

# **SPATIAL ANALYSIS OF RURAL-URBAN LINKAGES-A CASE OF NASHIK DISTRICT**

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IN  
URBAN AND REGIONAL PLANNING**

By

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**TO THE  
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LUCKNOW**

**JUNE-2022**

## Declaration

I, **Sharad Kumar Srivastava**, hereby declare that the thesis titled “**Spatial Analysis of Rural- Urban linkages – A Case of Nashik District**” submitted by me in partial fulfillment for the award of **Masters in Urban and Regional Planning**, at BBD School of Architecture and Planning, Lucknow, India, is a record of bonafide work carried out by me. The matter/result embodied in this thesis has not been submitted to any other University or Institute for the award of any degree or diploma.

Signature of the Student

Date: 29 June, 2022

## Certificate

This is to certify that the declaration of **Mr. Sharad Kumar Srivastva** is true to the best of my knowledge and that the student has worked under my guidance for one semester in preparing this thesis.

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## Abstract

The rapid urbanization taking place in Asia since 1970 has exhibited a process different from that of the developed countries in the West (Daniel Z. Sui, 2000). Giving rise to small towns and urban growth centres. The population is increasing in the urban areas at a rapid pace, if it continues to grow in the same pattern soon rural and urban population will be equal in number. In different parts of the world the definitions of urban areas differs for e.g. in Europe and Latin America has population threshold of 2000-2500 inhabitants whereas it is higher in the other nations (Satterthwaite, et al., 2002). If the same criteria are applied in Asia, most of the settlements will be classified as urban. In India settlement having a population of 50,000 can also be called as a small town. Though there are no universal definitions of rural and urban areas, the urban status plays an important role as it has huge impacts on developments policies, public-private investments, resource allocation and decision making of the Government.

Discussions and studies on the relations of the rural and urban areas hold a prominent positions among theories in planning, some of them being growth pole theory, spatial core periphery and spatial polarization models generally explaining that most of the economic benefits of any region are concentrated in the core areas. The attempts to organise rural areas according to the needs of urban areas mostly leads to exploitation of rural resources for the benefit of urban areas. The aim to reduce disparities among the rural and urban seldom gets fulfilled. The interactions between rural and urban areas have intensified, one of the major reasons being that there is huge exposure to world markets in the urban areas which increases the demand in the food production, which is the primary activity of the rural areas. This triggers the crop export and market becomes agriculture oriented. The exposure to market with the relevant tools and techniques to expand the business generally lies with the people residing in the urban areas. Thus these settlement patterns are influenced by these urban markets and mostly densities are seen to increase along these market routes.

This thesis is an attempt to understand the rural - urban relations in the form of the linkages that exist between them by taking a case study area of Nashik District. Study is done at two levels, Macro - district level and Micro - Village level wherein two villages in the most urbanised tehsil are studied. By selecting certain parameters, it tries to understand the various ways of interaction and dependencies between both areas which would help in understanding the role these rural urban linkages play in achieving sustainable development that would reduce the regional

disparities and trigger economic growth. The challenge lies in integrating these two areas in a way that they mutually benefit from each other and foster.

It is seen in the analysis, that rapid urbanisation is happening in selected tehsils due to the concentration of facilities leading to depletion of rural resources and transformations of surrounding rural areas. The study of economic linkages was able identify the poor areas which are having weak linkages resulting in poor socio- economic conditions. A comparative study of two villages at different

distances from the urban centre was able to identify the similarities and differences in the intensities of the different relations.

Various aspects such as spatial transformations, occupation pattern, social interactions and infrastructure dependencies were studied.

The analysis helped in finding the missing important factors and actions areas in the existing system of planning. Recommendations are made with the view to promote integrated development of the region. Policy recommendations and implementation strategies are suggested based upon the findings of the intensity of these relations which play an important role in the development of a region as a whole.

*Keywords: Linkages, rural, urban, disparities, resource*

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# CHAPTER 1. INTRODUCTION

## Background

This chapter discusses the concept of the Rural and Urban areas each respectively. The process of evolution of these areas since the beginning and the various dynamics (S, 2010) urban linkages which exist and the various factors affecting the development of these linkages. The development of urban and rural sectors are drawn to achieve economic and social agenda of the governments and that reflects in the policies and priorities that are framed to accomplish them. Rural and Urban areas have contrasting characteristics when it comes to social, economic, cultural, infrastructure profiles and thus it is a challenge to frame policies which enhances an integrated and balanced development of both sectors. Rural areas are generally sparsely populated small areas where majority of population is engaged in primary sector activities. Whereas urban areas are larger in size and densely populated where most of the population is engaged in tertiary sector activities and industries.

50.8% of the total world's population lives in rural areas. (S, 2010) But when compared to the urban areas rural areas lag behind in all sectors of development especially in the developing countries where huge amount of disparities in terms of economic and social equalities are seen. In these developing countries the rural population constitutes of almost 70% (e.g. India and China). Also a significant fact is that almost 70% of the world's poor is the rural population. (S, 2010). The rural-urban divide is not the only perspective which explains the dynamics of both the areas but there are also linkages existing between rural urban areas which strengthen both the sectors. The linkage perspective can play a major role in strengthening development in both the areas and bridge the gap which exists between them.

The definitions of urban and rural in India and elsewhere also are unable to portray the complexities and dynamics that happen between these two areas. The specific images that are fixed in people's mind about these areas such as urban meaning crowded cities and rural meaning isolated countryside having separate worlds and ways of living. Industrialisation and globalisation intensified the interactions that happen between different types and units of space.

This has given rise to the increase in the transactions that happen between them and the separateness has been slowly dissolving also giving rise to creation of new spaces such as the peri-urban areas and metropolitan regions. The creation of these blurred boundaries makes it difficult to cater to the specific needs of that place as it is not typically urban or typically rural. It is clear that both these areas cannot be seen as separate entities anymore. So while planning of these areas the perspective of this separateness causes huge implications in planning various policies and strategies. So an effort needs to be taken wherein the approach needs to change that recognises the changed dynamism between these spaces and makes various interventions accordingly.

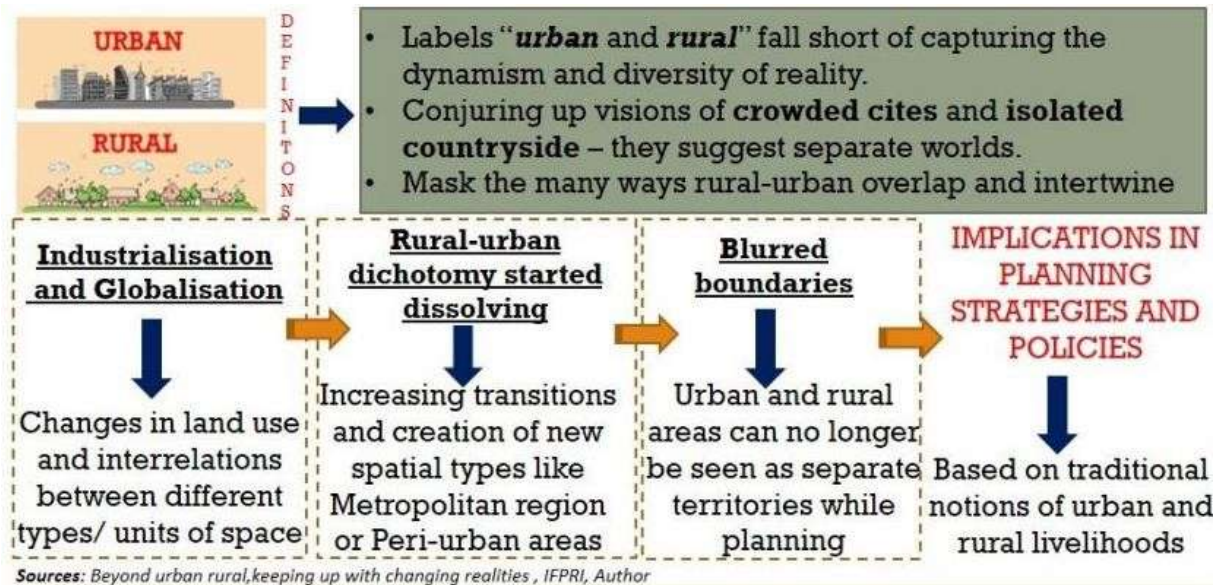


Figure 1-1 Rural-urban definition and implications on Planning  
 Source: Compiled by author

## Rural-Urban Dynamics: The divide perspective

In half of the phase of the independent existence of south Asian countries the roles and objectives have been varying in case of rural development. During this phase there were complex political, social, economic factors acting for the development. The multiplicity of these objectives which was to be achieved in the rural sectors specifically, deprived it of its focus and led to its failure. It has been debated that the two areas should not be treated as distinct entities because the livelihood of people depends upon both the rural and urban components, but this problem exists in almost every country.

The development strategies are mostly concentrated in the urban sector thereby increasing the gap between rural and urban. This urban bias was evident after independence in the strategies such as economic rents and surpluses that were transferred from rural to urban sectors through various interventions such as the state pricing and procurement of agricultural products, fiscal transfers and investments, and restrictions on labour movement. (Fan, et al., august 2005) upon comparing the demographics, poverty, education, school attendance, healthcare, health indicators, housing sector, access to safe drinking water, access to basic sanitation, access to electricity, road connectivity, banking services and penetration of information and communication technologies (ICT) it is evident that the rural areas lacks in most of these sectors, most basic of these being safe drinking water and sanitation.

## Rural-Urban Dynamics: The linkages perspective

This perspective focusses on the connections that exist in the rural and urban areas rather than viewing them as separate entities. According to UN Centre of Human Settlement: “Rural urban linkage is an integrated approach to promote balanced and mutually supportive rural-urban development.” Asian development bank defines it as “Rural urban linkage is an integrated requirements to be fulfilled with the interaction of rural urban relation in regard of income generation, cultural activities, growth, public development program, people’s participation and cultural activities in both rural and urban area.” They can be understood as the structural social relationships maintained between individuals in the urban environment and those in rural areas.

The rural urban linkages can be broadly divided into two categories: the spatial linkages and the sectoral linkages. The spatial linkages include the flow of agricultural products from rural to urban areas and in turn the flow of manufactured goods from urban to rural areas. Flow of people for obtaining certain kinds of services related to employment, health, education etc. There are people commute who between rural-urban areas daily, seasonally. Other economic linkages such as market information flows, price fluctuations between rural urban areas etc.

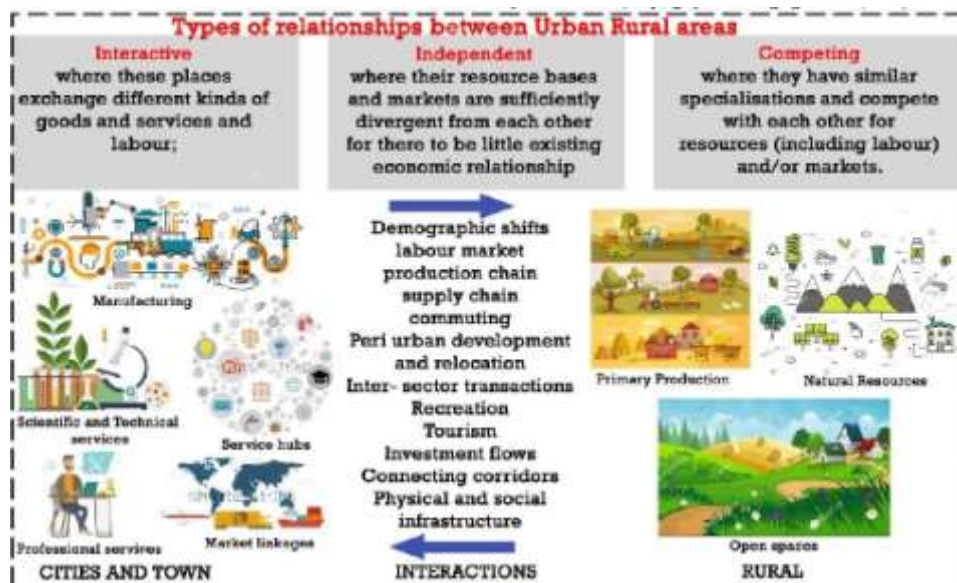
The financial flows include the flow of incomes which include the remittances which get distributed by the migrants within the family and communities. Therefore the daily exchange of goods and services enhance the multiplier effect in both rural and urban areas in the long run and in turn help in enhancing the livelihoods. The sectoral linkages include the forward and backward linkages which exists between the rural and urban areas such as production of fertilisers which can be used for agricultural purposes and agricultural products being processed in industries in the urban areas.

### Major types of rural-urban linkages

There are interactions which happen between the urban and rural areas. These can be classified into three types such as interactive, independent and competing. (Adrian Field PhD, 2015). Interactive relationships are those wherein there is healthy exchange of goods, services, labour etc. independent relationships occur when the resources are divergent and less dependency happens for having any kind of economic relationship. Competing relationship is when both areas have similar specialisations and compete with each other for market and resources such as labour, goods etc. cities and towns have activities such as manufacturing, scientific and technical services, professional services and service hubs on which the rural areas are dependent whereas the rural areas are known for the primary productions, natural resources, open spaces etc. on which the urban areas depend. So the interaction happens in terms of the demographics shifts, labour market, commuting patterns, peri urban development and relocation, inter sector transactions, recreation, tourism, investment flows, connecting corridors, physical and social interactions etc.

These complex kind of relationships are causing problems which need urgent attention. It has already been mentioned earlier that the policy vacuum and separateness of handling both these areas leads to many issues such as urbanisation which is happening at heavy rates for provision of

services which are available only at the urban centres also for certain facilities and employment opportunities. This phenomenon is putting pressure on the already insufficient infrastructure facilities that is available in the urban areas. To accommodate the growing population which also includes the migrants from the rural areas unorganised growth happens leading to unplanned sprawl in the peri-urban areas etc. it ends up depleting the resources such as productive agricultural land, water resources, polluting rural environment. The rural areas end up acting as sinks for the urban waste. This leads to the depletion of the resources. The policy vacuum that is present for the integrated development leads to isolated development of both these areas and regional disparities



start happening which are evident in most Indian states. These disparities are in terms of the economic status, health and other quality of life indicators. In most cases the benefactor is the urban areas who benefit from the natural resources available in the rural areas and their primary activities.

Figure 1-2 Types of relationships between urban and rural areas

Source: Author

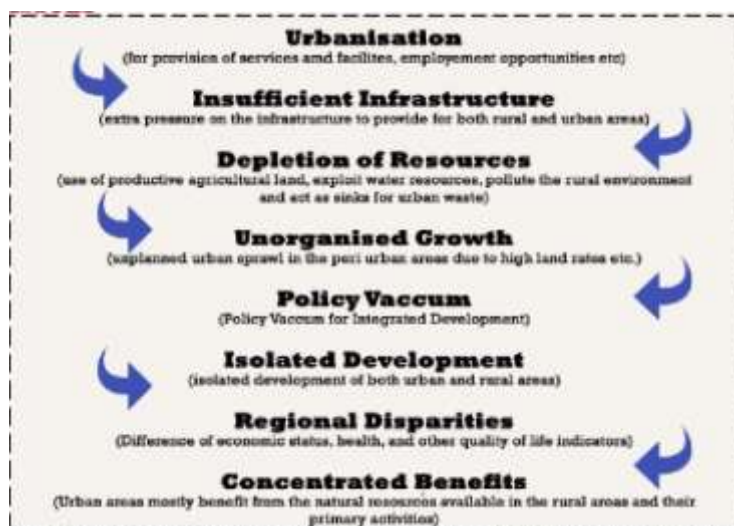


Figure 1-3 Issues

Source: Author

The issues mentioned in figure and explained above tell us that there is a need for a sustainable development which encompasses both urban and rural populations and also the interconnections between them. This can be done through spatial integration by strengthening various types of linkages between them. The types of linkages are listed in the table below.

The rural-urban linkages may be defined as the two-way movement of people, goods, capital, technologies and social transactions which is functional and structural. The linkages between the rural areas and the urban centres are complementary in nature.

(Raisul Bari, Apr. 2014)

The table below gives a comprehensive idea of the various types of linkages and also the elements that define what these types of elements in detail are.

**Table 1-1 Types of linkages and their elements**

TYPE	ELEMENTS
Physical linkages	Road networks, River and water transport networks, Railroad networks
Economic linkages	Market patterns, Raw materials and intermediate goods flows, Capital flows, Production linkages - backward, forward, Consumption and shopping patterns, Income flows, interregional commodity flows
Population movement linkages	Migration, temporary and permanent journey to work
Technological linkages	Technology interdependencies, Irrigation systems, Telecommunications systems
Social interaction linkages	Visiting patterns, Kinship patterns, Rites, rituals, and religious activities, Social group interaction
Service delivery linkages	Energy flows and networks, Credit and financial networks, Education, Training, and extension linkages, Health service delivery systems, Professional, commercial, and technical service patterns, Transport service systems
Political, administrative, and Structural relationships organizational linkages	Structural relationships, Government budgetary flows, Organizational interdependencies, Inter jurisdictional transaction patterns, Informal political decision chains.

## Conclusion

The complexities between rural and urban areas are understood in this chapter. Urbanisation being the major cause of the increasing relationships between both spaces. The definitions of 'rural' and 'urban' have caused implications in the planning process. To broadly understand the relationship between rural and urban areas both perspectives (divide perspective and linkage perspective) have to be looked into. The types of relationship have been explored and issue such as lack of integrated development due to various issues between both areas has been identified. Each type of possible linkage and element between rural and urban is explored. This broad understanding of the rural-urban dichotomy helped in shortlisting relevant literature to be studied, and understanding the need and importance of carrying out the study.

## CHAPTER 2. LITERATURE REVIEW

### Introduction

In this chapter the aim is to study relevant literature related to the topic which would help in understanding the topic better with respect to the related concepts, theories, methods, tools and techniques and various cases where similar studies have been conducted. For this purpose various journal papers, books, book excerpts, documents etc. will be studied.

Table -2-1 Literature review summary

Paper	Author	key findings
<p><b>CONCEPTUAL</b></p> <p>1. The links between urban and rural Development</p>	Cecilia Tacoli	<p>concept of urban rural linkages:</p> <ul style="list-style-type: none"> <li>• Factors contributing to increase in the scale of linkages</li> <li>• Linkage of rural urban interactions with economic, social and cultural transformations</li> <li>• Relevance of linkages to livelihoods (factors affecting livelihood)</li> </ul>
<p><b>CONCEPTUAL</b></p> <p>2. The potential of rural– urban linkages for sustainable development and trade</p>	şule akkoyunlu (international journal of sustainable development & world policy)	How to make the most of rural-urban connections -policies and strategy level interventions
<p><b>CASE STUDY</b></p> <p>3. Rural-urban interaction in Bangladesh : a study of linkages between villages and small urban centres (Islam, 1994)</p>	Author : Nazem, Mohammad Nurul Islam	<p>Rural Development and its Linkages with Urbanization</p> <p><b>Research Design-</b> The Strategy for field Work , levels of Study, Selection of Study Area Selection of Villages and Towns, the units of study, selection of respondents ,sampling procedure ,methods of collecting Data</p> <p><b>variables studied-</b> Household Economy and Rural-Urban Linkages (Occupational Characteristics, Sources of Household Income, Production</p>

		Expenditure and Capital Accumulation) Social Aspects -(Types of Towns and Cities Visited, Reasons for Visiting)
<p>4. Rural-Urban Interactions and Livelihood Strategies</p> <ul style="list-style-type: none"> <li>• The case of Himo and its region, northern Tanzania</li> <li>• Changing rural- urban interactions in sub-Saharan Africa and their impact on livelihoods: a summary</li> </ul>	<p>Cecilia Tacoli, Bitrina Diyamet t, Mathew Diyamet t, Jovita James Anthony Kibadu, Fred lerise, Richard Mabala, Esther Mbutol weand Nimrod Mushi</p> <p>(Diyame tt, et al., 2001) (Lerise, et al., 2001)</p>	<ul style="list-style-type: none"> <li>• Research design and techniques (focus group discussions, mobilitymatrix, venn diagrams) Factors for analysis of linkages such as: Land and productive activities, Access to productive inputs, Employment, access to Services</li> <li>• Patterns of occupational diversification and mobility, Migration, remittances and social networks across space, Access to markets and the role of traders</li> <li>• Research design and techniques (focus group discussions, mobilitymatrix, venn diagrams)</li> <li>• Questionnaire preparation</li> <li>• Patterns of occupational diversification and mobility, Migration, remittances and social networks across space, Access to markets and the role of traders</li> </ul>
<p>5. Measuring Urbanization Around a Regional Capital :The Case of Bhopal District (Gupta, 2013)</p>	<p>Anima Gupta</p>	<ul style="list-style-type: none"> <li>• Indicators to analyse urbanisation</li> <li>• Process and measurable for macro and micro level analysis</li> </ul>
<p>6. Master Planning under Rural- urban integration :The case of Nanjing, China</p>	<p>Author : Hui Qian &amp; Cecilia Wong</p>	<p>Interpretations of sustainable development Strategies: combining capital, technology and management skills of urban areas with land and labour of rural areas to foster development. Urban and Rural Planning Act (Urban and Rural master plans)</p>



## Book excerpt: RD - Rural Urban Linkage

(Sreeshtha & Raj , 1999)

**Summary :** This book excerpt explains the following : the concept of rural urban linkage, theories of evolutions of early towns, typology of rural urban linkages, theoretical framework of rural urban linkages, techniques to measure rural urban linkages, urban rural transfer mechanism.

The concept of rural urban linkage: this section explains that the relationship between the rural and urban areas is dynamic and multidimensional, definitions by UN Centre of Human Settlement and Asian Development Bank are explained, what are the essential factors for developing rural urban relation, three major elements of rural urban linkages are explained which are the city centres, rural hinterlands and distance. The concept of settlements, their elements and their types are classified in detail. Issues in Urban-Rural Linkage are characterised into four types. The unit 2 of Theories of Evolution of Early Towns explains the concepts of Environmental/ Hydraulic Theory, Economic Factor Theory, Military/ Force/ Security Theory, Traditional / Religious Theory, Causes of evolution of early towns (pre and post-industrial). Unit 3 - Typology of Urban Rural Linkages explains Preston's five typology and Rondinelli's seven types of rural urban linkages. Unit 4 explains theories such as Central Place Theory, Gateway Model, Urban Land Use Model, Core Periphery Linkage, Growth Pole / Centre model, Rural Urban Migration Theory (Todaro's Model). Unit 5 explains the Techniques to measure rural urban Linkage : Urban Centre Measure-identification or urban (growth centres and their spatial distribution), diversity and distribution measures and centrality measures (scalogram, Infrastructure Index, Functional Measures and Economic Base Measure, Hinterland Measure: expected hinterland and actual hinterland measure, Rural Urban Linkage Measure (Spatial Interaction (mobility), flow Model/ Analysis, Facility Location Model.

### Case study: Regional development through rural-urban linkages: The Dar-es Salaam Impact Region

(MUSHI, 2003)

**Context:** urban-rural linkages at two different geographical locations. Dynamic approach to rural-urban linkages - changes affecting the impact region livelihoods rather than merely describing the linkages between urban and rural areas. Formulation of policy framework for effective rural-urban linkages and enhanced livelihoods. Recommendations based on the main findings of the research.

**Key Learnings:** Study of various theories related to rural urban linkages (Emerging patterns for rural-urban linkages, aggregate growth models by Glasson (1974), the dependency theory propounded by Perroux (1955) and Santos (1979). Analysis of variables adopted was functional and spatial linkages. Research process adopted was through institutional survey, preliminary

village visit, destination studies and traffic counts. Methods adopted to carry out the study were participatory models, focus group discussion, mobility matrix, household surveys, and commodity chain analysis. Methods of selection of villages were based on certain variables. Policy implications / interventions suggested in the end.

## **Spatial Analysis of Rural-Urban Linkages in Basti District (U.P.)**

(Raisul Bari, Apr. 2014)

**Relevance to topic** –Gives an understanding of the concept of rural urban linkages, Identifies the factors that affects the relationship between rural-urban linkages and level of socioeconomic development in the study area. Studies the socio-economic and cultural status and linkages of the villages with the city. Suggests guidelines to remove the rural urban imbalance.

**Key Learnings:** Selection criteria for the villages, methodology: primary data collected through a well-structured questionnaire, Tools used were stratified purposive sampling technique, statistical and GIS techniques, Variables identified were Socio-cultural status, Economic Status, Agriculture, Education.

### **2.2.3. Master Planning under Urban–Rural Integration: The Case of Nanjing, China**

Author: Hui Qian & Cecilia Wong (Wong, et al., 2012)

**Context:** This paper talks about the rural- urban integration policy adopted in the case of master plan of Nanjing in 2008, the idea behind the formulation of such a policy, implementation strategies and also critically investigates the policy as it aims to achieve the objective of sustainable urban development.

**Key learnings:** Interpretations of sustainable development - environment, ecological, social cohesion, cultural

### **Major gaps identified in the literature**

The purpose to thoroughly study the available work done in this particular domain is to identify the missing elements and generate a research opportunity which would help in contributing more to the available rich studies. One such observation while studying the literature was the missing spatial understanding, spatial representations of the rural-urban dynamics across space and interventions for integrated planning. This helped in framing the research questions and narrowing down the aims and objectives of the study to be carried out.

## Need of the study

Many researches have pointed out that it is through the linkages of cities to town, towns to villages and vice-versa lead to the process of growth of livelihood development. The linkages are dependent on the various factors which govern the development of each individual household such as the education level, income, migration, skills etc. the location of these households also becomes a very important factor as for a rural household the proximity to gain urban based services, market to sell the agriculture based produce become the part of linkages. Similarly rural areas are important to the urban area for many workers who work in the urban areas but live in the rural areas as it is cheaper to live there. Many people look for seasonal work opportunities in the rural areas and also rely on them for the supply of produce to be sold in urban markets. Many urban poor travel to rural areas on daily basis to sell goods and services for earning their livelihood. (TACOLI, 2011) Therefore, there needs to be a system which studies and governs these linkages as there are people who depend on both these areas for daily livelihoods, services etc. The healthy and desirable linkages would benefit all at smaller as well as larger scale.

## CHAPTER 3. RESEARCH FRAMEWORK

### The research issue

After referring to various studies and literatures the research addresses the need to study the various kinds of interrelationships between rural and urban areas and how it is ultimately affecting the development. There exist various issues and weak links amongst these two areas which also affect the livelihoods of the people. The lack of spatial integration of these two areas in terms of planning and development strategies contradicts the concept of regional development which shows mostly the traces of urban bias in terms of development whereas rural areas show traces of being mostly backward.

### The research questions

The questions to be answered in this research are:

- What are types of relationships that exist between the rural and urban areas in the selected regions?
- Are there strong or weak linkages?
- What are the reasons behind each of the linkages and their intensity?
- Is there a potential to benefit from these linkages?
- What are the constraints for the development in the selected area?
- In what way the balanced economic growth and improvement of these areas be achieved?
- How are these relations affecting the socio-economic development of the region?

### Research design and methodology

The preferred research method to be used in this study is case study based wherein the shorter span of time, a detailed study can be done to investigate the concepts of rural urban linkages in real life context. The primary field work was carried out in one of the District's urban centre and two villages in a single administrative region.

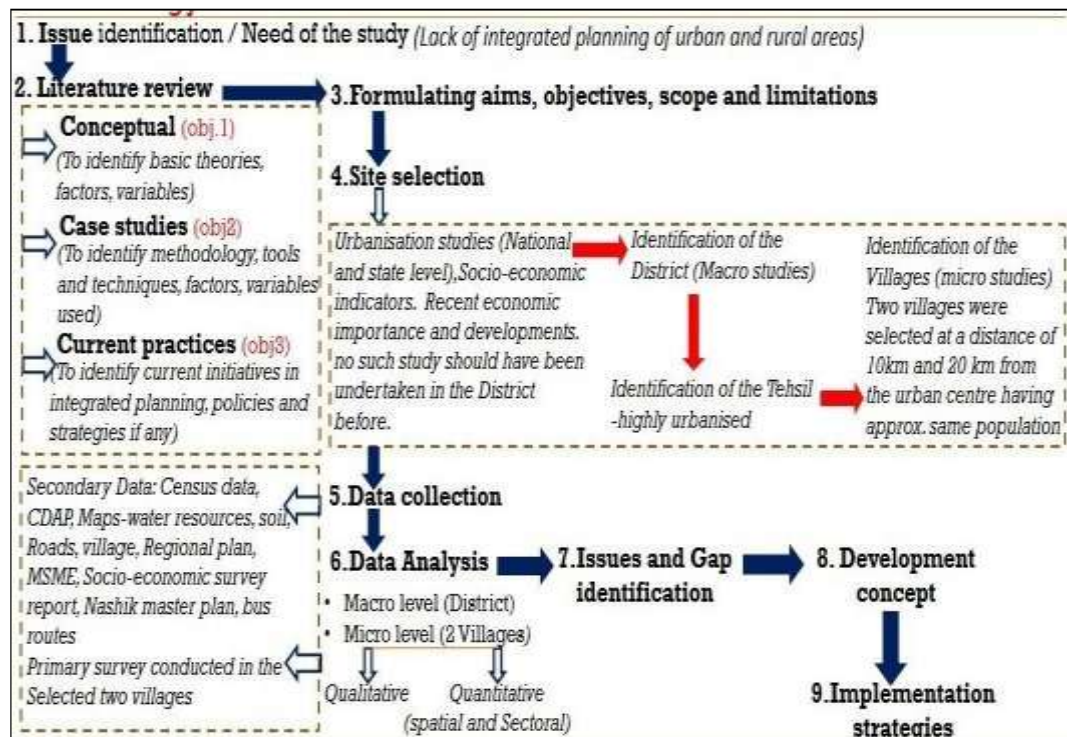


Figure 3-1 methodology chart

Source: Author

The study began by first identifying and understanding of the issues followed by understanding the need to carry out the study. Accordingly relevant literature studies were selected and thoroughly studied in order to find out the relevance to the study, the objectives, various tools and techniques used to carry out the study, various theories used, methods adopted can be looked into in detail. Conceptual based literature, various case studies and intervention based case studies were referred and key findings and inferences were noted. After gaining sufficient sensitivity of the issues, the topic, aims, objectives, scope and limitations of the study were formed. An understanding was also developed so as to how to adopt these parameters in the study. Simultaneously, collection of relevant data to carry out these studies was done.

The site was carefully selected which would do justice to the research. Relevant facts and studies related to the site were collected and analysed. A detailed study at each level such as urbanisation studies at National, State and District level was done to select the District. To get a further insight on a micro level two villages were selected from the most urbanised tehsil of the District. Certain were identified such as proximity to the urban centre and the population. The rural urban linkages based on the various linkages were studied in detail. To analyse these linkages primary and secondary surveys were conducted in both the rural and urban areas which comprised of qualitative and quantitative methods of survey. Various offices were visited and interaction with officials took place. At the village primary survey was conducted wherein interaction with the villagers took place. After data collection, the

relevant data to be used for the study was narrowed and analysed both on qualitative and quantitative terms based on the variations and various dynamics shared between rural urban areas. After the detailed analysis the policy deficits, issues, strength and weakness were studied in detail. A development concept was formed and implementation strategies both at horizontal and vertical level were formulated.

## The research aims and objectives

**Aim:** To achieve spatial integration of rural and urban areas through strengthening linkages in Nashik District.

### Objectives:

- To understand the dynamics of rural urban linkages through various literature studies.
  - Understanding concepts of Rural Urban linkages through various journal papers, articles, thesis reports, newspaper articles etc.
  - Finding relevant case studies and drawing out key inferences.
  - Identify various tools and techniques adopted for analysis, variables used, theories, methodologies adopted, type of data used, policies and strategies if formed.
1. To identify the factors affecting the rural- urban relationship and study how they operate in study area.
    - Study the urban rural interaction of Nashik District with the help of data available at the district level.
    - Study specific factors such as physical, social, economic, services interactions etc. for the study area by selecting suitable rural and urban areas in the District.
    - Analyse these factors in detail and make out necessary inferences.
  2. To understand the spatial issues, policy deficits, guidelines in terms of broader framework of 73rd and 74th CAA.
    - After detailed analysis, identify the issues in the study area that are affecting both urban and rural areas.
    - Study policies related to development of both areas and find out the deficits of integration policies and guidelines.
  3. To formulate implementation strategies for linkages that would strengthen the rural and urban areas.
    - To formulate policies to accomplish spatial integration at vertical (urban) and horizontal levels (rural).
    - Formulating strategies and guidelines for various plans.

## Site selection and justification

The site selected for the case study is Nashik District. Due to the economic policies adopted, Maharashtra has not only been experiencing high urbanisation but it is massive in its nature. The share of urban population in the state which was 42.4 percent in 2001 has increased to 45.2 percent during 2011. (Census of India, 2011) Maharashtra is the only State with 10 cities having population million+, one of which is the Nashik city.

Maharashtra also has one of the highest per capita incomes in the country and due to which it has attracted many people for job opportunities giving rise to urbanisation which is harming the planned development, affecting the agricultural land for accommodating the growing population. Nashik District is an important node of Technology triangle with Mumbai and Pune and it is becoming a new destination for entrepreneurs.

Main industries are manufacturing and engineering which are well developed but Agro based industries has huge potential and is still developing. Nashik district shows the similar growth trends of Mumbai and Pune, if this continues, it will put a strain on the already insufficient infrastructure of the District as people will start migrating to Nashik as Mumbai and Pune are already in a saturated state.

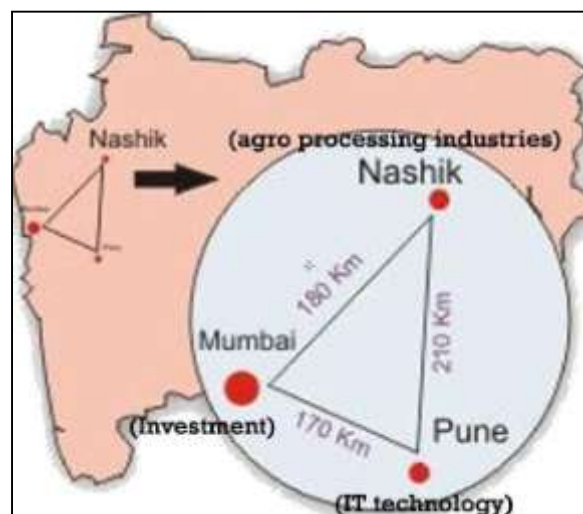


Figure 3-2 Technology Triangle of Maharashtra

### Criteria for study area selection at district level:

- 1) The District should be having fast urbanisation level;
- 2) A growing District in economic terms;
- 3) At least five small urban centres including one or two intermediate towns should be within the District;
- 4) No such study should have been undertaken in the District before.

## Urbanization

According to census 2011 the rural population percentage share is 68.84% whereas urban population share is 31.16%. The rural share has decline from 72.19 to 68.84% and the level of urbanization has increased from 27.81% in 2001 Census to 31.16% in 2011 Census.

### Rural -Urban Socio- Economic Indicators at National Level:

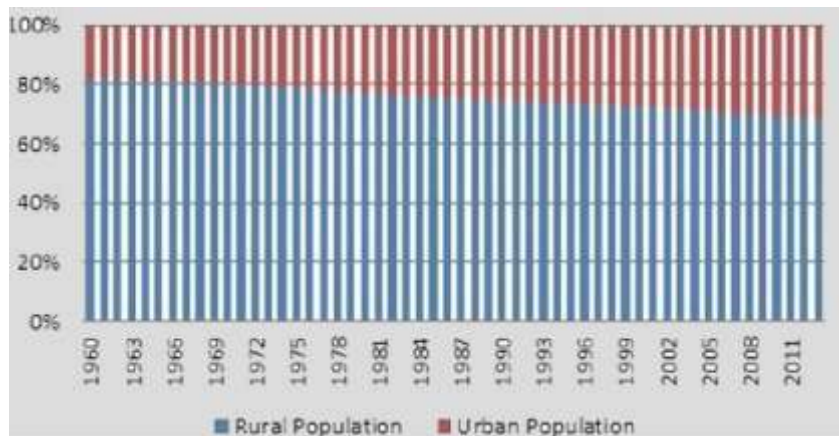


Figure 3-3 Population dynamics since 1960

Source: Socio-economic survey of Maharashtra 2017-18

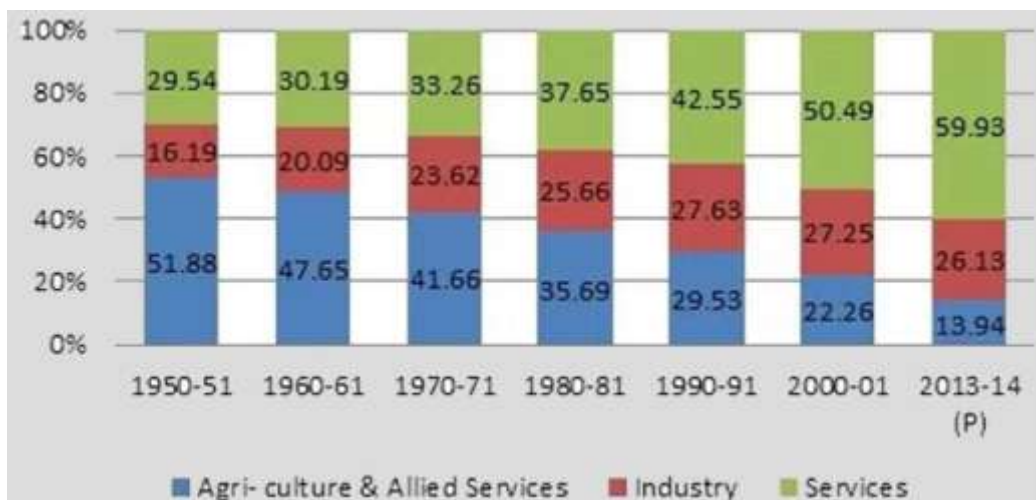


Figure 3-4 Sector wise contribution in GDP

Source: Socio-economic survey of Maharashtra 2017-18

As it can be seen in figure 2-3 and 2-4 the rural population is gradually seen to be decreasing from the year 1960 to 2011 due to migration of people in search of job opportunities, lifestyles, services, better living conditions. In the year 1950-51 it can be seen that country's GDP was mostly due to agricultural activities but it can be seen that it has



decreased to 13.9% in the year 2013-14. A shift service sector can be seen.

In the figure 2-5, it can be seen that the level of urbanisation is the highest among Mizoram (51.51%), Tamil Nadu (48.45%), Kerala (47.72%), Maharashtra (45.58%) and Gujarat (42.58%). Maharashtra when compared to the other states has the largest area whereas Kerala, Mizoram are comparatively very smaller states. Maharashtra also stands highest in terms of its contribution to the GDP and its urbanisation levels. (See fig.2-6) also, the rural population is seen to be declining in the last three decades. (See fig 2-7) Upon looking at the urbanisation levels of Maharashtra it is observed that Thane, Pune, Mumbai and Nagpur are highly urbanised where Mumbai is completely saturated and the other districts are falling in the range of 60-80% level of urbanisation (See fig.2-8). The other district that are most urbanised are the Nashik and Aurangabad districts where in a similar trend in Growth rate of the highly urbanised districts is observed. If a similar trend continues, it can be said that Nashik will also face similar issues which Mumbai and Pune are facing. As Nashik is in a developing stage, it can be well planned.

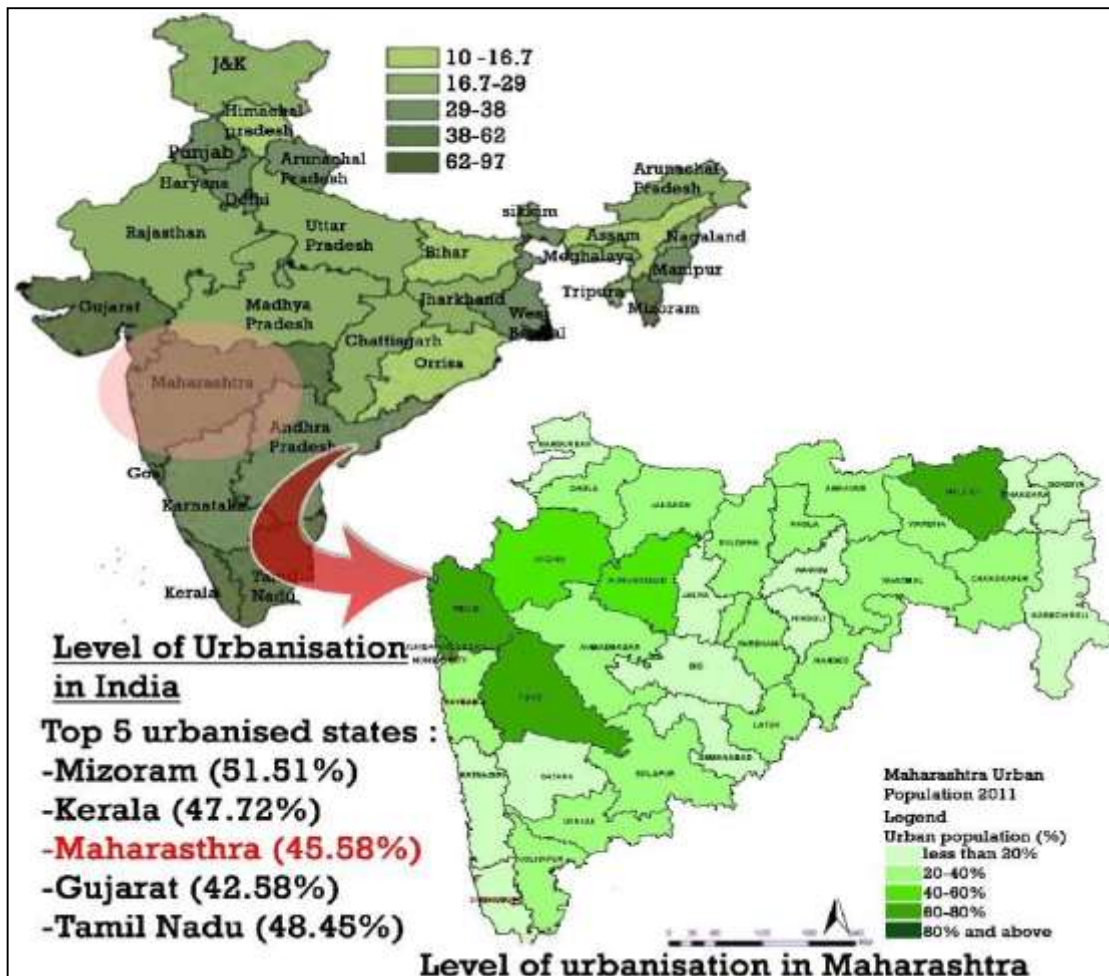


Figure 3-5 National and state urbanisation levels

Source: Author

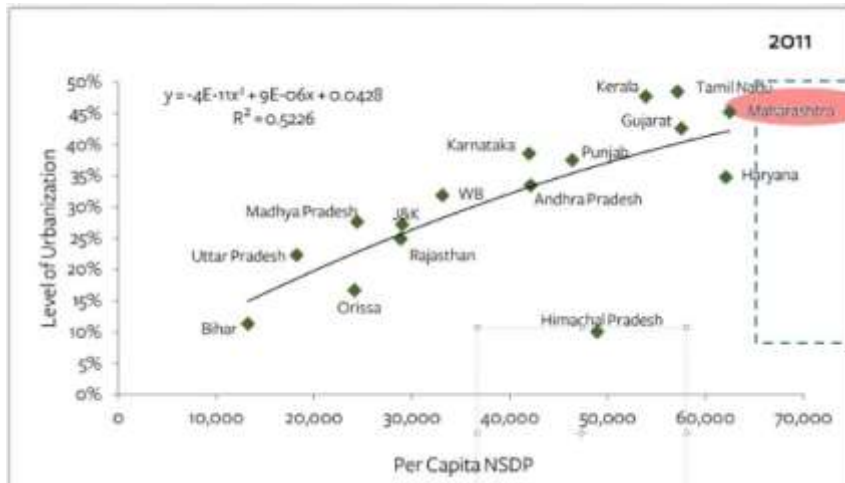


Figure 3-6 Graph showing the level of urbanisation and GDP contribution of major urbanised states

Source: National Accounts Statistics (1980-2011)

Year	Rural Population in %	Urban Population in %
1991	61.31	38.69
2001	57.57	42.43
2011	54.77	45.23

Figure 3-7 Urban Rural Population share of Maharashtra

Source: Census of India, 1991, 2001, 2011

District	Level of urbanization (%) district wise			Growth rate %
	1991	2001	2011	
Mumbai	100	100	100	Saturated
Thane	64.64	72.58	76.92	18.99
Nagpur	61.78	64.26	68.3	10.55
Pune	50.74	58.08	60.89	20
Aurangabad	32.76	37.45	43.74	33
Nashik	35.55	38.8	42.53	19.6

Figure 3-8 District wise level of urbanisation

Source: Census of India, 1991, 2001, 2011, compiled by author

## Nashik District:

Area of the district is 15530 Sq.km which is 5% of the area of Maharashtra. It has 15 tehsils, 11 statutory towns, 1922 Villages, total population of 6107187 out of which Urban is 42.53% and Rural is 57.57%. Decadal population growth of the district is 22.30%. Nashik is the most urbanized tehsil with 90 percent population being urban. (3rd largest urban area of Maharashtra). It has highest growth rates among top cities of Maharashtra. Nashik also ranks 1st in its contribution to agriculture (8.85%) and its allied activities sector in GDDP, it ranks 2nd in the state in terms of gross irrigated area (6.42%). Also Nashik has the highest workforce in the agriculture sector.

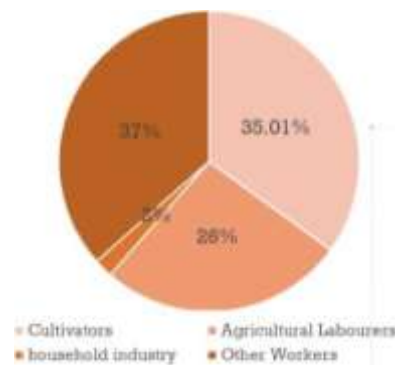


Figure 3-9 Occupation structure of the district in 2011

Source: Census of India 2011

## Selection criteria of the village:

1. Distance from the urban centre : two village selected at a distance of 10km and 20km respectively.
2. Population of the village : village having approximately same population were selected.

### Scope:

- To identify factors related various types of linkages identified.
- To select the villages based on certain factors such as size, population and proximity to urban area.
- To identify the issues, strengths and weaknesses in the impact region.
- To find out the deficits and necessary inputs to bridge the deficits.
- Comparative analysis of the various villages selected for the study.

## Limitations:

- The selection of factors for assessment of linkages will depend upon the

literature and data availability.

- The manifestation of the proposals will not be explored in the thesis.

**Outcome:**

A model for desirable spatial linkages and Policy level Interventions.

## CHAPTER 4. DATA COLLECTION & ANALYSIS

### Introduction

This chapter talks about the various type of data needed for carrying out the study closely linking it to each objective and its subtasks so that no data is missed while analysis. The methods and sources of data collection have been described, problems faced while collecting the data and how any particular data gap was overcome has been explained.

### Objectives wise- information required and Collection methods

- **Objective 1:** To understand the dynamics of rural urban linkages through various literature studies.  
**Data required:** Various literature in the form of journal articles, books, newspapers were needed.  
**Collection method:** Through online resources available such as research gate, JTSOR, World Bank, Economic and political weekly issues were very helpful.
- **Objective 2:** To identify the factors affecting the rural - urban relationship and study how they operate in study area.  
To fulfil this objective a study at two levels was performed, the broader level study at the District level and detailed study at the village level. For both level of studies data was required through primary and secondary sources.

### District level study:

#### Data obtained:

**Secondary sources:** Data on basic demographics was easily obtained from Census of India, to study the economic profile various documents such as Comprehensive development agriculture plan, Maharashtra competitiveness project report (Nashik MACP), various research studies done on Nashik, Socio- Economic report of Maharashtra were collected, Landsat imagery from Bhuvan.com, DEM files from USGS website, market details from <https://www.msamb.com/ApmcDetail/ArrivalPriceInfo>, APMC details from <http://apeda.gov.in/apedawebsite/> .

#### Data obtained on site (Primary sources):

Data which was not available online was collected from different departments in the Nashik District such as Regional planning document from the Town Planning Department, Village maps, Bus routes from the traffic department, list of schemes for rural development from the agricultural department were collected.

## Expert opinions:

To know the scenario of the district from people actually working in the field meetings with officials in various departments was done.

1. Mr Vijay Nirbhavane, Officer at District Agriculture office
2. Mr Vitthal Sonawne, District Court office, MSRDC

The relevant points discussed with these experts will be further elaborated in the following sections.

## Village level study:

### Data obtained:

**Secondary sources:** The village demographic statistics were easily available from Census of India website, for built up growth analysis- Satellite imagery from Google Earth was used.

### Data obtained on site (Primary sources):

To study the various linkages of the two selected villages in detail primary survey field visit was conducted in a duration of 4 days which included the following tasks:

1. Primary observation of the village (housing typology, road condition etc.)
2. Photo documentation of various observations on site
3. Questionnaire was conducted amongst villagers to quantitatively and qualitatively assess the linkages: for this purpose, household survey by random sampling method was done. Among the respondents included farmers, labourers, working class and shop owners etc.

### Problem faced during primary survey:

Some of the common constraints faced while surveying in both the villages was that, mostly the working member of the household was on the agriculture field or work place and women members were unable to answer questions related to income, travel distances.

- **Objective 3:** To understand the spatial issues, policy deficits, guidelines in terms of broader framework of 73rd and 74th CAA.

Data obtained: Documents of 73<sup>rd</sup> and 74<sup>th</sup> CAA- guidelines, various journals, articles and studies on assessment of decentralised planning in India.

# CHAPTER 5. STUDY AREA

## Introduction

This chapter describes in brief the profile of Nashik District in terms of its location, geo-climatic conditions, demography which is naturally affecting the District's economy. It also talks about the main features of its agriculture setup which would ultimately help in understanding the dynamics between the rural-urban areas.

## Brief Profile of the study area: Nashik District

Nashik region is known as a holy District of Maharashtra state. Nashik region is profoundly enhanced area as far as physiography. It has a primary stream Godavari which is called as 'Ganga' of Maharashtra. Due to the presence of the two main rivers and many smaller streams, it provides abundant resources of water for irrigation purpose hence making the area very rich in agriculture. Nashik District has made its name in the global market for its export of grapes. It is important for us to comprehend a short profile of this region which is currently setting up itself into one of the main agrarian and industrial area of Maharashtra state.



Figure 5-1 Location of Nashik District

Source: Maps of India

Nashik District is located in the north western part of Maharashtra. It has a total area of 15330 sq.km. It is surrounded by Ahmednagar District in the South, Aurangabad in the South-East, Thane in the West, Jalgaon in the North and North-East, Dangs and Surat District of Gujarat in

## Spatial Analysis of Rural-Urban linkages – A Case of Nashik District

the North-West and Dhule in the North.

For administrative purpose it is subdivided into four divisions namely, Nashik, Niphad, Malegaon and Peint and comprises of 15 tehsils namely Surgana, Satana, Peint, Yeola, Nashik, Niphad, Kalwan, Dindori, Chanvad, Malegaon, Nandgaon, Sinnar, Igatpuri, Trimbakeshwar and Deola.

## Agro-climatic zones in Nashik district

Maharashtra District has 9 Agro-climatic zones out of which Nashik District falls under four agro-climatic zones namely, Ghat Zone, Transition Zone1, Transition Zone2 and Scarcity zone and hence receives different variations of rainfall throughout the District and also has varied varieties of soil type throughout the district.

Some of the major types of soil present are medium to deep black soil, red soil and laterite soil and loamy soil. The average rainfall observed in the district is 1075mm<sup>3</sup>. (Govt. of Maharashtra, n.d.). The combination of all these factors greatly affects the agricultural pattern of the district. Wide variety of crops are grown in the district. It is therefore known for growing rich quality horticulture crops such as grapes, pomegranate, onions, and tomatoes and also some of the cereal crops such as Maize, paddy, Bajra, Soybean etc.

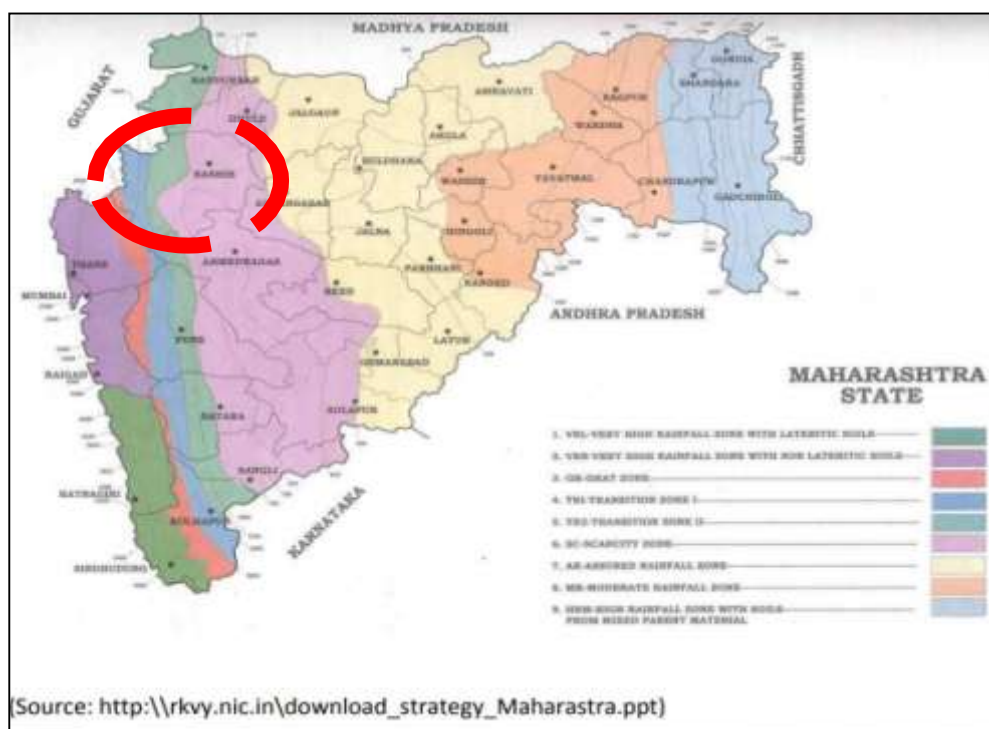


Figure 5-2 Agro-climatic Zones of Maharashtra

The soils present in the District are very fertile and are very suitable to grow various variety of crops due to their rich properties.



## Data Analysis (Objective 2)

### Introduction

This chapter includes the analysis done on the case study area in two parts i) Macro level analysis i.e. at the District level ii) Micro level analysis i.e. at the Village level. The profile of the study area at both the scale is studied in detail which affects the nature of the linkages that are present in the area. The analysis is based on certain set of selected parameters to study and analyse the various kinds of relations between rural and urban areas and this section also tries to understand the reasons for the existence and intensity of these relations.

### Macro level analysis

This level of analysis is done on the District level to understand the nature of linkages between the rural and urban areas in a regional context. For this purpose a set of parameters have been selected which help in determining the kind of linkages that exist in the region.

### Parameters for analysis

- I. Socio- economic Disparities
- II. Urbanisation
- III. Production and supply chain

Factors influencing rural-urban interaction:

- a) Physiography
- b) Productivity of region
- c) Socio- economic status Further explaining the parameters in deta

### Socio – Economic Disparities

The degree of socio-economic disparities greatly affect the pattern and intensity of the rural urban interaction. Disparities in terms of income status, provision of basic services etc. which exist between both rural and urban areas. The relationship exists in the first place to mutually benefit for the economic prosperity and thus dependency occurs to achieve this economic prosperity. It is observed that, greater the spatial disparity, larger are the flows and interaction. In this study, the first step would be to understand and analyse the socio-economic disparities that exist in the District which would enable us to understand the possibility of the degree of interaction that can exist in the region.

### Urbanisation

Process of urbanisation happens due to interaction of certain internal and external forces wherein traditional agrarian resources and society gets converted into more urbanised form. This not only results in changing the physical landscape but also the economic and social environment. The urban centres act as socio-economic hubs for the surrounding regions, mostly becoming the collection and distribution centres of various goods produced. This initiates the mobility of people, goods and services from rural to urban areas and vice-versa. This relationship is made functional by the physical linkages and by various facilities of

transportation. The urban centres most of times influence the growth of nearby settlements, transforming them from rural to urban. In this study, the urbanisation pattern in the region would be studied to determine the change in the land utilisation pattern, the growth of urban centres and their impact on the surrounding for various types of economic and social dependencies.

## Mobility

The socio-economic disparities and need to achieve better quality of life initiates mobility in terms of daily travel to work, permanent migration near work for better employment opportunities which requires efficient physical linkages, transportation facilities. The economic dependency in terms of movement of daily agriculture produce to the urban areas and manufactured goods back to rural areas also requires mobility through the physical linkages. In this study, the mobility patterns from rural areas for non-farm employment opportunities would be analysed. The extent of flow of goods and services from production to the consumers by the available physical linkages functioning this relation would be studied.

*Let us understand and analyse each of the parameters in detail in the context of the study area.*

Table 6-1 Population composition of the District

Year	1981-91	1991-2001	2001-2011
Total Population	38513 52	4,993,7 96	6,107,1 87
Population Growthrate	28.73 %	29.66%	22.33%
Density (per.sq.km)	248	322	393
Literacy rate	62.33	74.36	80.96

Source: Census of India

The study of population and its various aspects is very important as it determines the socio-economic development of any region. The development of region depends upon its natural and human resources. It can be seen from the table 6-1 that total population of the district is 6,107,187 as per Census 2011. The growth rate calculated for three decade shows high increase in the population from 1991- 2011. It has almost doubled in number

## Occupation structure

Table 6-2 the sectoral percentage distribution of workers in 1991

Sector	Maharashtra	Nashik
Primary	61.51	68.72
Secondary	15.80	13.99

Tertiary	22.69	17.27
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Source: HDR-Maharashtra 2002

The majority of population of the District was engaged in primary sector but during the recent years an increase in the secondary and tertiary sector has been seen, declining the population working in the primary sector both at state and district level.

Table 6-3 Working population scenario of the District

	1991	2001	2011
Total workers %	41.12	43.79	45.25
Main workers %	34.9	38.24	41.31
Marginal workers %	5.98	5.52	3.93
Non-workers %	58.88	56.24	54.75

Source: Census of India

Figure 6-2 Distribution of Main working population 2001, 2011

Source: Census of India

Figure 6-2 shows that the population working in other sectors such as service is constant in the last two decades, but in the Or it can be also due to the constraints in acquiring the assets to agricultural land and water, credit and financial assets.

**Socio- economic disparities:**

As discussed earlier, the degree of socio-economic disparities greatly affect the interaction between rural and urban areas. Let us see the level of disparities that’s exist in the Nashik Region.

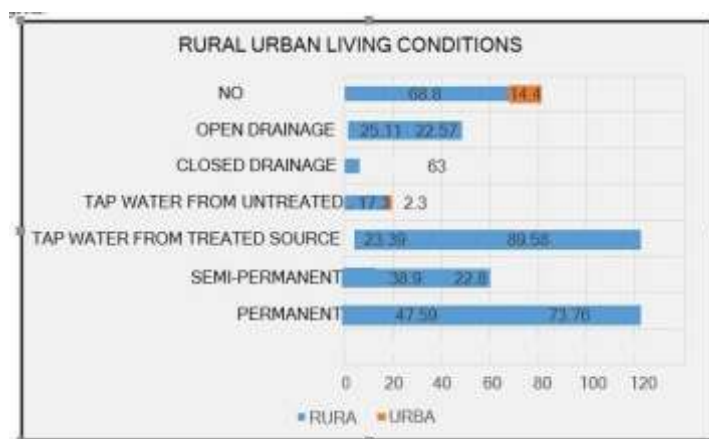


Figure 6-3 Rural - Urban living conditions (Drainage, Water, Shelter)

Source: Census of India

**Spatial Analysis of Rural-Urban linkages – A Case of Nashik District**

be seen that there are high level of disparities in terms of acquiring basic amenities such as closed drainage, tap water from treated source and permanent shelter. Only 6.1 percent of the rural population has the access to closed drainage, 23.39 percent rural population gets treated tap water and 12.5 percent of rural population still lives in temporary structures. This shows the level of deprivation of the rural areas to basic amenities whereas urban areas comparatively have better living conditions with 63 percent of population having closed drainage, 89.58 percent having tap water from treated source and 73.76 percent population living in a permanent shelter.

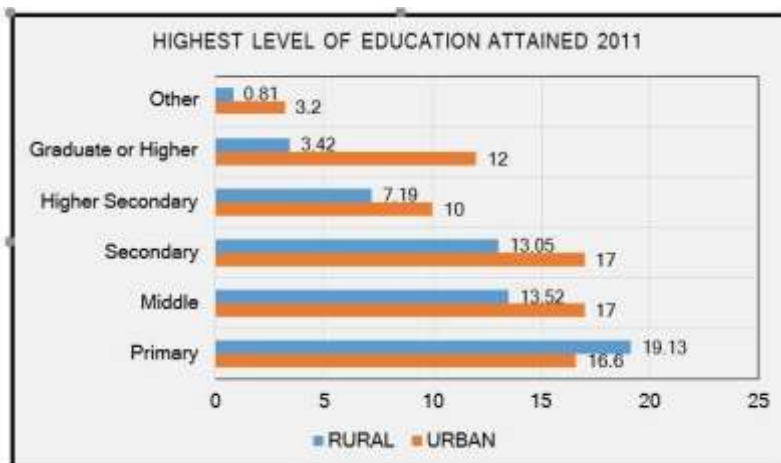


Figure 6-4 Highest level of education attained  
 Source: SECC 2011

The figure 6-4 shows the comparative picture of rural – urban population in terms of their education level. It can be seen that in rural areas highest level of education attained majorly falls under the category of Primary level education and the number decreases as the education level increases, graduates being only 3.42 percent. This disparity can be due to the insufficient infrastructure facilities present in the rural areas such as higher secondary schools, colleges and also transport facilities to travel to places offering higher education.

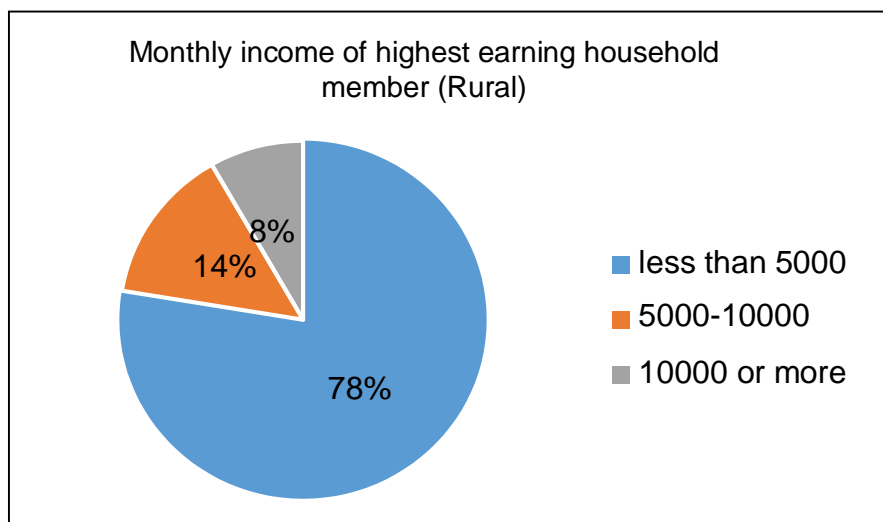


Figure 6-5 Monthly income of highest earning household member (Rural)  
 Source: SECC2011

From the above figure 6-5, it can be seen that 78 percent of the rural population have monthly earnings less than rs5000/month, 14 percent earning between rs5000 10000/month and only 8 percent households are earning more than rs10000 and more. In such a situation it becomes very difficult to afford basic day to day life necessities like food, water, clothes etc.

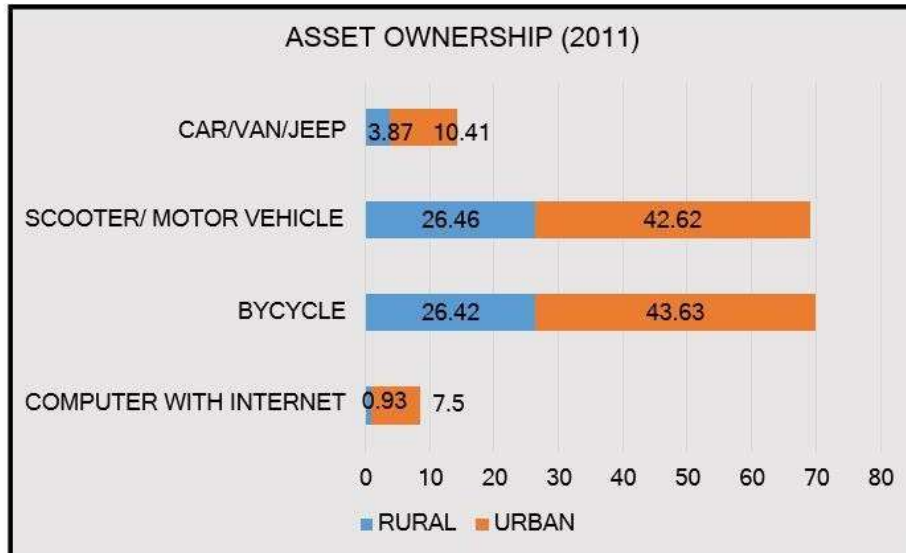


Figure 6-6 Asset ownership  
Source: Census2011

It can be seen from the figure 6-6 above that most rural population have ownership of bicycles or two wheelers, the percentage of four-wheeler ownership is very low (3.87%) whereas urban areas have almost double the ownership of these assets. This can be due to higher incomes in the urban areas. Rural agricultural households require four wheelers as it increases their chance of transporting agricultural produce at their own cost which otherwise becomes a costly affair through other means such as through traders or public transport.

Summary: In this section initially it was broadly seen that majority of the population in the Nashik District comprises of the rural population and the primary occupation of the district is in Primary sector as majority of the population is seen to be agricultural workers being agricultural cultivators or agricultural labourers. Also in the previous section it was mentioned that Nashik contributes the highest in GDP in Agriculture and allied activities. Hence it can be said that Nashik main economy is agriculture based. Though while comparing the socio-economic status of rural and urban population it was observed that rural population being in majority and contributing the most to Nashik's economy has high level disparities. The resultant effects of these disparities would be analysed in the next parameter of urbanisation.

## II. Urbanisation

The District has 15 tehsils and 1923 villages, where in Nashik Tehsil is the most urbanised with 90% of the population living in urban areas.

Table 6-4 Tehsil wise urbanisation levels 2011

### Spatial Analysis of Rural-Urban linkages – A Case of Nashik District

TEHSIL	URBAN	RURAL	TOTAL	URBANISATION	GROWTH RATE(2001-2011)
SURGAN A	6263	169553	175816	3.56	17.45
KALWAN	0	208362	208362	0	20.51
SATANA	37701	336734	374435	10	16.83
<b>MALEGAON</b>	<b>587457</b>	<b>368137</b>	<b>955594</b>	<b>61.47</b>	<b>17.40</b>
DEOLA	0	144522	144522	0	0
NANDGAON	103662	185186	288848	35.88	18.18
CHANVAD	25341	210508	235849	10.74	12.99
DINDORI	0	315709	315709	0	16.14
PEINT	0	119838	119838	0	19.24
TRIMBAK	12056	156367	168423	7.15	19
<b>NASHIK</b>	<b>1579543</b>	<b>175948</b>	<b>1755491</b>	<b>89.97</b>	<b>24.95</b>
IGATPURI	55827	197686	253513	22.02	9.98
SINNAR	65299	281091	346390	18.85	15.68
NIPHAD	74398	418853	493251	15.08	10.82
YEVLA	49826	221320	271146	18.37	13.13

Source: Census of India

## Settlement distribution in Nashik District

The settlement distribution in the District has been classified according to the population sizes of

### Spatial Analysis of Rural-Urban linkages – A Case of Nashik District

each village as per Census 2011.

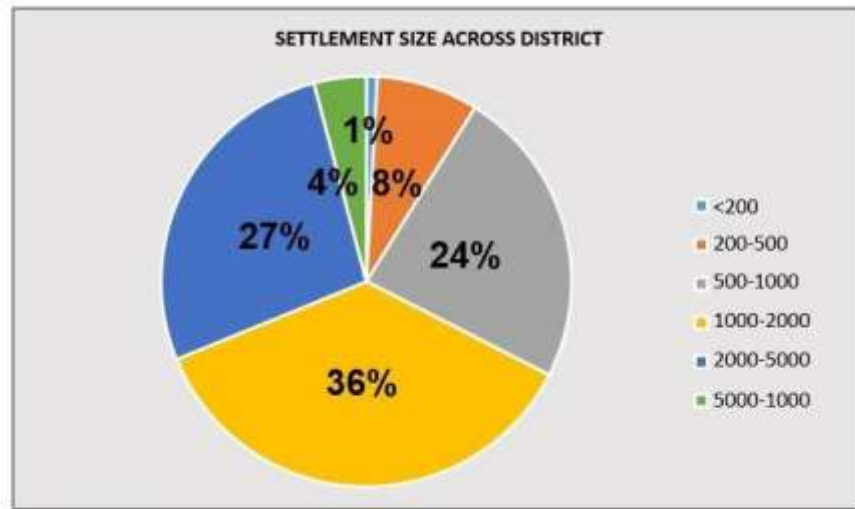


Figure 6-8 Settlement size across the District

Source: Census of India 2011

From the figure 6-8 it can be seen that 36% of the villages in the district have the population size of 1000-2000 persons, 27% have the population size of 2000-5000 persons and 4% falling under the category of 5000 and above.

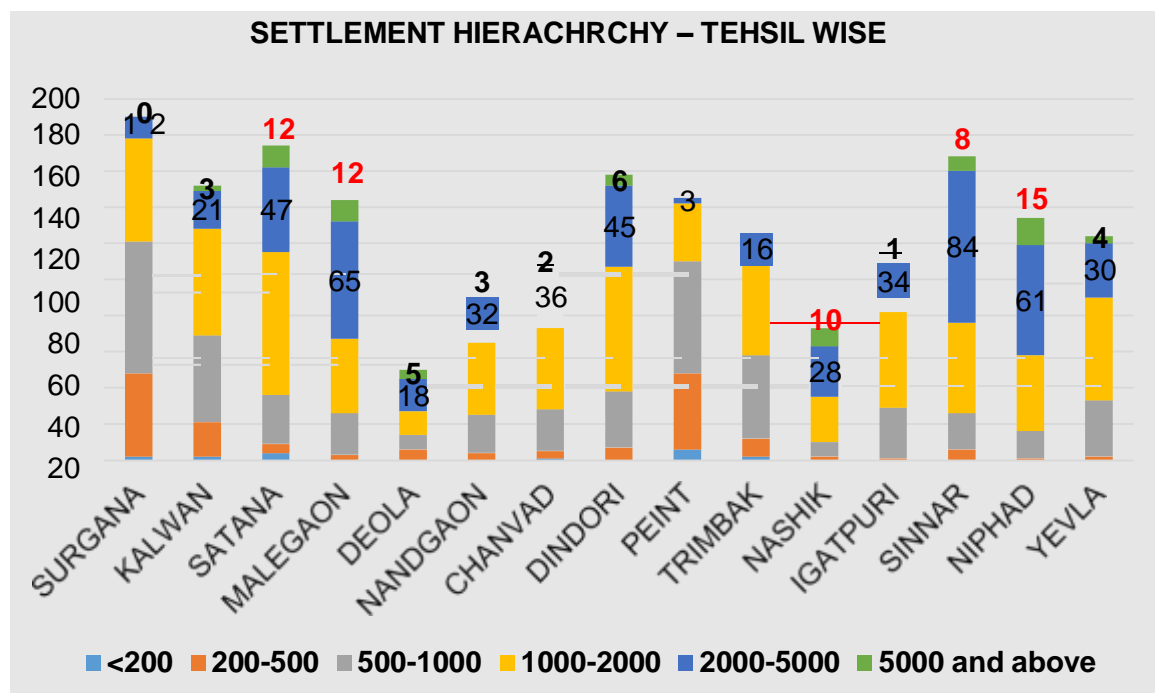


Figure 6-9 Tehsil wise settlement hierarchy

Source: Census of India 2011

As per census 2011, it can be seen in the figure above that the most urbanised tehsils Malegaon, Nashik and Niphad have settlement size in the range of 5000 and above. It can be seen in table 6-5 that Nashik has least number of villages (73). Apart from these three tehsil Sinnar and Satana also has 8 and 12 settlements in the range of 5000 and above. The proximity

### Spatial Analysis of Rural-Urban linkages – A Case of Nashik District

around urban centres leads to occupational diversification as land prices increases and small farmers either convert to labourers or find job in nearest town. This diversification of occupation leads to formation of Census towns. Let us see how the census towns have emerged in the district in each tehsil.

Table 6-6 Census towns Tehsil wise

TEHSIL	1991	2001	2011
SURGANA	0	1	1
KALWAN	0	0	0
SATANA	0	1	1
<b>MALEGAON</b>	<b>0</b>	<b>3</b>	<b>5</b>
DEOLA	0	0	0
NANDGAON	0	2	2
CHANVAD	0	0	1
DINDORI	0	0	0
PEINT	0	0	0
TRIMBAK	0	1	1
<b>NASHIK</b>	<b>1</b>	<b>4</b>	<b>7</b>
IGATPURI	1	2	2
SINNAR	0	1	1
NIPHAD	2	2	3
YEVLA	0	0	0

Source: Census of India 1991, 2001, 2011

Figure 6-10 shows that Nashik and Malegaon which are the highest urbanised tehsils have the highest number of census towns too followed by Niphad. The



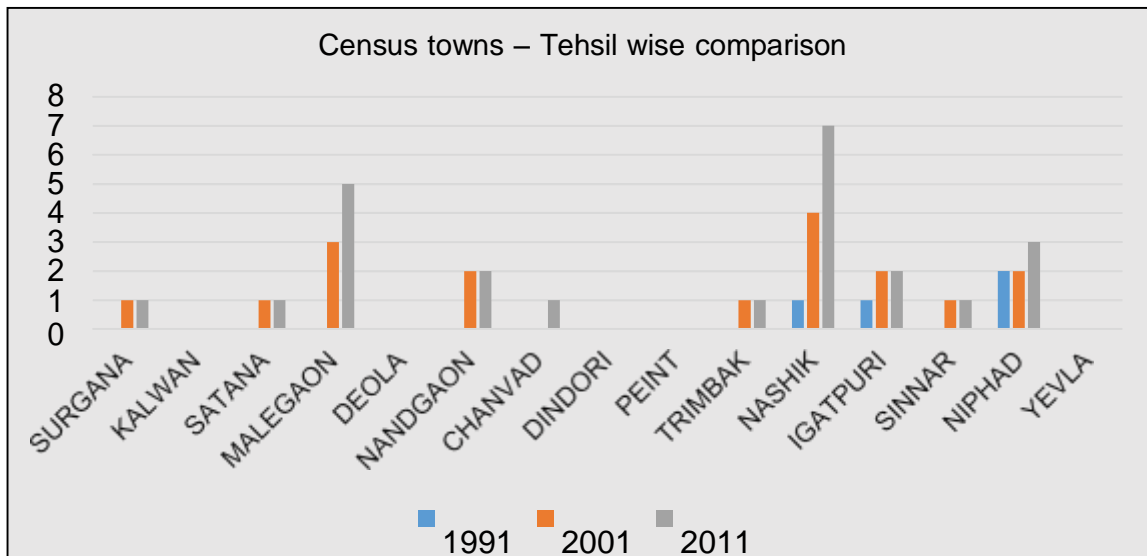
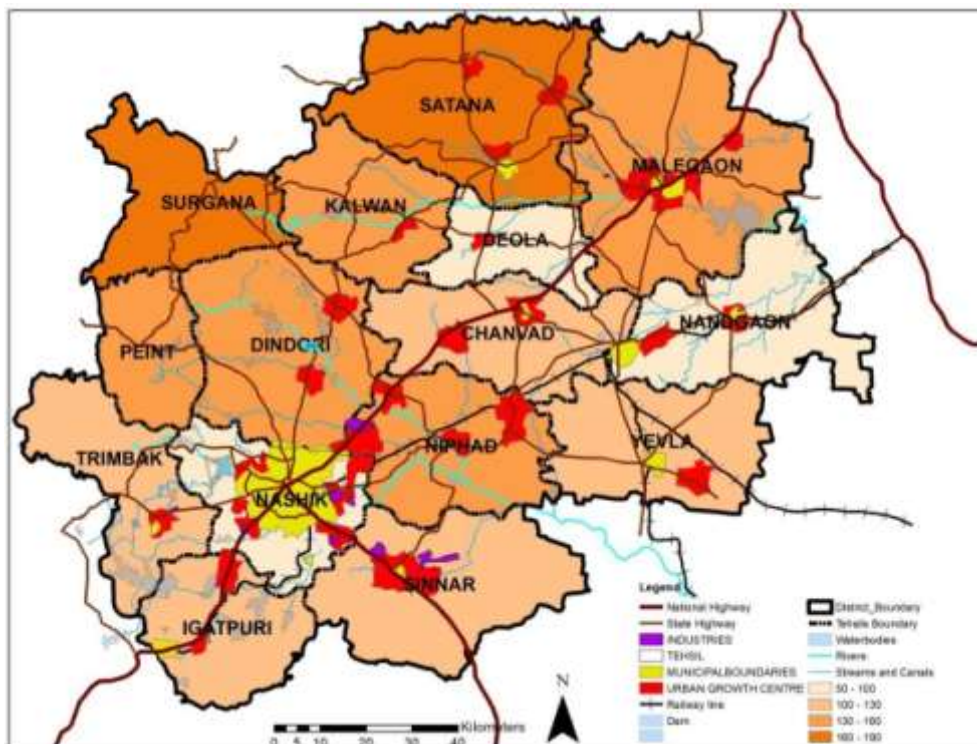


Figure 6-10 Tehsil wise comparison of census towns

Source: Census of India 1991, 2001, 2011

Figure compares the emergence of census towns from three decades starting from 1991 to 2011. Nashik which had only 1 Census town in 1991 currently has 7 Census towns as per census 2011. It shows that population size of villages is rapidly growing and undergoing occupational changes in these urbanised districts. Hence, a transformation of village to urban centres is seen in these particular tehsils.

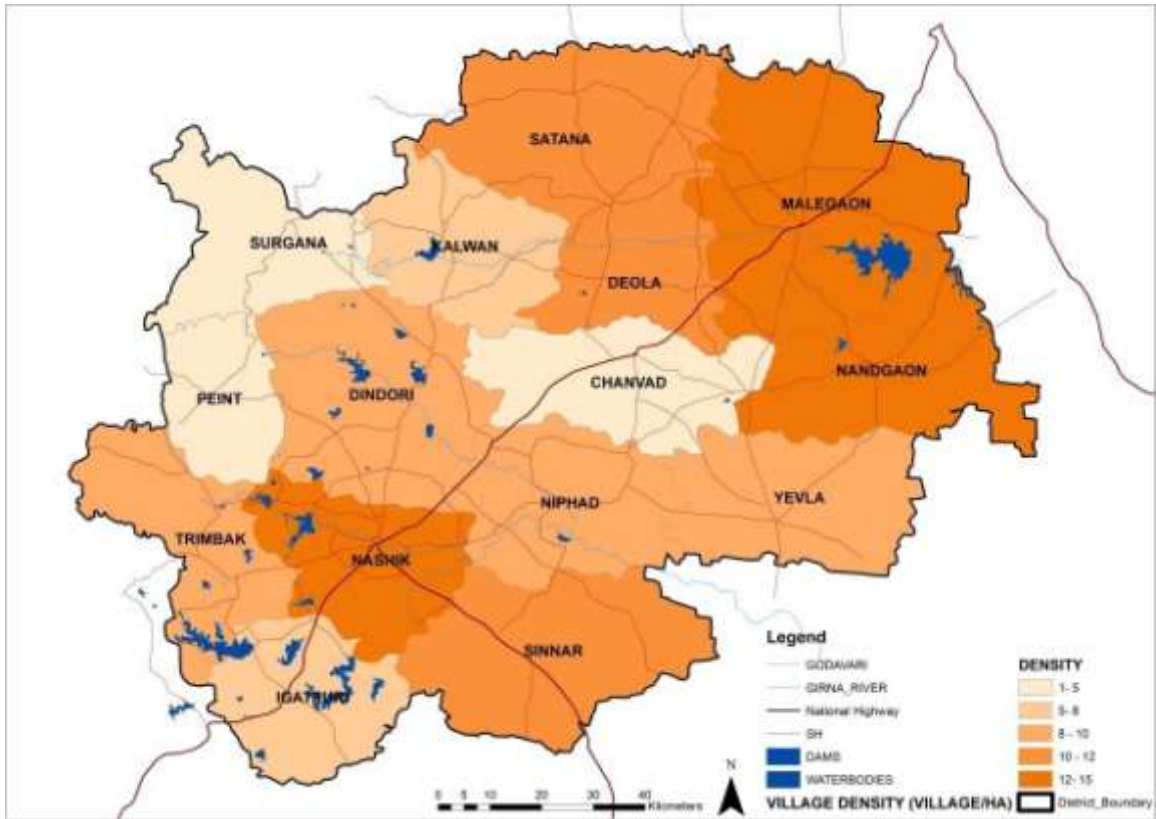


Map 6-1 Number of villages in the district

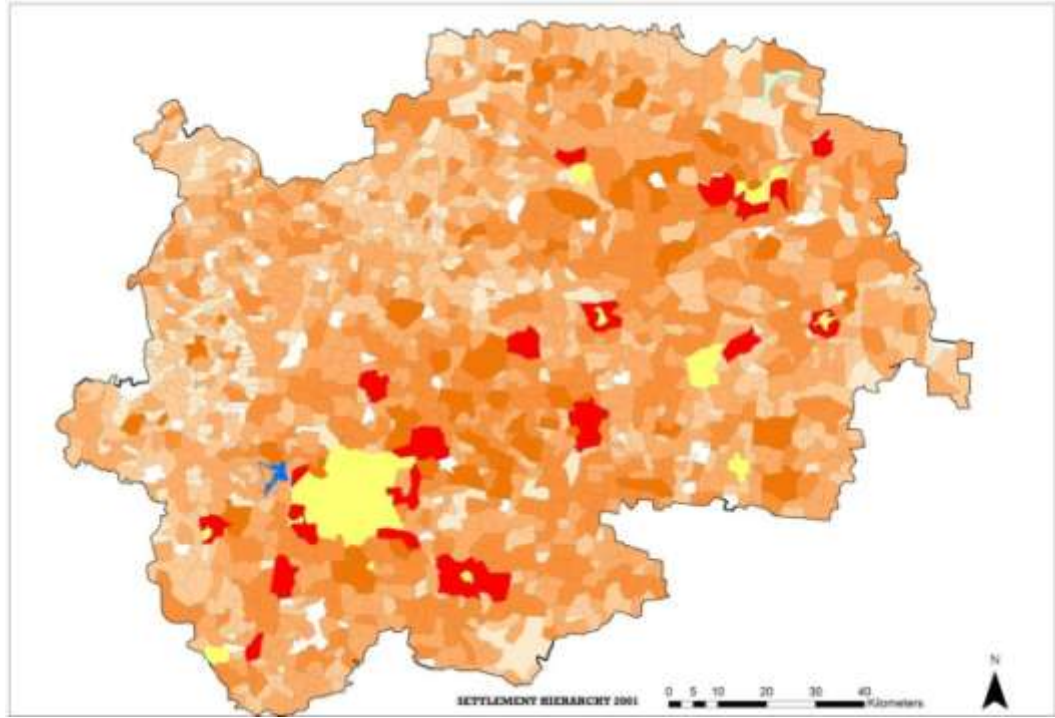
Source: Author

Peint, Surgana, Chanvad, Kalwan, Igatpuri have the lowest village densities which can be due to the smaller size of the settlements in these particular district.

### Spatial Analysis of Rural-Urban linkages – A Case of Nashik District

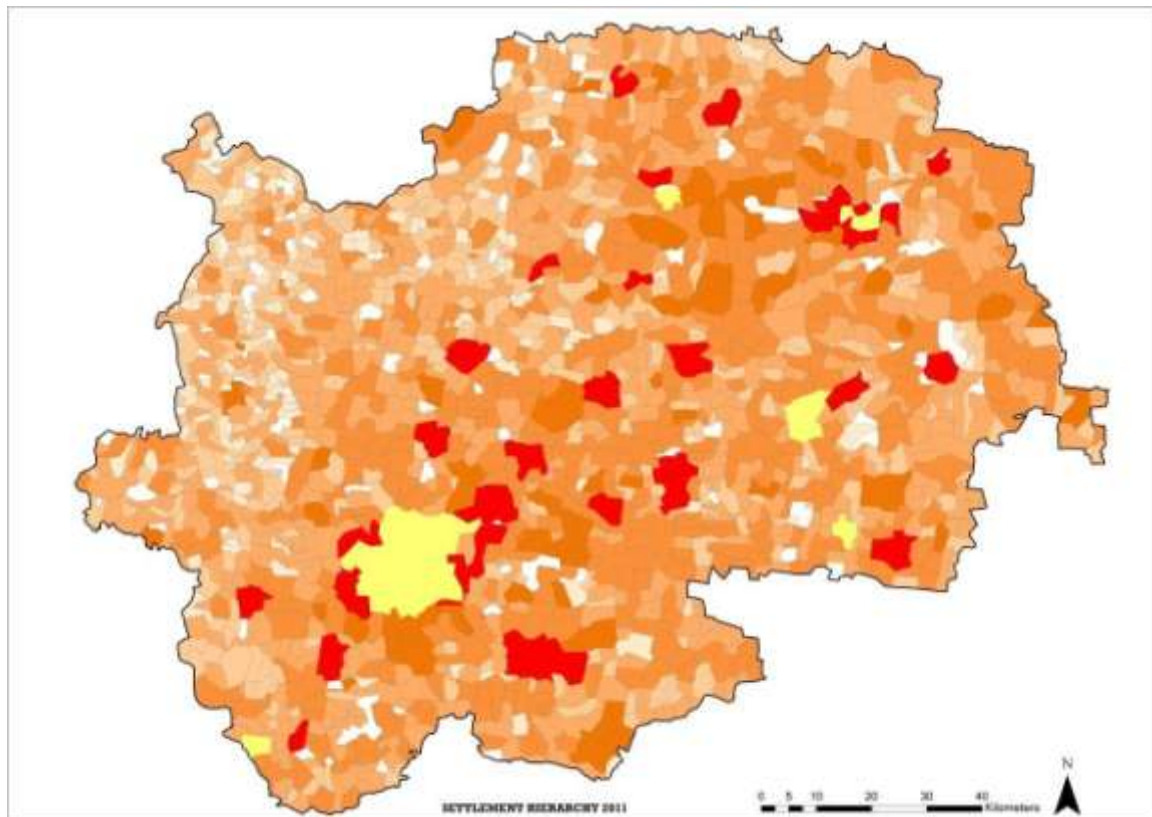


Map 6-2 village density map  
 Source: Author



Map 6-3 Settlement hierarchy map 2001  
 Source: Author

**Spatial Analysis of Rural-Urban linkages – A Case of Nashik District**



Map 6-4 Settlement hierarchy map 2011

Source: Author

It can be seen from the fig 6-3 and 6-4 of settlement hierarchy map 2001 and 2011 that North western side of the district i.e. the tehsils Surgana, Peint, Trimbakeshwar, Kalwan shows a lighter patch which means that the settlements in these particular tehsils are smaller in size in the population range of 200-500 and 500-1000 whereas a darker patch is seen in Nashik to Malegaon route which means settlements in these particular tehsils are larger in size in the range of 2000-5000 and 5000 and above. The temporal map of 2001 and 2011 shows that population is increasing in the settlements near the municipal boundaries (yellow), the new urban growth centres and census towns (marked in red) are also coming up near the urban area municipal limits and already existing urban growth centres.

It can also be seen that the growth of population is happening on the major transportation corridors. The National Highway 3 and State highway passing from Nashik tehsil to Malegaon tehsil. As discussed in the section earlier that the socio-economic disparities leads to the increase in the level of interactions. To examine this statement an analysis of the rural urban disparities at district level is already done. Now, to check which areas are mostly benefitting in terms of physical and social infrastructure, an analysis is done at the district level. This analysis is performed to check whether there is a pattern, concentration or bias in the provision of certain facilities and whether the settlement pattern is influenced based on the result of the analysis.

A weighted overlay methods is adopted wherein various parameters are comprehensively analysed to find out the areas which are most and least rich in social and physical infrastructure. The following list of parameters were used to carry out the analysis:

1. Health and medical facilities

### **Spatial Analysis of Rural-Urban linkages – A Case of Nashik District**

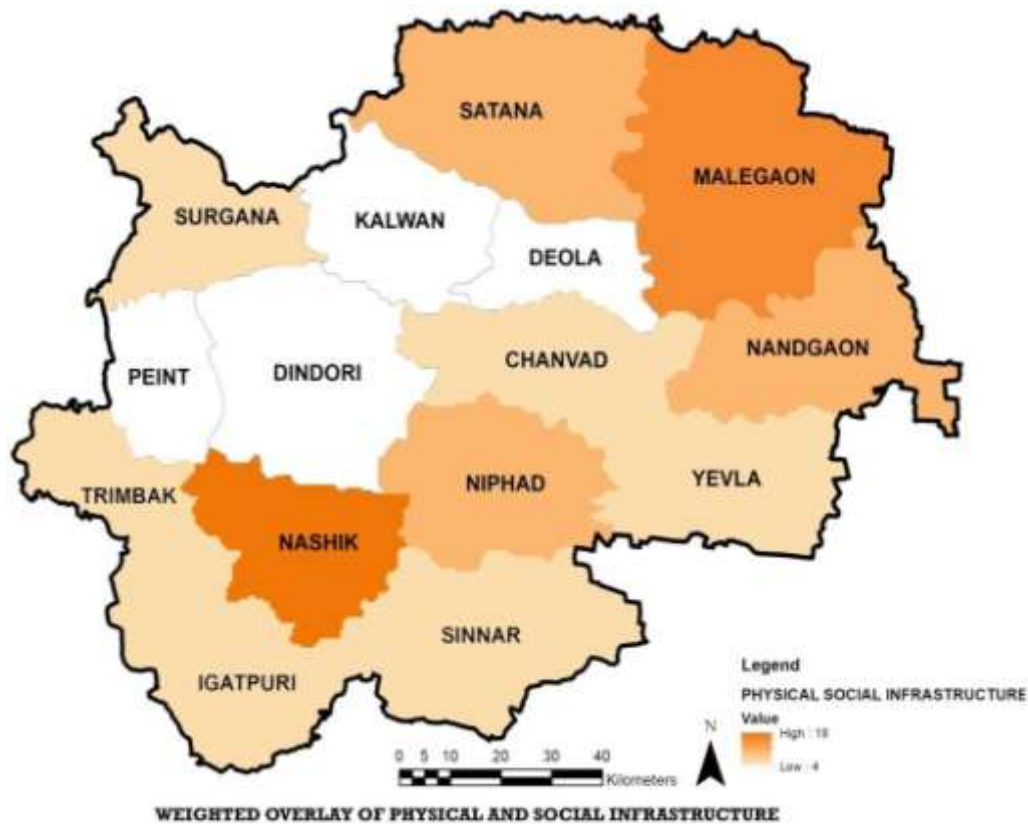
2. Educational facilities
3. Banking facilities
4. Others
5. The subcategories considered under each of the above mentioned categories is mentioned in the table below:

Table 6-7 Subcategories of social and physical infrastructure used in weighted overlay

<b>MEDICAL FACILITIES</b>	
Hospital Allopathic	Maternity Home (Numbers)
Dispensary/Health Centre	T.B. Hospital/ Clinic
Hospital Alternative Medicine	Nursing Home
Family Welfare Centre	Veterinary Hospital
Dispensary/Health Centre	Mobile Health Clinic Beds
Maternity and Child Welfare Centre	Others Doctors-Total Strength
Non-Government Charitable-Hospital/Nursing Home	
<b>BANKS</b>	
Nationalised Bank (Numbers)	Agricultural Credit Society (Numbers)
Private Commercial Bank (Numbers)	Non-Agricultural Credit Society (Numbers)
Co-operative Bank (Numbers)	
<b>EDUCATIONAL FACILITIES</b>	
Non-Government Medicine Shop (Numbers)	Private Degree College-Commerce Only(Numbers)
Govt. Primary School (Numbers)	Govt. Degree College-Art and Science Only (Numbers))
Private Primary School (Numbers)	Govt. Degree College-Art and CommerceOnly (Numbers))
Govt. Middle School (Numbers)	Private Degree College-Art and CommerceOnly (Numbers)
Private Middle School (Numbers)	Govt. Degree College-Art, Science andCommerce (Numbers))
Govt. Secondary School (Numbers)	Private Degree College-Art, Science andCommerce (Numbers)
Private Secondary School (Numbers)	Govt. Degree College-Law (Numbers))
Govt. Senior Secondary School (Numbers)	Private Degree College-Law (Numbers)

Private Senior Secondary School (Numbers)	Govt. Degree College-University(Numbers))
Govt. Degree College-Art Only (Numbers)	Private Degree College-University(Numbers)
Private Degree College-Art Only (Numbers)	Govt. Degree College-Others (Numbers))
Govt. Degree College-Science Only (Numbers)	Private Degree College-Others (Numbers)
Govt. Degree College-Commerce Only(Numbers))	Govt.-Medical College (Numbers))
Private-Management Institute (Numbers)	Private-Medical College (Numbers)
Govt.-Polytechnic (Numbers))	Govt.-Engineering College (Numbers))
Private-Polytechnic (Numbers)	Private-Engineering College (Numbers)
Govt.-Special School for Disabled (Numbers))	Govt.-Management Institute (Numbers))
<b><i>OTHERS</i></b>	
Govt.-Orphanage Home (Numbers))	Govt.-Cinema Theatre (Numbers))
Private-Orphanage Home (Numbers)	Private-Cinema Theatre (Numbers)
Govt.-Working Women's Hostel (Numbers))	Govt.-Public Library (Numbers))
Private-Working Women's Hostel (Numbers)	Private-Public Library (Numbers)
Govt.-Old Age Home (Numbers))	Govt.-Public Reading Room (Numbers))
Private-Old Age Home (Numbers)	Private-Public Reading Room (Numbers)

The above data mentioned in table 6-7 was acquired from census table 2011. The following table shows the cumulative number of all facilities in a broader category and the relative ranking given to each category to perform the weighted sum analysis. The relative scale of ranking used was 1-5, 5 being the highest/ most facilities available and 1 being the lowest value/ least facilities available in the tehsil.



Map 6-5 weighted overlay of social and physical infrastructure

Source: Author

### Urbanisation through LULC (Land utilisation and land Cover analysis)

The land utilisation and land cover map of the District is generated using Landsat imagery from USGS datasets which can give a comparative analysis of the land utilisation change that have occurred in the region. It gives a spatial picture of the changes that have taken place with time and also gives a quantitative analysis of the same.

The effects of urbanisation is mostly seen as depletion of resources, many of which are generally the productive resources such as agricultural land, forest land. These get depleted for making built up areas for human habitats. In the case of Nashik it can be seen that the percentage of forest, agriculture land is getting depleted and the urban built up area is getting increased at the cost of these productive resources.

For Nashik district, temporal analysis of the year 1991 and 2011 has been done. It can be seen from fig 6-15 that the spatial built up increase has taken place mostly in the Nashik and Malegaon Tehsils where noticeable change can be seen, taking away the productive agricultural land and scrub land. Also the fallow land, evergreen and mixed forest areas have depleted. An unorganised pattern of growth can be seen in the district.

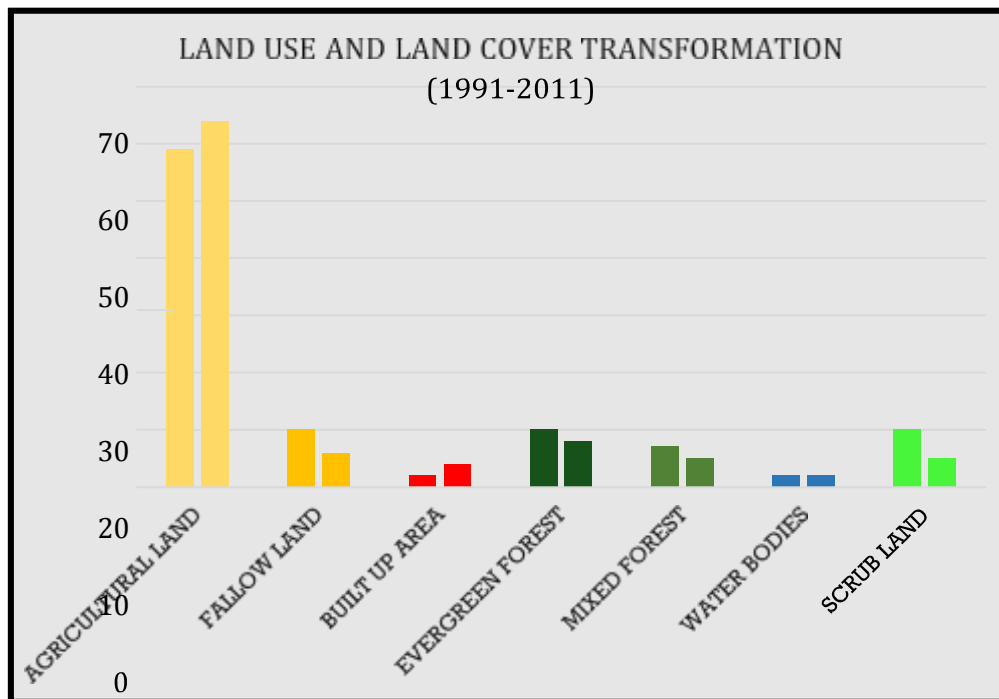
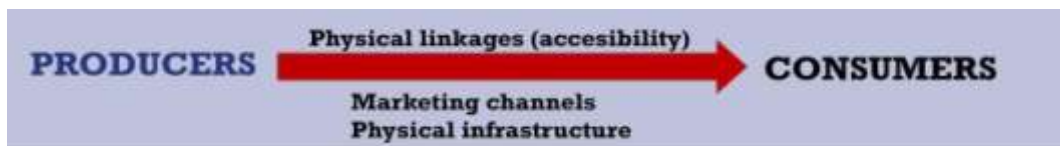


Figure 6-11 land use and land cover transformation (1991-2011)

### Economic linkages in the District

As agriculture is the main economy of the district and one of the main reason of interaction between rural and urban areas as the process starts from production of food products till it reaches the consumers. The production of food generally happens at the rural areas and the processing, distribution and redistribution through the market centres generally happens in the urban areas. The whole process happens by the means of physical linkages, marketing channels and supporting physical infrastructure.



Economic linkages also involve selling and buying of goods which from the part of financial transaction. They can be broadly divided into four categories:

1. *Channels* – through which the transactions happen and the supporting facilities used for the transactions
2. By how they are linked by *means of transport and communication networks*
3. Who plays the part of the *intermediaries*
4. Where do these transaction occur and how do they form a pattern in *spatial distribution*. (Tracey-White & , 2005)

The detail study of the economic linkages between the rural and urban areas was performed in this study. A stage wise study to understand each aspect of the various types of interaction related to their economy was done. The following are the

### Spatial Analysis of Rural-Urban linkages – A Case of Nashik District

various stages that were studied in detail:

STAGE I: Production (Production areas of key crops)

STAGE II: Production consumer network (Marketing channel)

STAGE III: Means of flow (Accessibility, Transport facility, intermediaries)

STAGE IV: People involved at different stages

Let us see each of the stages mentioned above in the case of Nashik District.

#### 5.5.2.1 STAGE I: Production (Production areas of key crops)

In this particular stage, the key crops grown in the districts were identified by various data sources. To understand the conditions influencing the agricultural scenario of the district various aspects were considered such as agro-climatic zone conditions, status of irrigation, area under cultivation, drainage accumulation. A tehsil wise analysis by using weighted overlay method was performed to identify the best performing tehsils and the poorest performing tehsils in terms of crop production. Weighted overlay method allows to analyse all the parameters together and rank them based on the required priorities. Also the major crops grown in each of the tehsil were identified which would be helpful in understanding the production supply chains as we proceed further with the stage wise analysis. the major produce grown in the district (see fig 6-16) are Bajra, Maize, onion and Nashik is famous for its grapes. Pomegranate is the upcoming horticulture crop of the district. Major crops grown in each tehsil will also be identified. Now, let us see each of the various parameters used for the weighted overlay analysis.

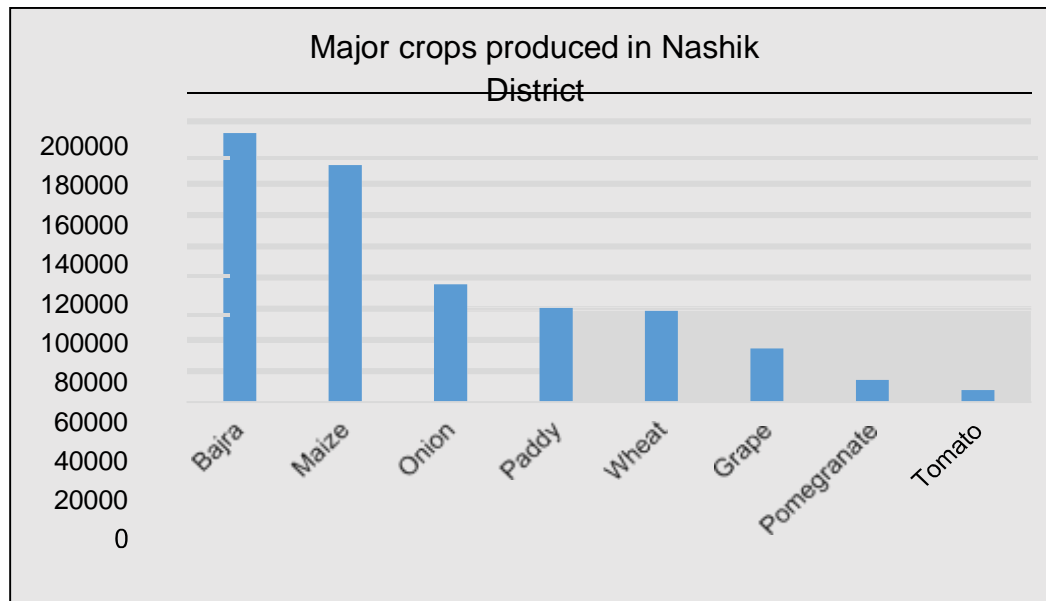
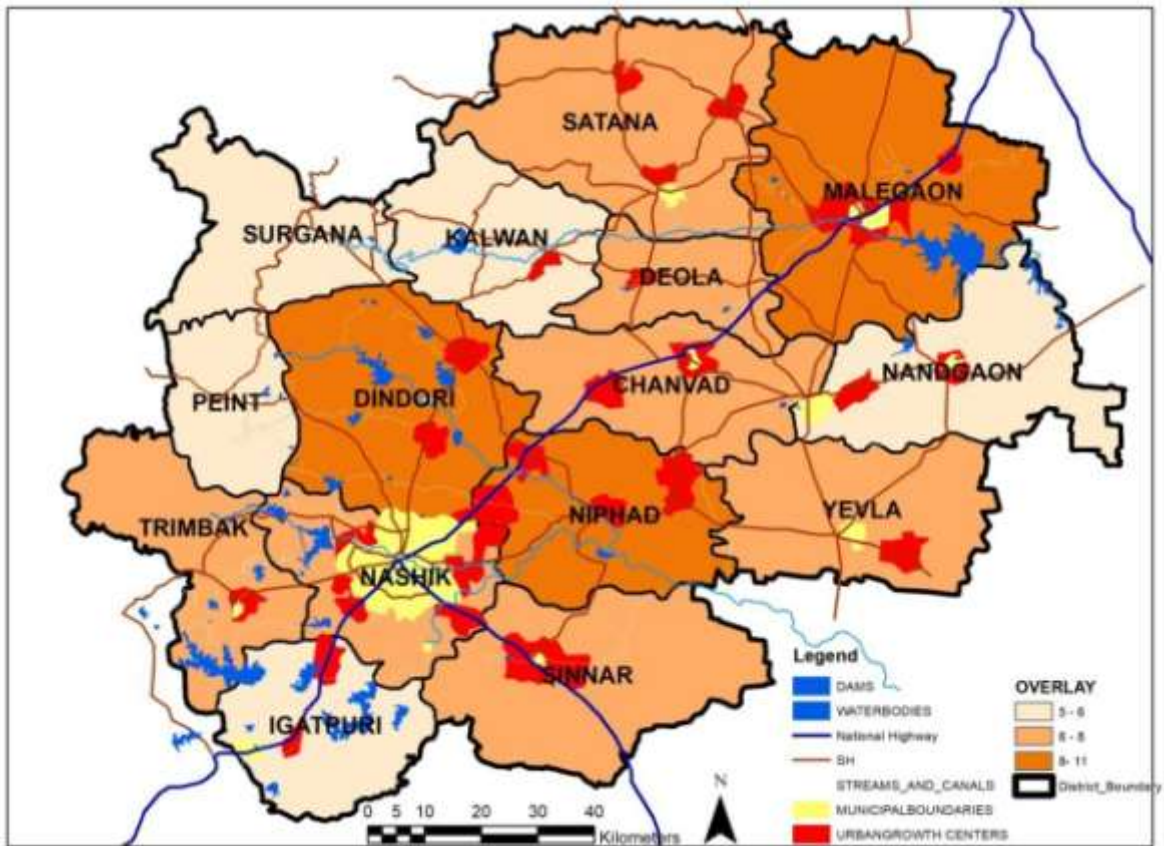


Figure 6-16- Major crops produced in Nashik District

Source: MACP report, Govt. of Maharashtra



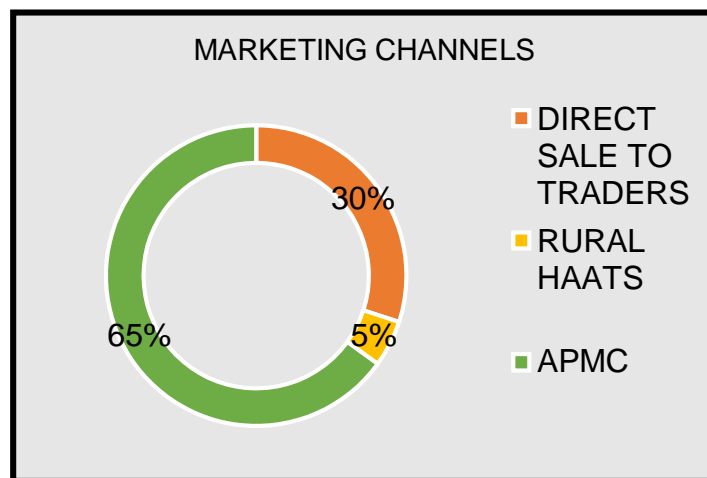


Weighted sum overlay of Tehsil wise Production of Nashik District

Source: Author

**STAGE II: Production consumer network (Marketing channel)**

Now that the production areas have been identified using the relevant parameters, it brings us to the next part wherein the produced goods are marketed through the marketing channels to be able to reach till the consumers. To identify these marketing channels in the district, the locations of the markets, and the various types of means available to market the product has been identified.



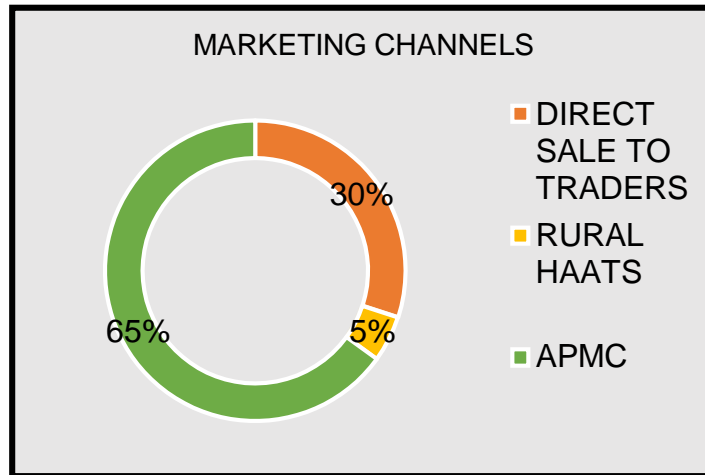
Marketing channels in the District

Source: MACP report

Now that the production areas have been identified using the relevant parameters, it brings us to the next part wherein the produced goods are marketed through the marketing channels to be able to reach till the consumers. To identify these marketing channels in the district, the locations of the markets, and the various types of means available to market the product has been identified.

### Marketing channels in the District

Source: MACP report



## Micro – level analysis

### Introduction

To understand the dynamics in detail, a case study approach was selected wherein two villages were selected in the Nashik Tehsil which is 90% urbanised. A primary study was conducted in which meetings and discussions with the officials in the various Government departments was done, field observations and questionnaire survey (see Annexure I for questionnaire format) was conducted in both the villages wherein interaction with the local farmers, labourers, shop owners was done to understand their relationship with the urban areas for their daily lifestyle, work pattern and various other dependencies.

### Indicators for analysis

Two villages were selected inside Nashik tehsil based on their distance from the urban centre (10kms and 20kms respectively) and the population was approximately the same. There can be unlimited number of indicators but for the purpose of this study four important indicators have been selected which are operational. The selected indicators are explained in detail:

1. **Demographic:** Demographic indicators such as the population growth rate, population density (persons/sq.km), temporal trends of occupational characteristics determine the level of influence of the urban centre and occupational development trends (towards agriculture, towards other sectors) of

### Spatial Analysis of Rural-Urban linkages – A Case of Nashik District

the area.

2. **Spatial:** Spatial indicators such as the temporal pattern development of the built-up of the area, the location of the growth, location of commercial establishments. It shows how the villages are transforming with time — is there a decrease in the agricultural land, is there an influence of the physical infrastructure such as roads etc.
3. **Economic:** Economic indicators such as the distance of travel to work, the distance travelled to acquire food and non-food items, acquiring of agricultural inputs, locations of work etc. the percentage of people involved in non-agricultural activities shows the influence of the opportunities available nearby and is an important driver for change from rural to urban lifestyle.
4. **Social and physical infrastructure:** the daily movement of the people to access health and education facilities, banks, ATM, police station etc. also increases the interaction between the rural and urban areas as higher education facilities are generally available in the urban centres. The social interaction for recreational activities, visits to relatives also influences the relationships.

### Comparative analysis of Samangaon and Girnare

**Village 1-Samangaon:** The village Samangaon lies in the north eastern side of the tehsil and is radially 10kms away from the Nashik Tehsil urban centre. It has an area of 567.73 hectares and a population of 5756 as per Census 2011. It is near to NH3 which connects the District to Pune.

**Village 2-Girnare:** The village Girnare lies in the north western side of the tehsil and is radially 20kms away from the Nashik Tehsil urban centre. It has an area of 238.72 hectares and a population of 6071 as per Census 2011. SH26 passes through the village.

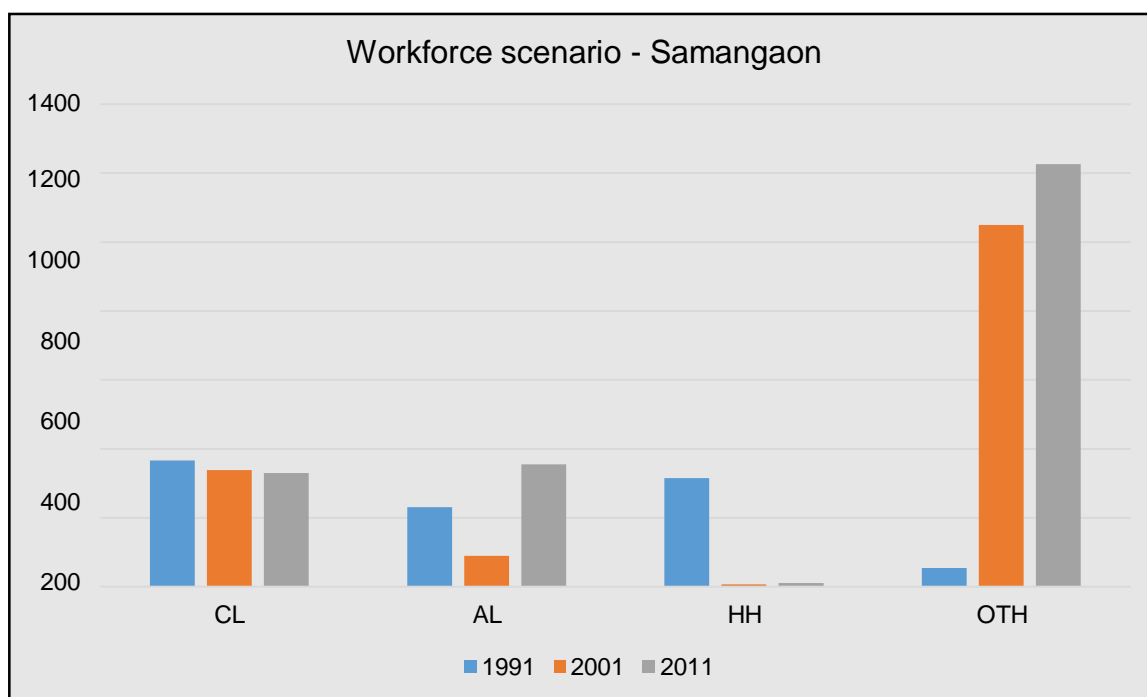
s

### Demographic:

#### Demographic scenario of Samangaon

	1991	2001	2011
<b>Population</b>	3452	4468	5756
<b>Population growth(%)</b>		29.4	28.8

Source: Census of India, 1991, 2001, 2011



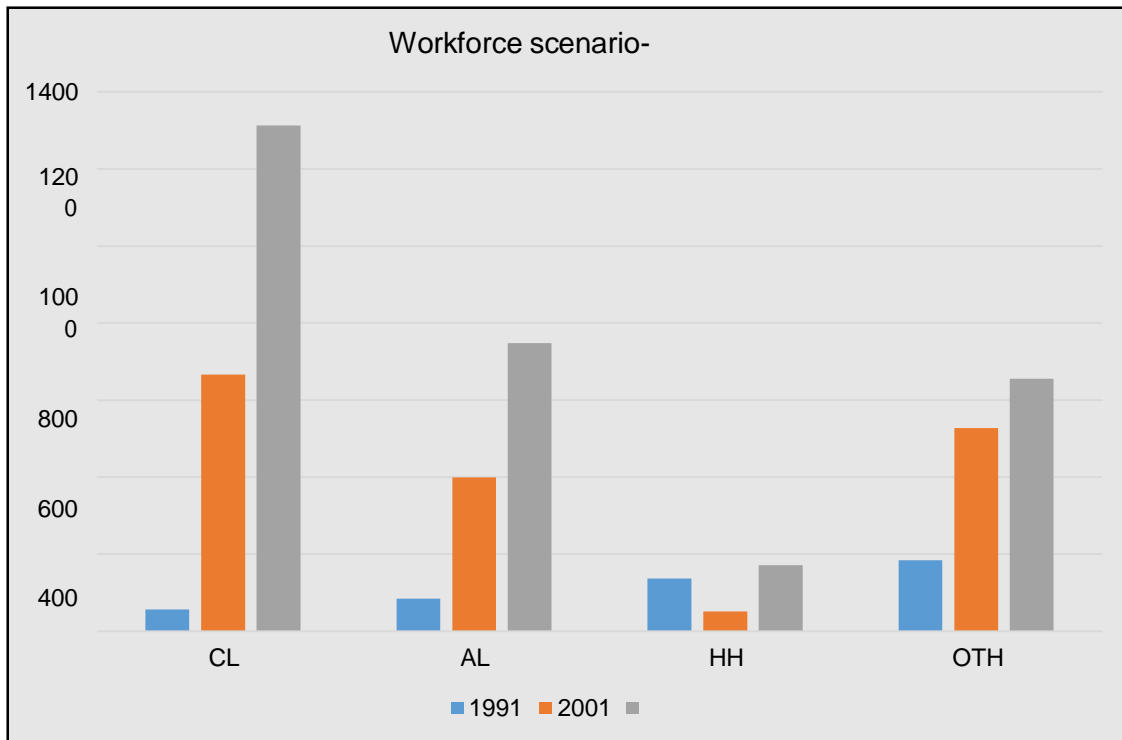
### Trends of the Main working population of the village Samangaon

Source: Census of India, 1991, 2001, 2011

### Demographic scenario of Girnare

	1991	2001	2011
<b>Population</b>	4243	5023	6013
<b>Population growth (%)</b>		18.3	19.7

Source: Census of India, 1991, 2001, 2011



#### Trends of the Main working population of the village Samangaon

Source: Census of India, 1991, 2001, 2011

**Inference:** The Demographic indicators show that Samangaon (10kms) has a higher population growth rate of approximately 29% as compared to the Girnare which has growth rate of 20%. It shows that apart from the natural population growth there is an influx of migrated population as it is near to the urban centre. It can also be observed from the figure 6-19 and 6-20 that contrasting trends of occupational changes have occurred since 1991. In Samangaon the population has shifted from agricultural activities to others category (non-agricultural). This can be due to the available opportunities of employment in the nearby centre which will be further explored in the economic indicators. The cultivators of Samangaon village are decreasing and agricultural labourers are increasing due to the loss of agricultural land holdings. In the Girnare village the agricultural workers is seen to be increasing but at the same time the population working in other sectors is also growing.

## CHAPTER 6. Inferences and Gap identification

### Introduction

After the detailed analysis at macro and micro level, this chapter describes the key inferences drawn out from the analysis and also its cause and effects. It helps in identifying the gaps and in turn the intervention areas which can help in framing relevant strategies for development.

### Macro level inferences

It was seen at the district level that rapid urbanisation in the few tehsils was happening. The causes of which being the concentration of social and physical infrastructure, resources and employment opportunities. This phenomenon is leading to the depletion of productive natural resources, socio-economic disparities among the rural and urban areas. This brings to the conclusion that, there is a need for equitable and strategic distribution of resources at the regional level and an integrated plan for rural and urban areas which ensures the balanced development of the region.

As the majority of the population in the district is engaged in primary sector, the detailed study of the economic linkages was done which showed strong production and supply chain linkages happening within and across districts. The leading and lagging areas/ tehsils of the district were identified based upon certain parameters and in both the cases the nature of relationship between the rural and urban areas was studied. Let us see both the cases of leading and lagging areas.

### The relationship of rural – urban in the leading areas



It was seen in the leading areas that there existed comparatively *strong links* between the rural and urban areas. This was due to the many reasons responsible which are mentioned below:

- **Accessibility:** the level of good infrastructure such as the accessibility through roads which was analysed through the connectivity index showed few areas having best accessibility which enables the easy flow of goods and materials through supporting

### Spatial Analysis of Rural-Urban linkages – A Case of Nashik District

transportation facilities. Also the accessibility and availability of facilities such as banking, education and health were responsible for the strong links.

- **Access to occupational supporting infrastructure:** the main occupation of the district being agriculture, the availability necessary infrastructure such as the cold storages, godowns, rural markets, APMCs, onions sheds etc. which are mostly present in the urban centres of the district are greatly influence the amount of the production. The tehsils are performing better due to close proximity of these facilities and good connectivity.
- **Strong relations with the intermediaries:** as the amount of production in these tehsils is considerably more, the traders and other intermediaries have strong relations with the farmers to sell their produce in the market.
- **Proximity:** the areas which are leading have urban centres in close proximity which gives good marketing opportunities.

Let us see the effects of the strong linkages in these areas:

- Rapid urbanisation in the urban centres, due to better quality of life and good infrastructure facilities.
- The marketing opportunities have increased.
- The increase in opportunities leads to more production in terms of quantity and variety of crops.
- It is also improving the socio- economic conditions of the people especially in the rural areas.

### The relationship of rural – urban in the lagging areas



The relationship of rural – urban areas in the lagging areas showed weak links. The causes of the weak links are mentioned below:

- **Accessibility:** the connectivity of these areas to the urban centres through the roads, transportation facilities was seen to be weak in the connectivity index analysis. Also, the accessibility to the physical and social infrastructure was seen to be poor.
- **Access to occupational supporting infrastructure:** the main occupation of the district being agriculture, the availability necessary infrastructure such as the cold storages, godowns, rural markets, APMCs, onions sheds etc.

### Spatial Analysis of Rural-Urban linkages – A Case of Nashik District

which are mostly present in the urban centres of the district are greatly influence the amount of the production. The tehsils are lagging in their activities due to unavailability to reach these facilities and weak connectivity.

- **Weak relations with the intermediaries:** as the amount of production in these tehsils is considerably less, the traders and other intermediaries have weak relations with the farmers to sell their produce in the market.
- **Proximity:** the areas which are lagging do not have urban centres in close proximity which gives good marketing opportunities.

Let us see the effects of the weak linkages in these areas:

- Less marketing opportunities due to huge distance to regulated markets.
- The quantity and diversity in production of crops is less and the supply chain is weak.
- It is also affecting the socio-economic conditions of the people especially in the rural areas due to insufficient infrastructure and economic opportunities.

### Identification of intervention areas

The study of both positive and negative aspects of the leading and lagging areas gave an idea on the possible intervention areas that needs to be worked upon. The areas of intervention identified are:

- **Marketing links:** creating efficient marketing links between rural and urban areas i.e. the provision of intermediate and major regulated markets, manufacturing opportunities etc.
- **Accessibility to services:** improving accessibility to physical and social infrastructure services, telecommunication etc.
- **Infrastructure development:** improving the infrastructure such as the road connectivity, storages, sheds, markets etc.
- **Facilitation:** improving and monitoring the activities of the facilitators i.e. the traders for efficient transfer of resources with reasonable marketing costs.

### Micro level inferences

The micro level analysis was done taking two villages at different distance from the urban centre and the level and intensities of dependencies of rural and urban were analysed. The Nashik tehsil, which is 90% urbanised was taken as a case study area. It was observed that the rural area around the municipal boundary was rapidly getting transformed into urban areas or census towns. In the macro analysis it was also observed that the urban area (Nashik city) in the Nashik tehsil had the maximum number of social infrastructure facilities which is not comparable to any other tehsil in the district. (See table 6-8). In this section identification of the intensities of linkages is done and also analysis whether distance plays any role in the level of interaction between rural-urban is seen.



## The intensity of linkages at 20kms from the urban centre

According to the results obtained from the analysis of primary survey done in the villages the inferences were drawn in the following categories:

- i) Strong links:* The level of strong dependency was observed for acquiring the *social and physical infrastructure* facilities such as health and education, transportation etc.
- ii) Weak links:* the *economic linkages* were weak in this case due to poor connectivity leading to high marketing costs, high transportation costs, time spent to travel to work was high. So, the village formed small commercial market of its own where the farmers from nearby villages came to sell their produce and vice-versa. Also, the social linkages were seen to be weak as daily travel opportunities were not feasible.

### The effects of the strong and weak linkages:

- The population growth rate of the village is slow.
- The socio-economic condition of the people is weak.
- The employment opportunities are less.
- The exposure to agricultural market in the sense of both inputs and outputs is limited.
- Growth pole approach for acquiring services and exchange of goods.

## The intensity of linkages at 10kms from the urban centre

According to the results obtained from the analysis of primary survey done in the villages the inferences were drawn in the following categories:

- iii) Strong links:* The level of strong dependency was observed for economic linkages as opportunities in other sector was easily available in the nearby urban centre. Service delivery linkages for social and physical infrastructures such as education, health and transportation was also seen to be strong.
- iv) Weak links:* Service delivery linkage for physical infrastructure such as water supply and electricity was seen to be in a poor condition.

### The effects of the strong and weak linkages:

- The population growth rate of the village is fast.
- The occupation shift of the people from agriculture to other sectors.
- The transformation of land from agriculture to built-up areas.
- The socio-economic condition of the people is weak.
- The employment opportunities are more due to close proximity and better transportation facilities.
- The exposure to agricultural market in the sense of both inputs and output is more.

## Identification of intervention areas

It is evident from the above inferences that there are certain similarities and differences in the way villages at different distances interact with the urban areas. While planning for a balanced development for both rural and urban areas, there are certain required things that should be considered. On the basis of above inferences in section 7.3. Certain intervention areas have been identified which are described below:

- **Physical linkage:** the connection of rural – urban areas by the means of roads plays an important role in the interaction of people as well as exchange of goods.
- **Strategic planning by distance:** it is observed that villages at considerably more distant, inaccessible are lagging areas. Therefore strategic planning keeping distance as an important factor is necessary.
- **Integrated land use plan:** detailed land use plan at the block level encompassing both urban and rural areas which can control the transformations of productive lands through certain regulations if formed.
- **Infrastructure provision:** strategic infrastructure provision based on the local economy such as agriculture and allied activities so that it encourages more benefits in that domain and changes in socio-economic conditions as most people don't have the access to urban areas.

## Gaps at Governance level

This section identifies the issues happening at the governance level. It is important to consider the governance part as without the efficient functioning at the organisational level it is difficult to implement any strategies. The relevant issues are studies and necessary implementation strategies will be suggested in the further sections.

## The scenario of district planning in India

Under the 73<sup>rd</sup> and 74<sup>th</sup> CAA of 1992, the rural and urban areas were given a legal status as self-governing institutions to move from the centralised government to decentralised democratic government and the key unit of planning was considered to be the district. Under the 73<sup>rd</sup> CAA, Panchayats and their elections were established and the functions were delegated. In 74<sup>th</sup> CAA, Municipalities were established and functions were delegated to them. Now, in addition to that the constitution of MPC (Metropolitan planning Committee) and DPC (District planning committee) was given which would consolidate the plans prepared by panchayats and municipalities. Also, the consolidation of state finance commissions to review the finances of the local bodies was established. In the 11<sup>th</sup> five year plan preparation of 'district plan' process was made an important part.

Under the concept of district planning, plans are to be prepared by the rural local bodies and urban local bodies for the activities which are assigned to them with the resources of their own. The physical integration of plan is supposed to be done by district planning committee into a district plan.

## **Causes of dismal performance of district plan in India:**

- a. Unsuccessful land reforms
- b. Lack of proper administrative bodies
- c. Lack of adequate resource transfer
- d. Irregular elections
- e. Lack of experience, skill and help in planning
- f. Rigid structure
- g. Relationship between PRI levels
- h. High costs
- i. Absence of adequate autonomy
- j. Absence of financial resources
- k. Absence of data with panchayats

## **Status of decentralised planning in Nashik**

*At district level:* The District Collector, District Judge, Superintendent of Police, Chief Executive Officer of Zillah Parishad and other senior Officers of the State Government, looks after the development, and regulatory functions, in the district.

- No District Planning Committee or Metropolitan Committee formed.
- District Rural Development authority present - only concerned with scheme implementation in the rural areas.
- No spatial planning aspect at village or block level undertaken by DRDA or any other department.
- No integration of plans between various departments present.
- Other institutes present at district level are - District Agriculture office, District health office, DIC etc.

**Inference:** - there is presence of capacity at governance level, skilled workforce, data at the district level but it is not efficiently utilised. There is weak devolution of roles and responsibilities and no initiative taken for integrated planning at district level has been done.

*At tehsil level:* Tahsildar, Block Development Officer, Judicial Magistrate, Deputy Engineers and other Officers, look after their respective departments for developments and regulatory functions.

- Town planning department, water supply, sewerage, Disaster Management, Education and other line departments present at the tehsil level having Municipal Corporation.
- No authority / specialised department or personals to prepare plans for tehsils not having Municipal bodies at the block level

## **Conclusions**

This chapter helped in identifying the major important gaps that exist as obstacles in making a balanced developed region, encompassing both rural and urban areas. It is seen that accessibility, infrastructure services, marketing channels, resource allocation etc. plays an important role in the development of a region. There is a need for strategic planning of rural urban areas as an integrated unit keeping in mind many important factors identified in this section. In the next sections the detailed strategies are suggested for the same.

## CHAPTER 7. RECOMMENDATION AND STRATEGIES

### Proposals

#### Development concept

The potency of rural – urban linkages is greatly being considered in the International Development Agenda as an approach to sustainable development. (Ayuk-Nkem, 2016) The UN- HABITAT considers this as a strategy to eradicate poverty and to generate rural-urban benefits. The habitat agenda in its paragraph highlights the need for balanced rural-urban benefits.

The poor trade relationships, road accessibility, transport services are important aspects that need to be looked into while integration of both the areas which is a serious issue in the study area. In the study area the intensity of rural urban relationship is best observed in its agricultural links. Integrated development approach has not yet been realised or practised at any level. In this case also no efforts have been taken resulting in few urban areas such as Nashik city and Malegaon becoming primate cities which are absorbing all the growth potentials of the surrounding regions as well.

This study has been able to identify the missing links, which upon forming necessary strategies and guidelines can become a win-win situation for both the parties. The new development scenario requires emphasis on thoughtful sustainable planning of land use of development land and conservation of the farmlands.

#### Three key development concepts:

The development vision for the integration of rural urban areas has been based on the following three concepts:

#### Sustainable spatial development:

- a. Keeping or retaining the importance of agriculture while also encouraging the diversification of *economic activities*.
- b. **Building Sustainable communities:** improving the accessibility and quality of services to rural areas.

#### Polycentric development system:

this approach breaks away from the traditional mono-centric development approach by creating horizontal functional hierarchal linkages wherein functional centres can also be placed in strategic rural areas by studying the appropriate proximity factor, interdependencies and character of the area.

## Rural – urban partnership:

- c. Partnerships between various sectors of development such as industrial sectors, agricultural sectors, transportation sector etc.
- d. Integration of rural and urban through efficient land use planning with special importance to the quality of the surroundings.
- e. Promotion of projects on national and international level through combined efforts and experience of expertise from both the areas.

## Implementation strategies

It has been well established that to bring balanced development in a region it is necessary to bridge the rural-urban gap and strengthen the linkages existing between them. To accomplish this, based upon the observations and inferences from the study the following recommendations have been made.

### Integrated development plan

The implementation of integrated development plan encompassing rural and urban shall be prepared based on the following guidelines and the key development concepts mentioned in the section 8.1.

**Aim:** To bridge the development gap and promote the integration of rural and urban area.

### Strategies:

1. **Extension of planning boundaries:** Rural-urban integration as an important principle of the master plan approach at the tehsil level wherein the planning limits or spatial coverage should be extended to the rural area so that integrated land use planning can be made possible.

The scale of the extensions is of paramount consideration: Considering the *planning boundary at block level* (administrative tehsil boundary in the case of Nashik) with all the rural areas; the highly dense and sparsely dense areas also so that the following things are achieved:

Attention must also be paid to the rural-urban interface to ensure that the residential subdivision pattern does not encroach into or serve to fragment agricultural lands.

- Protection and preservation green spaces and sensitive areas
- Creating an integrated detailed land use plan having a consideration of future growth
- Protection of agricultural land.
- Local potentials and local characteristics are considered.
- Ensuring and enhancing accessibility and connecting networks.
- Creating strong, compact and complete neighbourhoods fostering prosperity for people, business and government.

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2. **Functional area based approach:** treating rural and urban as two functional areas with equal status such as metropolitan development area, metropolitan green land etc. based on the local conditions of environment and economic activities. Defining roles of the urban centres with their hinterlands and accordingly development policies can be formulated.
3. **Polycentric development:** Polycentric development approach (Bulderberga, 2014) can be implemented wherein mutually dependant and connected networks of various development centres are created connecting all the leading and lagging areas in the regions to lessen the differences.
4. **Equitable Distribution of resources:** The need to change urban based development approach to a regional based development approach in terms of reallocation and strategic distribution of resources which would benefit both the urban and rural areas and the shift of concentration of industrial activities from urban to rural areas.
5. **Subsidies:** To reduce the poor marketing links between the producers and the consumers, agricultural intensification should be promoted through subsidies provided by the states.
6. **Infrastructure provision:** Provision of infrastructural services in rural areas such as roads, electricity, water supply, healthcare facilities etc. among the many basic needs will help in overcoming the current poor rural conditions.
7. **Strengthening marketing channels:** efficient and innovative ways of forming relationships between the producers, traders, small scale manufactures and consumers for reliable market flows. The local government should provide enabling environment for market led economic growth keeping in mind the global trade patterns. (Bah, et al., 2003)

The manifestation of the above can be done by **Regional Networks as a Spatial Framework**.

The functions regions which might not necessarily urban area but a cluster of many villages based upon their common function which will be created in the integrated development plan can be connected via these regional networks. For example, this will allow the decentralisation of industries from the urban centres to the relevant strategic locations thereby reducing the raw material and manufacturing distance. Bulk-losing processing and agro-industry, for example, may be more efficiently located near the fields or along major transport routes, including waterways, rather than in cities or towns. (Douglass, 1998) The advancement of mobility to have efficient flow of workforce, knowledge, capital and tourists.

The above strategies would need a detailed study of the local and regional context based on the following key points: Production activities, sectoral linkages, land and activity, settlement studies, land use, study of Population, study of Workers hierarchy of Settlement, nodes and

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urbanization trend, Connectivity, study of resources, agriculture, Industry, Animal Husbandry and Mining & Geology.

### **Recommendations at governance level:**

We have also noted in section 7.4. The salient features of 73rd and 74<sup>th</sup> CAA. It has also been noted that there are issues related to governance level which is hampering the integrated development process. Without the efficiency at the governance it is very difficult for the above strategies to work. The necessary expertise, human and financial resources become an important part for any plan to work. Firstly, the district planning committee should be formulated having representatives from all tier of government, planners, other line departments, and public representative so that inputs from all the areas is available and dwelled upon. The assessment of current bodies of administration, the availability, and responsibility of providing monetary resources should be dealt with. Exact roles and responsibilities at all levels should be devolved. The GPDP should be prepared with the consideration of spatial aspects of land use, accessibility, strategic infrastructure provision along with the incorporation of various schemes available for rural development by the rural ULB which will be monitored and revised at regular intervals.

The actors involved in the preparation of integrated plan will also have to deal with the following:

1. Development issues and their prioritisation
2. Financial viability and Management Analysis
  - Capability to execute capital projects
  - Revenue through grants and subsidies
  - Current and planned borrowing
3. Long term and short term development programme
4. Formulation of implementation strategies based upon the analysis.
5. Implementation and midterm performance assessments
6. Monitoring and Management of associated organisational levels
  - Organisation of performance management system
  - Organisation of key performance indicators
  - Departmental indicators linked to outputs



## CHAPTER 8. CONCLUSION

### Addressing the research questions

The research questions mentioned in the initial chapters in the section 3.2. were all addressed in the consecutive sections by using relevant methods and techniques and inferences were drawn. It was found that there still exist weak linkages between rural-urban areas due to which there are many lagging areas in the district affecting their socio-economic conditions. Agriculture being the main occupation the farmers are unable to find the supporting resources which affects their production and in turn their livelihood. The connection through physical linkages was also seen to be weak in these areas.

The areas where there good physical linkages were observed were the leading areas where lot of interdependencies were noticed between the rural and urban for economic activities, physical and social infrastructure etc. The leading areas were seen to be having more urban centres and concentration of all resources and facilities. The comparison of leading and lagging showed that there are huge gaps in the accessibility, infrastructure provisions, resources provision, marketing channels to name a few. All these factors are resulting into huge disparities between the rural and urban areas.

The spatial representation of the data showed that there is rapid increase in urban built up in Nashik and Malegaon tehsil which is affecting the productive land in that area. It also shows the uneven distribution of resources and facilities throughout the region which is affecting the livelihood of the population. This brings the attention of providing ways and means in which a balanced development can be achieved in both the rural and urban areas by which rather than competing, they can mutually benefit from each other.

During the process of the study many barriers were noted explaining the reasons for the imbalance development of rural and urban areas such as the consideration of rural and urban as separate entities in planning practices, weak institutional capacities i.e. less expertise, skills and realisation of roles and responsibilities and The inefficient chain of intermediaries between the producers, manufacturers and consumers were few of the issues noted in detail.

By considering rural – urban as a single unit in planning activities, giving both areas equal status and importance and then practising integrated planning process can help in achieving overall development of the region. Strengthening the institutional capacities also becomes an important part of the development process.

### Contributions of the thesis

The research contributes the existing relationship between the rural and urban areas in the Nashik District. These relationships have been understood and shown by spatial representation by overlaying of many layers such as the production activities and their factors, the supporting resources and infrastructure etc. This has helped in identifying the hidden and missing layers which can become guiding points to development of the region.

The detailed way of analysing the population linkages, economic linkages at the macro level and what is type of data, method and techniques that should be used are well represented in

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the study. The methods of carrying out the analysis at microlevel is also understood in the research such as carrying out the primary level survey by asking relevant questions, selection of appropriate factors for analysis etc.

Finally, going away from the traditional methods in planning and suggesting innovative development concepts and strategies for achieving balanced growth in rural-urban areas is contributed by the thesis.

### **Study implications and directions of future research**

The study establishes the need for having mechanisms at planning level to solve the issues of disparities between the rural and urban areas taking into account the various mutual relationships that they share. It shows how strengthening of the linkages can help in achieving a balanced development in both the areas.

Also, in the process of research many more dimensions of the research problems were realised. Due to the scope and limitations of this study all the aspects were not explored. The study can become guide to future research based on the points which were left unexplored such as the manifestation of the proposals on the study areas i.e. the kind of scenario that will be obtained after applying the development strategies can be worked out. The positive and negative implications of such an integrated plan can be explored. The exact framework and strategies of the actors involved such as government officials, private players and local public in the process can be worked out. Also the integration and efficiency of existing schemes to support the balanced development and suggestions of new schemes can be done.

## References

- Adrian Field PhD, T. P., 2015. Rural-Urban Linkages, Literature Review for Waikato Spatial Plan. *Dovetail*, p. 41.
- Ayuk-Nkem, A., 2016. Strengthening Rural-Urban Interactions as a Contemporary Paradigm to Sustainable Development in Africa: The Case of Meme Division, South-west Region, Cameroon. *CODESRIA, Council for the Development of Social Science Research in Africa, 2017, XLI(3)*, p. 20.
- Bah, M. et al., 2003. Changing rural–urban linkages in Mali, Nigeria and Tanzania. *Environment & Urbanization*, 15(1), p. 12.
- Bhonsle, K. D., 2010. study of urbanization in Nagpur district. *Institute of Town Planners, India*, p. 8.
- Bulderberga, Z., 2014. Rural – Urban Partnership for Balanced Spatial Development in Latvia. *International Journal of Architectural and Environmental Engineering*, 8(4), p. 8.
- Census of India, 2011. *PCA Maharashtra 2011*, s.l.: Director of Census Operations, Maharashtra.
- Daniel Z. Sui, H. Z., 2000. Modeling the dynamics of landscape structure in Asia's emerging desakota regions: a case study in Shenzhen. *Landscape and Urban Planning*, ELSEVIER, p. 16.
- Diyamett, B., Diyamett, M., James, J. & Mabala, R., 2001. Rural-Urban Interactions and Livelihood Strategies: The case of Himo and its region, northern Tanzania. *International Institute for Environment and Development (IIED)*, 1(1), p. 40.
- Douglass, M., 1998. A Regional Network Strategy for Reciprocal Rural-Urban Linkages: An Agenda for Policy Research with Reference to Indonesia. *Third World Planning Review*, 20(1), p. 31.
- Fan, S., Kang, C. C. & Mukherjee, A., august 2005. Rural and Urban Dynamics and Poverty: Evidence from India and China. *International Food Policy Research Institute*, p. 50.
- Govt. of Maharashtra, D. o. a., n.d. *Maharashtra Agricultural Competitiveness Project (MACP), Marketing Strategy Supplement (MSS) District - Nashik*, s.l.: s.n.
- Gupta, A., 2013. Measuring Urbanization Around a Regional Capital : The Case of Bhopal District. *"Savoirs et Mondes Indiens"*, 1(xi), p. 90.
- Haan, L. D. & Quarles, P., 2004. About Trade and Trust. The question of livelihood and social capital in rural-urban interactions.. *Centre for International Development Issues Nijmegen*, p. 15.
- Islam, M. N., 1994. *Rural-urban interaction in Bangladesh : a study of linkages between villages and small urban centres.*, Durham, England: Durham University.