 54 percent and growing at rate of 20 percent decadal growth rate. Urbanisation in Amritsar district is top heavy and also marked with the emergence of six new towns in the last decade which were all census towns and four out of six are in size class V and VI. The urban basic amenities among the towns are largely concentrated in large towns. The levels of the quality of urban basic amenities is directly associated with the ULBs expenditure on basic services. There are marked variations in urban basic amenities and their availability in old and newly emerged towns which have been analysed through primary field approach in towns of Amritsar district in next chapter.

CHAPTER 7

A COMPARATIVE ANALYSIS OF THE QUALITY OF URBAN AMENITIES IN OLD AND NEW TOWNS OF AMRITSAR DISTRICT: A FIELD BASED APPROACH

7.1 Introduction

In the previous chapter, the urban processes and its linkages with the levels and quality of the urban amenities in Amritsar district and across size classes of towns have been analysed. The revenue and expenditure dynamics of the ULBs and how it affects the quality of urban amenities have also been discussed on the basis of the secondary data from Census of India 2001 and 2011. It also gave in depth analysis of the levels of urban amenities on basis of Composite Index (Urban Amenity Index) for all the towns in the district. It has been found that there are marked variations in the quality of basic amenities in old and new towns of Amritsar district as high quality of urban amenities is found in large towns and mainly existed towns. Newly emerged towns lacks in high quality of urban basic services. This chapter has made an attempt to analyse the accessibility, availability and quality of urban amenities in the old/existing towns and newly emerged towns in Amritsar district on the basis of primary data collected through the field survey of 400 HHs in four selected towns of Amritsar district. This chapter has been divided into four sections: the first section analyses the quality of basic amenities (all five indicators and their sub-indicators) at the town level and shows its comparison in old and new towns and also among SC households and non-SC households. Second section discusses the relation between the annual income of the HHs and availability of urban basic amenities. It also presents the detailed analysis of the HH perception regarding the urban basic amenities provided by the ULBs in the towns. Third section presents a correlation analysis between the socio-economic determinants and quality of urban amenities. It discusses in detail the determinants of the urban basic amenities in the towns, both large towns and small towns. The final section presents the conclusions of the chapter.

7.2 Approach to study the quality of urban basic amenities in towns of Amritsar district on the basis of primary field survey

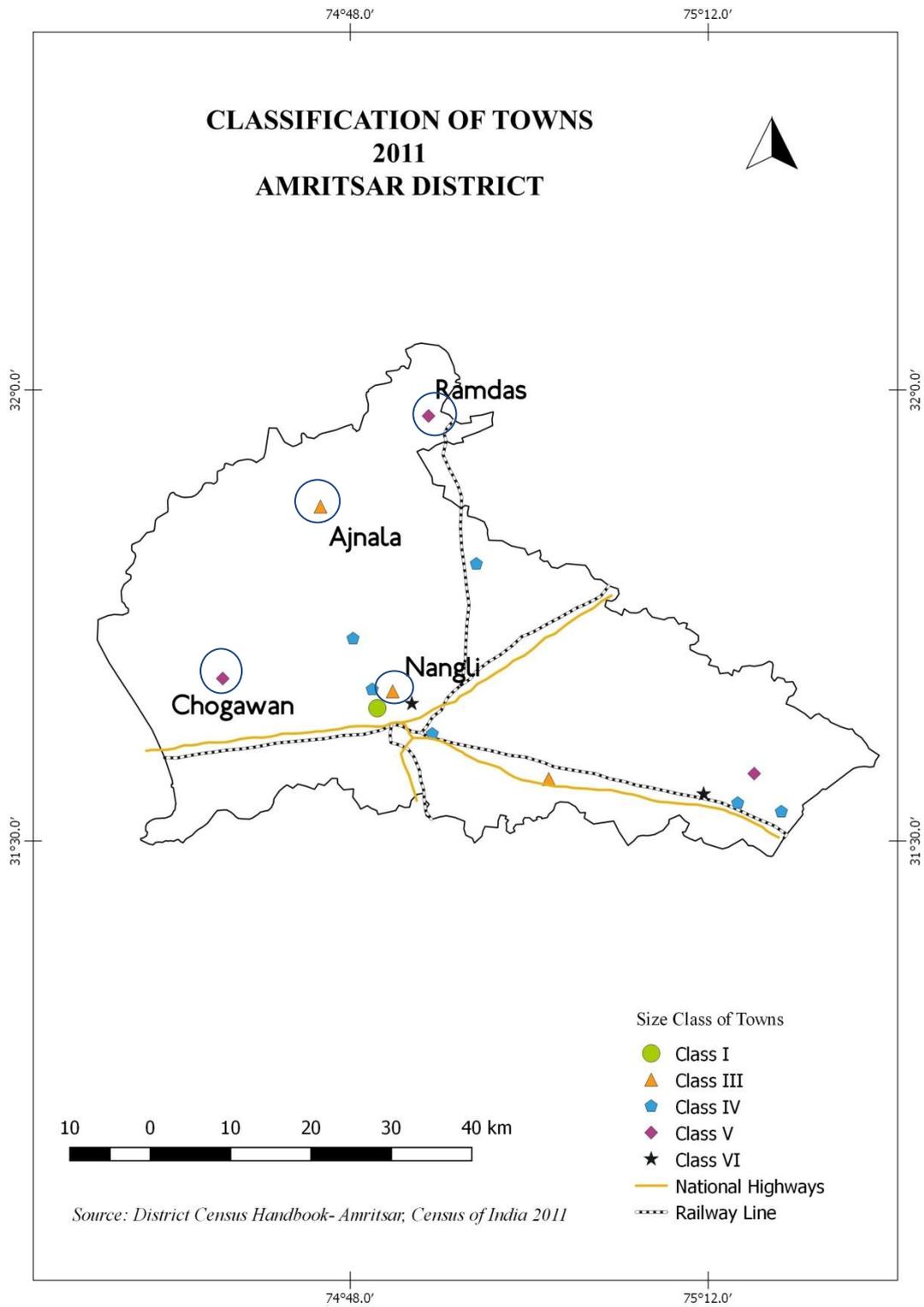
The data used in this section for quality of urban basic amenities in towns of Amritsar district is collected through the primary survey using household questionnaire and another questionnaire for urban local bodies (ULBs). Approximately 400 HHs have been surveyed spreading across four selected towns (2 newly emerged towns and 2 old/existing

towns) by asking the questions to person (respondent) from the HH. The primary survey that studies the level and quality of urban amenities has been done at two levels:

1. The primary survey at the HH (household) level with personal interviews by visiting the four towns of Amritsar district in Punjab. The towns chosen are classified as old/existing ones before census 2011 and newly emerged towns during census 2011. In this study, old/existing towns are Ajnala (size-class III town) and Ramdas (size-class V town) and new towns are Nangli (size-class III town) and Chogawan (size-class V town).
2. The primary survey is also conducted at the level of urban local bodies (ULBs) through a prepared questionnaire for all the four towns chosen for the study.

Here the sample selection has been done at two levels, one at the town level and another at the household level. At the town level, there are two sub-categories i.e. old or existing towns and newly emerged towns from 2001-11. From the old/existing towns, Ajnala and Ramdas towns with size-class III and V respectively have been selected. Among these towns, two wards in each town have been selected on the basis of average SC population (in percent) i.e. one ward with the lowest proportion of SC population in the town and second the ward with the highest proportion of SC population (in percent). And from each ward 50 households have been selected using stratified random sampling technique. Therefore in each town, total 100 HHs have been covered. Similarly from the newly emerged towns, Nangli and Chogawan towns (both are Census Towns) have been selected from size-class III and V respectively. In these towns (ward-wise classification has not given in census 2011) 100 households have been selected from each town. The proportion of SC population in Nangli and Chogawan towns are 39 and 21 percent respectively. The sample households in these towns have been selected on the basis of stratified random sampling. From the 100 households 50 are the SC households and 50 are non-SC households to understand the variations in distribution and availability of various amenities in both the categories.

Map 7.1 Towns covered for primary field survey in Amritsar district on the basis of classification of towns in 2011 census.



Note: Towns encircled in the map were surveyed for Primary study

Table 7.1 Sample size selection for primary field survey in towns of Amritsar district

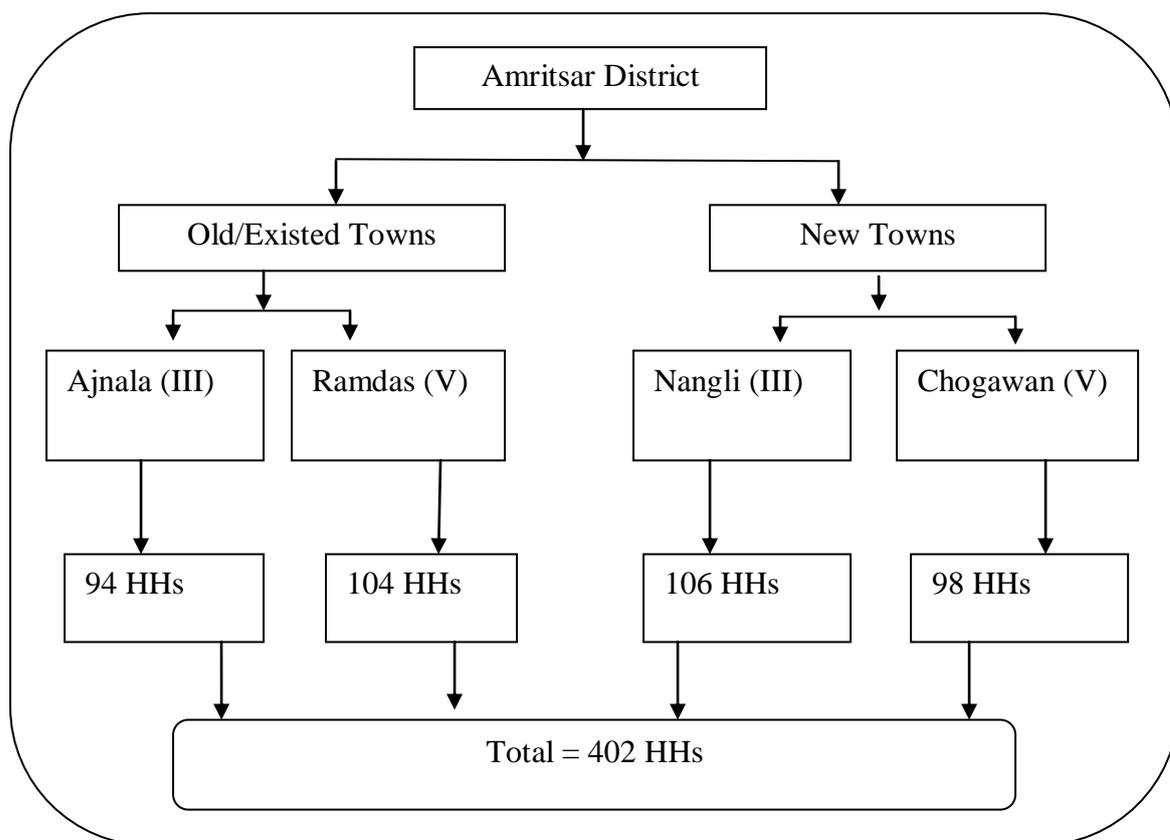
Sample Area Town (size class)		Population	Total HH	Avg. HH size	Sample HH
Ajnala (III)	TOTAL	21107	4060	5.19	100
	Ward No. 2	1807	321	5.63	50
	Ward No. 9	2197	464	4.73	50
Ramdas (V)	TOTAL	6398	1249	5.12	100
	Ward No. 1	693	129	5.37	50
	Ward No. 9	526	111	4.74	50
Nangli (III)	Ward No. 1	20440	4232	4.82	100
Chogawan (V)	Ward No. 1	5416	1100	4.82	100
Total Samples					400

Source: District Census Handbook, Amritsar District, Census 2011

A total of 400 HHs (households) have been interviewed, approx. 100 from each town and different wards were chosen through a method of sampling done through composite Index. Also municipal authorities of all towns i.e. Urban Local Bodies have been interviewed for the provisioning of urban basic amenities like water supply, sanitation and drainage system, garbage and waste disposal, cleaning and maintenance of sewerage in towns, financial position of the ULB related to basic amenities etc. (designed questionnaire accordingly), position of staff (sanctioned, vacant posts), etc. In addition to it sources of cooking fuel, sources of lighting, street lighting, public toilets provisions and related questions have been asked to ULBs authorities.

Data collection has been carried out using the personal interview approach by visiting households (HH) to collect information on basic demographic attributes, income of the HH, availability and accessibility of basic amenities like water supply, waste water disposal, collection and disposal of trash and garbage of HH, sources of cooking fuel, toilet facilities within or outside HH premises, health facilities and work environment of the workers from HH using a set of questionnaires.

Fig. 7.1 Structure of HH survey conducted in four towns of Amritsar district.



The indicators chosen to study the quality of urban amenities in the selected towns are as:

1. Sources of water supply for Drinking purpose (Safe Drinking Water)
2. Sources of cooking fuel used by HH (Safe Sources of cooking fuel)
3. Sources of Lighting at HH level (Safe Sources of Lighting)
4. Availability and usage of Toilet Facility within the HH premises. (Hygienic Toilet Facility)
5. Drainage Facility available for waste water Disposal at the HH level (Hygienic Drainage System)
6. Preventive Mechanisms against the diseases taken by urban dwellers, and,
7. Work conditions for the workers at the HH level. (Basic Amenities availability at workplace)

7.3 Analysis of the quality of urban amenities in towns of Amritsar (based on primary field survey)

The field survey is conducted in the four towns of Amritsar district to understand the level and quality of urban basic amenities at the ground and compare the urban basic amenities in towns selected for the survey.

Table 7.2 Selected towns for primary field survey in Amritsar district, Punjab

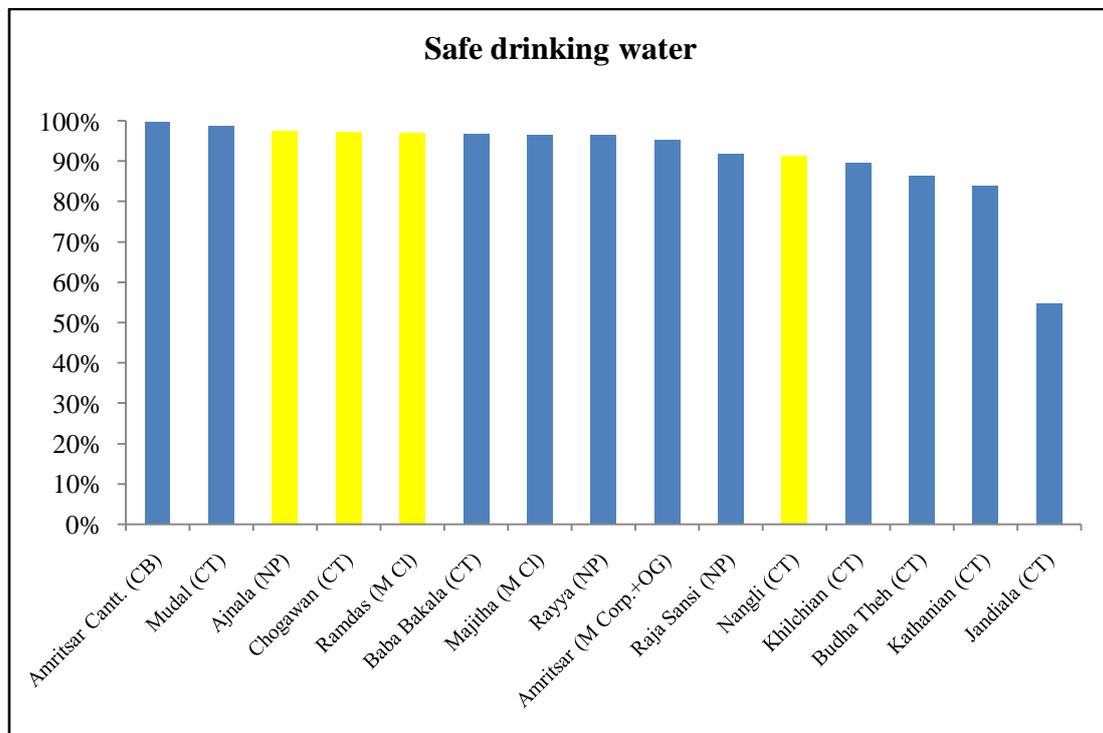
Town Name	Size Class	Civic Status	Town Status	HH Sampling
Ajnala	III	Nagar Panchayat	Old Town	100
Nangli	III	Census Town	New Town	100
Ramdas	V	Municipality	Old Town	100
Chogawan	V	Census Town	New Town	100

The comparison of the urban basic amenities in the towns have been done between the old town and new town of same size class on the basis of the responses from the residents and collecting the data of approx. 100 HHs from each town. The quality of urban basic amenities in Ajnala town has been compared with the urban basic amenities of the Nangli town, similarly for Ramdas with Chogawan town.

7.3.1 Drinking Water

The seriousness of the challenges associated with urban water supply and sanitation in India have been recognised in recent times. After decades of neglect, the first national effort to invest in the urban water and sanitation sector commenced in the 1970s but was accorded considerable priority in the subsequent two decades as a part of different national and state level schemes culminating most recently in the '*Swachh Bharat Mission*'. Unlike many other countries India has the unenviable situation of the need to simultaneously improve access to water and sanitation and responding to increasingly urgent environmental challenges.

Fig. 7.2 Proportion of HHs having safe drinking water sources in towns of Amritsar district, 2011



Source: Census of India, 2011, All India Town Directory, Punjab

The above figure shows the proportion of the HHs having safe drinking water in towns of Amritsar district. The bars marked with yellow colour shows the situation of the four surveyed towns in terms of HHs having availability of safe drinking water according to census of India, 2011. Among the surveyed towns, in Nangli town HHs has the lowest access to safe drinking water whereas primary field survey shows the different picture as analysed in the following section.

7.3.1.1 Different sources of drinking water

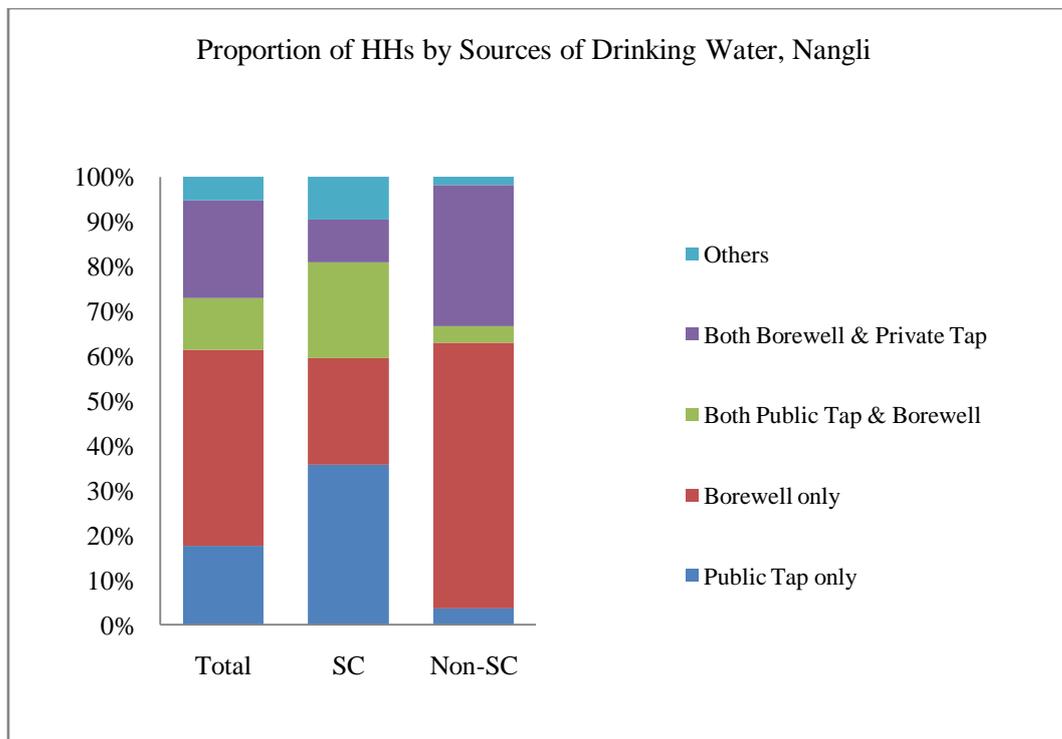
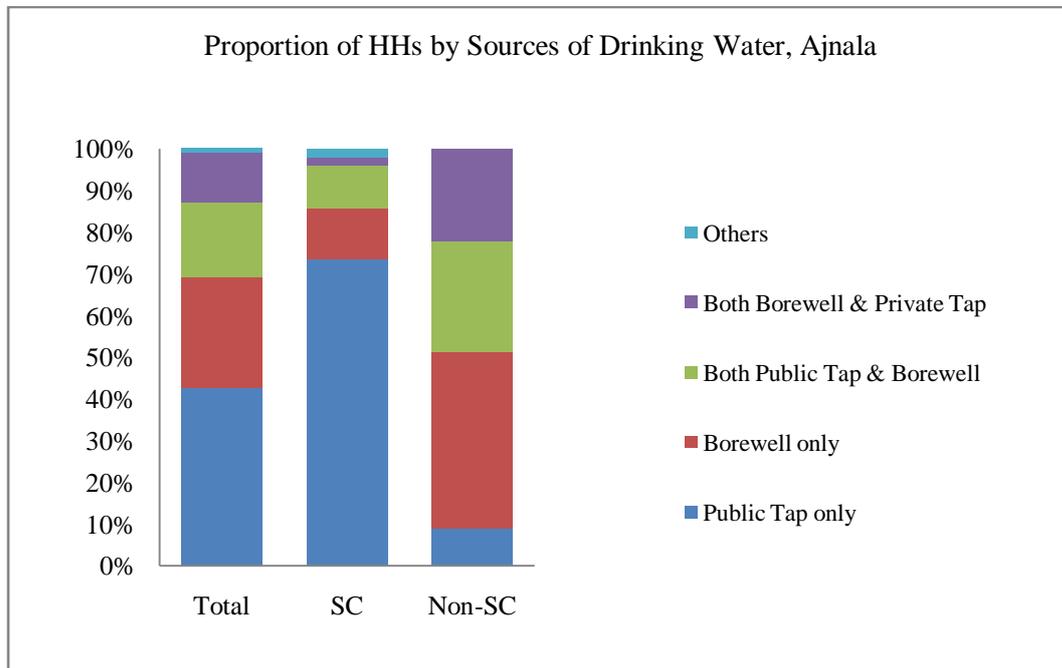
In the primary data collected through field survey, around 400 households have been surveyed to find the situation of drinking water and its accessibility, availability and quality. The sources of drinking water have been analysed in the towns of Amritsar district according to the different size classes of towns which have been surveyed through primary field visit. Fig. 7.3 shows the different drinking water sources used by HHs in size class III towns of Ajnala and Nangli and from total 100 households have been

surveyed in each of the town. In Ajnala it has been found that more than 40 percent of total HHs uses tap water as a primary source of drinking water for which the time is fixed by M.C. (ULBs locally called as Municipal Committee), it is followed by the use of bore well as a source of drinking water. 19 percent of the total HHs uses bore well and private tap as a primary source of drinking water. Nangli, new census town has observed a different pattern where highest proportion of HHs uses borewell as source of water i.e. around 44 percent HHs followed by tap water i.e. 17 percent. The picture of the usage of drinking water is different among SC households where more than 70 per cent of the HHs uses public tap water as main source of drinking water for which the time and quantity is fixed unlike the bore well which is considered a safe source of drinking water. While less than 10 per cent of non-SC HHs uses public tap as drinking water source in both Nangli and Ajnala as they are more reliable on bore well (42 percent HH in Ajnala and 59 percent HH in Nangli) as a major source of drinking water followed by a combination of both public tap, bore well and private tap.

“In the last two years we have just not used the tap water for the drinking water mainly because of the fact that it is not treated timely and properly, also tap water supply is not adequate and the quality is not good. Therefore as the residents who found it affordable to have a submersible pump (tube well) they installed it, some people even take loans to install borewell of 400 feet deep to have adequate water supply and better quality drinking water.”

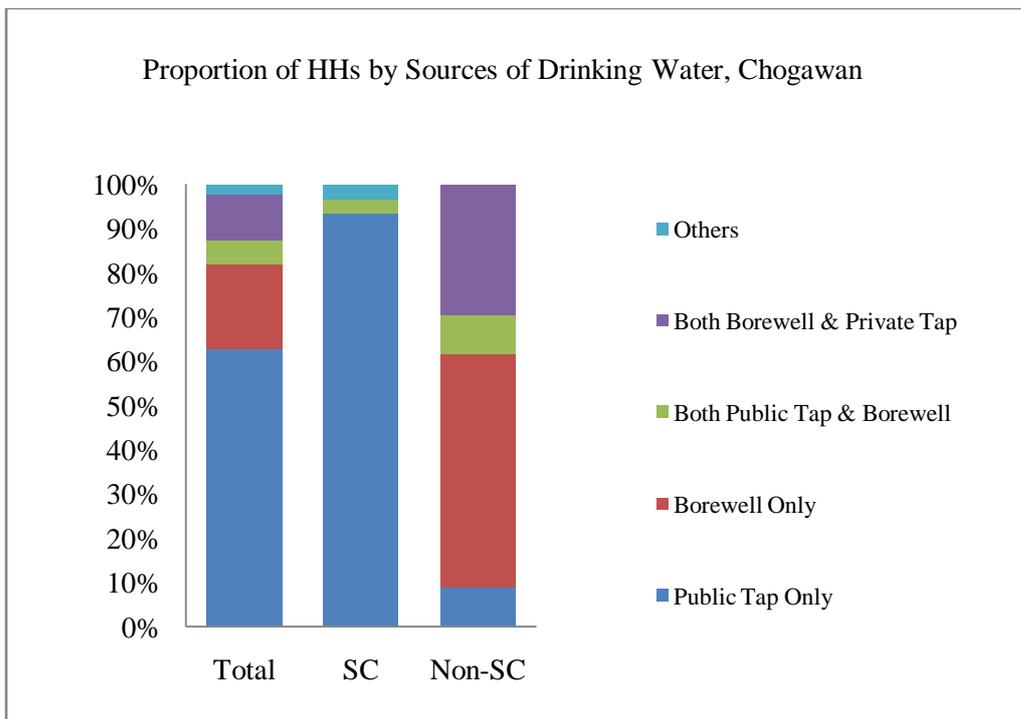
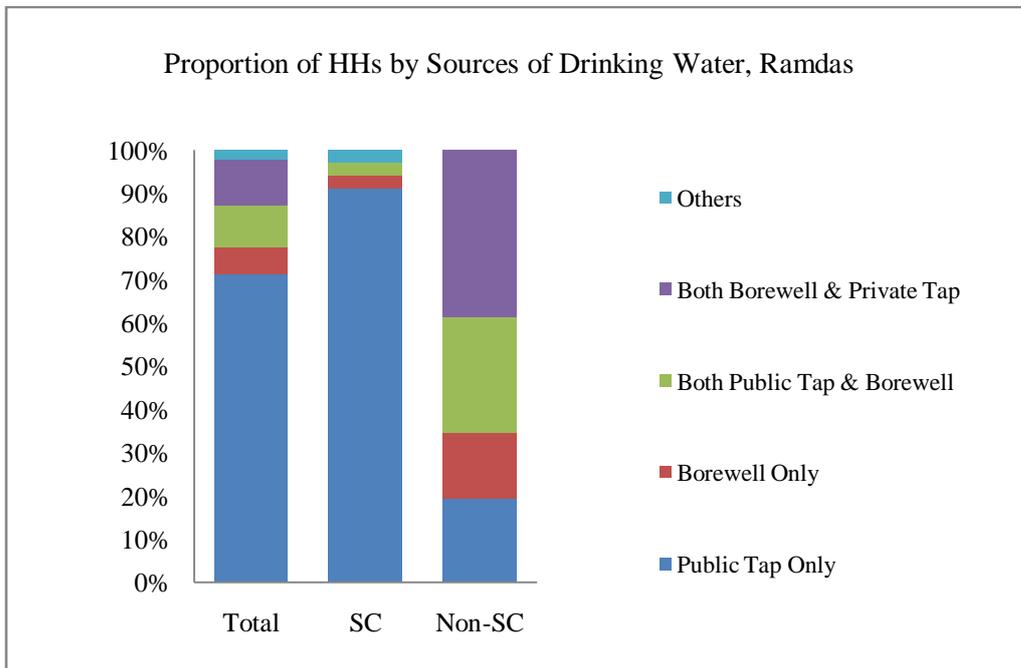
Resident of Ajnala town, 42 age, non-SC

Fig. 7.3(I and II) Proportion of HHs using different sources of drinking water in Ajnala and Nangli (size class III towns)



Source: Primary field Survey

Fig. 7.4(I and II) Proportion of HHs by sources of drinking water in Ramdas and Chogawan (size class V towns)



Source: Primary field Survey

In the *fig. 7.4* sources of drinking water is shown in small towns of size-class V i.e. Ramdas and Chogawan. It is shown that the sources of drinking water have a clear community-wise picture as SC HHs are more dependent on public tap water unlike non-SC households because people in non-SC HHs are engaged in economic activities associated with the primary activities where there is high water consumption. For example dairying where water quantity supplied through the municipal tap water is not enough to meet the needs of the HH, also the timing of the water supplied is not suited to their needs. In Ramdas, where more than 90 percent of SC HH is dependent on public tap water for their need of drinking purpose while less than 20 percent of non-SC HH depends on public tap as a primary source of drinking water. The main reason for the non usage of public tap by non-SC HHs is the quality of water supplied by ULBs. In Chogawan (Census Town) more than 50 percent of non-SC HHs have bore well as their major source of drinking water. It is noted here that majority of non-SC population are engaged in primary or allied economic activities. On the other hand SC HHs found it unaffordable to use borewell or private tap water for drinking purpose. Use of private tap and R.O. treatment of water system are increasing as people are getting aware of the quality of drinking water and its health association.

“Here the use of bore (borewell’s) water is considered a rich affair because the poor (Majabhi) can’t afford it so when the tap water is inadequate and of not good quality (sometimes in monsoon and rainy season) we borrowed water from the nearby borewell of the farmer which is clean and tasty for drinking (potable).”

Resident of Chogawan town, 54 age, SC

Pic.1 Piped drinking water supply in the HH of Nangli town (size class III), along with the storage of water for other purpose.



Pic.2 Use of the booster (*tullu pump*) to lift the water supplied by ULBs in Ajnala town, as the water pressure is low.



Source: Photos clicked during the Primary field survey

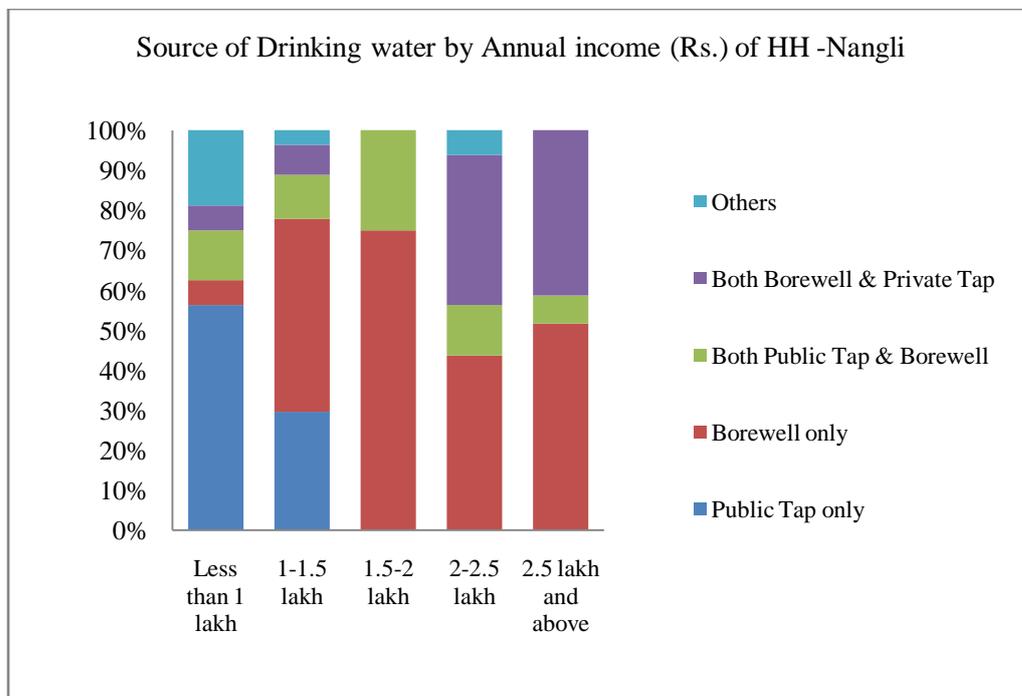
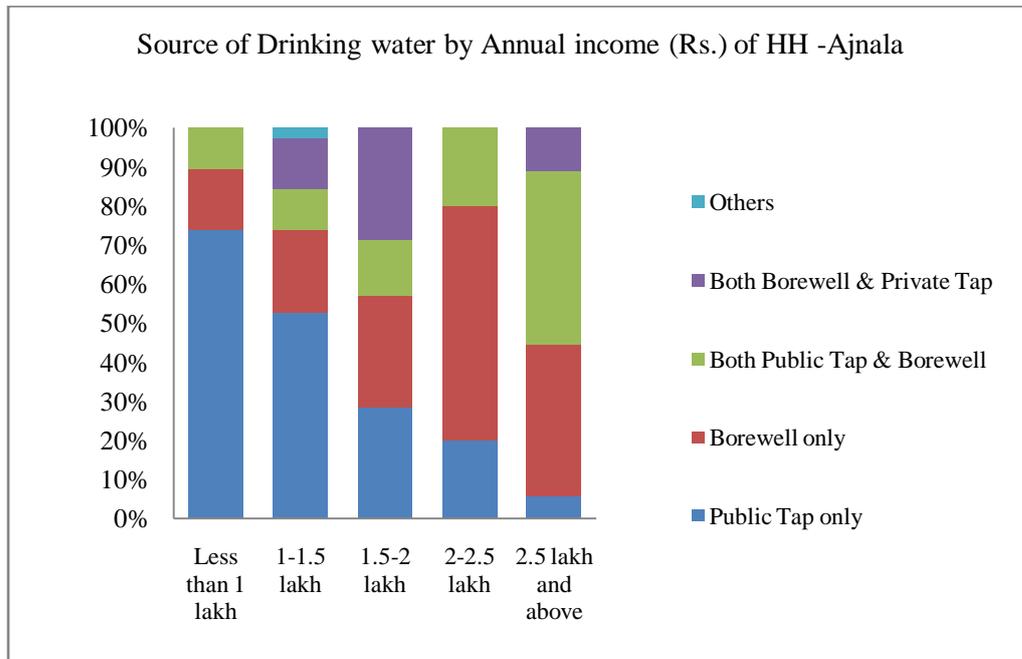
7.3.1.2 Relationship between annual income of HH and sources of drinking water

Total income of the HH is an important factor to determine the level and quality of urban amenities availing by them. The *fig. 7.5 I&II* shows how the sources of drinking water changes as the income of the HHs rises in Ajnala and Nangli towns (both size class III towns). It basically shows the relationship between the income of the HH and the different sources of drinking water supply used by the HH. In Ajnala, it has been observed that as the income of the HHs increases the dependency on the public tap for drinking water supply decreases as in the HHs with less than 1 lakh annual income more than 73 percent of the HHs uses public tap for drinking purpose. And as the income of the HHs increases to 1.5-2 lakh per annum, only 28 percent HHs depend fully on public tap which further decreased to just 5.5 percent of the total HHs in highest income category (above 2.5 lakh annual income). The decrease of the public tap as sources of drinking water supply with increase in the income of the HH is compensated with the increase in the use of borewell for drinking water purpose. In the very low income HHs of less than 1 lakh per annum only 15 percent of HHs uses borewell which increases to more than 28 percent of the HHs in 1.5 to 2 lakh annual income of the HHs and further increased to 60 percent of total HHs in high income HHs of more than 2 lakh income per annum. In the highest income HHs, both borewell and public tap are used by more than 80 percent of the total HHs.

In Nangli town, the condition is different as only very low and low income HHs uses public tap as main source of drinking water supply and HHs above 1.5 lakh income per annum do not use public tap water for drinking purpose because these high income HHs are more dependent on borewell for drinking purpose. It is observed that more than 75 percent of the total HHs uses borewell in annual income group of 1.5 to 2 lakh and in very high income HHs category (above 2 lakh annual income) private tap is used for drinking water supply. The main reason for the higher uses of the borewell by high income HHs is the quantity of water and non-dependency for the timings of the water as in the case of the public tap water which is municipal authorities dependent for quantity and timings both. It is to be noted that Nangli is the newly emerged census town of size

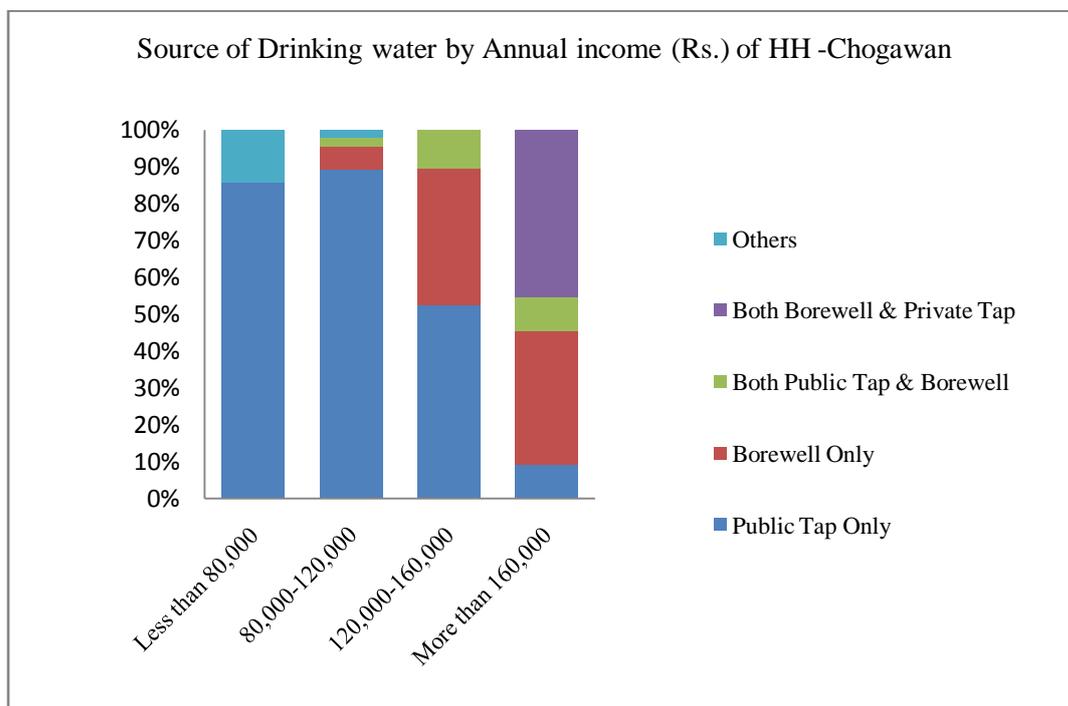
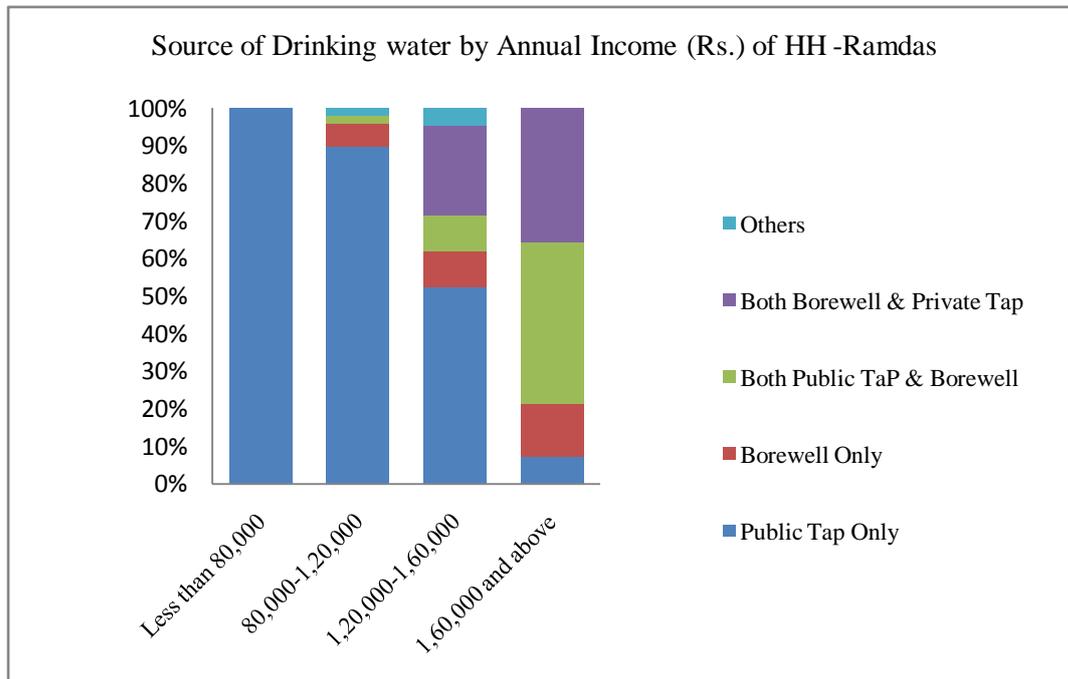
class III and installation of public tap for drinking water and related infrastructure has not completely installed yet.

Fig. 7.5(I and II) Proportion of HHs using different sources of drinking water according to annual income groups, Ajnala and Nangli (size class III towns).



Source: Primary Field Survey

Fig. 7.6(I and II) Proportion of HHs using different sources of drinking water according to annual income groups in Ramdas and Chogawan (size class V towns).



Source: Primary Field Survey

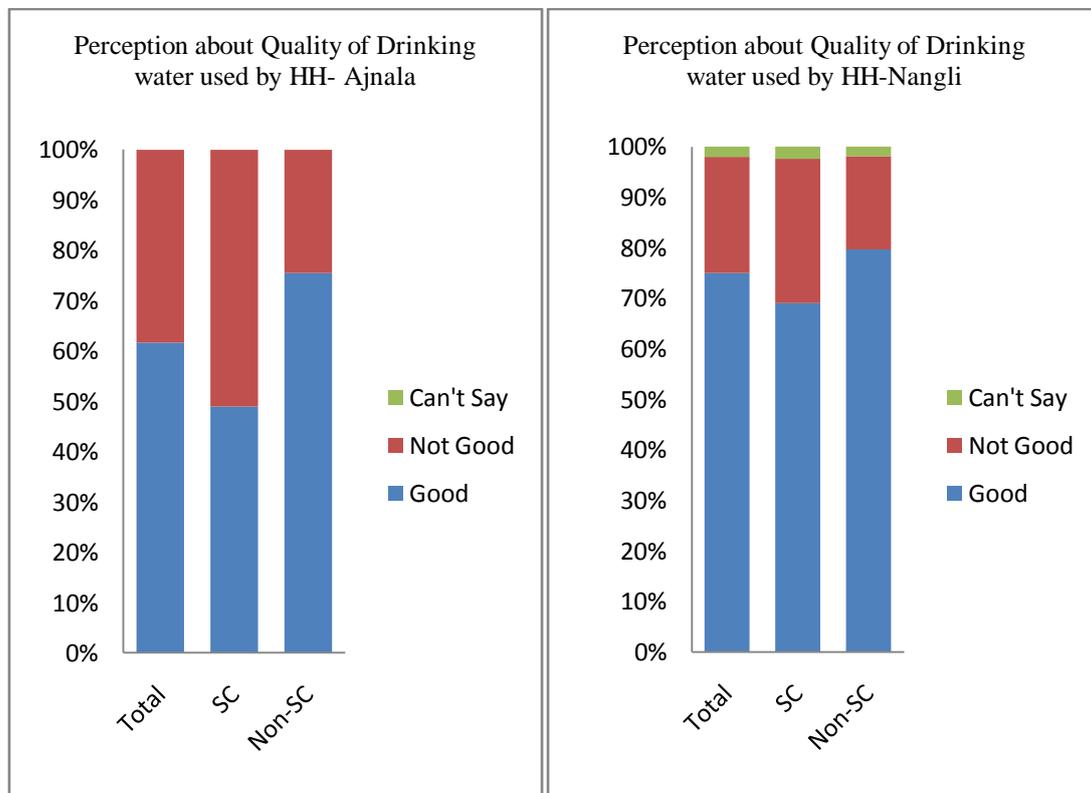
Income has the direct linkages with the source of drinking water used by the households as more income of the household gives more freedom to choose the medium of water use

which household perceived of good quality. It also frees households from the bondage of timing of water supply and increases the quality of water used by them. In the *fig. 7.6*, the sources of drinking water and the categorization of the households into four income groups is shown for size class V towns. In both the towns of Ramdas and Chogawan, HHs having lowest income (less than Rs. 80,000 annually) uses only tap water as source of drinking water i.e. it is around 100 percent in case of Ramdas and 85 percent in case of Chogawan. In Chogawan the rest of 15 percent of the total HHs in lowest income category uses 'others water sources' like borrowing from other HH or carries water from nearby religious places like *Gurudwaras* in case of Chogawan, mainly because of the inability of HH to install fixed sources of drinking water. There is a clear pattern in the use of drinking water source according to the income groups of the HHs. Public water usage by HHs is seen on decreasing in both the towns as the income group is increasing which means that people want to have bore well as a drinking water source as soon as they are financially capable to do so. In Ramdas, HHs with income group above 1.6 lakh rely on both public tap and bore well as major sources, which assures the good quality with quantity and independency from timings of water supply. This ratio of HH using both tap water and bore well is less in Chogawan, where higher income groups are more dependent on bore well as major source of drinking water with R.O. water treatment system fixed into it.

7.3.1.3 Perception about drinking water supply

Public perception about the quality of drinking water depends on the water used by them for the drinking purpose. In Ajnala town around 60 percent of the total HHs perceived the quality of drinking water as good and 40 percent are still perceived that the water they are using is not of good quality. It also changes with the perception by the community as shown in above figure, as only a little over 40 percent SC HHs perceive the quality of drinking water they used as good and the majority of SC HHs uses water of not-good quality. In Ajnala ward no. 9 where majority of SC HHs resides perceive water supplied by MC unfit for drinking purpose mainly because of the fact that the pipes used for supplying drinking water is not repaired regularly and sometimes, insects (*sundi*) come into drinking water supply.

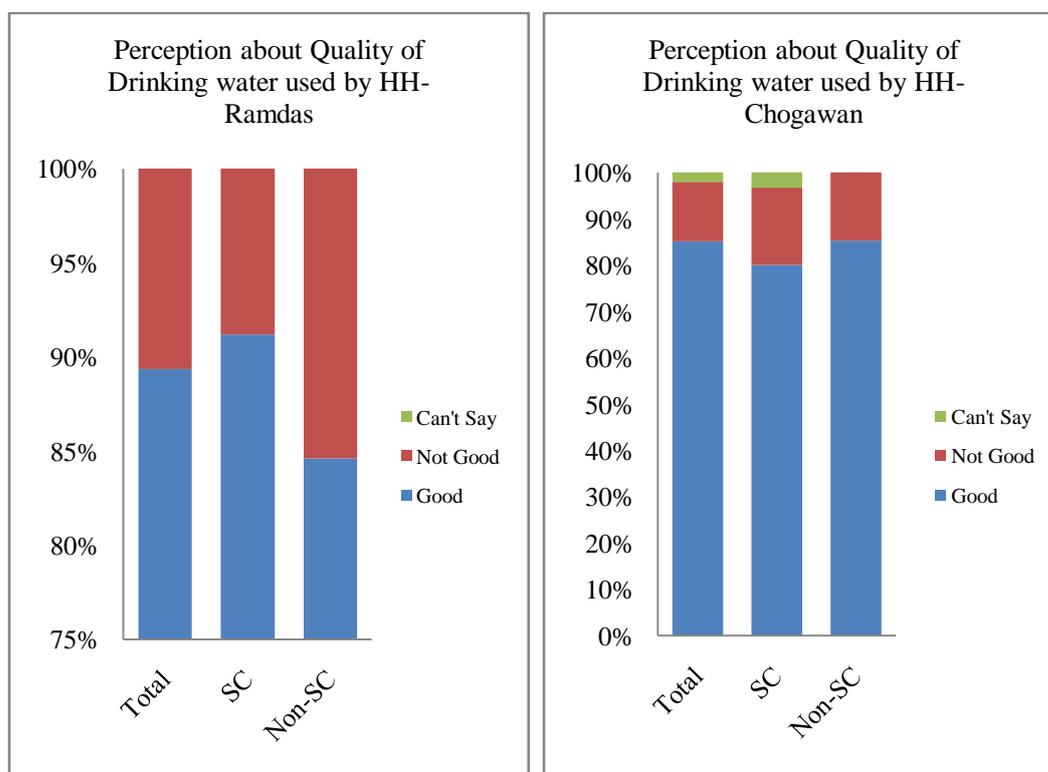
Fig. 7.7(I and II) Proportion of HHs having different perception about quality of drinking water in Ajnala and Nangli (size class III towns)



Source: Primary Field Survey

In Nangli (new town) the picture is also same as there are more than 30 percent HH perceived drinking water is not of good quality. Among SC HH's as compared to Ajnala, 70 percent of HH perceived drinking water is of good quality. Nangli is the newly emerged town where new public tap installation has been done and also new tank has been set up to supply drinking water to all HHs. More than 80 percent of non-SC HHs perceived drinking water quality as good mainly because around 50 percent of them uses bore well as water source which is often connected to R.O. for water treatment as higher income leads to use of good quality water treatment system for the HHs.

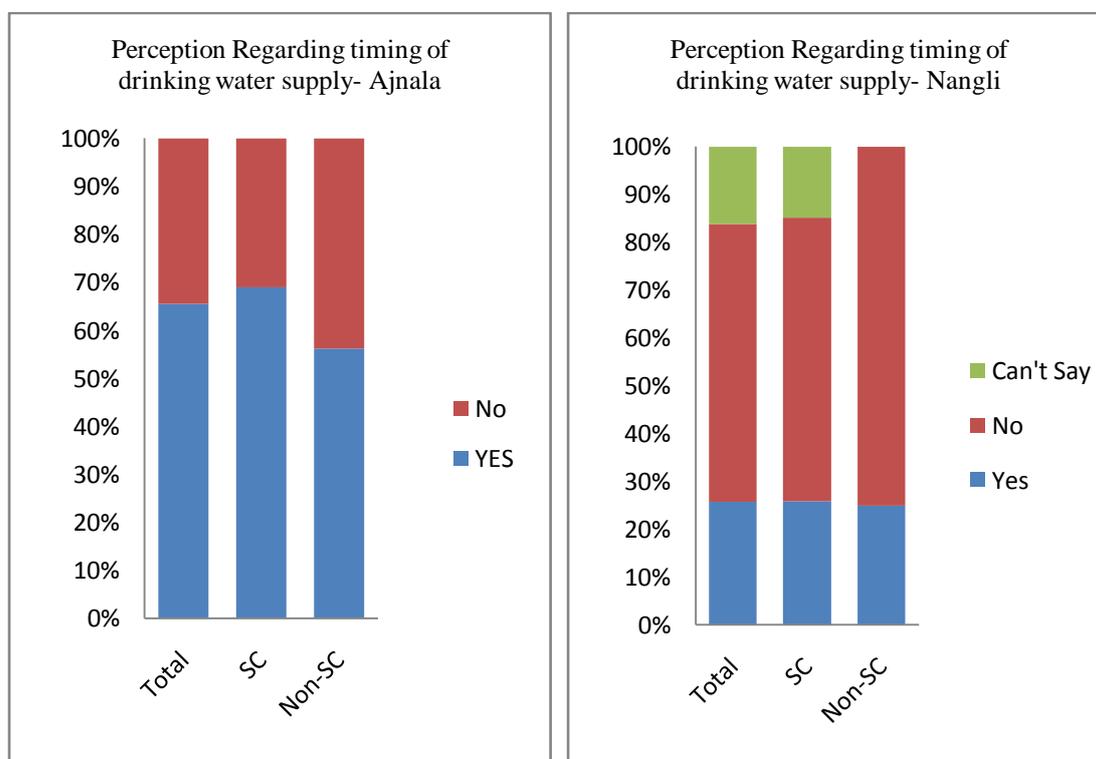
Fig. 7.8(I and II) Proportion of HHs having different perception about quality of drinking water in Ramdas and Chogawan (size class V towns).



Source: Primary Field Survey

As shown in the above fig. 7.8 (I and II) in Ramdas it is observed that around 90 percent of the total HHs are satisfied with the quality of the drinking water they uses. While this varies across social groups when we look that there are more than 90 percent of the SC HHs are satisfied with the quality of drinking water used by them but it is lower in case of non-SC HH where more than 15 percent of the HH are not satisfied with the use of the quality of water because of the fact that more than 50 percent of them uses bore well which are mainly old and hence new bore depth costs more and the quality of piped water not satisfied them. Chogawan which is newly emerged census town observed that only 10 percent of the total HHs are not satisfied with the quality of drinking water they uses, in fact it is same across SC HHs and non-SC HHs where 90 percent of all households are satisfied with the quality of water used by them.

Fig. 7.9(I and II) Proportion of HHs having different perception about timing of drinking water supplied by ULBs in Ajnala and Nangli (size class III towns).

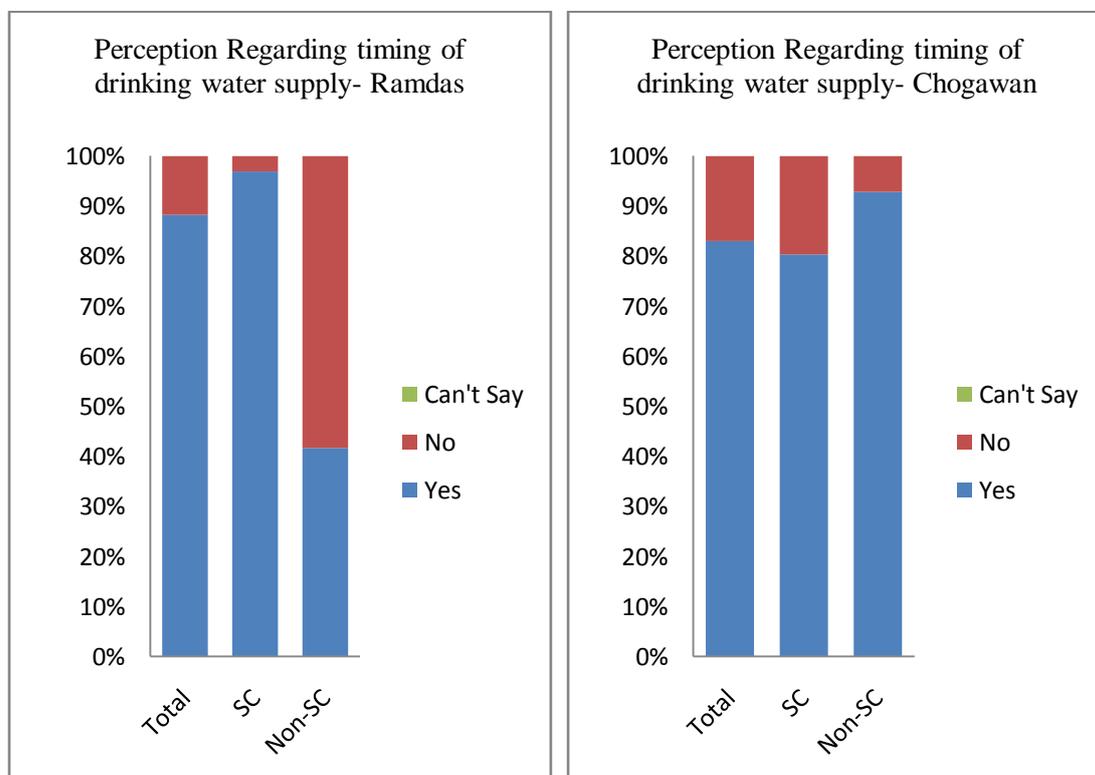


Source: Primary Field Survey

Perception regarding the timings of the drinking water supplied by municipal authorities is one of the main indicators of the quality and quantity of drinking water supply. If water supply is available throughout the day then the risk of water contamination is less and also the cost on the water storage is minimized mainly for the poor HHs. Timing of water supplied by MC not only decides the quantity of water supply but also gives the HH the opportunity to save money on the storage of drinking water. Timing of drinking water is critical for low income HHs as they are unable to afford the safe storage equipments like refrigerator, roof tank etc. While analyzing the perception of HH's regarding the timing of the drinking water supply by MC (ULBs also called as Municipal committee locally) shown by *fig. 7.9* in Ajnala, it has been found that SC HHs are more satisfied with the timing of the water supplied and it may be because of the fact that there is low per capita consumption of water in SC households as compared to the non-SC households. Also as mentioned earlier SC HHs uses the water supplied for drinking purpose unlike non-SC landholding HHs which uses that water supply for dairying, agriculture and other allied activities. In Nangli though the picture is different as 25 percent of all HHs are satisfied

with timings of water supply but the explanation to this is that it is a new town and newly built infrastructure of water supply like water tank, pipes to supply water etc. have not been fully completed and therefore HHs are getting low quantity of water as the connections are not fully maintained for water supply (as told by Municipal authorities). And it is clearly reflecting in the fig. above where more than 70 percent of HH are not satisfied with the timing of water supply. This proportion is even more in non-SC HHs because the required quantity of water in these are more as many HHs are engaged in animal husbandry and dairying activities which need more water.

Fig. 7.10(I and II) Proportion of HHs having different perception about timing of drinking water supplied by ULBs in Ramdas and Chogawan (size class V towns).



Source: Primary Field Survey

In the above fig. 7.10 (I and II) perception regarding the timings for drinking water supply measures through asking about the satisfaction about water supply timings. It is found that in Ramdas town more than 85 percent of total HHs are satisfied about timings of drinking water supply. Among SC HHs it is even more than 96 percent of total SC HHs that are satisfied about timings of drinking water supply. But there is a different situation observed for non-SC HHs where only 41 percent of all HHs satisfied about

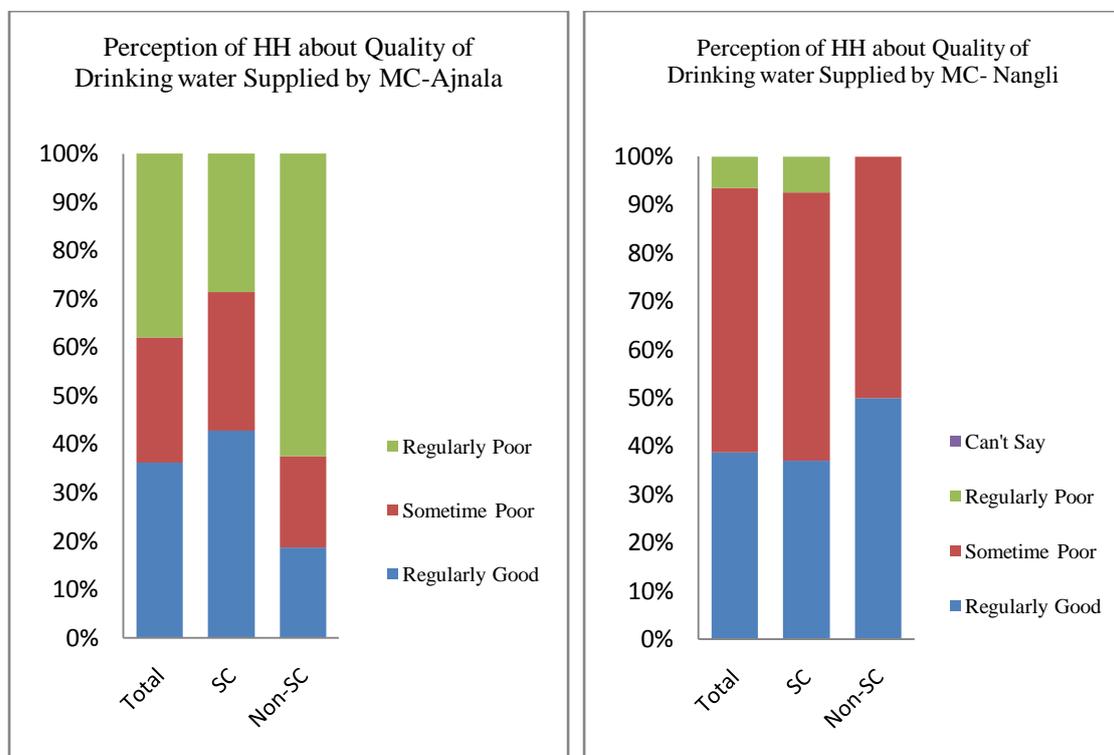
timings of water supply by municipal authorities. In Chogawan which is a newly emerged town there is a scenario where overall more than 80 percent of HHs across SC and non-SC HHs are satisfied about the timings of water supply. Here unlike the pattern in other towns, non-SC HHs are more satisfied about the timings of piped water supply.

Pic.3 and 4 Storage of the piped water supplied by the municipalities in Ramdas and Chogawan town respectively. The timing of the water supply is not adequate and hence there is a need to store water in big plastic drums and tanks as shown below.



Source: Photos clicked during the Primary field survey

Fig. 7.11(I and II) Proportion of HHs having perception about quality of drinking water supplied by ULBs in Ajnala and Nangli (size class III towns)



Source: Primary Field Survey

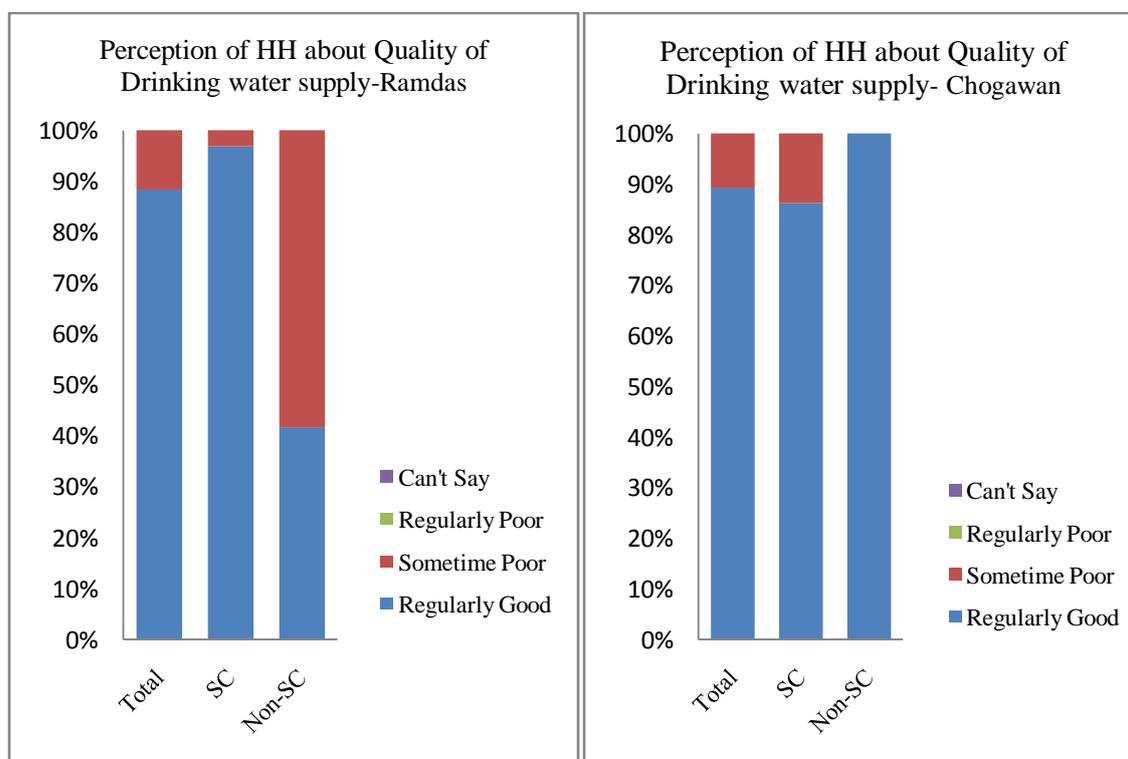
Perception regarding quality of drinking water supplied by Municipal authorities is an important indicator not only regarding the situation of the water quality that households get but also an improvement in the future regarding the water quality. As observed from the above figures public tap water supplied by municipal authorities is mainly used by the low income group households mainly because of the non-affordability of the other sources of safe drinking water supply while high income groups mainly depend on borewell, private taps, submersible tubewells etc. Fig. 7.11 shows the quality of drinking water supplied by municipal authorities and here perception about water quality measured by asking questions to the HH respondent through primary survey conducted and categorised as regularly good, regularly poor, sometimes poor and can't say. In Ajnala it is observed that among all the HHs only 25.6 percent urban HHs felt that the water supplied for drinking is of good quality and it changed for the SC HHs where around 43 percent of HHs perceived water quality as good which is totally opposite the case of non-

SC HHs where only 18 percent of HHs felt that regular good quality water supplied by municipal authorities. It is to be noted here as observed from the previous figures that SC HHs are mainly dependent on water supplied by municipal authorities and hence have few choices left of good quality water as opposed to non-SC HHs where more HHs depend on borewell and submersible tubewells for drinking water added by refrigerators and RO etc. and hence SC HHs perceived the only sources available of good quality. In Nangli which is a newly emerged census town more than 37 percent of SC HHs perceived municipal supplied drinking water of good quality and more than 55 percent of SC HHs felt that water supplied is of 'sometimes poor' quality. Among non-SC HHs 50 percent observed municipal tap water of regular good quality and rest 50 percent HHs perceived 'sometimes poor' water quality. It is mentioned that in Nangli water supply tap infrastructure is under process and the water quality checks are to be established to regularly check water quality.

“I know that the water quality is good but what about the quantity of water supply? The timings of the water supply is also appropriate but the main issue is of water pressure in water supply, it is so poor (low) that some times in 1-2 hrs it doesn't fill one bucket. Some people use 'tullu pump' (booster) to increase water pressure. It is illegal and costly so everyone can't use it.”

Residents of Nangli town

Fig. 7.12(I and II) Proportion of HHs by perception about quality of drinking water supplied by ULBs in Ramdas and Chogawan (size class V towns)



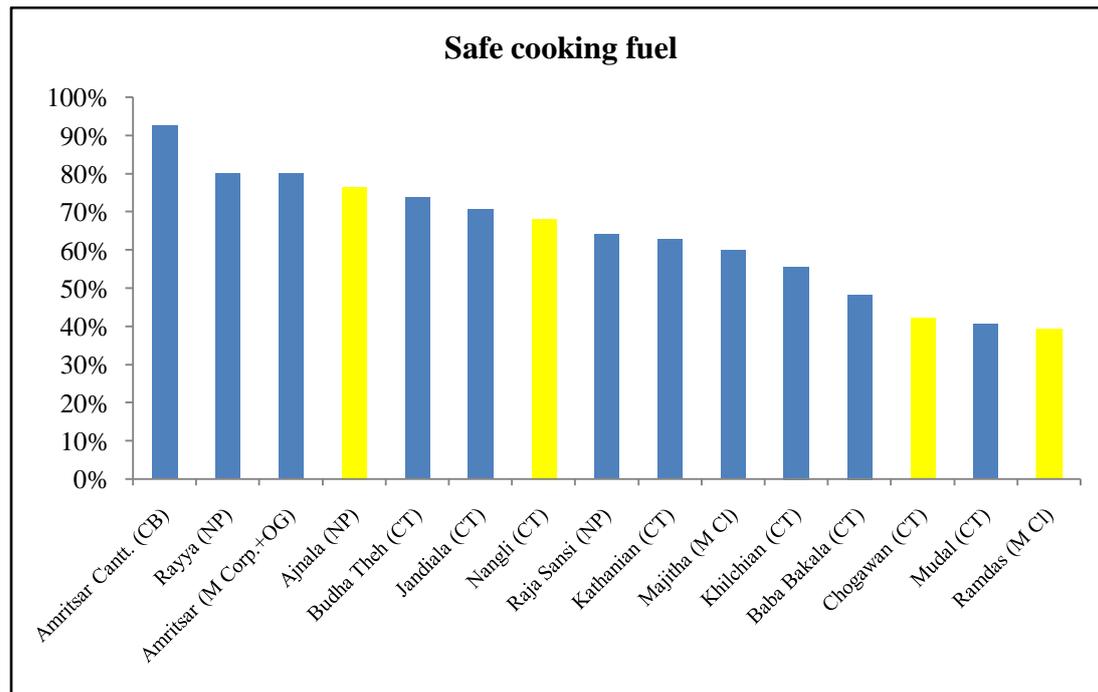
Source: Primary Field Survey

In Ramdas more than 88 percent of the total households recorded satisfaction with the level of quality of water provided by MC. While among SC households it is more than 90 percent, on the other side only 40 percent non-SC households are satisfied with water quality of piped water. In Chogawan also the situation is also same where more than 80 percent of total HHs across communities observed satisfaction to the water quality provided by MC. In Ramdas where 40 percent non-SC HHs recorded not satisfied with the water quality supplied by MC, on the contrary in Chogawan 100 percent non-SC HHs recorded satisfaction to the water quality provided by MC.

7.3.2 Sources of Cooking Fuel

Safe cooking fuel is at the core of the basic amenities available to the HHs as it is essential for the health of the people as well as for the environment.

Fig. 7.13 Proportion of HHs having safe cooking fuel in towns of Amritsar district, 2011

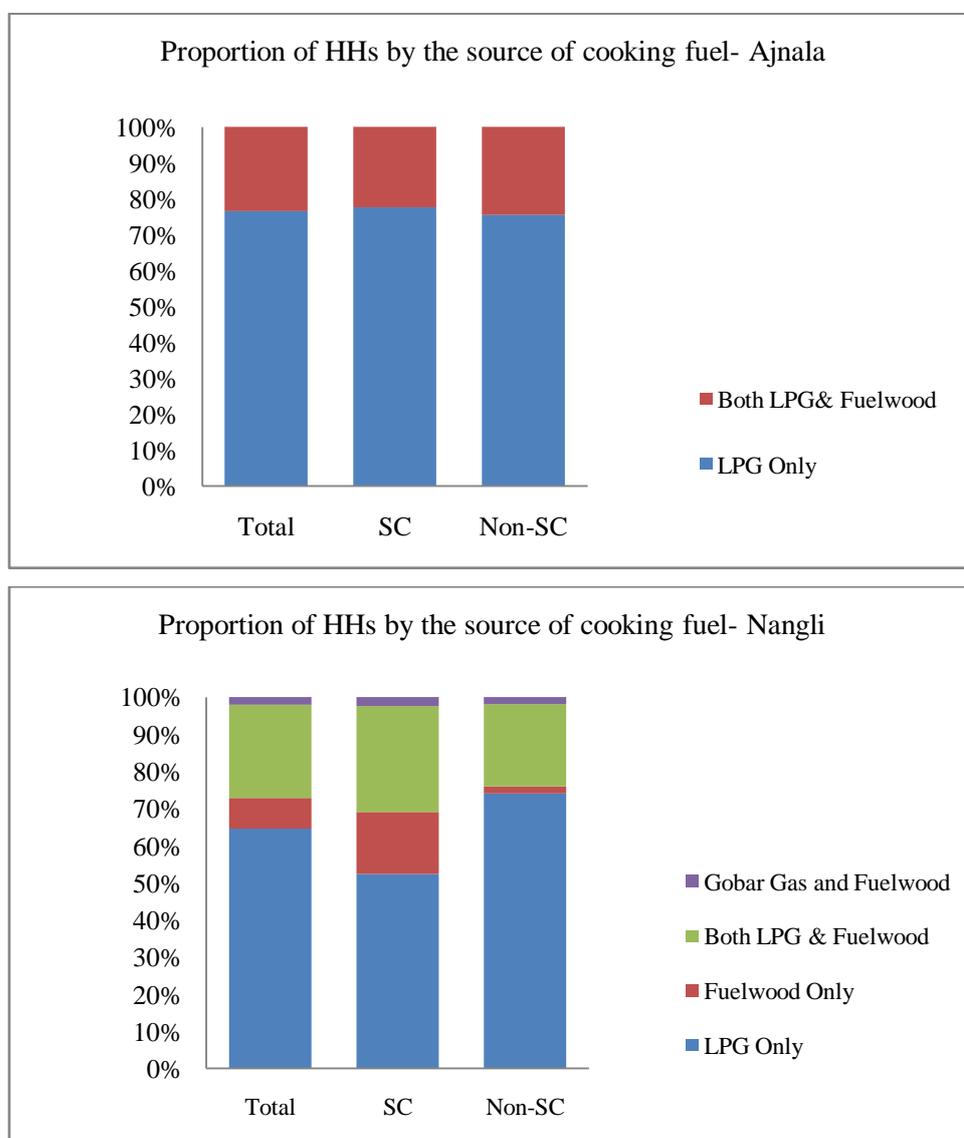


Sources: Census of India, 201, All India Town Directory, Punjab

In the towns of the Amritsar district it is found that mainly three sources of cooking fuel are used, one is LPG, second is fuelwood like firewood, cow dung cake and third is bio gas (Gobar gas). In Ajnala only LPG and fuelwood are used for cooking fuel with more than 76 percent of the HHs used LPG for cooking fuel followed by 23.5 percent HHs uses fuelwood coupled with LPG. In Nangli town more than 64 percent of the total HHs use LPG followed by both fuelwood and LPG which are used by 25 percent of the total HHs. In Nangli it is found that more than 8 percent of the total HHs uses only fuelwood for the cooking purpose unlike Ajnala town where there is not even a single HH uses only fuelwood for cooking. The fuelwood use for cooking fuel is firewood collected from farms or purchased from local vendors, shops of coal, wooden logs, cow dung cake etc. It is important to note that in Ajnala town more than 22 percent of HHs across both SC and non-SC HHs use fuelwood along with LPG though the uses of fuelwood is more among

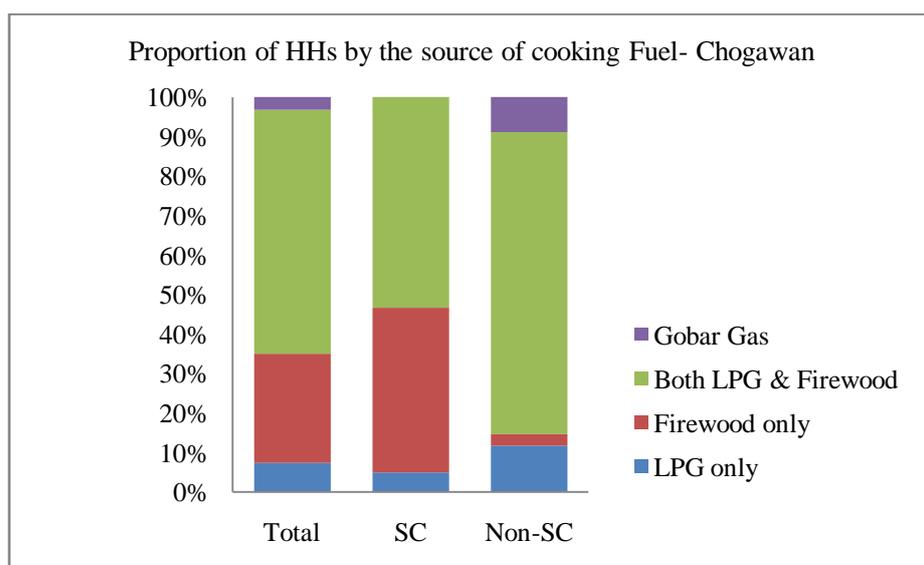
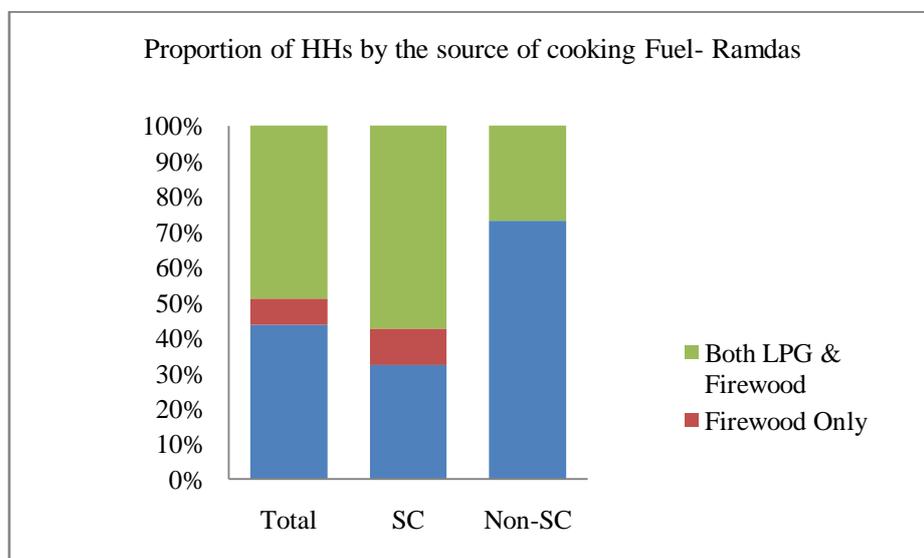
non-SC HHs by marginally 2 percent than SC HHs because of the fact that non-SC HHs own their fields and cattle to collect firewood and dung cake respectively. In Nangli town the condition of SC HHs in using cooking fuel is different as only 52 percent of the HH uses only LPG followed by more than 28 percent of HHs uses both LPG and fuelwood whereas the proportion of HHs uses only fuelwood as cooking fuelwood is more than 16 percent which is higher than that of non-SC HHs by 15 percent percentage points. More than 74 percent of the total non-SC HHs rely only on LPG for cooking fuel and 22 percent HH uses LPG coupled with fuelwood as cooking fuel source.

Fig. 7.14(I and II) Proportion of HHs uses different sources of cooking fuel in Ajnala and Nangli (size class III towns)



Source: Primary Field Survey

Fig. 7.15(I and II) Proportion of HHs uses different sources of cooking fuel in Ramdas and Chogawan (size class V towns)



Source: Primary Field Survey

In Ramdas town more than 43 percent of the total HHs use only LPG for cooking fuel which is a safe source of cooking fuel. While in Chogawan town it has been found that only 7 percent of the total HHs use LPG for cooking purpose. It is followed by the use of both LPG and Fuelwood i.e. by more than 61 percent of the total HHs in Chogawan while in Ramdas it is used by less than 50 percent of the total HHs. It is observed that in Ramdas town a little more than 7 percent of the total HHs uses ‘only fuelwood’ as cooking fuel source which is used by as high as more than 27 percent of the total HHs in

Chogawan. While analysing the use of cooking fuel by SC and non-SC HHs it is found that the use of LPG as cooking fuel is lowest among the SC HHs as compared to non-SC HHs as in Ramdas only 32 percent SC HHs uses LPG as opposed to 73 percent non-SC HHs. Though the total HHs uses LPG as cooking fuel is low in Chogawan but still the difference between SC and non-SC HHs can be seen clearly as only 5 percent SC HHs uses LPG as compared to 11 percent of total non-SC HHs. It is important to mention that use of ‘only fuelwood’ for cooking purpose is more than 10 percent of total SC HHs in Ramdas and it is not used at all by non-SC HHs. The same scenario is also observed in Chogawan town where more than 41 percent SC HHs use ‘only fuelwood’ as cooking fuel as compared to just 3 percent of non-SC HHs use it.

Pic.5 Govt. scheme ‘*PM Ujjawala Yojana*’ helps many women of poor HHs to use LPG for cooking purpose. A woman cooks using LPG cylinder at her home in Nangli town.



Source: Photos clicked during the Primary field survey

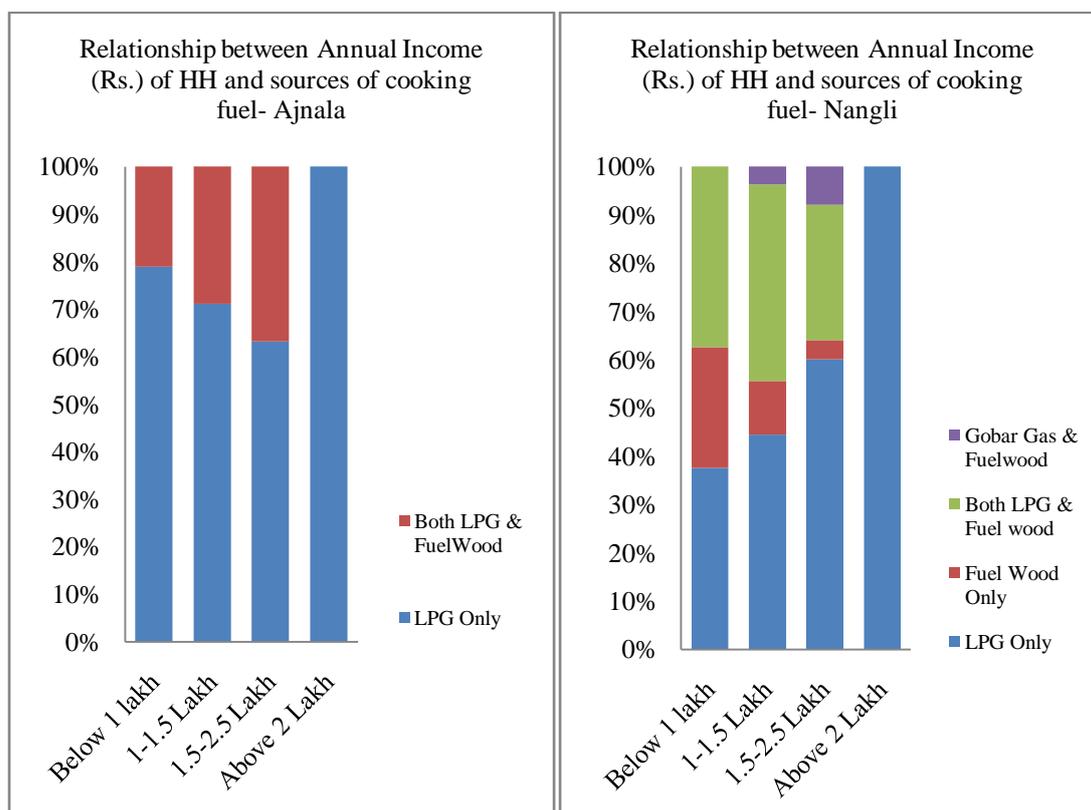
Pic.6 and 7 Use of cow dung cake and firewood in home-made ‘*chulhas*’ (earthen stove) for cooking purpose is common along with the LPG cylinders in census towns of Nangli and Chogawan. Use of only LPG as cooking fuel is unaffordable by many families in the towns.



Source: Photos clicked during the Primary field survey

7.3.2.2 Relationship between annual income of the HH and the sources of cooking fuel used

Fig. 7.16(I and II) Proportion of HHs using different sources of cooking fuel according to annual income groups in Ajnala and Nangli (size class III towns)



Source: Primary Field Survey

Income is the important determinant for the access to the cooking fuel by the HHs as it is found that as the income increases the household's choice of the cooking fuel changes towards the safe cooking fuel. It is clearly found that all the HHs above 2 lakh income use only LPG for cooking fuel in both Ajnala and Nangli town whereas more than 60 percent of the HHs in the income group of 1.5 to 2.5 lakh use only LPG as cooking fuel followed by more than 36 percent HHs use both LPG and fuelwood for cooking fuel in Ajnala and 28 percent HHs in Nangli. In Nangli 4 percent of the HHs with 1.5 to 2.5 lakh income group used only fuelwood for cooking fuel in which is nil (zero) in Ajnala. In income group of 1 to 1.5 lakh more than 71 percent of the HHs use only LPG in Ajnala which is just 44 percent in Nangli. In the lowest income group of below 1 lakh annual income in Nangli only 37 percent of the HH uses LPG which is lowest among all the income groups

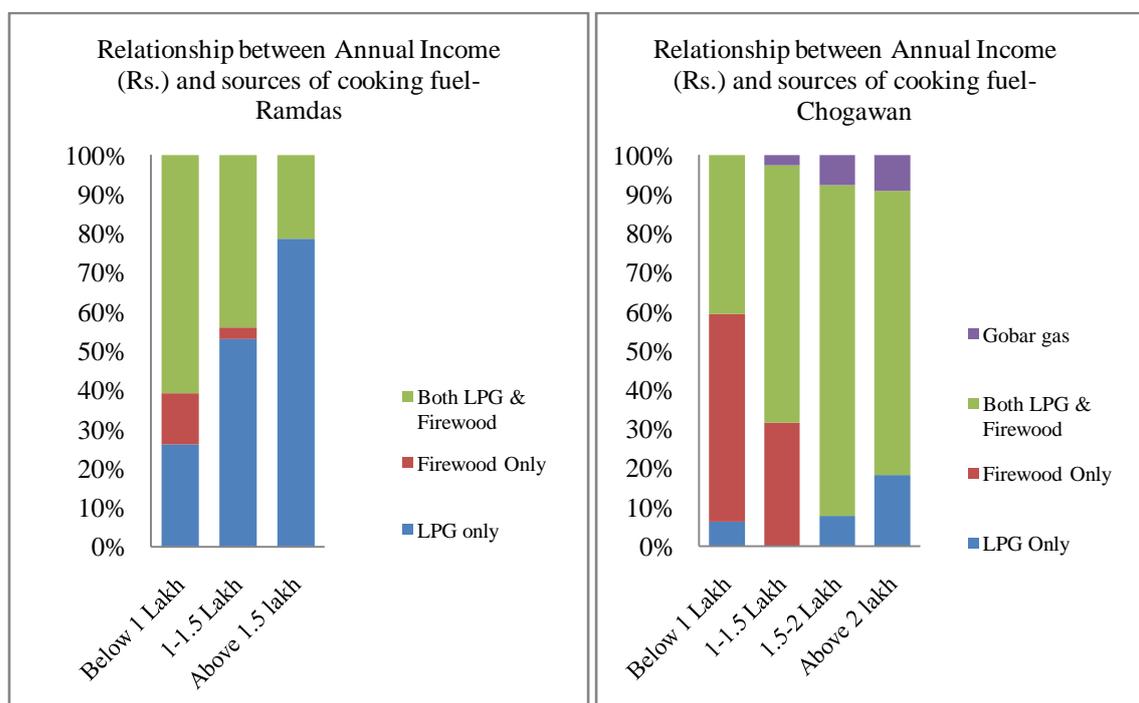
and it is followed by the highest usage of ‘only firewood’ as cooking fuelwood source i.e. 25 percent but in Ajnala more than 78 percent of the HHs in lowest income group use only LPG for cooking fuel. In Ajnala it is interesting to note that the usage of the firewood is more in the middle income group of the HHs unlike in the lowest income groups as in Nangli town too. It is found that more than 80 percent of the HHs in Ajnala are the beneficiary of the LPG subsidy by either state or central govt. which is not the case with Nangli town.

Pic.8 Use of ‘Chulhas’ is still very common for cooking purpose in Low Income Households (LIH) as people said that LPG we filling is unaffordable every month, so they use both firewood, cow dung cake along with LPG. Picture showing the half-built ‘chulha’ in first circle on left and use of ‘chulha’ for preparing food. Picture showing the half-built ‘chulha’ in first circle on left and use of ‘chulha’ for preparing food.



Source: Photo clicked during the Primary field survey

Fig. 7.17(I and II) Proportion of HHs using different sources of cooking fuel according to annual income groups in Ramdas and Chogawan (size class V towns)



Source: Primary Field Survey

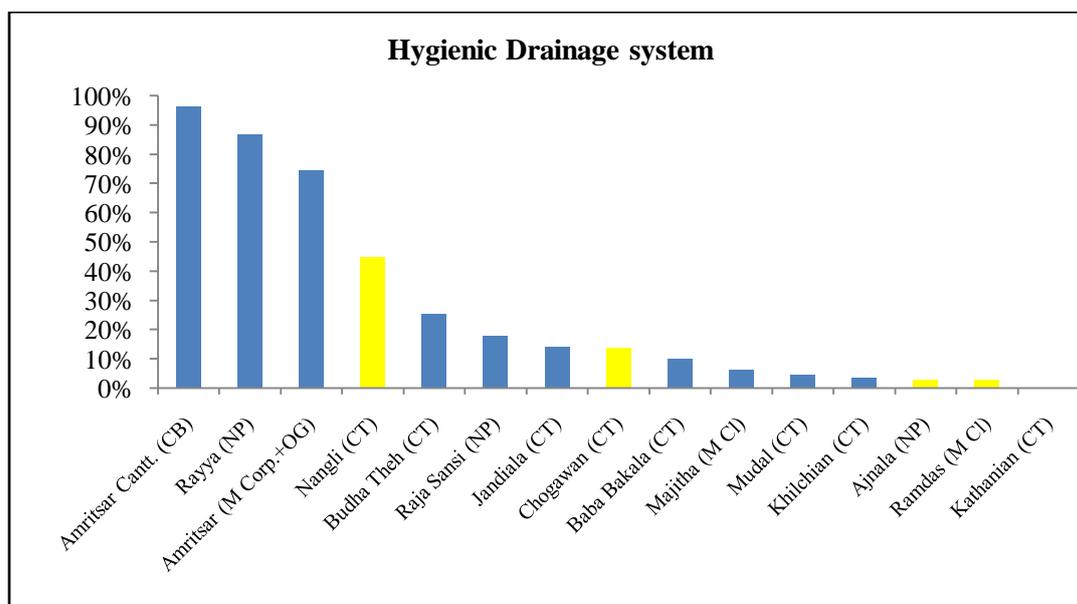
In Ramdas and Chogawan towns there is a direct positive relationship between the annual income of the HHs and use of cooking fuel as it is clearly showing in *above fig. 7.17 (I and II)* i.e. there is a pattern as the income of the HHs increases the use of clean and safe fuel in the form of the LPG for cooking purpose is also increases. It is found that in Ramdas only 26 percent of the total HHs use only LPG in lowest income group i.e. below 1 lakh and it increases to more than 52 percent of the HHs use LPG in income group of 1-1.5 lakh which further increases more than 78 percent in highest annual income group of more than 1.5 lakh. It is also observed that in Chogawan town where only 6 percent of HHs in lowest income group use LPG which increases to more than 18 percent HHs uses LPG in highest income group. There is also found a relationship between the use of only fuelwood as cooking fuel and increase in annual income of the HHs as in Ramdas 13 percent HHs below 1 lakh annual income uses only fuelwood which decreases to less than 3 percent in HHs with annual income group 1-1.5 lakh and decreases to 0 in highest income group. In Chogawan town it is found that the use of ‘only fuelwood’ for cooking purpose is limited to low income group HHs as more than 53 percent HHs in annual income less than 1 lakh use only fuelwood as cooking fuel which decreases to 31 percent

in 1-1.5 lakh income group and no use of fuelwood at all in high annual income HHs. It is seen that the income is an important determinant to the use of safe cooking fuel. Although there are many central govt. schemes which proved to be useful in distributing free LPG connections to the HHs but still the regular filling of the cylinders remain critical for the poor income HHs.

7.3.3 Drainage and disposal of waste water

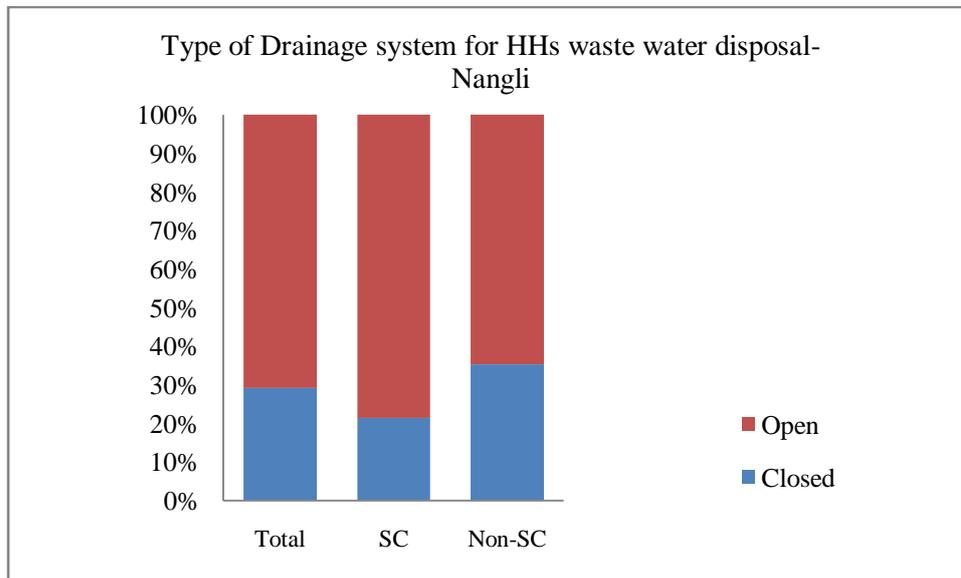
The water used by the HH for drinking purpose has been analysed in the first section of this chapter. The household usage of water for other purposes like washing clothes, bathing and for kitchen purpose and in cleaning, floor cleaning etc. also require proper disposal or hygienic drainage system to dispose off. The first component of the hygienic disposal of water is the type of the drainage system for waste water disposal i.e. whether the drainage system in the town is open or closed. Closed drainage system is the hygienic drainage system because it doesn't create foul smell, not spread disease and it prevents waste water to flow in streets and hence doesn't degrade environment.

Fig 7.18 Proportion of HHs having hygienic drainage system in towns of Amritsar district, 2011



Source: Census of India, 2011, All India Town Directory, Punjab

Fig. 7.19 Types of Drainage system available for HHs waste water outlet in Nangli (size class III town)



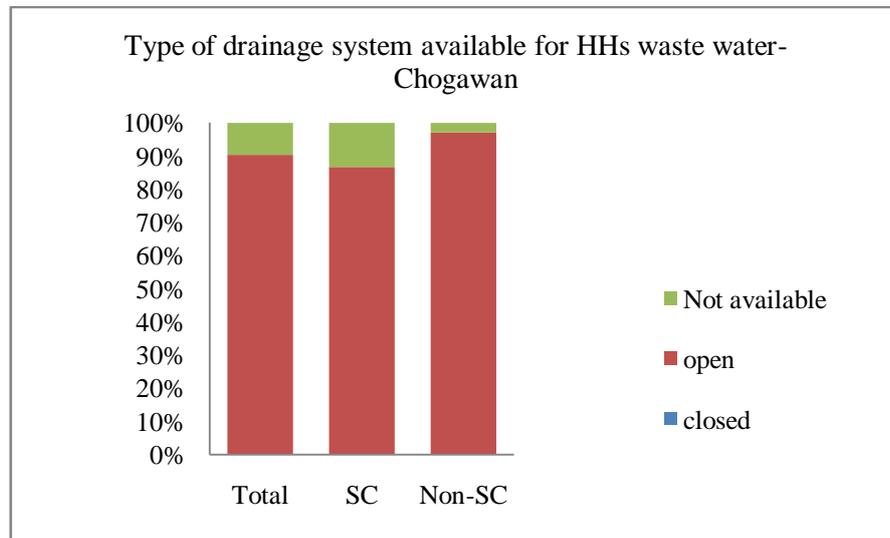
Source: Primary Field Survey

Disposal of waste water in Ajnala town is through open drain which is prevalent in whole of the town i.e. 100 percent of the HHs (households surveyed) recorded the existence of drainage but it is totally open drainage which is prone to many negative externalities. The fig. 7.19 shows the types of drainage system in Nangli and it is found that more than 29 percent HHs use closed drainage system which is clean and hygienic drainage system while use of closed drainage system among SC HHs is less than non-SC HHs i.e. by 14 percentage points.

In Ajnala all the HHs use open drainage as there is no closed drainage in the surveyed wards. The officials of Nagar Panchayat stated:

“From the last 1.5 to 2 years the amount for the closed drainage has been sanctioned for the Ajnala nagar Panchayat, in the last year also the equipments for the closed drainage like big pipes to connect drainage to sewerage has been lying on the streets but no work has been started yet because of some administrative hurdle and also money allotted to this is also very less”.

Fig. 7.20 Types of Drainage system available for HHs waste water outlet in Chogawan (size class V town)



Source: Primary Field Survey

In Ramdas, which is Census town of size-class V, 100 percent HH having open drainage which is prone to health problems especially in rainy season which causes diseases like dengue, malaria etc. The municipal authorities told that already a fund has been passed by the state govt. for closed drainage in the town.

“I am born in Ramdas and since the time of my schooling I am listening that the streets and drainage would be cemented (pucca) and closed. Even in last 3-4 years we kept listening that funds have come but still no work on closing the drainage for waste water have been started”.

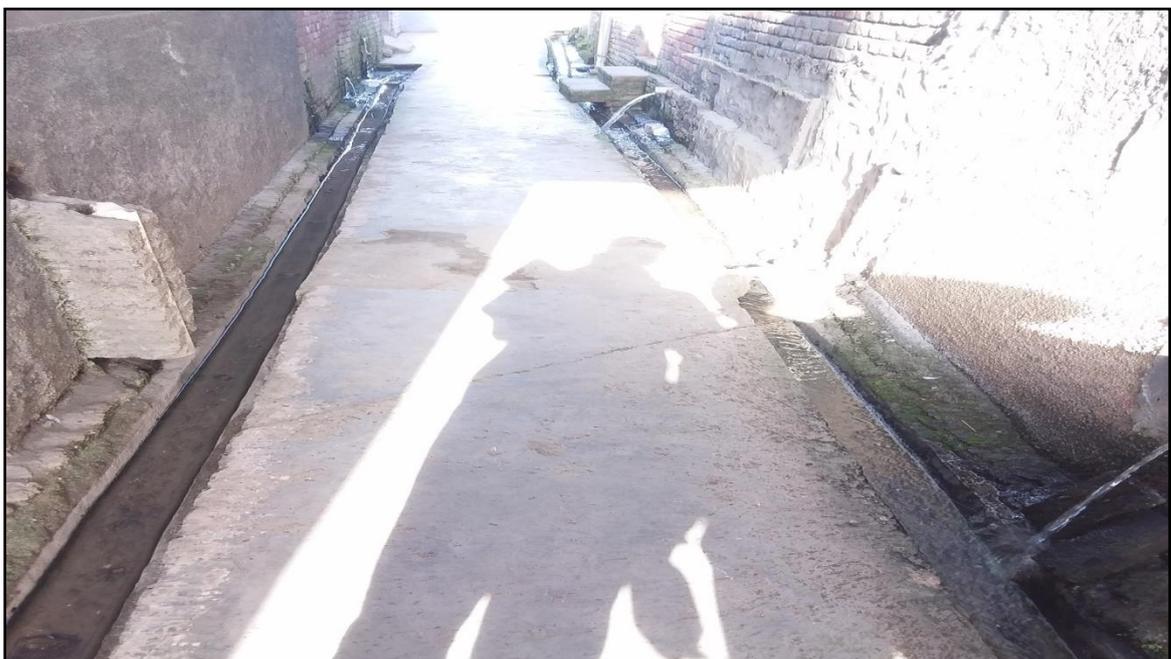
Resident of Ramdas, 38

The condition of the drainage for waste water outlet is not good for the Ramdas town where there is totally open drainage but the picture is too dismal in Chogawan town where there is more than 9 percent of the total HHs have no drainage system at all, they either throw waste water on streets or in open fields etc. The non-availability of the drainage is higher in SC HHs i.e. more than 13 percent as compared in non-SC HHs.

Pic.9 Hygienic drainage system for waste water disposal in HHs is one of the key determinants of hygienic sanitation services. Waste water thrown in front of the house in newly built colony of the Nangli town.

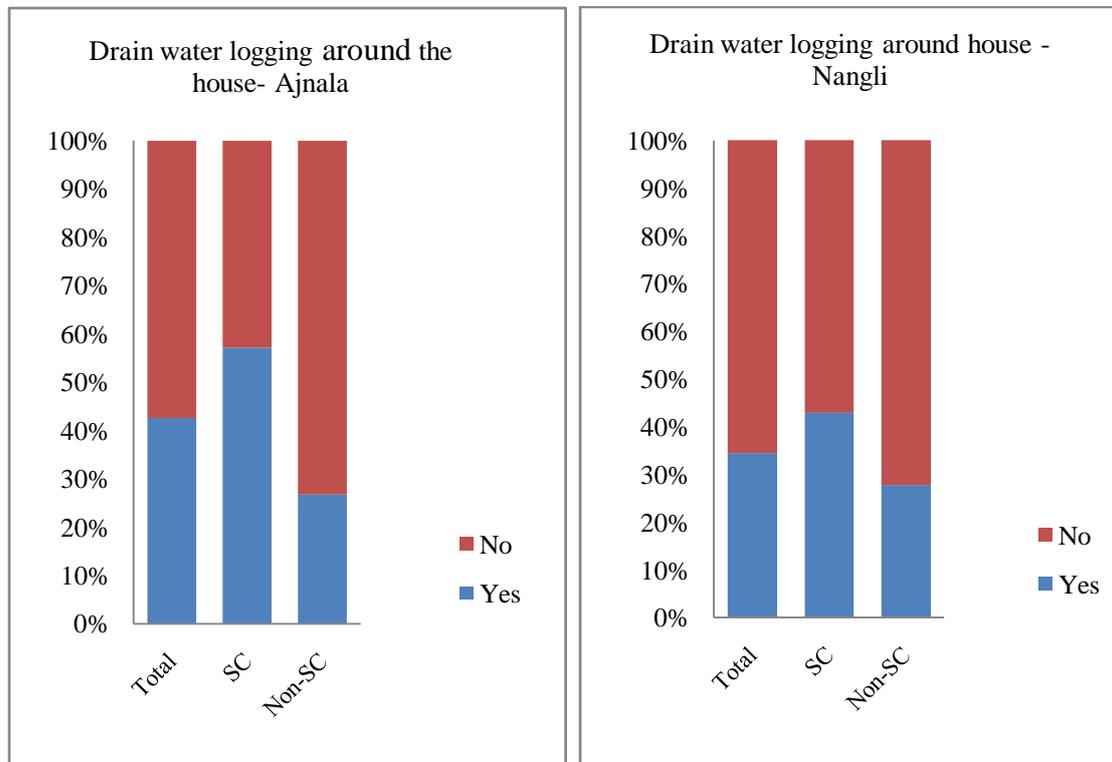


Pic.10 Open drainage system for waste water outlet is found in whole of Ajnala town.



Source: Photos clicked during the Primary field survey

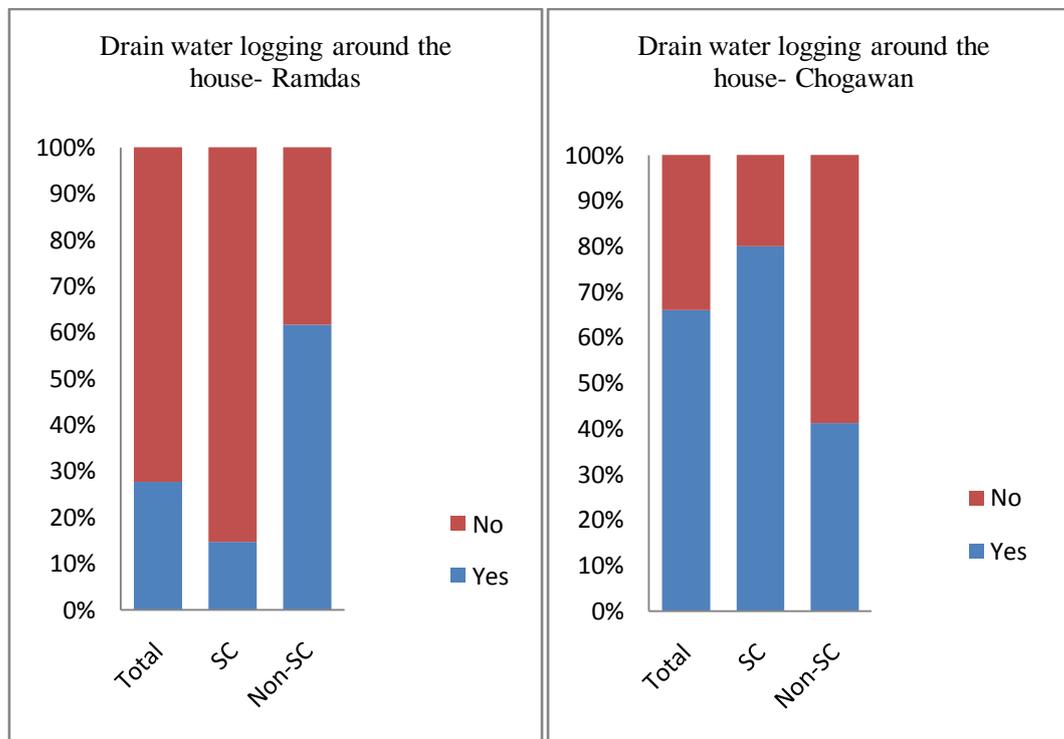
Fig. 7.21(I and II) Proportion of HHs where drain water logged around the house in Ajnala and Nangli (size class III towns).



Source: Primary Field Survey

Hygienic drainage is not just the availability of the closed drainage but also about whether the drains are cleaned regularly or not. If the drains are not maintained and cleaned properly mainly open drains which are prone to clogged down due to garbage or other waste, water logged in streets and around house. Fig. 7.21 (I & II) presents the comparison between Ajnala and Nangli about the percentage of households where drain water logged around the houses. In Ajnala more proportion of households responded that the drain water gets logged around their houses as comparison to the households in the Nangli. In Ajnala town approx. 60 percent of SC households said about the drain water logging around the houses and this number is more as compared to the non-SC households. In Nangli town also the same pattern is observed where more SC HHs observed drain water logged around the house which means that drains are not cleaned and maintained properly and regularly.

Fig. 7.22(I and II) Proportion of HHs where drain water logged around the house in Ramdas and Chogawan (size class V towns).



Source: Primary Field Survey

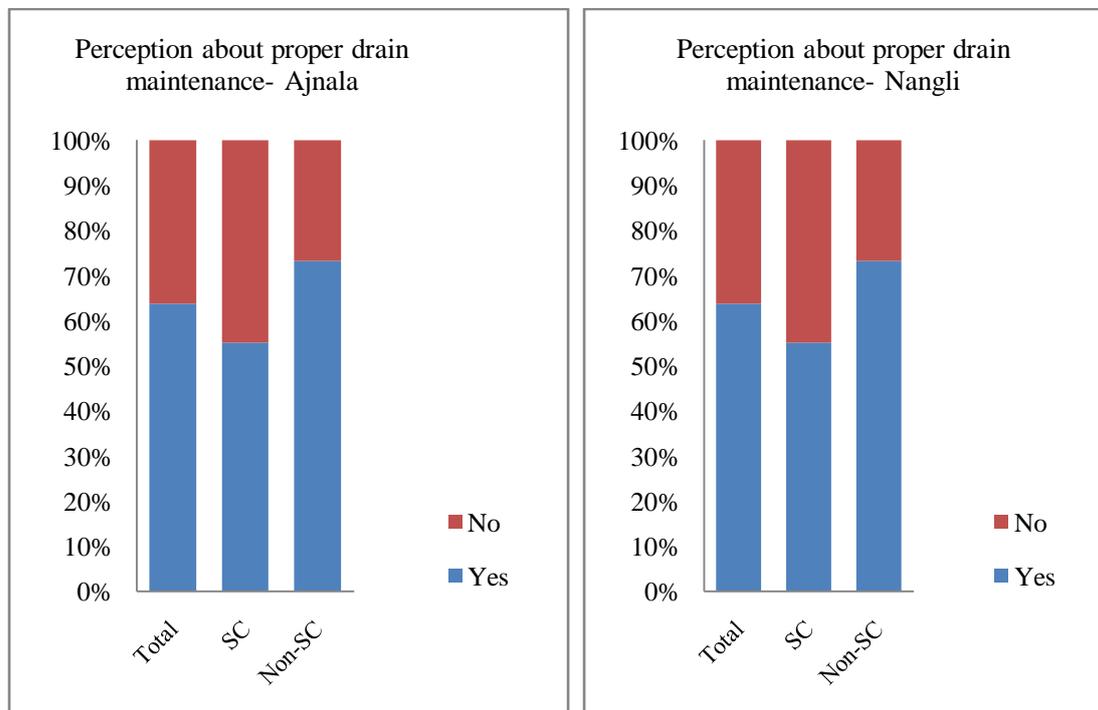
The above *fig. 7.22* depicts the perception of the people and their observation regarding the drain water logging in the size class V towns of Ramdas and Chogawan. In Ramdas approx 28 percent of the households say that water is logged around their areas while this percentage is as high as 65 percent in the town of Chogawan. It shows that the drainage condition and the people's satisfaction with it in the Ramdas are higher than that in Chogawan. The drains in Chogawan town are open for more than 80 percent of the HHs. the condition in Chogawan town is worse as around 10 percent of HHs do not have any drainage at all which have pits around house to collect waste water and emptied it weekly or so. It is interesting to see that in Ramdas town around 60 percent of non-SC and 15 percent of SC houses have observed the water logging around their houses which is totally opposite to Chogawan town where approx 80 percent and 40 percent of SC and non-SC respectively observed the drain water logging around their houses. Higher number of non-SC HHs observed water logging around their houses in Ramdas may be because of the fact that more non-SC resides in new colonies and residential areas and

also *dera HHs* (HHs outside main residential regions) have no proper drainage which are mainly belonged to non-SC HHs.

Pic.11 and 12 In census towns of small size class (V and VI), the drains are in very unhygienic condition. The pictures below showing the blockage of street drain which have even blocked the street and led to spread of diseases. There is no proper and regular cleaning of drains in census towns. (Source: Photos clicked during the Primary field survey)



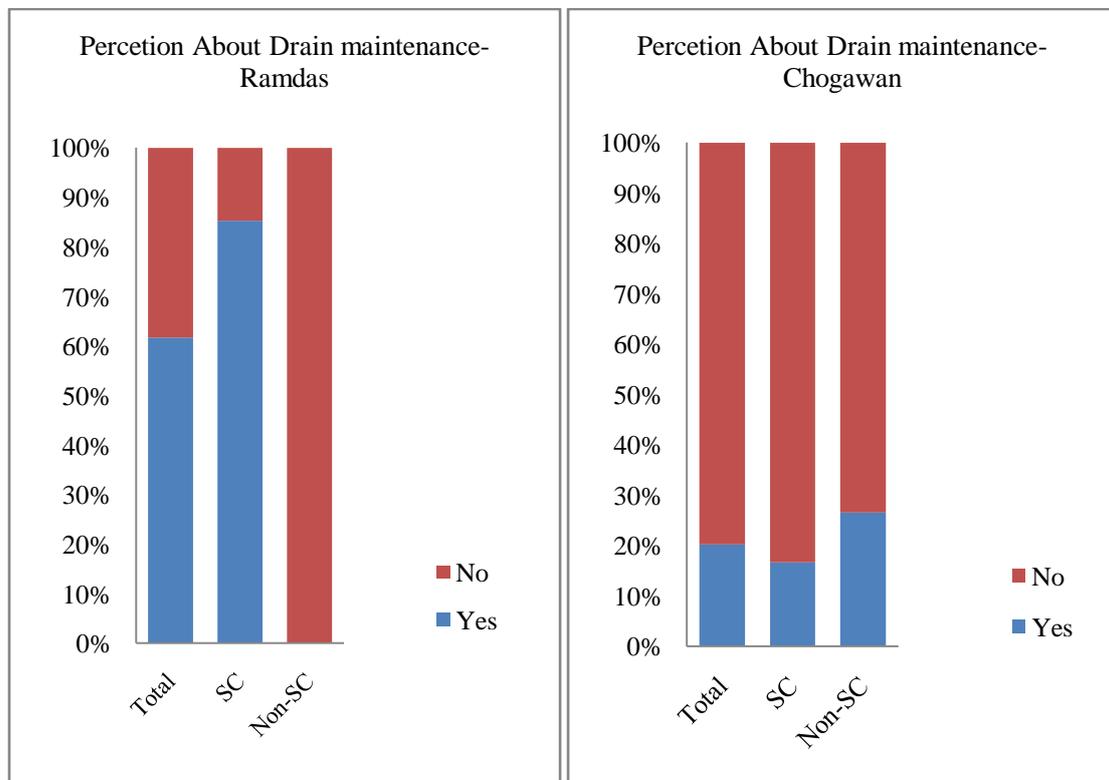
Fig. 7.23(I and II) Proportion of HHs having different perception about drain maintenance by ULBs in Ajnala and Nangli (size class III towns)



Source: Primary Field Survey

Above figures represent the perception about drain maintenance in the size class III towns of Ajnala and Nangli in Amritsar district. It shows that in Ajnala about 65 percent of the households believe the drain is maintained properly by the Municipal bodies whereas approx 48 percent households in Nangli believe the same. SC and non-SC households in the Ajnala observed the huge difference of approx 20 percentage points means non SC perception about the proper drain maintenance is approx 72 percent. In Nangli town only 40 percent SC households believe that drains are being maintained properly while only 55 percent non SC households believe the same.

Fig. 7.24(I and II) Proportion of HHs having different perception about drain maintenance by ULBs in Ramdas and Chogawan (size class V towns)



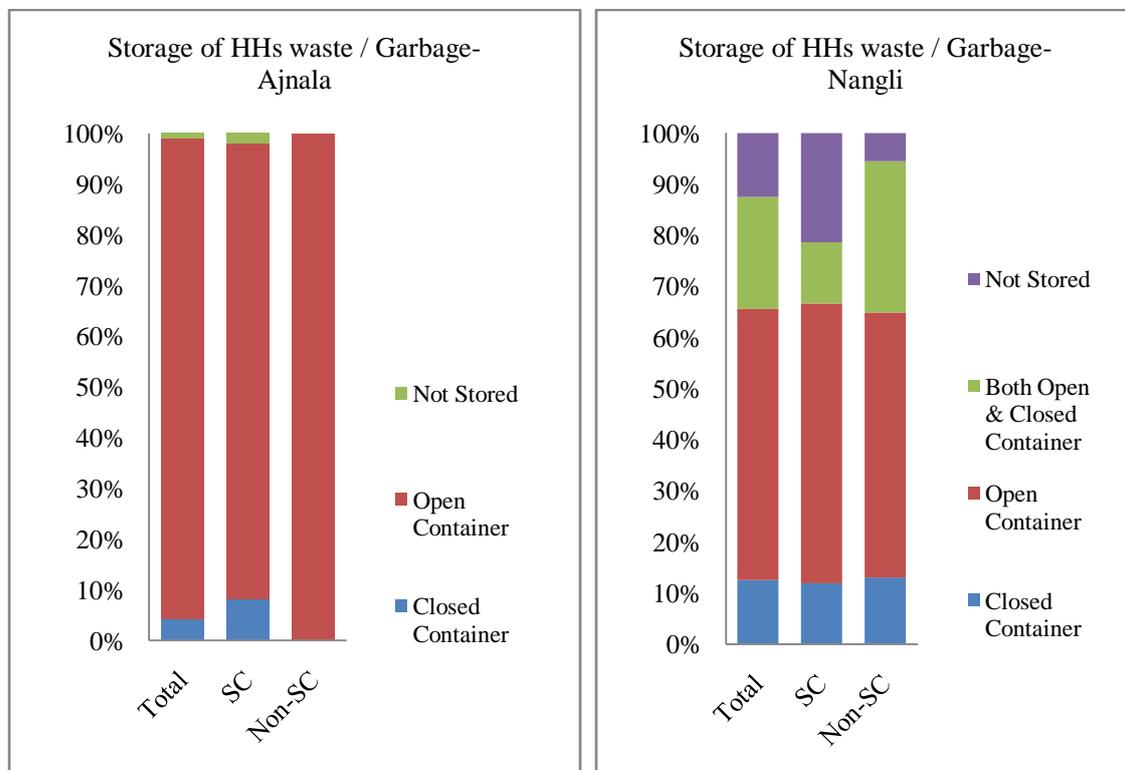
Source: Primary Field Survey

Fig. 7.24 represents the level of satisfaction about drainage maintenance in the size class V towns of Ramdas and Chogawan. In Ramdas percentage of the households satisfied with the maintenance of drain is approx 60 percent while in the Chogawan town only 20 percent HHs are satisfied. The comparison of the SC and non SC households about their perception regarding the drain maintenance present a huge variation in the Ramdas town as approx 90 percent of the SC households are satisfied with the drain maintenance while less than 5 percent of non SC households are satisfied with the maintenance and this may be due to their differences in income and standard level. In Chogawan both SC and non SC households are not much satisfied with the drain maintenance in the town because of the fact that the responsibility of the drain maintenance in census town is not clearly defined as in Chogawan.

7.3.4 Garbage / waste collection and its disposal

Increasing urbanisation in India has not only accentuated the problems like shortage of housing, lack of access to safe drinking water, safe and clean fuel, hygienic toilet and drainage facilities but also waste generation and solid waste management in urban India has increased to unprecedented level. It is a major concern especially since the last two decade when waste collections, use of landfill sites, segregation of waste at source are at the centre of urban basic amenities. As told by the ULB authorities in Ajnala, in urban Punjab due to shortage of land for waste dumping, the municipal authorities started throwing the urban waste into the backyards of smaller towns and villages. And when village turns into town and smaller towns converted into cities, the problem gets accentuated. Therefore waste collection and its hygienic disposal methods are central to sustainable urban development. This section looks into the garbage and waste collection methods and its disposal in four surveyed towns of Amritsar district.

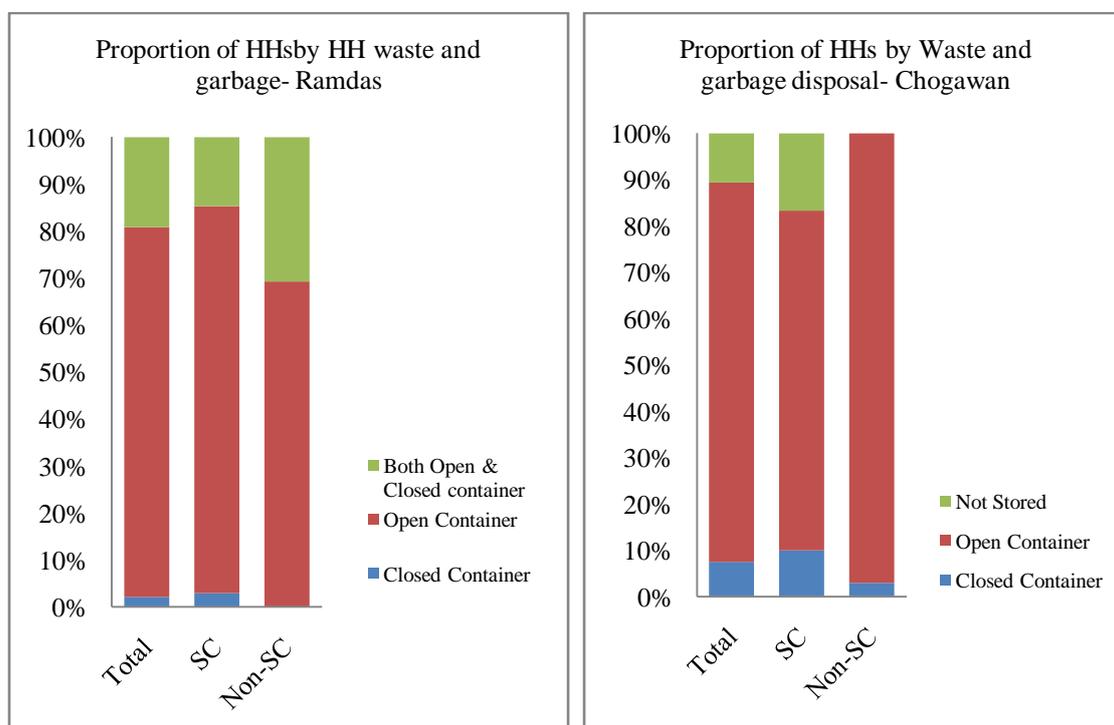
Fig. 7.25(I and II) Proportion of HHs according to medium of collection of garbage in Ajnala and Nangli (size class III towns)



Source: Primary Field Survey

In the surveyed towns of size class III as shown in *fig. 7.25*, it has been found that more than 99 percent of the total HHs use container to stored the household garbage in Ajnala town but then the question raised whether the container used in the garbage or waste storage is hygienic or not? It has been found that only 4 percent of the total households use closed containers for waste or garbage disposal which is considered as hygienic garbage disposal system as it doesn't cause foul smell and also keeps away mosquitoes, houseflies and hence diseases. In the SC HHs the use of closed containers in the form of closed buckets, dustbins etc. are only 8 percent of the total HHs and 92 percent SC HHs use open containers for the HHs garbage and waste which are prone to diseases and is unhealthy. 100 percent non-SC HHs uses open containers for garbage disposal. In Nangli town (newly emerged size class III) it has been found that even the majority of urban HHs use open containers for the HHs waste and garbage disposal i.e. more than 53 percent of the total HHs but still there is an increase in proportion of HHs uses closed containers by more than 12 percent of total HHs as compared to Ajnala town where only 2 percent HHs use them. Also more than 21 percent of the total HHs use both closed and open containers (not fixed method of storing waste). It is important to note that in Ajnala where there is less than a percent of HHs which do not store HHs waste and garbage, in Nangli there are more than 12 percent of total HHs which do not store garbage in containers but either they throw it in open plot nearby or throw roadside or in the nearby field. Among SC HHs only 12 percent uses closed containers and more than 21 percent of total SC HHs do not used any containers for HHs garbage. The non storage of HH garbage or waste is low among non-SC HHs i.e. only 5 percent of the total HHs. It is mainly because of the fact that non-SC HHs uses their fields to throw the waste and garbage.

Fig. 7.26(I and II) Proportion of HHs according to collection of garbage in Ramdas and Chogawan (size class V towns)



Source: Primary Field Survey

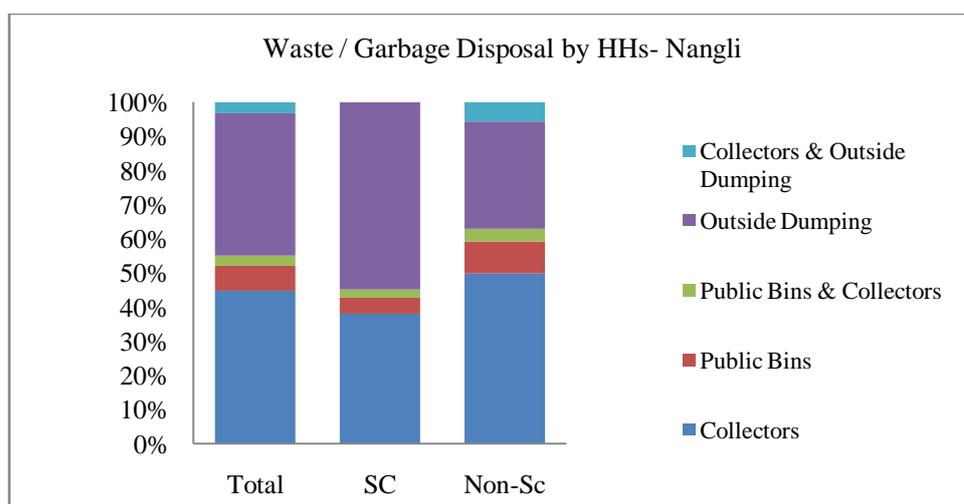
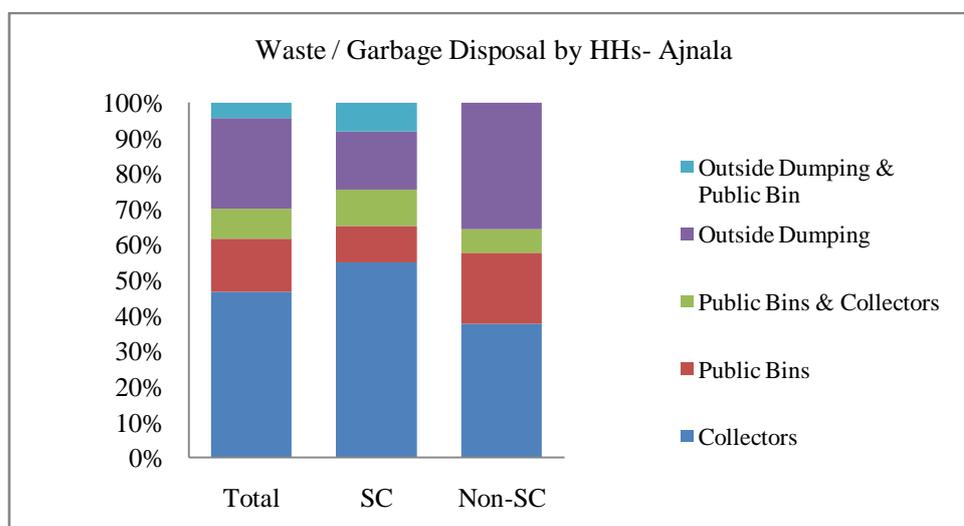
In Ramdas the condition related to the storage of the house waste and garbage is worse as only 2 percent of the total HHs use closed containers for the waste/ garbage storing purpose and more than 78 percent of the HHs use open containers for the waste storage which is unhygienic and contagious and give births to diseases. In Chogawan town though the proportion of the HHs uses closed container for garbage storage is 7 percent of the total HHs but it is observed that 82 percent of the total HHs use open containers for waste and garbage storage. In fact in Chogawan more than 10 percent of the HHs does not stored HH waste and garbage and it is noted that all these households are SC HHs as shown from *fig. 7.26 (II)*. All the non-SC HHs in both Ramdas and Chogawan store house garbage and waste in closed containers or open containers or both where the garbage can be collected by the municipalities and dumped safely unlike the non stored garbage.

After storing the waste and garbage by the HHs, the disposal of garbage is the essential part of the sewerage and sanitation hygiene. The next section looks for the disposal of waste and garbage by different methods by HHs.

Pic.13 and 14 In Nangli town (newly emerged census town of size class III), HHs garbage is thrown in open spaces like open plots, nearby fields, alongside roads etc. because there is no regular collection of the HH garbage by the municipality.



Fig. 7.27(I and II) Proportion of HHs by use of different methods for garbage disposal in Ajnala and Nangli (size class III towns)



Source: Primary Field Survey

In Ajnala more than 46 percent of the total HHs disposed their garbage and waste through collectors which collect waste from streets and houses in different municipal vehicles. The frequency of the garbage collection by municipalities is also an important indicator of hygienic sewage system. Frequency of garbage collection is analysed in next section (fig. 7.28). Garbage and waste of more than 46 percent of HHs are disposed through ‘collectors’ in Ajnala but the dismal picture is that it is followed by outside dumping of waste by the HHs i.e. more than 25 percent of HHs use outside dumping for waste disposal. The dumping is generally nearby empty plots, nearby field or nearby some

public parks, besides govt. buildings etc. Also in Ajnala more than 14 percent of the total HHs use public dustbins for the garbage disposal. In Nangli, more than 45 percent of the total HHs dispose their waste through collectors of municipality which is almost same like Ajnala. But outside dumping is used by more than 41 percent of the total HHs which is 16 percentage more than that of Ajnala town, it may be because of the fact that Nangli is the new town and the building construction, empty plot of lands are there and hence easy for the people to dump waste outside and also the installation of public dustbins is not completed yet as seen from the data that in Nangli only 7 percent of the HHs use public bins for waste disposal.

Pic.15 In Ajnala town (Nagar Panchayat, town of size class III), there is small piece of land for dumping of HH garbage disposal. The picture below shows the dumping ground where waste is burning.



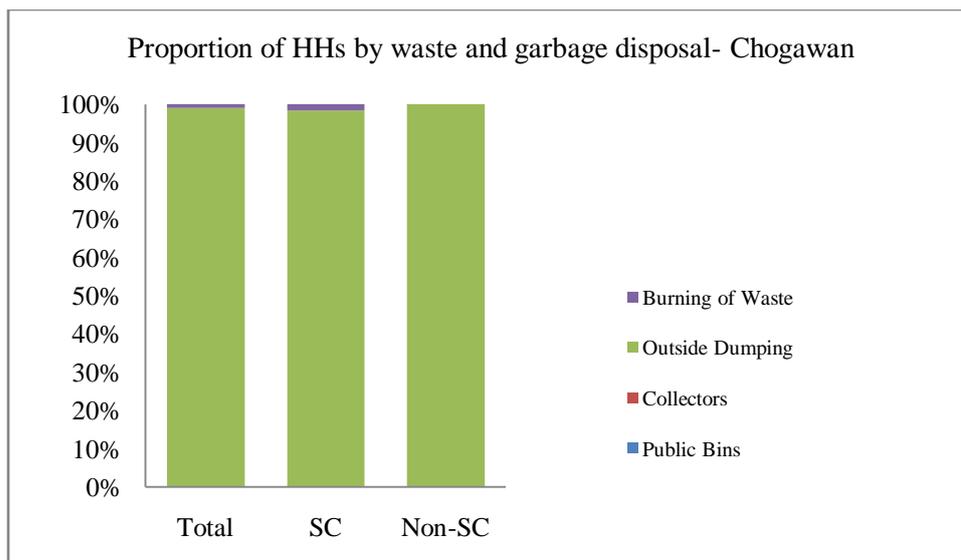
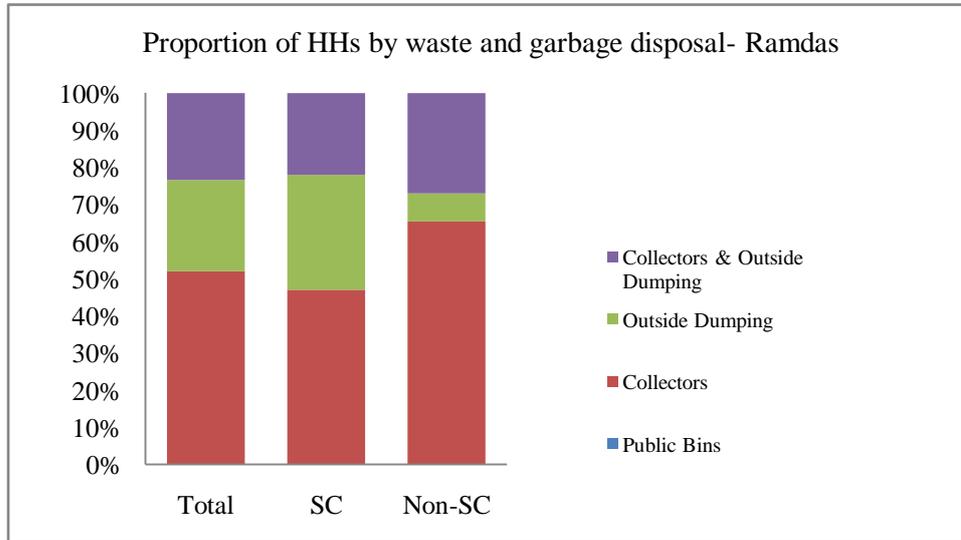
Source: Photos clicked during the Primary field survey

Pic. 16 The garbage collected by the municipalities is thrown alongside roads in scarcity of the land for garbage disposal in town of Chogawan (census town of size class V).



Source: Photo clicked during the Primary field survey

Fig. 7.28(I and II) Proportion of HHs by use of different methods for garbage disposal in Ramdas and Chogawan (size class V towns)

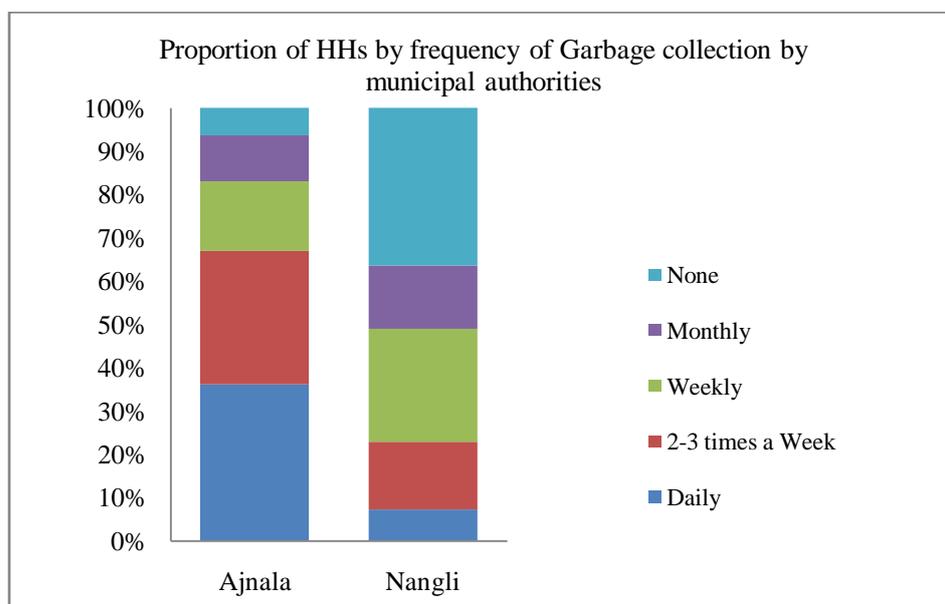


Source: Primary Field Survey

The above figure shows how the stored waste by the household gets disposed or what are the ways to dispose the HH's waste and garbage? In Ramdas towns it has been found that there is no usage of public bins for the HH waste but 52 percent of the total HHs dispose the garbage through 'collectors' by municipality and it is followed by outside dumping i.e. by 24 percent of the total HHs. In Ramdas, outside dumping of the waste is more in SC HHs than in non-SC HHs i.e. 31 percent and 7 percent respectively. There is worse condition prevailing in Chogawan town as more than 98 percent of the total HHs dumped their waste outside in open fields and alongside roads (one can see heaps of garbage

thrown) and the rest 2 percent burn the waste which is more dangerous for hygienic purpose as well as from the ecological point of view.

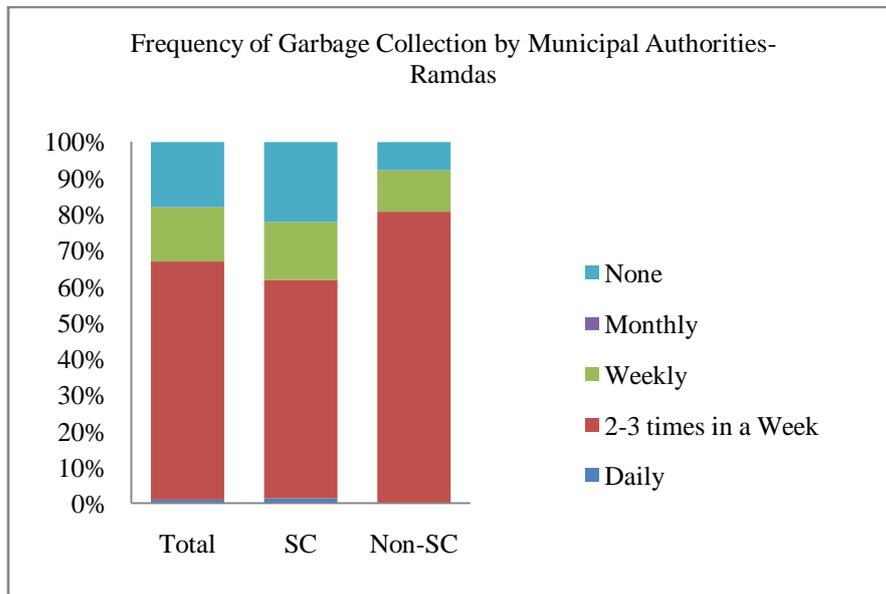
Fig. 7.29(I and II) Proportion of HHs according to frequency of garbage collection by ULBs in Ajnala and Nangli (size class III towns)



Source: Primary Field Survey

The garbage collection is the responsibility of municipal authorities and as we can see from the analysis in previous section that only 45 percent of total HHs uses collectors for garbage and waste collections in size class III towns. But it is also important to see the frequency of garbage collection by the municipality to check whether the garbage properly and timely collected. In Ajnala more than 46 percent of HHs observed the daily collection of the garbage followed by 31 percent HHs recorded garbage and waste collection at least 2-3 days in a week. But in Nangli only 7 percent of the total HHs responded that there is daily garbage collection followed by 15.6 percent HHs responded 2-3 times a week collection of garbage by the municipal authorities. In Ajnala around 16 percent of the HHs observed that there is a weekly collection of HHs garbage as opposed to 26 percent of total HHs in Nangli. It is observed that in Ajnala only 6 percent of the HHs responded that there is no collection of house waste and garbage by the municipalities whereas it is 6 times higher in Nangli i.e. 36 percent of the total HHs responded that there is no waste and garbage collection. They either throw the waste in the open places or either to the public bins.

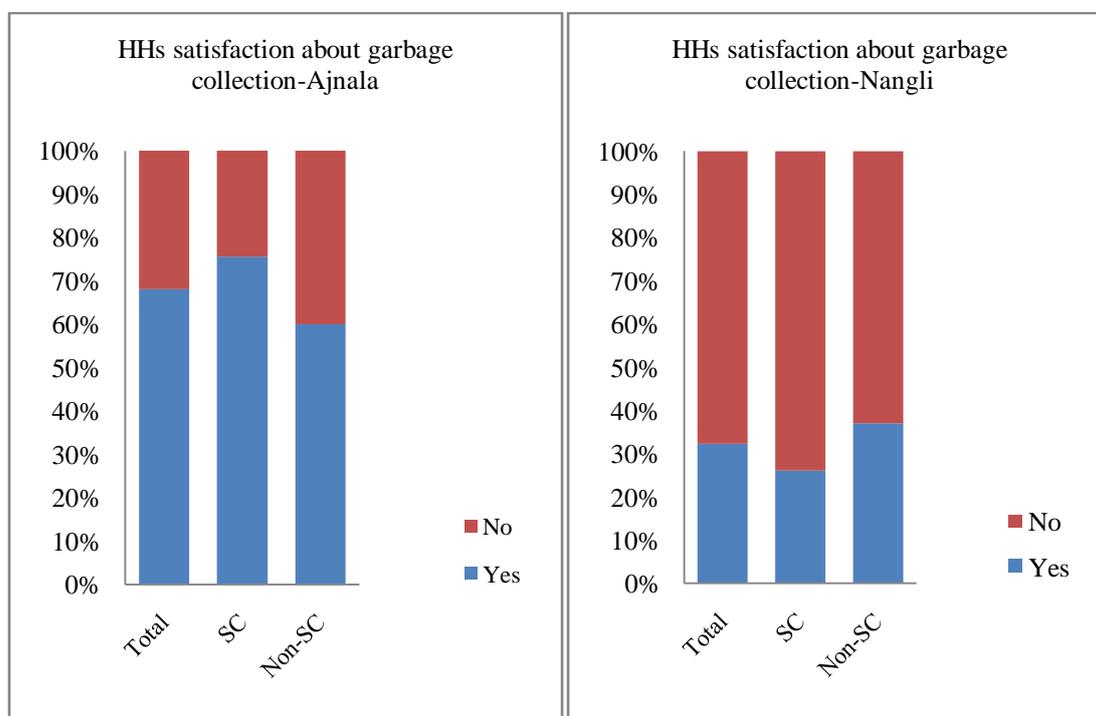
Fig. 7.30 Proportion of HHs according to frequency of garbage collection by ULBs in Ramdas (size class V town)



Source: Primary Field Survey

In Chogawan there is recorded no garbage or waste collection by municipal authorities. In Ramdas it is observed that for less than a per cent of HHs daily garbage collection by municipality takes place and around 66 percent of the HHs recorded the waste and garbage collection 2-3 times in a week which is observed by 60 percent of the SC HHs and around 80 percent of the non-SC HHs. It is noted in Ramdas that 18 percent of the total HHs recorded no garbage collection by the municipalities and it is 22 percent in case of the SC HHs where there is no garbage collection as oppose to just 7 percent for the non-SC HHs.

Fig. 7.31(I and II) Proportion of HHs satisfied with garbage collection by ULBs in Ajnala and Nangli (size class III towns)



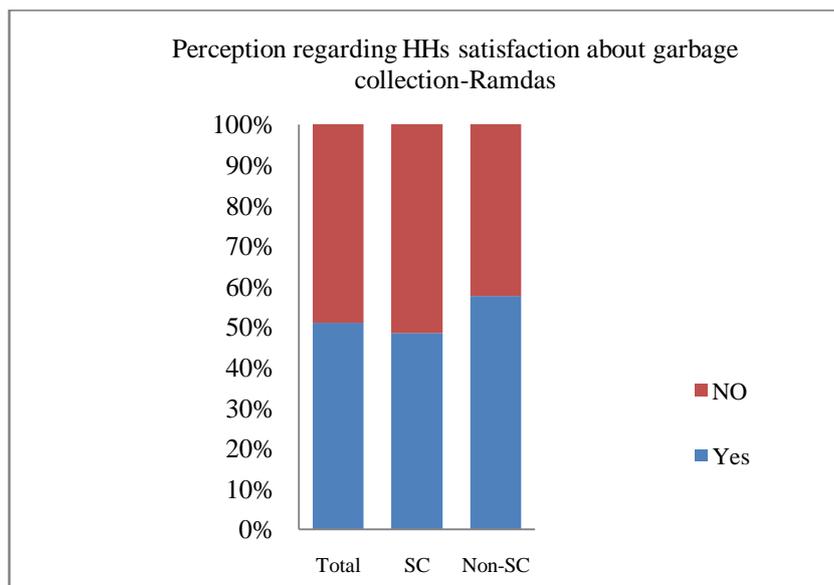
Source: Primary Field Survey

The HH perception about the garbage collection by the municipality is measured by asking questions whether the HH is satisfied about the collection of garbage and waste. In Ajnala it is found that more than 68 percent of the total HHs are satisfied with the garbage collection where the satisfaction is even more for the SC HHs i.e. more than 75 percent of the HHs are satisfied with garbage collection. In Nangli there is a different picture as only 32 percent of the total HHs are satisfied with the frequency and quality of garbage collection and more than 68 percent of the total HHs are responded negatively with the frequency of garbage collection by municipalities. As compared to Ajnala where more SC HHs are satisfied about the garbage collection in Nangli only 26 percent of the SC HHs are satisfied about the garbage collection. Nangli town has no proper municipal authority to look after garbage collection and hence the responsibility of the garbage collection lying with the different *Gram Panchayat's head* (three Sarpanch in town) of Nangli.

One of the workers who collect garbage stated that:

“...in Nangli there is not any permanent (regular) worker to collect the garbage and waste. We work with very low wages on behalf of the contractors and hence there is no regular collection of the garbage for every HHs. Nangli (town) needs more vehicles, workers for the cleaning of the HH garbage.”

Fig. 7.32 Proportion of HHs satisfied with garbage collection by ULBs in Ramdas (size class III town)



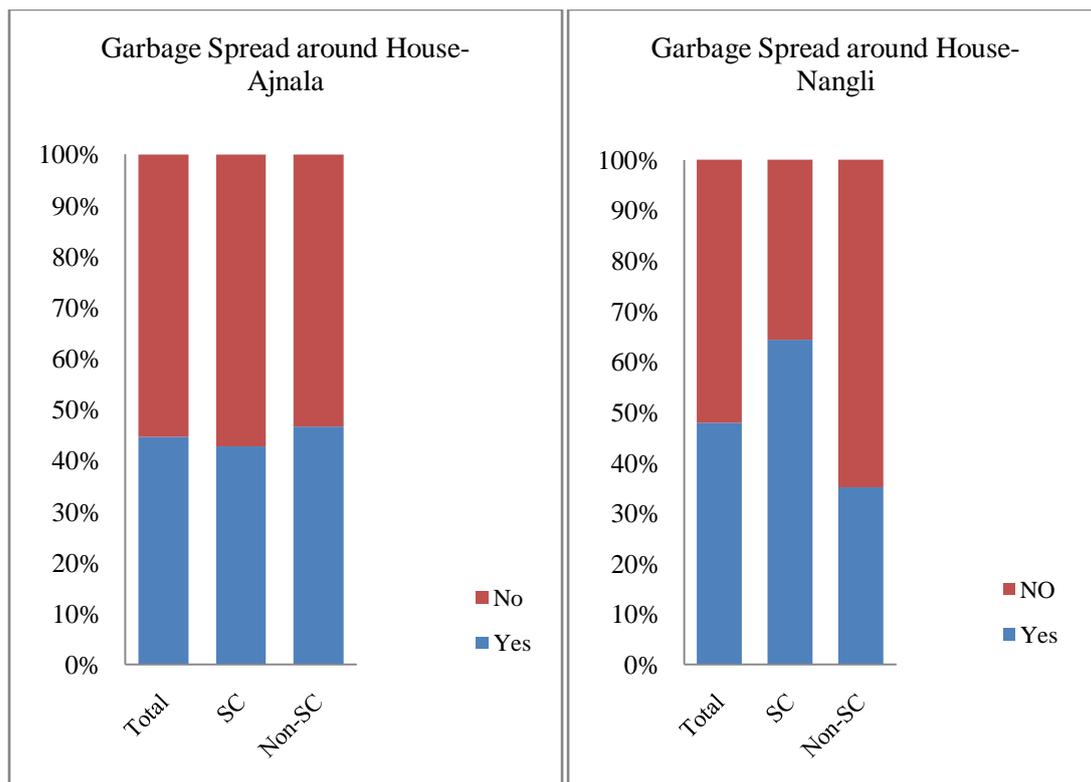
Source: Primary Field Survey

The fig. 7.32 shows the HHs perception about the satisfaction of garbage collection and to see whether HH is satisfied or not for garbage collection? In Ramdas it has been found that 51 percent of the total HHs responded positive that they are satisfied about the garbage collection by the municipal authorities. As we have seen above more than 65 percent HHs have seen 2-3 times in a week garbage collection in Ramdas and out of them 14 percent are not satisfied among them. Most of the HHs responded that garbage need to be collected on daily basis which is not taking place and hence 49 percent of HHs are not satisfied. It is almost same for SC and non-SC HHs regarding satisfaction i.e. 48.5 percent

and 57 percent respectively. In Chogawan town there is no garbage collection by municipal bodies and hence no question asked regarding HH's satisfaction and it is not appropriate for the people and for the town development with regard to urban basic amenities.

The garbage stored by the household does not properly and timely collected by the municipalities in addition to more than 12 percent of the HHs in Nangli that do not stored the garbage and hence they throw it either in open spaces like plots, fields etc. The garbage collected by the municipalities are not disposed properly lacking proper landfills to dump off the garbage or treat the garbage like solid waste treatment plants.

Fig. 7.33(I and II) Proportion of HHs where garbage spread around house in Ajnala and Nangli (size class III towns)



Source: Primary Field Survey

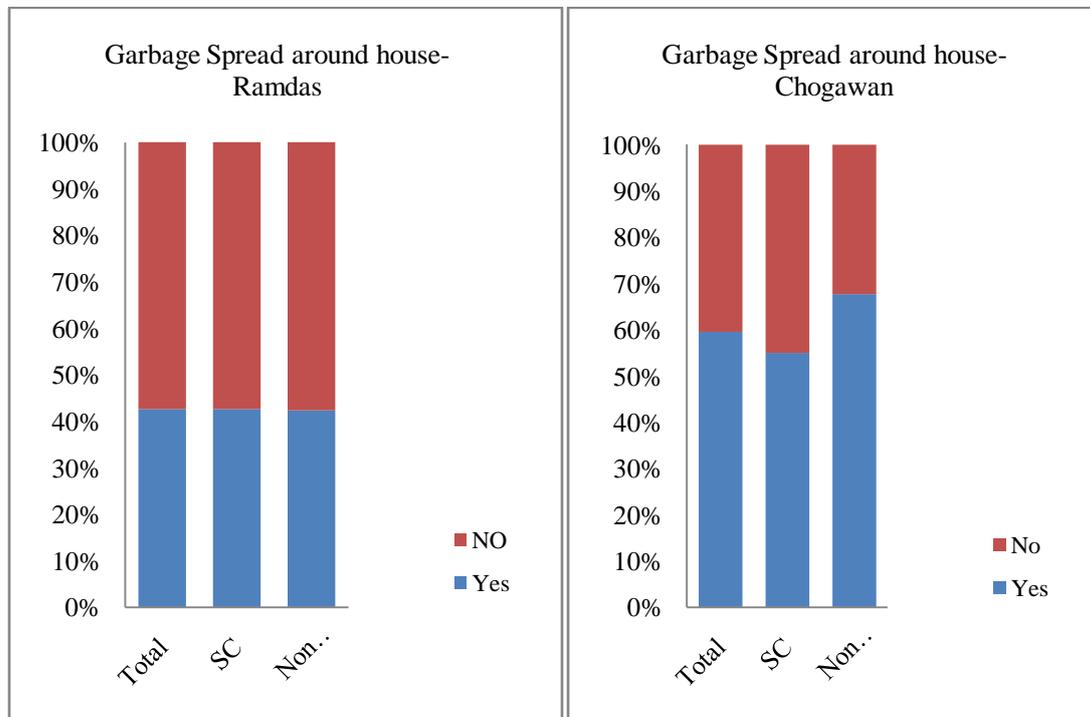
Although in Ajnala every HHs responded that municipalities collects the HH garbage but still the garbage is spread around for more than 40 percent of the HHs which means that either the garbage collected by the municipalities are not properly disposed i.e. at waste disposed sites or the HHs are not properly collected the garbage. In Nangli also it is more

than 47 percent of the HHs where garbage spread around the house, it is also observed that around SC HHs it is even worse i.e. around more than 60 percent of the houses. In Nangli town majority of the respondents said that the garbage spread in colonies due to the fact that this is a new town which has seen development in last 4-5 years and there are no proper mechanisms for garbage collection, transportation and treatment.

Resident of Nangli town, 62 age, SC

“All the rich people from the main city (Amritsar core area) shifted to or shifting here for more space and congestion-free atmosphere. In the last 4-5 years Nangli has witnessed a rapid growth in construction of roads, large kothis (bunglaws), parks, offices, etc. so there is huge dust, garbage, etc. There is no proper civic body responsible for cleaning drains, garbage collection and its treatment.”

Fig. 7.34(I and II) Proportion of HHs where garbage spread around house in Ramdas and Chogawan (size class V towns)



Source: Primary Field Survey

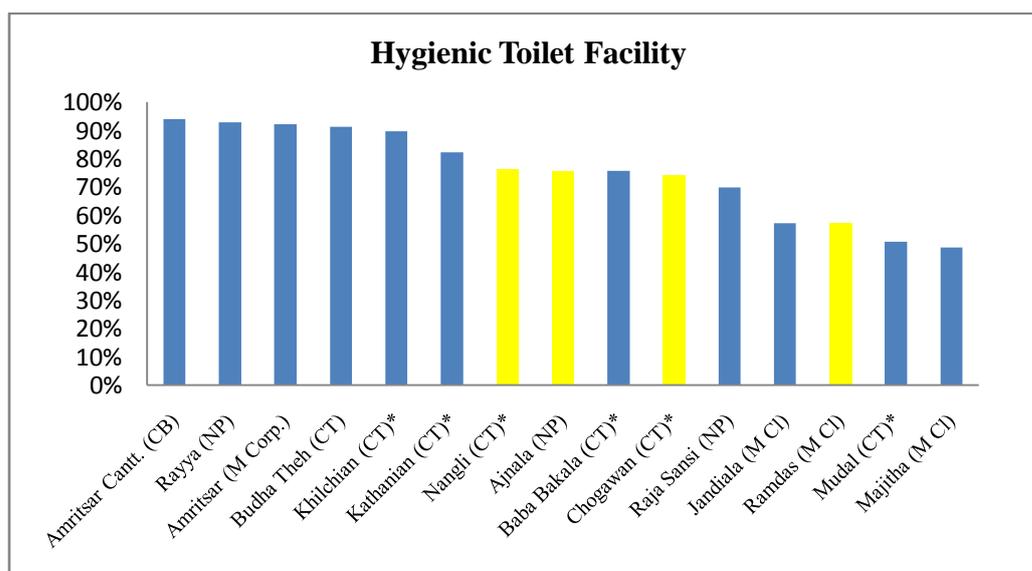
In Ramdas 42 percent of the total HHs have seen the garbage spread around their house for both SC and non-SC HHs as compared to Chogawan town where around 60 percent of the HHs are recorded the garbage spread around their house.

7.3.5 Hygienic Toilet facilities

In the four surveyed towns of Amritsar district, all the towns are open defecated free and almost all the HHs using toilet facilities. The availability of the toilet facilities gets a boost especially after the flagship programme by central govt. i.e. ‘Swachh Bharat Abhiyan’ in 2015, under which the construction and usage of toilet facilities are mandatory for every HH. It has benefitted mainly the poor and low income group HHs. Though the programme include many other aspects of sanitation like eliminate manual scavenging, municipal solid waste management etc. but they have been that successful as the construction of flush latrines as found during the field visit to four towns.

The fig. below shows the availability of hygienic toilet facilities to the HHs in towns of Amritsar district as recorded in census 2011.

Fig. 7.35 Proportion of HHs having hygienic toilet facilities in towns of Amritsar district, 2011



Source: Census of India, 2011, All India Town Directory, Punjab

In census 2011, towns like Nangli, Chogawan and Ajnala have 75 percent HHs used hygienic toilet facilities while Ramdas has only 57 percent HHs used toilet facilities. The picture has changed in five years as during the primary field visit in these towns in 2017, Nangli, Ajnala and Ramdas town were open defecated free while in Chogawan town (newly emerged town of size class V) 10 HHs were recorded to use open places for toilet. In as many as 12 HHs in Chogawan town, toilet is half constructed and not fit for use. It is noted here that all these HHs were SC HHs.

Resident of Chogawan town, 32 age, SC

“In last 4 months we only got one installment of 2 thousand rupees for the construction of flush latrines which is not enough for the full toilet construction, we just managed to dig pits and brought cement and bricks. Authorities told that another installment will be received after inspections but no other installment received yet and hence incomplete flush latrine..... we use neighbour’s latrine or go outside sometimes”.

Pic. 17 A woman showing the half constructed latrine in her house in Chogawan town due to non-release on installment on time, which forces the residents to go outside for toilet. (Source: Photos clicked during the Primary field survey).



Pic. 18 Another incomplete construction of a toilet in a HH in Chogawan town, picture showing the pits have been dug but afterwards no money reached the HH to complete the construction. (Source: Photos clicked during the Primary field survey)



7.4 Determinants of the quality of urban basic amenities in towns of Amritsar district (based on primary field survey)

Urban basic amenities to the HHs depends on many factors i.e. type of town (census or statutory town) where HH resides, per capita expenditure on basic amenities by the ULBs and socio-economic characteristics of the HH etc. Socio-economic attributes are crucial in determining the quality of basic services of the HH. For example literacy rate and higher educational attainment not only spread awareness regarding safe cooking fuel, safe drinking water, hygienic toilet services etc. but also aspires the HH to achieve the same. Similarly, high work participation rate particularly female participation rate leads to rise in the capability of the HH to attain high quality amenities. Though the provisioning of basic amenities in the towns is largely a responsibility of the ULBs but citizen role is

crucial also in the form of pressure groups like ‘welfare associations’ to put pressure on the authorities towards basic amenities. It has seen mainly in large towns mainly in Delhi, Mumbai and Jalandhar etc.

This section looks into the socio-economic determinants of the HH and how are they related to the quality of urban basic amenities of the HH. It has been done through the correlation technique for all four surveyed towns of Amritsar district.

Table 7.3 Correlation between socio-economic attributes and urban basic amenities in Ajnala, Nangli, Ramdas and Chogawan town

Relationship between socio-economic determinants and quality of urban basic amenities						
Urban basic amenities / Socio-economic determinants		SDW	SC_FUEL	HYG_DRAIN	H_GARB_DISP	H_GARB_STOR
AN_IN	Pearson Correlation	-.759	.434	.733	.150	.853
	Sig. (2-tailed)	.241	.566	.267	.850	.147
WPR	Pearson Correlation	.458	-.235	-.369	.061	-.654
	Sig. (2-tailed)	.542	.765	.631	.939	.346
FWPR	Pearson Correlation	.689	-.968*	-.173	-.986*	.173
	Sig. (2-tailed)	.311	.032	.827	.014	.827
SC	Pearson Correlation	.743	-.446	-.683	-.158	-.816
	Sig. (2-tailed)	.257	.554	.317	.842	.184
LIT	Pearson Correlation	-.804	.614	.611	.348	.682
	Sig. (2-tailed)	.196	.386	.389	.652	.318
F_LIT	Pearson Correlation	-.479	.209	.442	-.093	.724
	Sig. (2-tailed)	.521	.791	.558	.907	.276
** . Correlation is significant at the 0.01 level (2-tailed).						
* . Correlation is significant at the 0.05 level (2-tailed).						

Source: Primary field Survey

In the above table, the abbreviations are:

AN_IN	: Average Annual Income of the HHs
WPR	: Work Participation Rate
FWPR	: Female Work Participation Rate
SC	: Proportion of Schedule Caste Population (%)
LIT	: Literacy Rate
F_LIT	: Female Literacy Rate
SDW	: Safe Drinking Water
SC_FUEL	: Safe Cooking Fuel
HYG_DRAIN	: Hygienic Drainage System
H_GARB_DISP	: Hygienic Garbage Disposal
H_GARB_STOR	: Hygienic Garbage Storage

The above *table 7.3* highlights the relationship between the socio-economic attributes and the quality of urban basic amenities of the households in the towns surveyed through primary field visit. Average annual income of the HHs is one of the important determinants of the quality of urban amenities which is seen from the above table. Safe cooking fuel available with the HHs, hygienic drainage and hygienic garbage storage are positively related to the average annual income of the HHs. Annual income of the HHs is also positively related to the hygienic garbage disposal. It is important here to mention that annual income of the HHs is highly negatively related to the safe drinking water availability to the HHs. It shows that the increase in the annual income doesn't related to the safe water supply as all the HHs responded that it is the core responsibility of the municipalities, hence HHs preferred to improve other amenities rather drinking water mainly among SC HHs.

It has been seen that the total work participation rate in these towns is positively correlated with safe drinking water supply to the households which means that as the worker's participation in the economy increases it led to increase in the safe water supply to the HHs. Female work participation rate is also highly positively correlated with safe drinking water supply i.e. 0.69 similarly to WPR where the correlation is 0.46. Female workers have a direct association with safe drinking water supply because women are closely associated with water supply works like carrying water, storing of water etc. Female WPR is not significantly related to other urban basic amenities indicators. It is

here important to mention that in Punjab, female WPR is very low as compared to other states and similarly the towns surveyed have observed just 15 percent female workers.

Punjab has the highest proportion of SC population mainly concentrated in Amritsar and Jalandhar district and hence it is essential to analyse the relation between the proportion of SC population and urban basic amenities in the HHs. The high proportion of the SC (Scheduled Caste) in the towns of Amritsar district is negatively correlated with safe cooking fuel, hygienic drainage, hygienic garbage storage and disposal. It means that the towns where there is high proportion of SC population the quality of urban amenities are not in good condition. The towns with high SC population have unhygienic drainage system like open drainage, unhygienic garbage storage and disposal like open containers or throw in open field and areas, no proper collection of garbage by municipality happened.

Literacy and education are the essential determinants of the urban basic amenities as educated and literate people acted quickly in decision making related to the health of the family (*Kitamura et al., 2015*)¹. As shown in the above table, total literacy rate in towns of Amritsar is highly correlated with hygienic garbage storage, safe cooking fuel, hygienic drainage and hygienic garbage disposal. It means that literacy makes people aware about the importance of urban basic amenities and hence increase in the use of closed containers to store HH garbage, hygienic disposal of collected garbage like in municipality containers, public dustbins etc. Female literacy rate is also highly positively correlated with safe cooking fuel used by HH along with hygienic drainage and highest correlation with hygienic garbage storage. Women are mainly associated with household chores and kitchen work and hence female education plays an important role in proper garbage storage and hygienic disposal of it.

Both total literacy rate and female literacy rate are highly negatively correlated with safe drinking water supply i.e. literacy rate is not the only determinant of the safe water supply as majority of the population responded that it is the responsibility of the urban local body to provide drinking water to every household. The majority of the SC HHs responded that

¹ Kitamura, Yuto, Yamazaki, Eri, Kanie, Norichika, Edwards Jr., D. Brent, Shivakoti, Binaya Raj, Mitra, Bijon Kumer, Abe, Naoya, Pandyaswargo, Andante Hadi and Stevens, Casey (2015). Linking Education and Water in the Sustainable Development Goals. *UNU-IAS, Policy Brief #2*.

the non-affordability of the borewells or R.O. for cleaning water is the main reason for dependence for drinking water supply on ULBs.

7.5 Conclusions

For the present study, around 400 households have been surveyed in four different towns of Amritsar district, here the quality of urban basic amenities has shown different trends and pattern which are as:

- The use of public tap for drinking water supply is higher amongst the SC HHs as compared to non-SC HHs, where there is the use of tubewells and private tap are more. It has been clearly recorded in the relationship between annual income of the HH and sources of drinking water supply that only 8 percent non-SC HHs uses public tap while more than 90 percent SC HHs use it as major source of drinking water. Non-affordability is the main reason behind non-usage of tubewells and private tap by SC HHs. The main reason behind the use of tubewells and private tap for drinking water by non-SC HHs is that public tap water is time bound and of limited quantity.
- The people's perception about the quality of drinking water supplied by the ULBs showed that non-SC HHs are more satisfied about quality in new town of Nangli as compared to old town of Ajnala. In Nangli town the water supply lines are new and the quantity of water supplied is also optimum as compared to Ajnala town where timings and frequency of water supply is not adequate to meet the drinking water requirements. The same pattern has been observed in class V towns of Ramdas and Chogawan. The perception about the quality of drinking water used by the HHs recorded that more than 28 percent SC HHs in old town (Ajnala) responded negatively as regularly poor quality of water as compared to only 7 percent SC HHs in new town (Nangli). While there is totally opposite pattern found in small towns where around 90 percent SC HHs have responded positively about regularly good quality of water in old town of Ramdas and Chogawan, here non-SC HHs are not satisfied with the quality of drinking water.

- Analysis of the safe sources of cooking fuel used by the urban dwellers shows that in Ajnala more than 75 percent HHs use LPG as cooking fuel source across SC and non-SC HHs while in Nangli there is clear difference observed as only 52 percent SC HHs use LPG as cooking fuel as compared to more than 74 percent non-SC HHs. In small towns of Ramdas and Chogawan, it has been found that the overall use of safe cooking fuel is less in comparison of class III towns. In Ramdas only 32 percent SC HHs uses LPG as cooking fuel which is just 5 percent among SC HHs in Chogawan town. On the other hand, more than 70 percent non-SC HHs in Ramdas use LPG and in Chogawan 11 percent HHs use LPG and more than 8 percent HHs use Gobar gas for cooking purpose. Gobar gas as a cooking fuel use only by non-SC HHs.
- Annual income of the HHs is directly related to the use of safe sources of cooking fuel mainly in the form of LPG. It has been observed clearly in Nangli that as the income of the HHs increases the use of LPG increases correspondingly to the fact that HHs with annual income of more than 2.5 lakh per annum only use LPG as cooking fuel in both towns i.e. Ajnala and Nangli. Though the average annual income of the HHs are less in class V towns but the usage of cooking fuel pattern is same as income increases use of fuelwood decreases and corresponding use of LPG increases. In Chogawan town even the HHs with highest income use fuelwood as cooking fuel source.
- Hygienic drainage is critical not only for the health of the households but also have positive externality for the people in locality as it keeps away diseases, fouls smell etc. In three out of the four towns surveyed i.e. Ajnala (nagar Panchayat), Ramdas (municipal council) and Chogawan (census town) there is no closed or hygienic drainage. Whereas in Nangli only 29 percent of the HHs has closed drainage for waste water outlet and it is even worse in Chogawan where there are around 10 percent of the HHs who don't even have drainage at all.
- The condition of drainage is even worse when we looked at water logging around houses or fields and it has been found that more than 42 percent of the HHs in Ajnala and more than 34 percent of the HHs have water logged around the house in absence of proper drainage and even no drainage at all. The condition of water logging around the house is more prominent in SC locality as more than 57

percent and 42 percent SC HHs in Ajnala and Nangli respectively are suffering from water logging situation. In Chogawan town more than 67 percent HHs have water logged around their house.

- People perception about drain maintenance is more satisfactory in statutory towns as compared to census towns as shown in surveyed data. More than 62 percent of HHs each in Ajnala and Ramdas responded regular cleaning of drainage by ULBs while regular cleaning respondents are very low in census towns.
- In Ajnala towns only 4 percent of the HHs collected their garbage in closed containers (hygienic garbage storage), while in Nangli towns more than 12 percent HHs used closed containers. On the other hand, only a percent of HH which did not collect garbage in Ajnala and 12 percent in Nangli, they either throw in nearby plots or roadside or nearby fields. More than 8 percent SC HHs collected garbage in closed containers in Ajnala and 12 percent in Nangli. In Ramdas and Chogawan towns majority of the HHs used closed containers to collect garbage. Around 31 percent of non-SC HHs did not store any garbage in Ramdas while in Chogawan every non-SC collects garbage but only 3 percent in closed containers.
- Garbage and waste of more than 46 percent of HHs are disposed through 'collectors' in Ajnala but the dismal picture is that it is followed by outside dumping of waste by the HHs i.e. more than 25 percent of HHs use outside dumping for waste disposal. The same pattern of collectors usage for garbage disposal was observed in Nangli town while the 'open dumping' of waste by more than 41 percent HHs was recorded in Nangli which is alarming. 55 percent of total SC HHs in Nangli dumped their waste outside which was only by 16 percent SC HHs in Ajnala. . In Ramdas, outside dumping of the waste is more among SC HHs than in non-SC HHs i.e. 31 percent and 7 percent respectively. There is worse condition prevailing in Chogawan town as more than 98 percent of the total HHs dumped their waste outside in open fields and alongside roads etc.
- The frequency of garbage collection as daily was observed by 36 percent HHs in Ajnala and only by 7 percent HHs in Nangli. In Ramdas no daily collection of

garbage observed though 66 percent HHs recorded collection of garbage to 2-3 times in week but in Chogawan no collection at all has been observed.

- There are various determinants of the quality of urban basic amenities to the HH. The relationship has been established between the socio-economic characteristics and availability of basic amenities to the HHs. Annual Income of the HH is positively correlated with all basic amenities except safe drinking water, where it is significant negatively correlated.
- Proportion of SC population in the surveyed towns is significantly negative correlated with all basic amenities (safe cooking fuel, hygienic drainage, hygienic garbage storage and disposal) except with safe drinking water. It has been observed that wards in towns with majority of SC population are having the low quality of basic amenities.
- Total literacy rate and female literacy rate in the four surveyed towns of Amritsar district are highly correlated with, safe cooking fuel, hygienic drainage and hygienic garbage disposal. Both total literacy rate and female literacy rate are significantly negative correlated with safe drinking water as safe drinking water is seen as ULBs responsibility where literacy of the HH do not have much association.
- Total work participation rate in these towns is positively correlated with safe drinking water supply to the households which means that as the worker's participation in the economy increases it led to increase in the safe water supply to the HHs. Female work participation rate is also highly positively correlated with safe drinking water supply i.e. 0.69 similarly to WPR where the correlation is 0.46. On the other hand both WPR and female WPR are negatively correlated with safe cooking fuel and hygienic drainage services.

The four towns (two existing towns and two newly emerged towns) in Amritsar district have been surveyed through a prepared questionnaire on basic amenities for the HHs and ULBs. The various aspects of different basic amenities have been analysed from the perspective of the HHs like sources of drinking water, relations between annual income of the HH and sources of drinking water used, provisioning by ULBs, its quantity and

quality, HH's perception regarding quality, measures adopted by ULBs for safe drinking water etc. have been analysed. It has been analysed for different groups. For other amenities like safe cooking fuel, hygienic drainage, garbage storage and disposal etc various aspects have been analysed. It has been observed that low income HHs have low amenities as compared to high income HHs, all basic amenities also vary according to social groups as SC HHs lack behind as compared to non-SC HHs in quality of basic amenities. Large towns have high quality of basic amenities as compared to small towns. Census towns (newly emerged) have low and poor amenities as compared to statutory towns. Majority of the HHs responded that political will and income of the ULBs are the key for the high quality of basic amenities.

CHAPTER 8

CONCLUSIONS

8.1 Introduction

This chapter attempts a summary of the conclusions of the thesis which have been found from the empirical analysis in various chapters. The conclusions and findings have been presented according to the scheme of the study i.e. at macro level and at the micro level. Also there is a section which dealt with the results of the chapter based on the primary field survey i.e. comparison of urban amenities in old and new towns of Amritsar district. At the end of the chapter some policy suggestions have been recommended under the title 'The Way Forward'.

8.2 Macro Scenario of Urbanisation, urban growth and emergence of new towns

The urbanisation of Punjab is higher than that of all India average since independence. Even, the urbanisation gap between the state and all India average has been increased i.e. the state is getting urbanised faster than the country as a whole. In 2011, Punjab has 37.5 percent of urbanisation which is 6.3 percent more urbanised than all India level. But the urban growth in the state is not encouraging for urbanisation. The zigzag pattern has been observed in the context of urban decadal growth rate in Punjab from 29 percent in 1951-61 which has increased tremendously to more than 44 percent in 1971-81 which was the highest ever urban decadal growth rate observed by the state. It again falls to below 30 percent in 1981-91 but then again increased to more than 37 percent in 1991-2001 which was the period of the economic reforms. In 2011 census, there recorded the decrease in the growth rate of urban population in the state to around 26 percent. The urban decadal growth rate of Punjab is generally lower than the national average except in 1971-81 and 1991-2001. During 1971-81 Punjab observed the successful green revolution that led to migration from rural to urban areas. The period of 1991-2001 was period of liberalisation, privatisation and globalisation in Indian economy that boosted industrialisation and service sector which led to migrate cheap labour into cities and towns in search of jobs and employment.

There are marked regional variations in terms of urbanisation and urban decadal growth rate in the state the spatial variation in the level of urbanisation in Punjab across the districts reveals that there is the huge variation as the district of Ludhiana, Jalandhar and

Amritsar etc. have more than 50 percent of the urbanisation while district of Tarn Taran has only around 12 percent of urbanisation level. The highly urbanised districts like SAS Nagar, Ludhiana, Jalandhar and Amritsar form a central belt of highest urbanisation in the state. The southern districts like Muktsar Faridkot, Mansa, Moga and Ferozepur have lowest urbanisation i.e. below 30 percent and northern districts like Gurdaspur are catching up in the urban processes i.e. from 21 percent urbanisation in 1991 to around 29 percent in 2011. In terms of the spatial variations in urban decadal growth rate, it has been found higher in the newly formed districts of Punjab like SBS Nagar, Rupnagar etc. Districts with high level of urbanisation like Amritsar, Ludhiana and Jalandhar recorded comparatively low urban decadal growth rate in 2001-11. The future prospects of urbanisation in Punjab is good as the districts having low urbanisation recorded high growth rate e.g. Rupnagar (99 percent) and SBS Nagar (54.7 percent) etc. and also the highly urbanised districts recorded positive growth rate like Jalandhar (24 percent) and Ludhiana (22 percent) etc.

There is an addition of 60 new towns in 2011 census as compared to only 37 towns emerged in 1991-2001. Out of the 60 new towns that have been created after 2001, 56 are the Census towns and only 4 new towns are statutory towns. Maximum number of towns emerged in the Gurdaspur district followed by Ludhiana. Large numbers of class V and class VI towns have been emerged in the state as compared to the large towns of size classes I and II. Out of 60 newly emerged towns around 50 towns are in close periphery of the national highways as seen from the 5 km buffer around the national highways which emphasizes the towns are emerged out of demographic and economic activities reclassification rather than urban governance as priority.

The growth of population across the size classes of towns reveals that the proportion of population in class I and class II towns are larger and it is continuously increasing over the period in the state while the population in the small towns is decreasing continuously which is not good for sustainable urbanisation. At the same time the small towns (size classes IV, V and VI) are emerging in the large number but there is no marked increase in their contribution of total urban population and hence in total urbanisation. Hence to make the urbanisation eco friendly and sustainable it is required that policies should be oriented towards the development of all types of towns like large, medium and small towns equally with special emphasis on the development of small and medium towns as

they are the absorbers of the population from rural regions and lessen burden on big cities. Analysis of the trend and pattern of growth of towns shows that urban population of big towns has been continuously increasing which may pose the pressure on their resources, on infrastructure, basic amenities, shortage of land and burden on the urban local government to provide the basic amenities especially to the low income and marginalised groups.

8.3 Macro Scenario of the quality of urban basic amenities

The two-fold study of urban basic amenities has been done i.e. one for the urban HHs at the district level where the relationship between urbanisation and quality of basic amenities has been analysed, secondly the quality of basic amenities across size classes of towns.

8.3.1 Quality of urban basic amenities among districts

In 2001 the districts with high level of urbanisation has also highest access to safe drinking water but the pattern changed in 2011 where low urbanised districts also added to highest category in accessing to safe drinking water. It was noted that in 2011 safe drinking water includes only tap water from treated source which was not available separately in 2001 census and hence some districts showed the decline in the availability of safe drinking water in 2011.

In 2011, in Punjab more than 80 percent urban HHs used safe cooking fuel which was increased from 63 percent in 2001 and it was also reflected in the spatial pattern i.e. across districts in 2011. In 2001, south-eastern region of the state which includes the districts like SAS Nagar and Patiala have the highest proportion of urban HHs having availability of safe cooking fuel and the number of districts was further increased by the addition of the highly urbanised districts like Jalandhar, Ludhiana, Kapurthala and Amritsar (central belt of high urbanisation) in 2011. On the other hand the southern districts of Punjab like Mansa, Sangrur, Barnala and Muktsar have lowest proportion of urban HHs accessing safe cooking fuels both in 2001 i.e. below 50 percent HHs and in 2011 i.e. below 70 percent HHs.

In 2011 there were three districts i.e. Jalandhar, Patiala and Kapurthala where the proportion of urban HHs having safe sources of lighting were more than 99 percent. The northern and southeastern districts of the state have the maximum proportion of urban HHs with safe sources of lighting in both 2001 and 2011. The region also includes the highly urbanised belt of Punjab. On the other hand, south western districts which are also border districts like Mansa, Faridkot and Ferozpur etc. have lowest proportion of urban HHs with safe lighting i.e. below 95 percent of total urban HHs.

In 2011, the districts of Patiala, SAS Nagar, Jalandhar, Kapurthala, Fatehgarh Sahib and Ludhiana have observed more than 90 percent of urban HHs having bathroom within HH premises while in 2001 there was not even a single district which had more than 88 percent of HH having bathroom within premises. In 2011, districts like Tarn Taran (new district carved out from Amritsar), Mansa and Ferozpur have less than 80 percent of urban HHs having access to bathroom facility within HH premises. It has clearly been observed that the border districts i.e. districts shares international border with Pakistan have low proportion of urban HHs having access to bathroom facilities within HH premises.

The access to hygienic toilet facilities in urban Punjab has increased from 67 percent in 2001 to more than 89 percent of total HHs in 2011 but it varied district-wise. In 2011 there were six districts which have more than 90 percent of total urban HHs having access to hygienic toilet facilities i.e. Jalandhar, Patiala, Ludhiana, Kapurthala, Rupnagar and Fatehgarh sahib. Kapurthala district recorded the highest increase of 32 percentage point from 2001 to 2011, when it has around 93 percent urban HHs accessed hygienic toilet facilities. It was also noted that in 2001 Amritsar was at the bottom in availing hygienic toilet services but observed the growth of more than 30 percent points from 2001 to 2011. The picture was different for the district of Mansa which has just 75 percent of total urban HHs availing hygienic toilet facilities, which was lowest among all the districts.

From 2001 to 2011, urban Punjab have done well in the availability of hygienic drainage facilities to the households which increased from 44.9 percent in 2001 to more than 57 percent in 2011. The spatial pattern is same for 2001 and 2011 where central belt of highly urbanised districts have high availability of closed drainage system for waste water outlet. While the districts like Ferozpur, Moga and Muktsar were at the bottom in having hygienic drainage system in 2001 but have improved their access in 2011. Sangrur,

Barnala and Mansa are the districts which were at the bottom in availability of hygienic drainage in 2001 and in 2011 among all the districts.

8.3.2 Quality of urban basic amenities across size-classes of towns

Among all the indicators chosen for the quality of urban amenities, access to safe drinking water sources for HHs in Punjab has decreased from 2001 to 2011 i.e. from 98 to 87 percent of all HHs. It was also reflected clearly in medium and small populated towns in 2011 i.e. proportion of HHs with safe drinking water supply decreased in size classes IV and VI towns. On the other hand in large towns of size-class I there observed a continuous increase though they were at top in 2001.

Use of safe cooking fuel sources in urban Punjab has increased significantly from 54 percent of total urban HHs in 2001 to more than 72 percent in 2011. There observed a clear pattern that the higher access to safe cooking fuel was in large towns of class I and II and it decreased in medium and small towns being the lowest in class VI towns. In towns of size-classes IV, V and VI the access to safe cooking fuel is lowest among all towns, even lower than the state's average.

Safe lighting sources (lighting from electricity, solar energy) in urban Punjab was accessed by more than 95 percent of the total HHs in 2001 which was further increased to more than 97.6 percent of total urban HHs in 2011. The highest growth was found in class III and IV towns followed by large towns of class I and II towns and the lowest growth in use of safe lighting sources was in small towns of size-classes V and VI.

Hygienic toilet facilities in the urban HHs in Punjab have increased by 21 percentage points to 79 percent of total HHs in 2011. The higher access to hygienic toilet facilities was found in large towns of class I and class II in 2011 i.e. more than 90 percent of total urban HHs and lowest access was in small towns of size-classes V and VI towns. The higher growth in HHs with hygienic toilet facilities was recorded in class III and class VI towns. Hygienic drainage facilities (closed drainage) was the worst faring amenities among all for urban Punjab as only 29.4 percent of urban HHs in 2011 have hygienic drainage services and that was only 25.6 percent of total urban HHs in 2001. There was a large disparity across size-classes of towns as more than 75 percent of HHs have accessed

to closed drainage in size-class I towns as compared to less than just 20 percent of total HHs accessed closed drainage in size-classes V and VI towns. Even in class VI towns there observed a decrease in hygienic drainage to HHs from 20 percent in 2001 to 12 percent in 2011 because majority of class VI towns are newly emerged census towns with no proper authority to look after drainage services.

8.3.3 Levels of quality of urban amenities

The analysis of the level of quality of urban basic amenities (PCA based Urban Amenity Index) in 2001 showed that among all the 157 towns, 14 towns were in size-class I of which 3 towns i.e. SAS Nagar, Patiala and Jalandhar were having high level of urban amenities followed by majority of size-class I towns (11 out of total 14) which have medium level of urban amenities. It was noted that no town from size class I is in low level of urban amenities. In small populated towns of class V, 24 towns out of total 29 towns fall under low level of urban amenities and only one town falls in high level of urban amenities and same pattern is observed in class VI towns where three towns out of six towns have low level of urban amenities. The analysis of the level of urban amenities in 2011 gave the picture that out of 16 towns in size-class I, only 6 towns falls into high level of amenities, topped by SAS Nagar (Mohali) followed by Patiala. There was not a single town from class I that falls into low level of urban amenities. The pattern changed for size-class III and IV towns where majority of town came under medium and low level of urban amenities i.e. 35 towns of total 61 towns had low level of urban amenities for size class IV towns. In small towns of size-class V and VI most of the towns come in low level of urban amenities i.e. 31 out of 49 towns and 13 out of 18 towns respectively. Among the newly emerged 60 towns, 40 towns have low level of amenities and majority of these towns are from size-class V and VI.

There found a negative significant correlation between proportion of SC population in large towns and accessibility, availability and quality of all urban basic amenities particularly safe drinking water, safe cooking fuel and hygienic drainage. In small towns also there observed a negative correlation between high proportion of SC population and quality of urban amenities but less significant as compared to large towns. Literacy rate and female literacy rate both have a positive significant relationship with all indicators of urban amenities in large and small towns. Female literacy was positively correlated with

safe drinking water and safe cooking fuel as observed from the analysis. There found a totally different pattern in the correlation between total WPR and availability of urban basic amenities as in large towns there found a positive correlation between the two except with safe lighting while there was direct negative relationship between the two in small towns.

8.4 Financial situation of ULBs in Punjab

The total revenue of the ULBs of Punjab has increased by more than five times from 1980-81 to 28.6 billion in 2013-14. After the immediate fall of total revenue in 2014-15, it increased again to more than 35 billion in 2016-17. Since 1990-91 the growth rate in total revenue is continuously decreasing to 2.2 percent in 2012-13, even it was negative in 2014-15. The total expenditure of ULBs in Punjab has increased continuously except from 2013-14 to 2014-15 when it recorded negative growth rate of -4 percent. The per capita income has been doubled from 2009-10 to 2016-17 which was encouraging for the revenue of the ULBs in the state. But the depressing part was that per capita expenditure has not increased correspondingly i.e. it is less than double from 2009-10 to 2016-17. PCI was always higher than PCE from 2009-10 to 2006-17. The gap between the PCI and PCE was continuously increasing since 2013-14 and it is highest in 2016-17 which reflected the non-prioritization of the urban services by the ULBs

Among all the sources of revenue, 'octroi' constituted the highest share which increased to more than 50 percent of total income in 2015, but since then it showed a declining trend and come down to 36 percent of total revenue base in 2017. On the other hand, grants from govt. share have been increasing continuously from 2013 to 2017 i.e. more than 10 percent share in total revenue, and similarly lighting rate share have increased marginally over the period. In all the sources of expenditure, the highest source of expenditure in Punjab since 2012 is administration and establishment which is more than 50 percent in 2015 which afterwards has decreased to less than 30 percent in 2017. The critical condition of the expenditure sources is that total expenditure decreased on water supply, sanitation and on lighting, which implied that basic amenities were not the priority for the ULBs. Similarly the proportion of total expenditure on roads has also decreased from 2012 to 2016. Annual expenditure on basic amenities like water supply, sanitation services, drainage services and lighting charges were far below the minimum

levels that must be incurred for delivering, maintenance and sustainability of these services. The low spending by the ULBs on basic amenities is one of the key reasons for the poor condition of services in towns and cities.

District wise analysis of the sources of revenue from 2012 to 2017 showed that octroi constitutes by more than 50 percent in more than half of the districts and these districts were not highly urbanised and even do not have high quality of urban amenities. On the other hand the districts where octroi contribution was less than 10 percent of the total revenue were Amritsar, Jalandhar, Tarn Taran and Gurdaspur. It was concluded that in all these districts over the period from 2012-17 grants from govt. constitutes a major sources of revenue. It signified that major chunk of revenue depends on state govt. transfers which was not a consistent source and hence negatively hampers the expenditure by ULBs. The tax domain of the municipalities in terms of the revenue base has not registered any change as most of the taxes and non-taxes which municipalities have jurisdictions over were either not in use or have low level of productivity. It refers that with changing towns and cities economy and socio-economic realities, the revenue base is obsolete. There is a clear trend and pattern for increasing the transfers from central govt. and state govt. and also dependency of the ULBs on Grants from govt. and grants from local funds has increased. It states that transfers when used for balancing the inefficiencies of internal functioning of the urban local body leads to 'zero sum game'.

The priority of the expenditure of the majority of the districts were administration and establishment which constituted above 50 percent of total expenditure in districts like Amritsar, Tarn Taran, Pathankot and Faridkot from 2012-15, all districts are border districts and three districts among them are newly created district headquarter and hence huge funds required for administration infrastructure. The pattern changed since 2015 when ULBs of Amritsar districts drastically decreased its expenditure on administration and establishment and increase its expenditure on water supply and sanitation. Other districts which have lowest expenditure on administration and establishment were Moga, Fatehgarh Sahib and Bathinda while all these districts have highest expenditure on sanitation followed by roads and water supply.

8.5 Micro Scenario on urban processes and quality of amenities

The trend of urbanisation in Amritsar district showed that it was increasing since 1951 and it has been greater than the state level since independence and in 2011 it was more than 53 percent of the total population. Amritsar observed a drastic increase in urbanisation from 1991 to 2001 which also increased to 2011 but at a slower rate and district which carved from Amritsar recorded lowest urbanisation in the state. Urban decadal growth rate has recorded a sharp increment from 18 percent in 1981-91 to more than 30 percent in 1991-2001 but afterwards it recorded a declining pattern since last two decades in Amritsar district to only 20 percent in 2001-11. The emergence of new towns in Amritsar district showed that six new towns have been created and all new towns were the Census towns. The new towns emerged are one in size-class III followed by one town each in size-class IV and V and two new census towns in class VI. The majority of towns emerged were small towns of size-classes IV, V and VI.

In Amritsar district more than 99 percent of total urban HHs have accessed to drinking water in 2001 and 2011. Safe cooking fuel access to the urban HHs in Amritsar district have increased from 59 percent in 2001 to more than 79 percent in 2011 and safe cooking fuel access to urban Amritsar is second lowest among all other amenities. Sanitation services in Amritsar have increased in terms of hygienic toilet accessibility to urban HHs have increased from 60 percent in 2001 to 90 percent in 2011. Though the hygienic drainage access to urban HHs in Amritsar was lowest i.e. less than 70 percent of urban HHs in 2011 which has increased from 53 percent in 2001.

Among all the towns of Amritsar district in 2001 and 2011, Raja Sansi NP (size class IV) has least access to safe drinking water i.e. 93 percent in 2011 as all other towns have more than 98 percent HHs with access to safe drinking water. The newly emerged towns have less than 50 percent of urban HHs accessed to safe drinking water except Nangli (class III Census town) and Khilchian (class VI Census town) i.e. 68 percent and 55 percent of HHs respectively having access to safe drinking water respectively. The highest growth in accessing safe cooking fuel by urban HHs is in Amritsar Cantt followed by Amritsar Corp. The lowest growth is in Ramdas town (Municipal Council) and it has also lowest access i.e. only 39 percent of total urban HHs has access to safe cooking fuel. The newly emerged towns have the highest proportion of HHs without access to safe

cooking fuel. Amritsar Cantt was the only town of Amritsar district followed by Amritsar Corp. which had the highest proportion of urban HHs accessed to bathroom facilities within premises, hygienic toilet and drainage services. The lowest access to hygienic toilet services is in Mudal town (class VI newly emerged CT) i.e. only 44 percent in 2011 followed by Ramdas town (NP). In access to hygienic drainage services, among the newly emerged towns (all Census Towns), Nangli (size-class III) has highest access followed by Chogawan town (size-class VI) i.e. 66 percent and 13 percent respectively, all other towns have less than 10 percent HHs accessed hygienic drainage. It is noted that Kathanian town (size-class IV) have not a single percentage of urban HHs with access to hygienic drainage services.

While analysed the level of urban amenities in the towns of Amritsar district in 2001 it has been found that the highest level of urban amenities in Amritsar district is observed in size-class IV town of Amritsar Cantt which is more than two times that of second highest town i.e. Amritsar M. Corp. in term of level of urban amenities. It was observed that in 2001, Amritsar CB was only town with high level of urban amenities among all the towns. In 2001, low level of urban amenities was observed in large number of towns, i.e. six towns out of total nine towns that were found across size classes III to V. The level of urban amenities in 2011 is highest again in Amritsar Cantt but in 2011 it is accompanied by Amritsar Corp. of class I and Rayya nagar Panchayat of class IV. The newly emerged town in class III i.e. Nangli observed medium level of urban amenities followed by Budha Theh as was observed in 2001 too. Low level of urban amenities is recorded in all small towns from class V and class VI categories lowest being in Ramdas followed by new census town Mudal in 2011.

In terms of the total revenue and total expenditure, underspending of total revenue was observed for all ULBs of Amritsar district. It showed that the level of access to urban amenities by households decreased if the ULBs spend less on basic urban services. Unlike other districts 'octroi' was not the major contributor of the total revenue in Amritsar district but Grants from Government and Grants from Local Funds were the major contributor. Similarly in expenditure sources, Amritsar district stands different as major expenditure is on administration and it was from 2012 to 2015 and simultaneously expenditure increased on sanitation by five times in last six years which was positive trend.

8.6 Status of Urban Amenities on the basis of Primary field survey

More than 400 HHs have been surveyed in four towns of the Amritsar district. It has been found that statutory towns have high level of urban amenities as compared to census towns. The availability and distribution of basic amenities is higher for non-SC HHs as compared to SC HHs which were dependent on municipal authorities for safe drinking water, hygienic garbage disposal, hygienic drainage system and its maintenance etc.

The use of public tap for drinking water supply was higher amongst the SC HHs as compared to non-SC HHs who were more dependent on use of tubewells and private tap water. It has been clearly recorded in the relationship between annual income of the HH and sources of drinking water supply that only 8 percent non-SC HHs uses public tap while more than 90 percent SC HHs use it as A major source of drinking water. Non-affordability was found to be the main reason behind non-usage of tubewells and private tap by SC HHs. The main reason behind the use of tubewells and private tap for drinking water by non-SC HHs was that public tap water is time bound and of limited quantity. The people's perception about the quality of drinking water supplied by the ULBs showed that non-SC HHs are more satisfied about quality in new town of Nangli as compared to old town of Ajnala where more SC HHs were satisfied about the quality of drinking water. In Nangli town the water supply lines were new and the quantity of water supplied was also optimum as compared to Ajnala town where timings and frequency of water supply was not adequate to meet the drinking water requirements. The same pattern has been observed in class V towns of Ramdas and Chogawan. The perception about the quality of drinking water used by the HHs recorded that more than 28 percent SC HHs in old town (Ajnala) responded negatively as regularly poor quality of water as compared to only 7 percent SC HHs in new town (Nangli). While there was totally opposite pattern found in small towns where around 90 percent of SC HHs have responded positively about regularly good quality of water in old town of Ramdas and Chogawan, here non-SC HHs were not satisfied with the quality of drinking water.

Safe sources of cooking fuel used by the urban dwellers showed that in Ajnala more than 75 percent HHs use LPG as cooking fuel source across SC and non-SC HHs while in Nangli there was clear difference observed as only 52 percent SC HHs use LPG as cooking fuel as compared to more than 74 percent non-SC HHs. In size class V towns of Ramdas and Chogawan, it has been found that the overall use of safe cooking fuel was

less in comparison of class III towns. In Ramdas only 32 percent SC HHs used LPG as cooking fuel which was just 5 percent among SC HHs in Chogawan town. On the other hand, more than 70 percent non-SC HHs in Ramdas used LPG and in Chogawan 11 percent HHs used LPG and more than 8 percent HHs used Gobar gas for cooking purpose. Gobar gas as a cooking fuel used only by non-SC HHs. Annual income of the HHs is directly related to the use of safe sources of cooking fuel i.e. LPG. It has been observed clearly in Nangli that as the income of the HHs increased, the use of LPG as cooking fuels also increased correspondingly to the fact that HHs with annual income of more than 2.5 lakh per annum only used LPG as cooking fuel in both towns i.e. Ajnala and Nangli. Though the average annual income of the HHs are less in class V towns but the usage of cooking fuel pattern is same as with increase in income, the use of fuelwood decreases and corresponding use of LPG increases. But in Chogawan town, a different pattern has been observed as even the HHs with highest income use fuelwood as cooking fuel source.

In three out of the four towns surveyed i.e. Ajnala (N.P), Ramdas (M. Cl) and Chogawan (CT) there is no closed or hygienic drainage. In Nangli only 29 percent of the HHs has closed drainage for waste water outlet. The condition was even worse in Chogawan town where around 10 percent of the HHs did not even have any drainage at all. The condition of drainage was even poor when we looked at water logging around houses and it has been found that more than 42 percent of the HHs in Ajnala and more than 34 percent of the HHs in Nangli have water logged around the house in absence of proper drainage and even no drainage at all. The condition of water logging around the house is more prominent in SC locality as more than 57 percent and 42 percent SC HHs in Ajnala and Nangli respectively are suffering from water logging situation. In Chogawan town more than 67 percent HHs have water logged around their house. People perception about drain maintenance is more satisfactory in statutory towns as compared to census towns as shown in surveyed data. More than 62 percent of HHs each in Ajnala and Ramdas responded regular cleaning of drainage by ULBs while regular cleaning respondents are very low in census towns.

In Ajnala town, only 4 percent of the HHs collected their garbage in closed containers (hygienic garbage storage), while in Nangli towns more than 12 percent HHs used closed containers. HHs who do not collected garbage are just a percent in Ajnala town and 12

percent in Nangli, they either throw in nearby plots / roadside / nearby fields. More than 8 percent SC HHs collected garbage in closed containers in Ajnala and 12 percent in Nangli. In Ramdas and Chogawan towns majority of the HHs used closed containers to collect garbage. Around 31 percent of non-SC HHs did not store any garbage in Ramdas while in Chogawan every non-SC collects garbage but only 3 percent in closed containers. Garbage and waste in more than 46 percent of HHs are disposed through 'collectors' in Ajnala but the dismal picture is that it is followed by outside dumping of waste by the HHs i.e. more than 25 percent of HHs use outside dumping for waste disposal. The same pattern of collectors usage for garbage disposal was observed in Nangli town while the 'open dumping' of waste by more than 41 percent HHs was recorded in Nangli which is alarming. 55 percent of total SC HHs in Nangli dumped their waste outside which was only by 16 percent SC HHs in Ajnala. . In Ramdas, outside dumping of the waste is more in SC HHs than among non-SC HHs i.e. 31 percent and 7 percent respectively. There is worse condition prevailing in Chogawan town as more than 98 percent of the total HHs dumped their waste outside in open fields and alongside roads etc. The frequency of garbage collection as daily was observed by 36 percent HHs in Ajnala and only by 7 percent HHs in Nangli. In Ramdas no daily collection of garbage observed though 66 percent HHs recorded collection of garbage to 2-3 times in week and there was no collection of garbage at all in Chogawan town.

The socio-economic characteristics of the HHs were correlated with the availability of basic amenities on the basis of primary data collected. It showed that Annual Income of the HH is positively correlated with all basic amenities except safe drinking water, where it is significantly negative correlated. High proportion of SC population in the surveyed towns was negatively correlated with all basic amenities (safe cooking fuel, hygienic drainage, hygienic garbage storage and disposal) except with safe drinking water. It has been observed that wards in towns with majority of SC population are having the low quality of basic amenities.

Total literacy rate and female literacy rate in the four surveyed towns of Amritsar district are highly correlated with safe cooking fuel, hygienic drainage and hygienic garbage disposal. Both total literacy rate and female literacy rate are significantly negative correlated with safe drinking water because it was seen as ULBs responsibility where literacy of the HH does not have much association.

Total work participation rate in these towns is positively correlated with safe drinking water supply to the households which means that as the worker's participation in the economy increases it led to increase in the safe water supply to the HHs. Female work participation rate is also highly positively correlated with safe drinking water supply i.e. 0.69 similarly to WPR where the correlation is 0.46. On the other hand both WPR and female WPR are negatively correlated with safe cooking fuel and hygienic drainage services.

8.7 The Way Forward

Urbanisation is both the cause and the result of the changes in economic and demographic characteristics of the region. Urbanisation in India is continuously increasing as in 2011 census for the first time the absolute increase of population in urban areas was more than the increase in rural areas. In 2011 census total urban population in India was 37.7 crore which have many implications for urban planners, administrators, policy makers and researchers etc. Punjab located in north western region of India is highly urbanised state which is even urbanizing at the faster pace. Though there are spatial variations related to urbanisation in the state where the urbanisation got concentrated in the 'central belt' of the districts like SAS Nagar, Jalandhar, Ludhiana and Amritsar (all districts have more than 50 percent urbanisation). This is also the belt of industrial dominance in the state. In Punjab from 2001 to 2011, 60 new towns have emerged where 56 new towns are census towns (CT) with no urban governance system. It has been observed that majority of these towns are concentrated in the 5 km buffer of National Highways and in the 'central belt of highly urbanised districts. On the other hand, the southern districts have low level of urbanisation since 1991. As mentioned, even the majority of New Towns were emerged in industrial and highway corridor of central belt. There is a policy requirement to boost the urban processes in these districts through industrial developments, development of MSME (Micro, Small and Medium Enterprises), development of agro-based industries especially in Census Towns (CT) and through skill-based industries etc. The socio-economic characteristics of the Census Towns should be incorporated while framing a policy for the urban planning and development. For example female work participation rate is lowest in urban Punjab which impacts the urban development of the state and hence priority be given to increase the women participation in workforce through Start

ups, Skill based industries, service sectors etc. Also as many scholars, urban planners argued that the large cities and towns are 'exclusionary' therefore we need to develop our tier-II and tier-II cities. The new scheme by central govt. 'SPM Rurban Mission' can be a game-changer for the large number of Census Towns (CT) in providing the basic amenities i.e. both infrastructural developments as well as economic amenities.

The urbanisation and levels of urban amenities are closely associated in the manner as the growth of population has increased in urban areas, there is need of correspondingly increase in basic amenities for the residents especially for the marginalised and economically poor (Low Income Groups) sections. Large towns (size classes I and II towns) have better availability and accessibility of quality of amenities as compared to small towns (size classes V and VI towns). Small towns lack severely in availability of safe drinking water, safe cooking fuels and hygienic sanitation services like bathroom within HH premises, toilet facilities and closed drainage system. Census towns even lacks badly in provisioning of urban services without proper municipal responsibility to provide the basic amenities and lacks of proper funding structure for these towns. Provisioning of the basic amenities are the foundations of the sustainable urban development, without which the urban growth would be like 'spurious urbanisation'. The policies and programmes of the central govt. like 'Smart City Mission', JNNURM and AMRUT etc. are biased towards the large cities in providing the basic services where the small and medium towns are marginalised. There need a policy focus on small and medium census towns which have a very poor track record of basic amenities provisioning. As many studies suggested that small and medium towns could be the pressure-bearer of the large cities, can reduce migration towards large towns if provided with the high level of urban services.

The financial powers of the ULBs have been observed diminishing mainly after the abolition of 'octroi' which was the major source of revenue for municipalities. These ULBs are dependent on the grants aid from the central and / or state govt. It took away the financial autonomy from the ULBs which have the direct negative impact on the provisioning of basic amenities where main stake holders are the marginalised, low and medium income households. Even the ULBs which are big enough to generate optimum revenue are not providing quality services. Municipalities in India are not bounded by any performance appraisal system either in respect of revenue generation or in expenditure

which have direct impact on the delivery of services and quality of urban amenities. As a result they continued to operate in sub-optimum level of urban services and also they do not have any plans to eliminate the inefficiency in services provisioning. 'Urban Budget' could be the better option for dealing with both the situation i.e. loss of revenue by ULBs and ULBs with optimum resources but not delivering the services. Target the urban poor for provisioning of urban services through financial inclusion and legal inclusion should be the priority for the towns with large slum population. Another problem along with the under-funding of the ULBs is the under-staffing of the majority of ULBs in the state. In the four towns surveyed (two statutory and two census towns) the municipal authorities on the condition not to be named responded that for cleaning and collection of garbage we have just half or sometimes less staff. If some urgent or large project started they hire labourer on daily wages. It not only leads the under staffing of the ULBs but also the shift of the responsibilities towards residents. The ULBs are in the dire need to address the problems of three F's (Funds, Functions and Functionaries) to make the urbanisation sustainable and to result in inclusive and economic development.

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APPENDICES

Table 1 Levels of quality of urban basic amenities in all towns of Punjab, 2001

QUALITY OF URBAN AMENITIES -2001								
HIGH			MEDIUM			LOW		
TOWN	CLASS	PCA1	TOWN	CLASS	PCA1	TOWN	CLASS	PCA1
SAS Nagar (Mohali)	I	2.47	Pathankot	I	0.99	Kot Kapura	II	-0.02
Patiala	I	1.90	Hoshiarpur	I	0.97	Fazilka	II	-0.09
Jalandhar	I	1.47	Ludhiana	I	0.93	Malout	II	-0.43
Gobindgarh	II	1.58	Phagwara	I	0.84	Gidderbaha	III	-0.03
Rajpura	II	1.32	Bathinda	I	0.84	Morinda	III	-0.05
Firozpur	II	1.29	Amritsar Corp.	I	0.69	Bagha Purana	III	-0.08
Sangrur	II	1.24	Khanna	I	0.62	Qadian	III	-0.15
Kapurthala	II	1.24	Malerkotla	I	0.47	Patti	III	-0.19
Nabha	II	1.11	Moga	I	0.39	Zira	III	-0.38
Talwara	III	1.62	Abohar	I	0.07	Dina Nagar	III	-0.50
Nangal	III	1.16	Batala	I	0.06	Jandiala	III	-0.53
Jalandhar Cantt.	III	1.11	Gurdaspur	II	0.91	Zirakpur	III	-1.28
Hussainpur	IV	2.98	Tarn-Taran	II	0.73	Longowal	III	-1.30
Jugial	IV	2.96	Muktsar	II	0.67	Karoran	III	-1.77
Amritsar Cantt.	IV	1.81	Mansa	II	0.62	Goraya	IV	-0.02
Nehon	IV	1.73	Barnala	II	0.42	Sultanpur Lodhi	IV	-0.06
Dera Bassi	IV	1.53	Faridkot	II	0.39	Bhucho Mandi	IV	-0.07
Bassi Pathana	IV	1.02	Sunam	II	0.26	Sanaur	IV	-0.14
Akalgarh	V	1.18	Jagraon	II	0.18	Fatehgarh Churian	IV	-0.14
Shekhpura	VI	1.44	Firozpur Cantt.	II	0.11	Nurmahal	IV	-0.17
Sansarpur	VI	1.18	Budhlada	III	0.90	Dirba	IV	-0.23
			Nawanshahr	III	0.83	Bhawanigarh	IV	-0.34
			Patran	III	0.80	Rahon	IV	-0.39
			Dasua	III	0.72	Guru Har Sahai	IV	-0.42
			Rupnagar	III	0.70	Raman	IV	-0.43
			Mukerian	III	0.69	Bhulath	IV	-0.44
			Ahmedgarh	III	0.69	Bhikhiwind	IV	-0.53
			Urmar Tanda	III	0.66	Dhariwal	IV	-0.56
			Kharar	III	0.47	Mullanpur Dakha	IV	-0.59
			Sujanpur	III	0.41	Talwandi Bhai	IV	-0.59
			Samana	III	0.41	Tappa	IV	-0.71
			Dhuri	III	0.41	Lehragaga	IV	-0.71
			Raikot	III	0.34	Dharamkot	IV	-0.82
			Kurali	III	0.34	Dhanaula	IV	-0.84
			Phillaur	III	0.32	Rayya	IV	-0.89
			Sirhind Fatehgarh Sahib	III	0.31	Bareta	IV	-0.90

	Kartarpur	III	0.28	Bhikhi	IV	-1.01
	Nakodar	III	0.27	Bhadaur	IV	-1.08
	Jalalabad	III	0.17	Balachaur	IV	-1.10
	Jaitu	III	0.06	Ajnala	IV	-1.22
	Rampura Phul	III	0.05	Machiwara	IV	-1.30
	Maur	III	0.00	Raja Sansi	IV	-1.32
	Goniana	IV	0.97	Banur	IV	-1.34
	Banga	IV	0.86	Moonak	IV	-1.39
	Shahkot	IV	0.56	Sardulgarh	IV	-1.45
	Mahilpur	IV	0.48	Kalanaur	IV	-1.48
	Samrala	IV	0.43	Khanauri	IV	-1.61
	Adampur	IV	0.36	Majitha	IV	-1.97
	Amloh	IV	0.33	Makhu	IV	-2.10
	Garhshankar	IV	0.24	Khemkaran	IV	-3.54
	Anandpur Sahib	IV	0.23	Gardhiwala	V	-0.02
	Sahnewal	IV	0.14	Chohal	V	-0.05
	Doraha	IV	0.02	Haryana	V	-0.15
	Bhogpur	IV	0.02	Bhabat	V	-0.17
	Rurki Kasba	V	0.46	Khamano	V	-0.25
	Hajipur	V	0.37	Alawalpur	V	-0.29
	Budha Theh	V	0.16	Dhilwan	V	-0.37
	Badhni Kalan	V	0.15	Jandiala	V	-0.38
	Daulatpur	VI	0.43	Begowal	V	-0.51
				Mullanpur Garibdass	V	-0.53
				Lohian Khas	V	-0.53
				Bhankharpur	V	-0.58
				Payal	V	-0.63
				Cheema	V	-0.66
				Maloud	V	-0.71
				Sangat	V	-0.79
				Dera Baba Nanak	V	-0.80
				Ghanaur	V	-1.08
				Ghagga	V	-1.24
				Handiaya	V	-1.24
				Kot Fatta	V	-1.28
				Bariwala	V	-1.34
				Sri Hargobindpur	V	-1.78
				Ramdas	V	-2.15
				Bhisiana	VI	-1.16
				Sham Churasi	VI	-1.52
				Bharoli Kalan	VI	-1.58

Table 2 Levels of urban amenities across size class of towns, 2011

QUALITY OF URBAN AMENITIES- 2011								
HIGH			MEDIUM			LOW		
TOWN	CLASS	PCA	TOWN	CLASS	PCA	TOWN	CLASS	PCA
S.A.S. Nagar (M Cl+OG)	I	1.76	Firozpur (M Cl)	I	0.97	Firozpur Cantt (CB)	II	-0.20
Patiala (M Corp.+OG)	I	1.53	Khanna (M Cl)	I	0.97	Jaitu (M Cl+OG)	III	0.00
Jalandhar (M Corp.+OG)	I	1.50	Hoshiarpur (M Cl)	I	0.95	Gidderbaha (M Cl)	III	-0.05
Ludhiana (M Corp.)	I	1.28	Malerkotla (M Cl)	I	0.80	Ajnala (NP)	III	-0.09
Amritsar (M Corp.+OG)	I	1.19	Bathinda (M Corp.)	I	0.77	Talwandi Sabo (NP)	III	-0.32
Pathankot (M Cl+OG)	I	1.02	Barnala (M Cl)	I	0.72	Lehragaga (M Cl)	III	-0.35
Zirakpur (M Cl)	II	1.54	Batala (M Cl+OG)	I	0.65	Maur (M Cl)	III	-0.43
Rajpura (M Cl)	II	1.36	Moga (M Cl+OG)	I	0.58	Machhiwara (M Cl)	III	-0.58
Phagwara (M Cl)	II	1.23	Muksar (M Cl)	I	0.46	Sujanpur (M Cl)	III	-0.67
Gobindgarh (M Cl+OG)	II	1.22	Abohar (M Cl)	I	0.24	Tapa (M Cl)	III	-0.71
Kapurthala (M Cl)	II	1.21	Kharar (M Cl)	II	0.95	Longowal (M Cl)	III	-1.02
Sangrur (M Cl)	II	1.19	Gurdaspur (M Cl+OG)	II	0.87	Bhikhiwind (CT)	III	-1.03
Tarn Taran (M Cl)	II	1.18	Sirhind Fatehgarh Sahib (M Cl)	II	0.80	Jandiala (M Cl)	III	-1.04
Nabha (M Cl)	II	1.08	Samana (M Cl)	II	0.72	Anandpur Sahib (M Cl)	IV	-0.03
Rupnagar (M Cl)	II	1.01	Jagraon (M Cl)	II	0.62	Rahon (M Cl)	IV	-0.10
Nangal (M Cl+OG)	III	1.56	Faridkot (M Cl+OG)	II	0.59	Talwandi Bhai (M Cl)	IV	-0.10
Dera Bassi (M Cl)	III	1.48	Rampura Phul (M Cl+OG)	II	0.57	Bhattian (CT)	IV	-0.14
Jalandhar Cantt. (CB)	III	1.38	Malout (M Cl)	II	0.50	Goraya (NP)	IV	-0.16
Gill (CT)	III	1.13	Dhuri (M Cl)	II	0.50	Dhariwal (M Cl)	IV	-0.26
Hussainpur (CT)	IV	1.98	Fazilka (M Cl)	II	0.43	Dharamkot (M Cl)	IV	-0.27
Amritsar Cantt. (CB)	IV	1.86	Sunam Udham Singh Wala (M Cl+OG)	II	0.42	Guru Har Sahai (M Cl)	IV	-0.28
Rayya (NP)	IV	1.16	Mansa (M Cl)	II	0.42	Chamkaur Sahib (NP)	IV	-0.31
Jugial (CT)	IV	1.08	Kot Kapura (M Cl)	II	0.19	Mullanpur Dakha (NP)	IV	-0.34
Daulatpur (CT)	IV	1.05	Naya Gaon (NP)	II	0.17	Bhagta Bhai Ka (NP)	IV	-0.44
Sultanpur (M Cl)	IV	1.02	Kartarpur (M Cl)	III	1.00	Handiaya (NP)	IV	-0.44
Partap Singhwala (CT)	IV	1.00	Nakodar (M Cl)	III	0.82	Raja Sansi (NP)	IV	-0.46
Sufipind (CT)	V	1.16	Raman (M Cl)	III	0.80	Nurmahal (M Cl)	IV	-0.49
Akalgarh (CT)	V	1.02	Nawanshahr (M Cl)	III	0.79	Bhankharpur (CT)	IV	-0.51
Dhaki (CT)	VI	1.28	Kurali (M Cl)	III	0.67	Bhamian Kalan (CT)	IV	-0.57
			Doraha (M Cl)	III	0.67	Ghagga (NP)	IV	-0.60
			Phagwara Sharki (CT)	III	0.67	Dhanaula (M Cl)	IV	-0.61
			Sahnewal (NP)	III	0.64	Moonak (NP)	IV	-0.68
			Jalalabad (M Cl+OG)	III	0.58	Dirba (NP)	IV	-0.74
			Phillaur (M Cl)	III	0.56	Cheema (NP)	IV	-0.77

Dasua (M Cl)	III	0.55	Bhikhi (NP)	IV	-0.87
Ahmedgarh (M Cl)	III	0.53	Balongi (CT)	IV	-0.87
Patran (M Cl)	III	0.52	Banur (M Cl)	IV	-0.95
Banga (M Cl)	III	0.51	Sardulgarh (NP)	IV	-0.96
Mukerian (M Cl)	III	0.50	Khanauri (NP)	IV	-1.02
Bassi Pathana (M Cl)	III	0.47	Mudki (NP)	IV	-1.05
Bhawanigarh (M Cl)	III	0.46	Kathanian (CT)	IV	-1.08
Raikot (M Cl)	III	0.45	Bhadaur (M Cl)	IV	-1.10
Patti (M Cl)	III	0.44	Majitha (M Cl)	IV	-1.34
Urmar Tanda (M Cl)	III	0.39	Bareta (M Cl)	IV	-1.36
Qadian (M Cl+OG)	III	0.38	Makhu (NP)	IV	-1.40
Adampur (M Cl)	III	0.33	Mallanwala Khass (NP)	IV	-1.42
Sanaur (M Cl)	III	0.31	Khem Karan (NP)	IV	-1.99
Zira (M Cl+OG)	III	0.24	Tibri (CT)	IV	-2.18
Bagha Purana (M Cl)	III	0.21	Sohana (CT)	V	-0.13
Lalru (CT)	III	0.14	Jandiala (CT)	V	-0.15
Dina Nagar (M Cl)	III	0.14	Satyewala (CT)	V	-0.16
Balachaur (M Cl)	III	0.12	Mubarakpur (CT)	V	-0.21
Budhlada (M Cl)	III	0.11	Manwal (CT)	V	-0.38
Mamun (CT)	III	0.06	Maloud (NP)	V	-0.39
Morinda (M Cl)	III	0.05	Chohal (CT)	V	-0.41
Nangli (CT)	III	0.05	Fateh Nangal (CT)	V	-0.42
Tharika (CT)	IV	0.99	Sri Hargobindpur (M Cl)	V	-0.44
Talwara (CT)	IV	0.81	Ghanaur (NP)	V	-0.49
Samrala (M Cl)	IV	0.70	Daper (CT)	V	-0.61
Begowal (NP)	IV	0.70	Bungal (CT)	V	-0.62
Rurki Kasba (CT)	IV	0.65	Bariwala (NP)	V	-0.64
Bhulath (NP)	IV	0.64	Khambra (CT)	V	-0.77
Bhucho Mandi (M Cl)	IV	0.56	Alawalpur (M Cl)	V	-0.80
Bhogpur (NP)	IV	0.46	Rakri (CT)	V	-0.86
Mahilpur (NP)	IV	0.46	Khothran (CT)	V	-0.88
Goniana (M Cl)	IV	0.44	Behrampur (CT)	V	-0.95
Alhoran (CT)	IV	0.38	Chogawan (CT)	V	-0.95
Budha Theh (CT)	IV	0.33	Sarna (CT)	V	-0.97
Khamanon (NP)	IV	0.32	Halwara (CT)	V	-1.04
Amlah (M Cl)	IV	0.26	Baba Bakala (CT)	V	-1.12
Garhshankar (M Cl)	IV	0.25	Kot Fatta (M Cl)	V	-1.70
Fatehgarh Churian (M Cl)	IV	0.24	Tharial (CT)	V	-1.83
Shahkot (NP)	IV	0.08	Mirpur (CT)	V	-1.86
Lohian Khass (NP)	IV	0.06	Narot Mehra (CT)	V	-1.88
Kot Ise Khan (CT)	IV	0.02	Ramdass (M Cl)	V	-1.94
Mullanpur Garib Dass (CT)	V	0.83	Ghoh (CT)	V	-1.97
Bhadson (NP)	V	0.75	Rail (CT)	V	-2.05

Nilpur (CT)	V	0.58	Korianwali (CT)	V	-3.12
Sarai Khas (CT)	V	0.52	Kot (CT)	V	-3.85
Dera Baba Nanak (M Cl)	V	0.43	Jodhan (CT)	VI	-0.07
Badhni Kalan (NP)	V	0.37	Ghanauli (CT)	VI	-0.13
Dhin (CT)	V	0.37	Kotla Nihang (CT)	VI	-0.21
Gardhiwala (M Cl)	V	0.33	Khilchian (CT)	VI	-0.42
Hazipur (CT)	V	0.19	Chomon (CT)	VI	-0.56
Haryana (M Cl)	V	0.17	Sham Chaurasi (M Cl)	VI	-0.82
Payal (M Cl)	V	0.15	Sangat (M Cl)	VI	-0.93
Dhilwan (NP)	V	0.08	Malikpur (CT)	VI	-0.98
Apra (CT)	V	0.02	Shikar (CT)	VI	-1.23
Amargarh (CT)	V	0.01	Saloh (CT)	VI	-1.39
Nehon (CT)	V	0.00	Mudal (CT)	VI	-1.83
Baddowal (CT)	V	0.00	Baryar (CT)	VI	-2.09
Raipur Rasulpur (CT)	VI	0.74	Bhisiana (CT)	VI	-5.42
Chachoki (CT)	VI	0.71			
Sansarpur (CT)	VI	0.67			
Aur (CT)	VI	0.23			

Table 3 Levels of quality of urban basic amenities in New Towns of Punjab, 2011

QUALITY OF URBAN AMENITIES IN NEW TOWNS OF PUNJAB- 2011								
HIGH			MEDIUM			LOW		
TOWN	CLASS	PCA	TOWN	CLASS	PCA	TOWN	CLASS	PCA
Gill (CT)	III	1.13	Naya Gaon (NP)	II	0.17	Talwandi Sabo (NP)	III	-0.32
Partap Singhwala (CT)	IV	1	Phagwara Sharki (CT)	III	0.67	Bhattian (CT)	IV	-0.14
Sufipind (CT)	V	1.16	Lalru (CT)	III	0.14	Chamkaur Sahib (NP)	IV	-0.31
Dhaki (CT)	VI	1.28	Mamun (CT)	III	0.06	Bhagta Bhai Ka (NP)	IV	-0.44
			Nangli (CT)	III	0.05	Bhamian Kalan (CT)	IV	-0.57
			Tharike (CT)	IV	0.99	Balongi (CT)	IV	-0.87
			Alhoran (CT)	IV	0.38	Mudki (NP)	IV	-1.05
			Bhadson (NP)	V	0.75	Kathanian (CT)	IV	-1.08
			Nilpur (CT)	V	0.58	Mallanwala Khass (NP)	IV	-1.42
			Sarai Khas (CT)	V	0.52	Tibri (CT)	IV	-2.18
			Dhin (CT)	V	0.37	Sohana (CT)	V	-0.13
			Apra (CT)	V	0.02	Satyewala (CT)	V	-0.16
			Amargarh (CT)	V	0.01	Mubarakpur (CT)	V	-0.21
			Baddowal (CT)	V	0	Manwal (CT)	V	-0.38
			Raipur Rasulpur (CT)	VI	0.74	Daper (CT)	V	-0.61
			Chachoki (CT)	VI	0.71	Bungal (CT)	V	-0.62
			Aur (CT)	VI	0.23	Khambra (CT)	V	-0.77

		Rakri (CT)	V	-0.86
		Khothran (CT)	V	-0.88
		Chogawan (CT)	V	-0.95
		Sarna (CT)	V	-0.97
		Halwara (CT)	V	-1.04
		Baba Bakala (CT)	V	-1.12
		Tharial (CT)	V	-1.83
		Mirpur (CT)	V	-1.86
		Narot Mehra (CT)	V	-1.88
		Ghoh (CT)	V	-1.97
		Rail (CT)	V	-2.05
		Korianwali (CT)	V	-3.12
		Kot (CT)	V	-3.85
		Jodhan (CT)	VI	-0.07
		Ghanauli (CT)	VI	-0.13
		Kotla Nihang (CT)	VI	-0.21
		Khilchian (CT)	VI	-0.42
		Chomon (CT)	VI	-0.56
		Malikpur (CT)	VI	-0.98
		Shikar (CT)	VI	-1.23
		Saloh (CT)	VI	-1.39
		Mudal (CT)	VI	-1.83
		Baryar (CT)	VI	-2.09