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DECLARATION

I hereby declare that, the thesis entitled **"A GEOGRAPHICAL STUDY OF MARKET CENTRES IN HINGOLI DISTRICT"** is my own work and that, to the best of my knowledge and belief, it contains no material preciously published or written by another person nor material which to substantial extent has been accepted for the award of any other degree or diploma of the university or other institute of higher learning, except where due acknowledgment has been made in the text.

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Chapter I

INTRODUCTION

Chapter I

INTRODUCTION

1.1 INTRODUCTION:

Indian agriculture is the backbone of economy. In India near about 74% population live in villages.Market centers playimportant role not only in the marketing system of the country but also in the rural development. Marketing Geography is one of the special branches of Human Geography. So far as the marketing is concerned it is a geographic phenomenon. The study of marketing system is a part of geography. It is also studied specially in other disciplines like anthropology, economics, business management, administration science, sociology etc. Marketing Geography includes the study of the location and spatial distribution of the market centers, their infrastructural

patterns, measure and extent of marketing activities, delimiting, defining and mapping of the market areas, movement of buyers and traders, identification of their hierarchic orders for the purpose of making a systematic plan for regional development. Generally, marketing system is the exchange of goods and services, The Geographers study the marketing system in the spatial point of view. In Geographical study of marketing, spatial organization of points is the need of time. In the developing country like India, rural and urban development and the integrated developments of nodes are key matters of importance. Such study of various factors of market centers provides information to the planners and decision makers and also useful to suggest over all development of the study region.

Market centers furnish goods and services.They act as a central point for transportation and serve as growth centers by providing various services to the region. Because of these centers, there is an increase in social interactions and other activities. Therefore, the predominance of economic importance is to be given to the market centers in any region. Basically the process of marketing is the process of economic development. This development is of the complex and of dynamic nature. According to Davies (1976) for a geographic study of marketing system, it is the areal analysis which is offered to the sources of demand and the supply system and its structure that furnish foundations. The phenomenon of market system has been studied in many of other disciplines but Geographer studies the marketing phenomena in spatial context.

Marketing Geography is a newly oriented branch of Human Geography that studies various elements of market centers and marketing systems. In the opinion of Dixit (1988) marketing system is a geographical phenomenon in which the exchange of goods and services manifest spatial elementary aspects. It provides a foundation to a

geographic study of marketing, and it also expands the application of geographical principles, methods and techniques to the practical problems and difficulties concerning the marketing phenomenon. In the view of Applebaum (1954), “Marketing Geography is concerned with the channels of distribution through which goods move from producer to consumers,” According to Hodder (1964) market is “an authorized public gathering of buyers and sellers of commodities meeting at an approved place at regular intervals.”In this way the market centers are the units of area and combination of various kind marketing activities including distribution and exchange of goods that are needed by the buyers is a sole concern of marketing geography. Mc Carty and Lindberg 1966 stated that; ”Geographical studies deal with trading activities usually appear under the fabric of marketing geography whose concern has been almost exclusively with the location of retail and wholesale establishments, their sell facilities, market territories and similar facts of trading institutions. According to B.J. L.Berry(1967) marketing geography undertakes the retail interests of the geographer in practice into metropolitan areas.Itis in the service of private business enterprises. Moreover, he delineates the sole concern of marketing geographer as description and measuring of service area, and this type of measurement is the basis of presenting data; evaluating market center performers in the sense of functional magnitude. The main function of marketing in geography is retailing which has captivated much attention. Regarding this the work of Barry (1967), Peter Scott (1970) R.L. Davies (1976) are a worthy to mention. Davies has righty observed that, “Marketing geographydescribes the various facts of retailing as aspect of geography which is concerned with territory economic activities and especially the distributive trades”.

In short Marketing geography is a branch of knowledge related with the location and the spatial distribution of market centers. The base

of marketing geography is the market centre. The word ‘market’ is derived from the Latin word ‘marketus’ which refer to a place where buyers and sellers meet each other. In this way market centers are spatial units, and their location, site, situation, physical extent, regional distributional pattern, types and interactions etc. are most important for the geographers.

While explaining the of phenomenon marketing activity,we have toexplain intercommunications, the exchange of goods and services among buyers, producer, sellers and consumers. Market is a location where theseinteractions take place and their values are decided in money point of view. It is a place where sellers and buyers meet together for marketing with regular intervals or daily. To provide, various commodities and wants is the important purpose of marketing system. It is said that the basics of marketing are difference, desire and distance. If difference is there, the increase in commercial exchanges takes place, then desire is strong and distance is short (Garnier&Delobez, 1979).Due to the geographical and economic differences there is a making of the areas of demand and supply. It is here that marketing process starts.

There are number of elements and factors which determine and influence the development and growth of market centers. Broadly speaking transportation facilities, population, introduction of cash and exchange medium, establishment of law and order, physical setting, growth of agricultural and industrial products etc. are the dominating factors in the development of marketing system. So we can say that marketing phenomenon is found in the all types of societies where it is urban or rural places.

In the development of marketing system the rural area and especially the farmer’s area plays very important role. In such type of area, the periodicity plays vital role, the market centers are rather periodic

than daily because of the small demand of goods and its supply per day. It is noteworthy that supply of the goods, commodities, agricultural goods, articles of everyday use and its requirement from nearby towns to rural areas are gained in these periodic or weekly markets. The rural market centers are small in these periodic or weekly markets. The rural market centers are small in size due to the inadequacy of transportation network and also the lack of constant demand to back up the daily or permanent shops. The market centers in India are known by various names in different regions as Bazar, Hats, Mandis, Weekly market etc. These are centers of collection and distribution of goods.

According to Walter Charistallar (1933), central places provide goods and services to central places and to the places of the surrounding region. Market centers also perform the same but with different nature of the system. In this way, the market centers may be the service centers and central places in strict Christallerian view (Webmail, 1981).Market place is a central place to surroundings which serves the lower goods and services on fixed day in a weak.

Market centers are the main places of gathering of the famer's societies, the reason behind this is that the main features of internal trade network is the existence of market nodal point to and from which, flows of commodities are directed (Brombley 1971). In the economy, especially rural economy market plays a vital role in the interactions and exchanging the local products through certain norms where 'system of rural market serves as the nodal points for the collection and distribution of large range of goods and services of both local and external origin' (Good,1972). Thus market is more important and worthy to be considered as trading institution. It is an authorized public gathering of buyers and sellers of commodities, meeting at an approved place of regular intervals (Hodder 1865).

It is also noteworthy that market centers are the places available to agrarian society to dispose their agricultural surpluses. They are also centers to purchase goods and services for their daily requirements and needs. Thus market centers are the basic steps of a more complex hierarchy of central places. These market centers are able to organize the entire economic structure together in a functional sense. Many market centers have central locations where the social gatherings take place. They are outlet for various social functions. They are also centers of communication, diffusion, innovations.They also provide ground for governmental, private, specialized agencies to establish new shops and small mills as well as necessary to announce the advertisements of different ideas, notions, policies and pronouncements with their political importance.

In the existing market system in the region, not only its study but also identification, analysis of spatial distribution, organization and its spatial behavior can furnish the information about the strength and weaknesses of the system. The role played by such market centers in the process of overall development of the region is also important. In the study an attempt has been made to show the strengths and weaknesses of the system with the help of the elements like spatial distribution, typology, centrality, hierarchy, trade area and organization of market systems existing in the region.

This information provides a base to the planning and development purpose.On the basis of this background an attempt is made to study the market centers of Hingoli district which are located in upper area and basin of the Purna and Penganga rivers.

1.2 OBJECTIVES OF THE STUDY:

The present study aims to deal and analyze various aspects of market centers in Hingoli district with the following objectives.

1. To study the physical setting and social aspects of Hingoli district as a basis for the distribution of market centers.
2. To study and analyze the spatial distribution of market centers and their relationship with physical and social factors.
3. To study the typology of market centers in the study region.
4. To study the centrality and hierarchical order of market centers.
5. To delimit and gap the trade areas of market centers and to find out poorly served areas.
6. To study the association of market centers in regional development.
7. To prepare the plan for the proposed market centers and structuring of market cycles in the study region.

1.3 DATA BASE:

The entire study is based on primary and secondary data pertaining to the market centers and population. All the relevant published and unpublished records have been considered. Primary data is collected through intensive fieldwork. The period of investigation is of 20 years, from, 1981 to 2001.Secondary data has been collected from the District Census Handbook, Hingoli District Gazetteer, Municipal year books, District Statistical Abstracts and Socio-Economic Abstracts and Records of Villages, Tahsils, and Panchayat offices .Some recent data is also collected from the website, Census of India and from various websites like www.msamb.com/www.cencusindia.net.

The primary data collected through questionnaires and schedule have been used to study from time to time in the study region. The researcher has visited 190 market centers and data has been collected.

Interview technique has been also employed to collect the data and information regarding the consumer's behavior for making other empirical observation.

1.4 METHODOLOGY:

Computation and re-arrangement of data in a tabular form followed the collection and completion of data. The data analysis includes both the empirical and theoretical approaches. To analyze the various aspects of market centers various statistical and quantitative techniques have been used.

Co-relation has been employed to find out the relationship between market centers and area, population and inhabited villages etc.

Karl Pearson's co-relation method is employed to find out the relationship between market centers and area, population, inhabited villages.

His co-relation formula is as follows.

$$r = \frac{\Sigma dx\, dy}{\sqrt{(\Sigma dx)^2 \times (\Sigma dy)^2}}$$

To find out the spatial distributional pattern of market centers 'nearest neighbor analysis' has been used.

The technique developed by plant ecologist Clark and Evens (1954) is used for the present investigation.

Following formula developed by Hammond and McCullough (1974) has been employed

$$Rn = \frac{\overline{D}obs}{\overline{D}ran} \qquad \text{Or} \qquad Rn = 2\overline{D}obs\sqrt{\frac{N}{2}}$$

The taxonomical (classification) method has been used to analyze the typology of market centers.

To calculate the centrality indices 'Location Quotient Method' has been used and hierarchical orders of market centers have been prepared.

Centrality is calculated using following formula

$$C = \frac{t}{T} \times 100$$

The established theoretical approaches have been used for limitation of trade areas of the markets centers.

Three methods have been used for area influence of trade areas of market centers. V.L.S. Prakash Rao's modified method and Saxena's modified methods are used in the present study.

$$i)\ Jackson's\ Method\ Trade\ Area = \frac{Total\ Area}{Number\ of\ Market\ Centres}$$

$$Trade\ \ Area\ \ km^2 = \frac{Area\ \ in\ km^2}{Number\ \ of\ \ Market\ \ Centres}$$

$$ii)\ Trade\ \ Area\ \ Villages\ \ = \frac{No.of\ \ inhabited\ \ \ Villages}{Number\ \ \ of\ \ Market\ \ \ Centres}$$

$$iii)\ TradeAreaPopulation = \frac{Population}{Numberof\ MarketCentres}$$

For the analysis of existing market cycles and its re-structuring in the study region, mobile traders and consumers were consulted. Total traders visiting each market centre have been grouped into six categories. They are i) Grocery shop ii) Fruits and Vegetables iii) Domestic and utensil's iv) Cloth traders v) Food grain merchants and vi) others. For

operating the interviews, 15 percent traders were selected by stratified random sampling method from weekly markets of the region.

Different research methods used in the present work have been discussed in appropriate chapters and it has been represented in tabular forms. The results and analysis are represented by suitable graphs, diagrams and maps. An elaborate list of references, bibliography, appendices and questionnaire is given at the end.

1.5 REVIEW OF LITERATURE:

A Considerable information has been received from various social scientists of the studies relating to the market centers and exchange system .There has been a large publication of the study of literature on the study of market centers and places which includes daily, weekly and bi-weekly. In this study, references of concerned studies have been presented in each chapter. Notwithstanding, a brief review of major works have been given for apprehending the trend of geographical research in marketing.

The books on marketing geography written by Cliff(1973), Berry (1976), Davits R.L. (1976) , Saxena (1984,1988,1990),Dixit (1984,1988), Srivastava (1987), Huger (2000) have analyzed the various aspects of market centers and rural marketing in different regions at various scales.

The researchers Fate (1994), Patil (1993) & (1998), Jagadale (1990), Nayak (1994), Durgade (2000) etc, have completed their M. Phil Dissertations on the various aspects of weekly and periodic market centers, whereas, some important studies in this field carried out by researcher's for their doctoral thesis in different research centers, Institutes and Universities. It includes the work of Singh

(1962),Vishwanath (1967), Kumawat (1973),Sami (1975), Parvathi (1978),Gedam (1978), Maidmwar(1979),Srivastava (1983), Talikoti (1991),Patil(1994), Lokhande (2001)etc.on the various aspects of market centers in the different regions of the country.

This study includes the role of market centers, origin and evolutions, locations and distributions, transportation and development of market centers, typology, centrality and hierarchy of market area, market morphology, consumers and traders behavior, synchronization of market cycles, periodic market system, planning and perspective etc.

Some notable work in the form of research papers has been published by some foreign geographers. Applebaum (1954) has published papers about the various aspects of marketing geography. Hodder (1961, 1964) published papers about the rural, periodic, day markets and origin of market in part of Yoruba-Land. Jackson (1971) has published papers about the various aspects of periodic markets in Southern Ethiopia. Mckim (1972) published paper about the periodic market system in northeastern Ghana. Hill and Smith (1972) have published a paper on spatial and temporal synchronization of periodic markets of Northern Nigeria. Wood (1975) has published a paper on a Spatio-temporal analysis of rural market in Kenya.

There are many well-known Indians who have published papers as follows: Tamaskar (1966, 1978) has published papers on various aspects of weekly markets of Sager –Damoh plateau and Chhattisgarh plain respectively. Verma and Saxena (1968) have published a paper about a geographical study of market centers of JhalraPatan. Ghosal (1972) has published a paper on market places and market areas. Srivastava (1977) has published a paper on periodic markets and rural development in Bahraich district of U.P.Jana (1978) has published a paper on hierarchy of market centers in Lower Silabati Basin. Wanmali (1980) has published

a paper on the regulated and periodic markets and rural development in India. Dixit (1980,1981) has published papers on hierarchy of market centers Umland of Kanpur and market cycle in the Bundelkhand. Ram and Srivastava (1982) published a paper on nature and demarcation of market area regions of lower Ganga-GhagaraDoab.Kumbhar&Deshmukh (1984) have published a paperon periodic markets of Sangli district. Hugar (1987, 1992) published papers on Spatio-temporal relationship of periodic markets in regulated markets of Gulbarga district. Pawar and Lokhande (1999, 2000) have polished two papers on periodicity and distributional pattern of market centers in Kolhapur district. Paper on hierarchical organization of market centers in Raichur district, has been published by Mulimani (2002).

1.6 SELECTION OF THE TOPIC:

Hingoli District of Maharashtra is chosen as the study region for the present investigation because of the following factors.

1. The heterogeneity or heterogeneous nature of the study region.
2. Inadequacy of the transportation network.
3. Agriculture is the base of economy of the region and it is socio-economically developing.
4. The region is a part of Ajanta ranges and some parts are undulating where market centers are important service centers functioning as the centers of development.
5. The study region is famous for edible oil and cotton cultivation and its marketing.
6. Hingoli district is economically backward area as a part of Marthawada the development of market centers and study region is necessary, consequently its study is important.

These are some of the reasons which inspired the researcher to select Hingoliregion for study.

1.7 LIMITATIONS OF THE STUDY:

The present study work undertaken has certain limitation as Follows:

1. There are new tahsils emerged in the study region. So the tahsil wise necessary information is not available adequately.
2. The relevant maps are not available in concerning offices for the study.
3. Enough literature is not available on market centers in HingoliDistrict.
4. Population data regarding levels of poverty is not available for urban households, therefore only rural household data is considered for the calculation levels of development.

All the above said and minor difficulties have put limitations on the study of the market centers in the study region.

Notwithstanding, with available information, researcher has tried to give justice to the problem.

1.8 ORGANIZATION OF THE WORK:

This research work includes the study of market centers which are daily and weekly. The main focus of attention is spatial analysis of market centers. This includes spatial distribution, the typology, centrality and hierarchic structure of market centers, trade areas of market centers, perspective of spatial organization of market centers and planning are the main aspects covered in the present investigation.

The present study entitled ‘A Geographical Study of Market Centers in Hingoli District’ is organized into eight chapters including findings and recommendations.

1.9 SCHEME OF CHAPTERS:

The first chapter 'Introduction'deals with importance of the study of selected topic, the objectives, database, methodology, brief review of the literature and selection of the topic and the study region.

The secondchapter deals with 'The Study Area': Geographical Landscape' of the study region This includes the location and extension of the region, physiographic regions, Geology,climate,drainage pattern, the soil types,natural vegetation, population, landaus pattern, agriculture, irrigation, cropping pattern,industries, transport and communication,settlement distribution, and demographic characters. The study of market centers in Hingolidistrict reveals the physical, social and economic factors play a vital role in the distribution and growth of market centers.

The thirdchapterdeals with theDistributional characteristics of market centerswith spatial distribution area and market centers ratio with area inhabited villages and population. Market centers distance from nearest town, distributional patterns, and periodicity and market cycles in the study region.

Thefourthchapter'Typology of Market Centers' deals with the classification of market centers including the study of locality characteristics such as population size, persons engaged in tertiary activities, estimated average attendance of people , function and exchange orientation , major commodities, market meeting days, number of shops ,location of market place etc.

The fifth chapter Is divided into two parts namely A and B and Parts 'A includes the study of Centrality and B' deals with hierarchy of the market centers.

The sixth chapter analyzes the 'Trade Area of Market Centers' the theoretical and empirical methods have been employed to discuss the perspective.

The seventhchapter'Other Perspectives of Spatial Organization of Market Centers' deals with the analysis and role of market centers on levels of development, followed by the planning of proposed market centers, synchronization market days and restructuring of existing market cycles.

In t**he last eighthchapter**'Conclusion, Recommendations' and Suggestions have been given.

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Chapter II

Physical and Socio-Economic Setting of Region

Section I: Physical Setting

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2.2 Brief History

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2.4 Physiography

2.5 Drainage

2.6 Climate

2.7 Soils

2.8 Natural Vegetation

Section II: Socio-Economic Setting

2.9 Population

2.10 Urban-Rural Population Ratio

2.11 Settlements

2.12 Main features of Regional Economy

2.13 Landuse

Chapter II

Physical and Socio-Economic Setting of Region

Section I: Physical Setting

2.1 ***Introduction:***

In the previous chapter, introduction of the subject, objectives, database, methodology, review of literature, choice of the region, limitations of the study and an outline of the present work etc. have been discussed.

This chapter is mainly concerned with the geographical landscape of the study region. In this chapter, physical and socio-economic factors have been analyzed. Physical factors include location, physiography, drainage, climate, soils, Natural Vegetation whereas socio-economic factors include population, urban-rural population ratio, settlements, main features of regional economy and landuse. All these physical and socio-economic factors affect on the market centres of the study region.

2.2 ***Brief Hisoty:***

The district 'Hingoi' was created bifurcating the Parbhani district and formed on 24th April, 1999. Earlier to this, it was tahsil in the district. In the medieval period 'Hingoli' was known as 'Wingully'. It is quite likely that the present name 'Hinoli' is a derivative of 'Wingully', Wingamulh and later Lingoli. The refined name 'Hingoli' came into being in the year 1866.

Until 1853, the area of Hingoli district was an indivisible part of the ancient Vidharbha region. During the British rule it was the border line of the Nizam state of Hyderabad. It was a base camp of the Nizam's troops. Military hospital, veterinary hospital for the benefit of troops was available in the area. Because of these, the area became a military

cantonment and a famous town in the erstwhile Hyderabad state. There are still some localities like Phaltan, Risala, Tofkhana and Pensionpura, Sadar Bazar etc., which reminds the old kingdom.

As stated earlier, Hingoli was part of the Parbhani district. Hingoli was famous as a place where the suppression of things commenced in 1838. It also formed a cantonment till 1903. Afterwards some of the Nizam's troops were stationed here. Today Hingoli district is well known as a trade centre and is linked both by road and rail. A market yard was established at Hingoli in 1933. Though churches are comparatively less in number, temples and mosques are plenty in the district. Among them, the temple 'Aundha' (Nagnath) is famous probably, the only one structure which reminds the old history of the district.

The temple of AundhaNagnath located at Aundha is a very famous holy place, which is associated with the name of Nagnath i.e. BhagwanShankaranand considered as one of the twelve 'Joytirlingas' in India. The temple was constructed at the time of Yadavas of Devgiri, probably in the 13^{th} century and hence has considerable historical importance. The temple of Nagnath covers an area of 669.60 m^2 (7200 sq.feet). The height of the temple is about 60 feet. It is a solid work in masonry and on its wall are engraved hundreds of images of human beings and various types of animals like elephants, horses and bulls in splendid design.

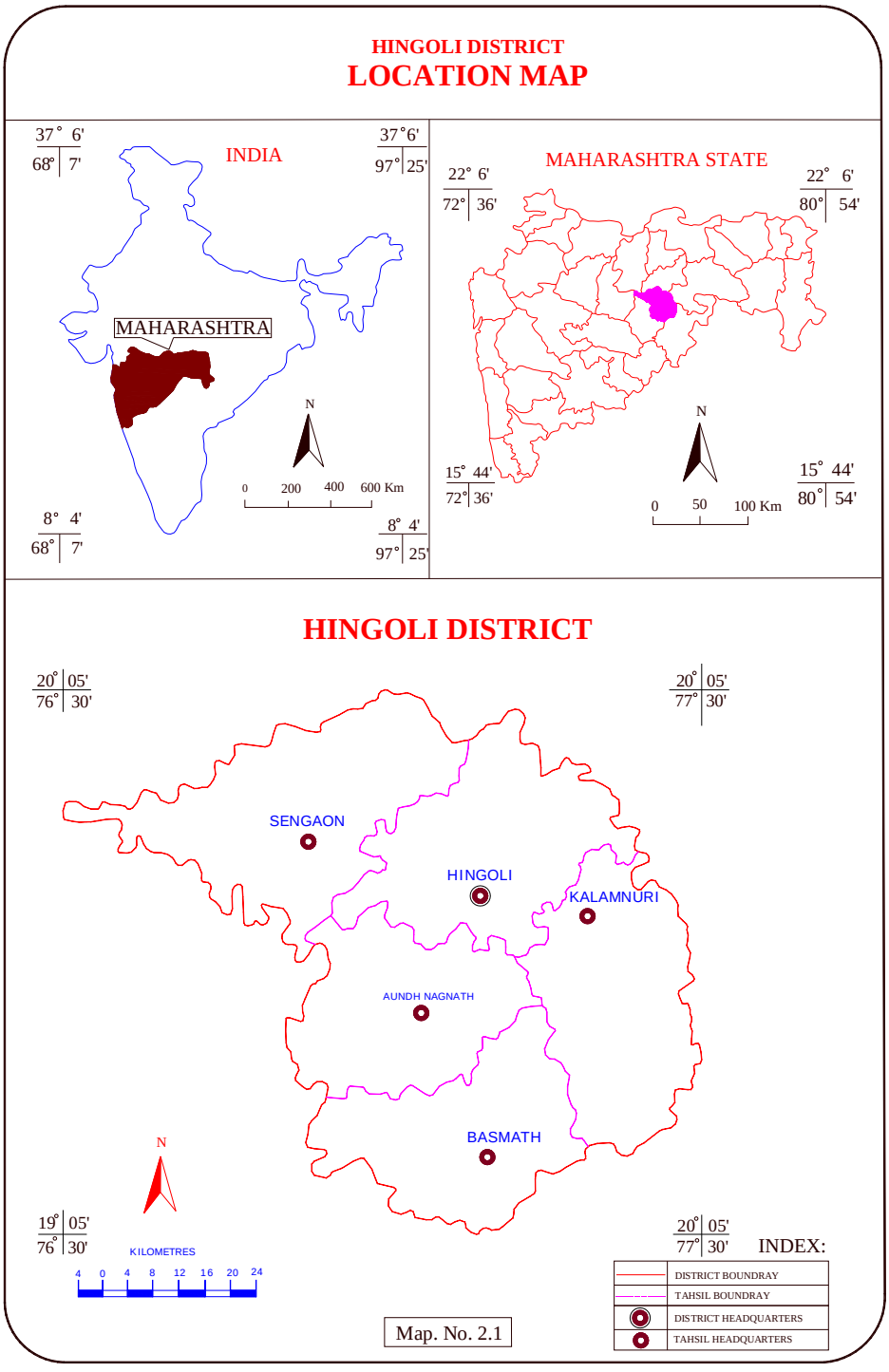
In historical times the entire area in Vidarbha was a part of the empire of Ashoka, then Maurya in 184 BC. The Satavahana held sway over Vidarbha for about 450 years from 200 BC to 250 AD. After declining the power of Satavahans in about 250 AD., and the Hingoli district of Maharashtra formed part of the dominion of the Vatsagulma. In ancient period, after Vatsagulma, Kalacuris, Mahismati, Rashtrakutas, then Chanakya, Yadavas, the medieval period begins from Ala-ud-din in

1316. Hingoli thus passed again with the rest of Berar into the hands of Musalmans. After the rule of Bahamani and Imadsahi, the Nizam of Ahmadnagar became emperor from 1565 till 1595. In the Moghal period from 17th Century, the emperors like Akbar, Murad, Malik, Ambar and Jahangir ruled successfully and then Aurangzeb became a powerful ruler. After the death of Aurangzeb in 1707, the Moghal Empire at this period was on the verge of decline and the NizamAsaf Jah became the ruler and he established his capital at Hyderabad. After a period of about 140 years, due to bankruptcy of the Hyderabad Government, and their disorganized administration districts yielding gross revenue of Rs. 50 lakhs a year were handed over to the British by a treaty. The district thus ceded constituted a major portion of Berar heart of Osmanabad (Naldurg) and Raichur. From the remaining portion of Berar, which was left with the Nizam, district Parbhani was formed under reforms of Salar-Jang in the year 1853 and again Hingoli district was carved out on 1st May 1999. Being a newly formed district, it has 710 inhabited villages and 4 towns. Hingoi was constituted with 5 tahsils and 3 municipal councils. Today has an area of 4827.0 km^2.

2.3 ***Location:***

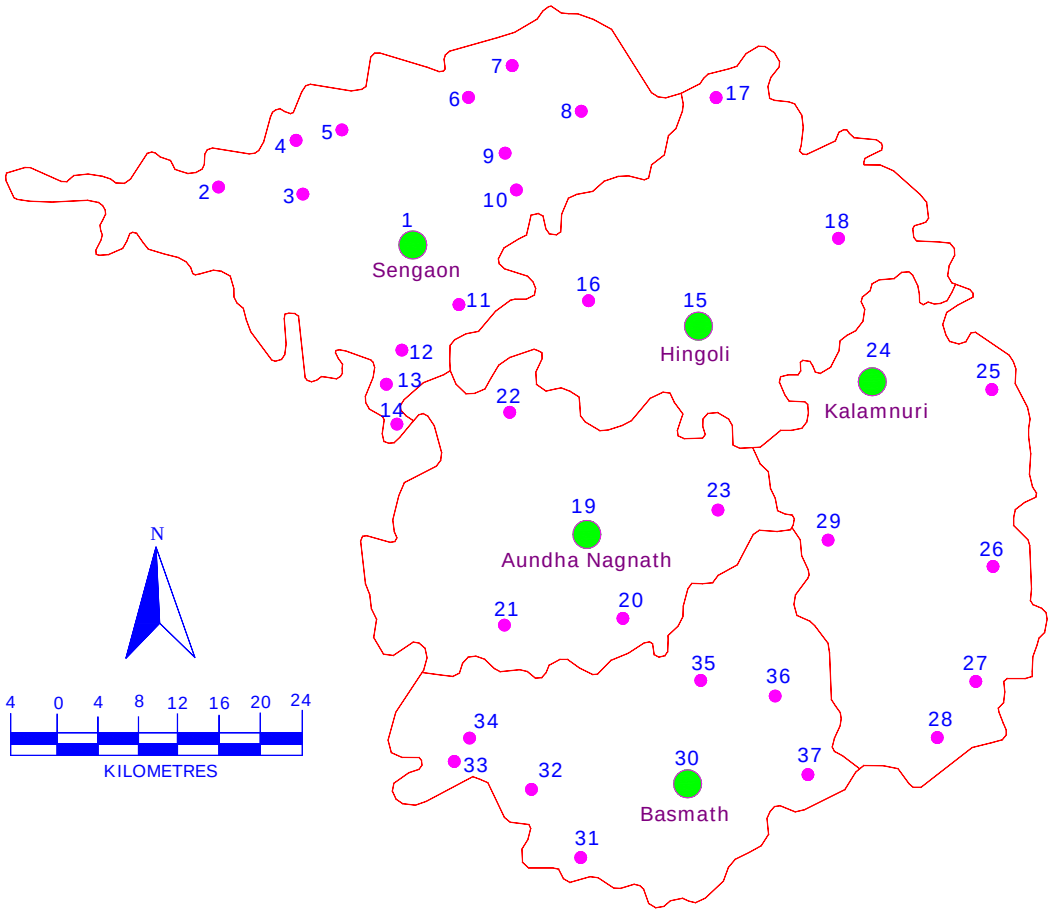
Hingoli district of eastern Maharashtra is selected as a study region for the present investigation. Hingoli district lies between 19^0 05' North to 20^0 05' North latitude and 76^0 30' East to 77^0 30' East longitude. It covers an area of 4827 sq.km. Which is 1.56 percent to the total area of the state and a population of 1178973 (2011 census) which is 1.05 percent of the total population of the state of Maharashtra. Among the 35 districts of the state, the district ranks 32nd in terms of area and 33rd in terms of population and 29th in terms of density. The region, comprising 710 inhabited villages and 03 urban centres, is administratively subdivided into 05 tahsils namely Hingoli, Kalamnuri, Basmath, AundaNagnath and

Sengaon.


HINGOLI DISTRICT
LOCATION MAP
INDIA
37° 6'
68° 7'
37°6'
97°25'
MAHARASHTRA
N
0 200 400 600 Km
8° 4'
68° 7'
8° 4'
97°25'
MAHARASHTRA STATE
22° 6'
72° 36'
22° 6'
80° 54'
N
0 50 100 Km
15° 44'
72° 36'
15° 44'
80° 54'
HINGOLI DISTRICT
20° 05'
76° 30'
20° 05'
77° 30'
SENGAON
HINGOLI
KALAMNURI
AUNDH NAGNATH
BASMATH
N
19° 05'
76° 30'
KILOMETRES
4 0 4 8 12 16 20 24
20° 05'
77° 30'
INDEX:
DISTRICT BOUNDRAY
TAHSIL BOUNDRAY
DISTRICT HEADQUARTERS
TAHSIL HEADQUARTERS
Map. No. 2.1

HINGOLI DISTRICT

Location of Market Centres



2	Kapadsingi	10	Palshi	20	Shirad Shahpur	29	Bolda
3	Sakhara	11	Pusegaon	21	Jawala Bajar	31	Hayatnagar
4	Jaipur	12	Khillar	22	Bhosi	32	Aral
5	Pankanhergaon	13	Adol	23	Pimpaldari	33	Hatta
6	Kahakar	14	Lingpimpri	25	Goul Bajar	34	Adgaon
7	KendraBK	16	Narsi Namdev	26	Akhada Balapur	35	Choundi Amba
8	Goregaon	17	Kanhergaonnaka	27	Warangaphata	36	Kurunda
9	Ajegaon	18	Sirsam	28	Dongarkada	37	Girgaon

It is bounded on the north by Washim district, on the west by Parbhani district, on the south and east by boundary of Nanded district and on the north-east by Yavatmal districts. The river Purna runs of the

boundaries of Hingoli and Parbhani districts and work as to attach these two regions. The river Painganga runs on the boundaries of Washim and Yavatmal.

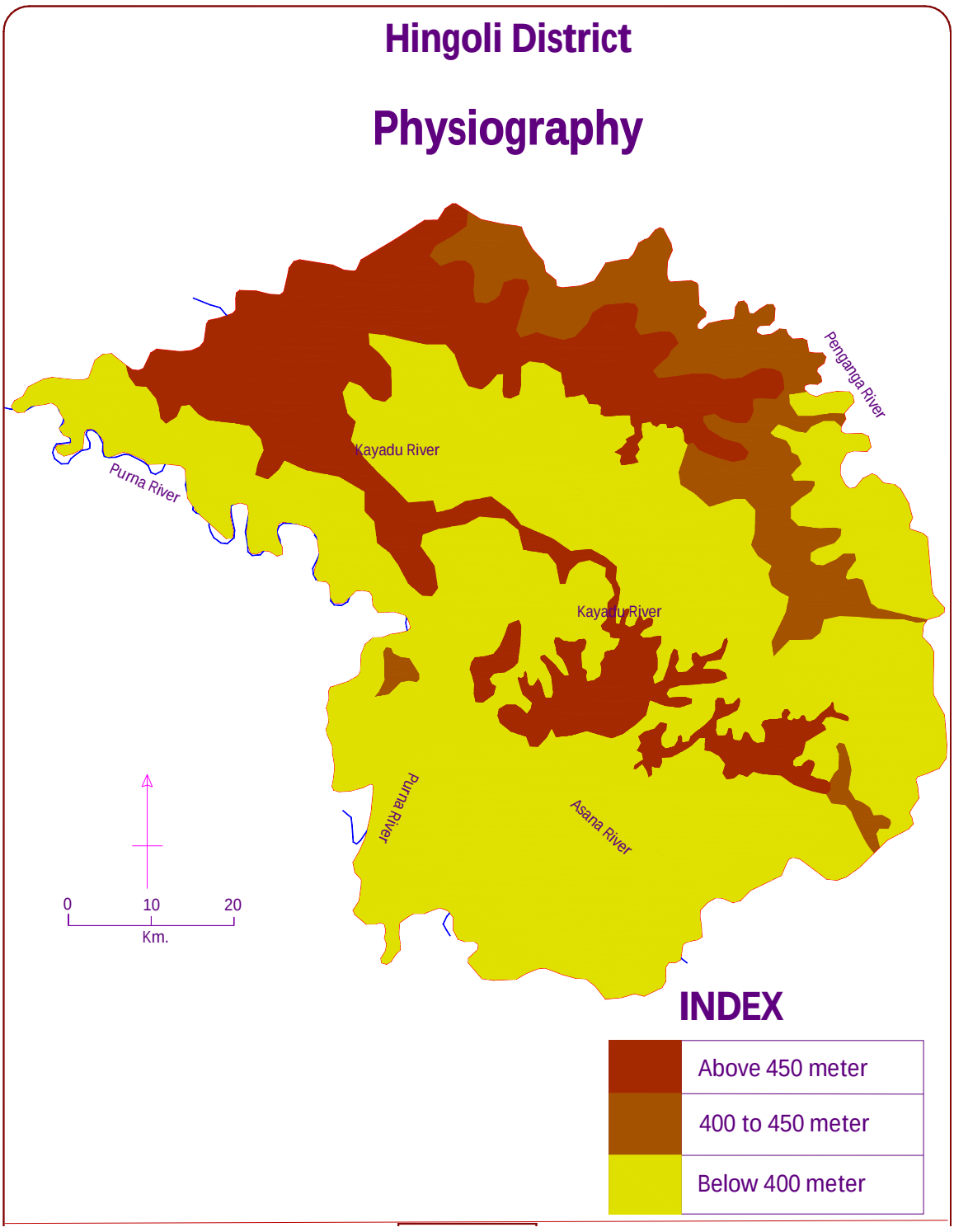
It is surrounded by Buldhana and Washim district to the east, Nanded and Parbhani districts to the south and Parbhani and Jalna districts lying to the west .

In Hingoli district, there are 37 market centres. Out of these, 14 market centres are in Sengaontahsil, 04 market centres in Hingolitahsil, 05 market centres in AundhaNagnathtahsil, 06 market centres in Kalamnuritahsil and 08 market centres in Basmathtahsil.

2.4 ***Physiography:***

The physical landscape is the fundamental base for economic activities and affects the distribution of population. Economic activities like agricultural, trade and transportation network are very limited in North-West hilly part of the district. On the other hand in plain and fertile areas, these activities are better developed. Hingoli district is a part of Deccan trap. The district has been spread between Purna River in west to Painganga in North-East.

Hingoli district is based on basaltic foundation on Deccan plateau. The average height of the region is near about 500 m. from the sea level. The highest (598 m) part of the region is found in Hingolitahsil near Malhivara village. The lowest height (400 m) is found in southern part of Hingoli district near Basmath.



The slope of the region is high to the Northern part whereas it becomes less to southern part. On the basis of relief, the district may be

divided into three groups i.e. 1) The Painganga valley, 2) The Hingoli plateau and 3) The Godavari plain.

The Painganga valley stretches in the extreme northeastern portion of the district. It attains a height of about 400 meter. The Hingoli plateau covers a major portion of the district. It includes major parts of Sengaon, Hingoli, Aundha-Nagnath and Kalamnuritahsils. The general elevation of this plateau is about 500 meters above mean sea level. The plateau is badly dissected with and uneven surface and hence the land available for agriculture is limited. The Godavari plain includes Basmathtahsil and southern parts of Aundha-Nagnath and Kalamnuritahsils. It attains a height of between 400 and 450 meters and slope gradually towards the south.

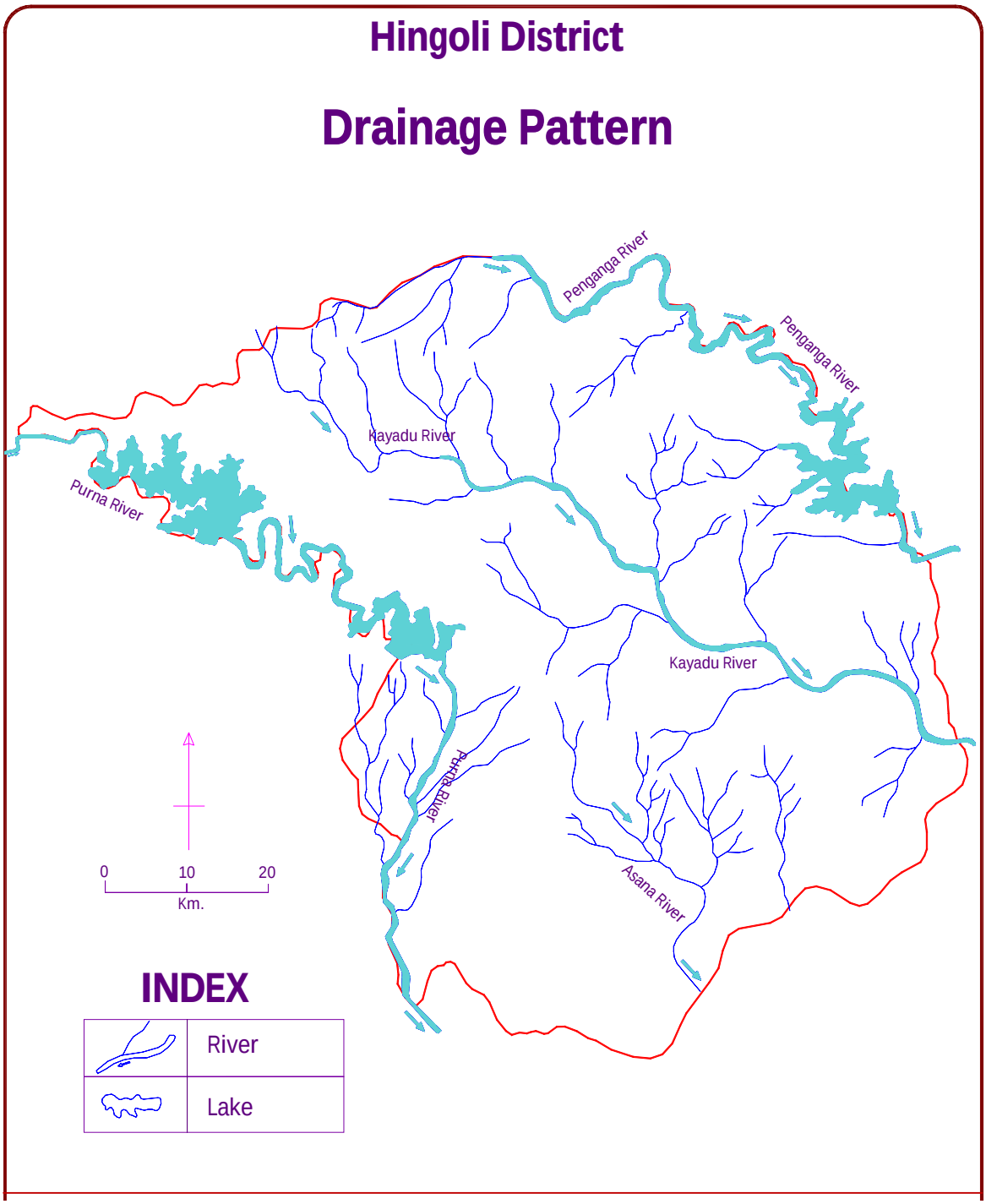
The different topographical area of the study region plays a vital role in the determination of the location of market centres. The physiographic divisions decide the extent of economic activities of the region and they are important and useful in the planning process.

2.5 ***Drainage:***

The drainage pattern of Hingoli district is developed and geared to the base level. Keeping tune with southward topographical slope of the land, all the rivers flow towards southern side. The prominent rivers of the region are Purna, Kayadhu and Painganga.

i) Purna River:

The Purna River, a tributary of the Godavari River, drains the western portion of the district. It arises at Ajantha hill ranges 56 km. distance from northern Aurangabad district. It forms the district boundary



in the northwestern portion of the district for about 72kms. Purna, generally flows north-south way. Running from its source through Jalana, Buldhana, it reaches to Hingoli and then Parbhani districts. The length of Purna in Hingoli district is 100 km. Yeldari and Sidheshwar dams have

been constructed on this river which is used for irrigation in AundhaNagnath and Basmathtahsil.

Purna project is the first important irrigation and water energy project in Marathwada region.

ii) Kayadhu River:

Kayadhu is main tributary of Painganga which is very important for the Hingoli district. It arises from hilly region of Risod city/ town in Washim district, and just enters in Hingoli district. The length of the Kayadhu in this district is 80.50 km. It flows between Purna River and Painganga River at Sengaon, Hingoli and Kalamnuritahsil from north-west to south-east.

Construction of Sapali Dam is in progress on this river in Kalamnuritahsil. Hingoli city is situated on the bank of Kayadhu River.

iii) Painganga River:

Painganga is important river which flows in Hingoli district. It arises at Ajantha hills at west of Buldhana city. Painganga flows north-east way. Painganga has 80.45 km. length in Hingoi district and it runs ahead in Yavatmal district. Esapur dam is constructed on this river at the boundary between Hingoli and Yavatmal.

iv) AsanaRiver:

Asana is a small seasonal river which originates from hilly area near AundhaNagnath and flows in the southern region through Basmathtahsil, enters Nanded District.

2.6 *Climate:*

The climate is important factor in physical setting of the study region. The climate of Hingoli district can be included in the sub-tropical temperate category, characterized by medium rainfall and moderate

temperatures. Comparatively, this climate is hot and dry. The mean daily maximum temperature is observed 41.9^0c in summer and the mean daily minimum temperature is found 12.6^0c in winter (December). Sometimes due to cold waves over northern India, temperatures may drop to about 6^0c. May and December are the hottest and coldest months of the year respectively. On the basis of climatic conditions, the year can be divided into four seasons:

i) Summer season from March to May with maximum temperature
ii) The rainy season from June to October
iii) North eastern monsoon from October to November
iv) Winter season from December to February with minimum temperature.

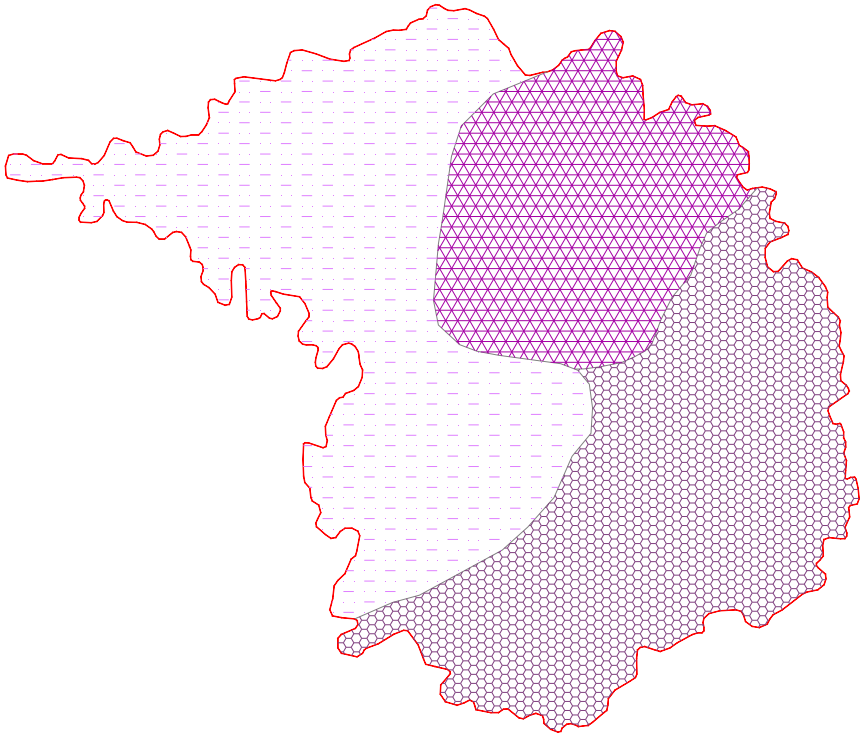
2.7 ***Soils:***

Hingoli district is situated in Purna, Kayadhu and Painganga River's basin. The soil of the region is identified as 'Black Cotton Soil' or Regur. The Ph value of soil of the region is 8.36 in average. The depth and fertility of black cotton soil varies from place to place in the study region. On the basis of fertility, soil of the region is divided in three types i.e. Deep black soil, Medium black soil. Color of this soil is gray and shallow black soil / light soils.

The northern upland area of the district consisting of Sengoan, Hingoli, Northern Kalamnuri and AundhaNagnathtahsils have light soils (shallow black soil) which are sandy loam in texture, brownish black in

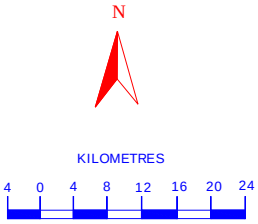
HINGOLI DISTRICT

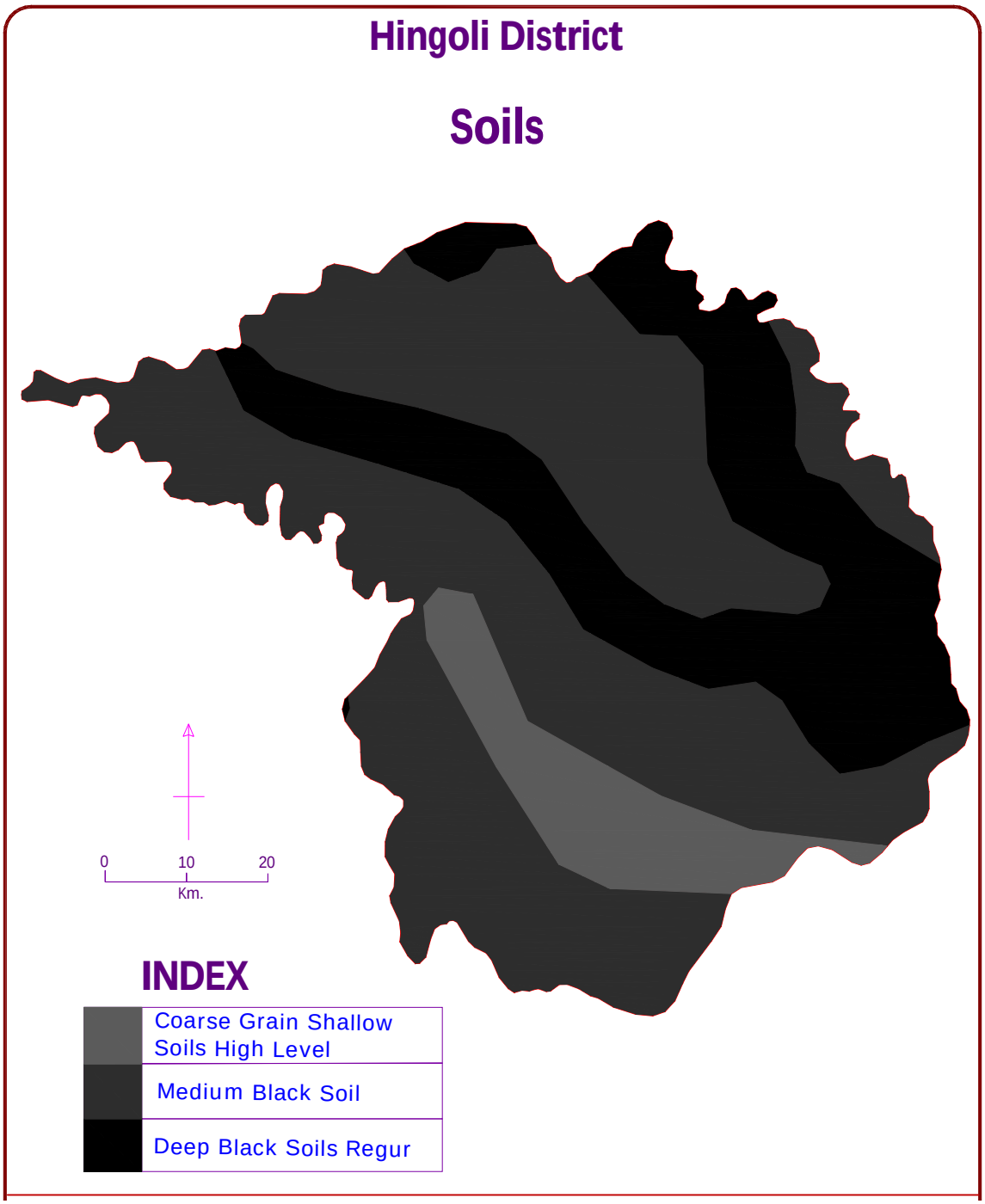
Average Annual Rainfall (mm)



INDEX

	Above 950 mm
	850-950 mm
	Below 850 mm





colour and underlaid with murum derived from the basaltic rocks. These soils are most suitable for Kharif crops like Jowar, Bajri, Groundnuts etc.

The southern portion of the district occupying Basmath, southern part of AundhaNagnath and Kalamnuritahsils have medium to deep black

soils, which vary in texture from clay to clay loams. These soils are retentive in moisture and rich in plant materials such as lime, magnese, iron and alkalies. These soils suit both Kharif and Rabi crops.

2.8 ***Natural Vegetation:***

It is found that there is only 2.4 percent area under forest in the whole region. Out of 4827 sq.km. Only 114 sq.km. is forest area. Major area lies in Hingoli and Kalamnuritahsils. This is a thin type of forest. Thick forest is not seen in the district. There is a scope for social forestry and re-plantation in the old forest.

The trees like Teak, Tirmar, Salani, Palas, Dhawada, Sagwan, Ain, Khair, Mahua, Tembhurni, Babhul, Bor, Ayoni, Kona and Orange, Mango, Custard apple fruits etc. such are found in the study region. In grass area Pawanya, Kusal, Raj and Rosha grass are seen in the region. The forests also have medicinal plants and large grassy area. The collection of Tembhurni leaves, gum, mahua flowers, fruits and charoli seeds is the major occupation in forest area.

Section II: Socio-Economic Setting

Socio-economic factors are also important for the growth, development and distribution of market centres in specific study region. Population, rural-urban ratio, irrigation, agricultural landuse, transportation and industries etc. these socio-economic factors, left their influence upon the growth, distribution and development of the market centres directly or indirectly.

2.9 ***Population:***

Population as a resource is an important part of the inputs necessary for the development of a region. Population has a direct influence on the market centres activities of a region. Population has various aspects like growth rate, density, the urban-rural proportion, economic classification, occupational structure etc. which give an idea of features, composition and availability of manpower in the region. It also shows the extent of utilization of manpower in the region.

2.9.1 ***Growth of Population:***

The population of Hingoli district is 1.05 percent of population of Maharashtra. It has increased from 9.87 lakh to 11.78 lakh from 2001 to 2011.

There is growth of population in the year 1901 to 1911, which increased by 20.5 percent. But from 1911 to 1921, population decreased by 01.8 percent in this decade. After 1921, population growth is occurring gradually. And 19.8 percent population growth have found in 2001 and 19.4 percent population growth in 2011.

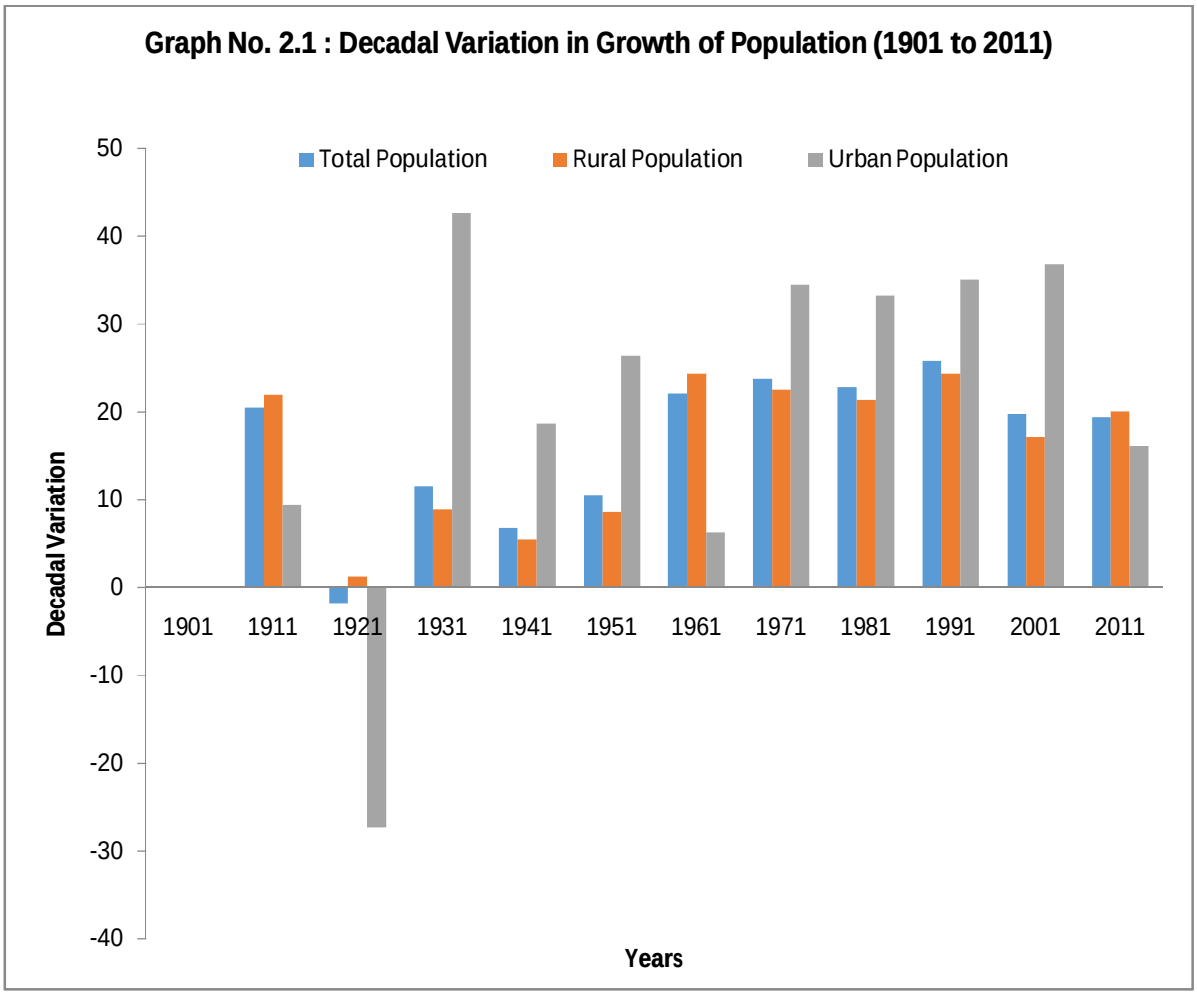
Decadal Variation in Growth of Population

(During 1901 to 2001)

Year	Total Population		Rural Population		Urban Population	
	Persons	% to Decadal Variation	Persons	% to Decadal Variation	Persons	% to Decadal Variation
1901	226384	--	200683	--	25701	--
1911	272785	20.5	244679	21.9	28106	9.4
1921	267991	-01.8	247561	1.2	20430	-27.3
1931	298807	11.5	269648	8.9	29159	42.7
1941	319200	06.8	284581	5.5	34619	18.7
1951	352856	10.5	309090	8.6	43766	26.4

1961	430986	22.1	384459	24.4	46527	6.3
1971	533595	23.8	471024	22.5	62571	34.5
1981	655199	22.8	571868	21.4	83331	33.2
1991	823931	25.8	711372	24.4	112559	35.1
2001	987160	19.8	833130	17.1	154030	36.8
2011	1178973	19.4	1000102	20.04	178871	16.12

Source: *District Census Handbook of Hingoli District, 2001 and Census of India, 2011.*



The main cause of rapid growth of population is the decline in death rate and increase in the birth rate. It is thus, clear that the regional population is growing at a rapid rate since 1961, but there was decrease in growth rate of population in 2001 and 2011.

2.9.2 ***Density of Population:***

The district of Hingoli with an area of 4827 sq.km. has a density of 244 persons per sq.km. It is the less of state average 323, out of all tahsils, the highest density of population is found in Basmathtahsil i.e. 312 persons per sq.km. The lowest density is recorded in Sengaontahsil which is 182 persons per sq.km.

Tahsilwise General Statistics, 2011

Tahsil	Area in km^2	Population	Density	Population percentage		Sex Ratio
				Rural	Urban	
Sengaon	1124.0	204768	182.17	100.00	00.00	935
Hingoli	969.4	269581	278.09	68.41	31.59	923
AundhaNagnath	835.0	181385	217.22	100.00	00.00	944
Kalamnuri	941.8	231927	246.25	89.30	10.70	929
Basmath	932.4	291312	312.43	76.34	23.66	935
Total	4827	1178973	244	86.81	13.19	935

Source: *Census of India, 2011.*

2.9.3 ***Sex Ratio:***

The sex ratio varies from tahsil to tahsil. Maharashtra has an overall sex ratio of 925 females per 1000 males. It has increased from 922 to 925 during the last decade as against this sex ratio of the district is greater than the state (953). This is a good indicative factor of female position in the population composition of the district.

Within the Hingoli district, sex ratio varies between 944 in AundhaNagnathtahsil and 923 in Hingolitahsil. Sex ratio of Sengaontahsil is 935 of Kalamnuri is 929 and of Basmath is 935.

2.9.4 ***Literacy:***

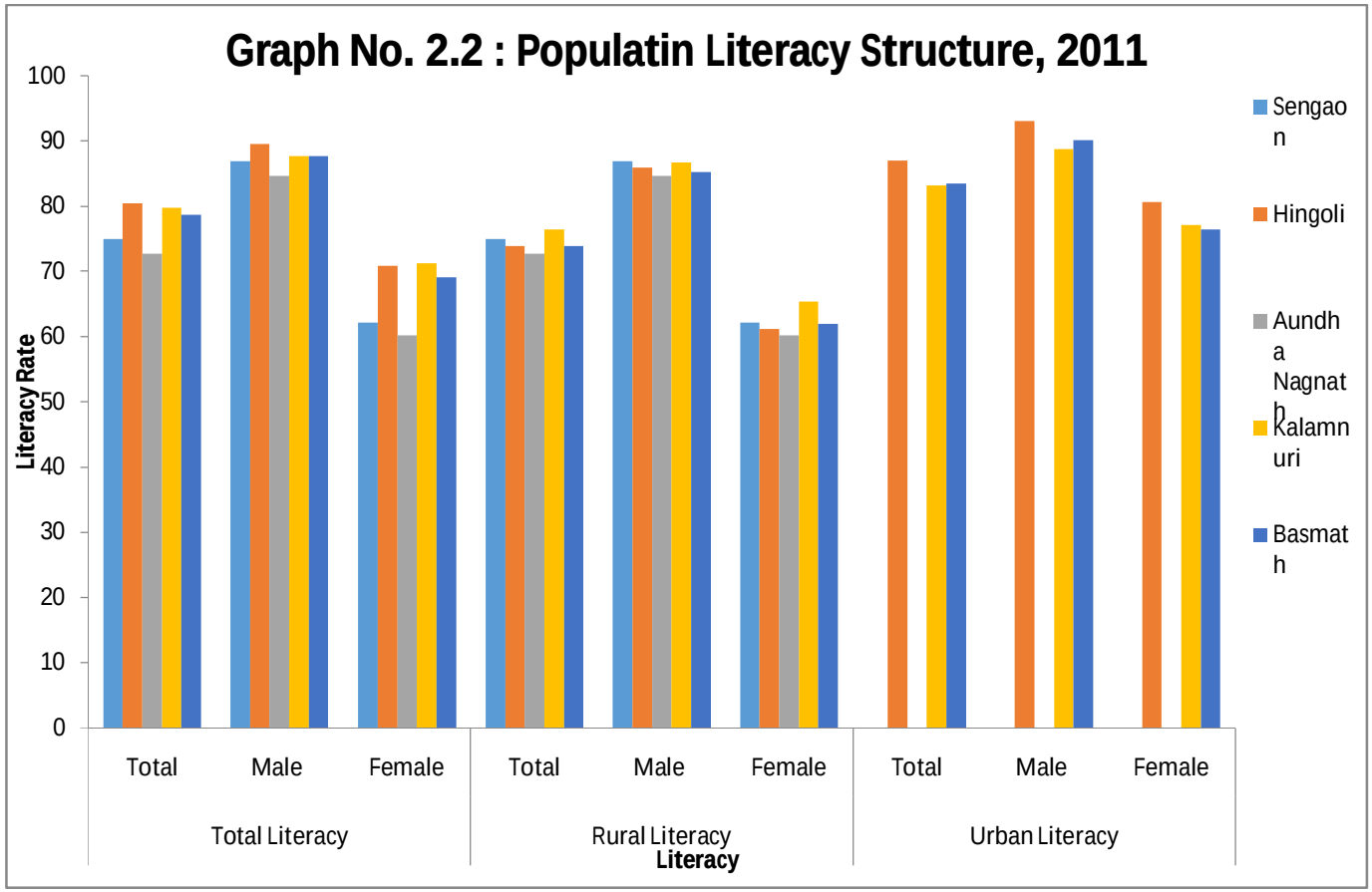
According to census of India, any person who can both read and write with understanding in any language is considered literate. Children in the age group 0 to 6 are not considered literate even though they can spell out some words or alphabets. Accordingly about 77 percent population of the district was literate in 2011. When, the literacy rate of the states as a whole was 82.91 percent. Hingolitahsil has the highest percentage of literate population i.e. 80.42 percent.

Population Literacy Structure, 2011

Tahsil	Total Literacy			Rural Literacy			Urban Literacy		
	Total	Male	Female	Total	Male	Female	Total	Male	Female
Sengaon	74.90	86.90	62.10	74.90	86.90	62.10	00.00	00.00	00.00
Hingoli	80.42	89.51	70.90	73.91	85.97	61.18	86.93	93.05	80.63
AundhaNagnath	72.73	84.68	60.19	72.73	84.68	60.19	00.00	00.00	00.00
Kalamnuri	79.78	87.72	71.23	76.35	86.65	65.39	83.21	88.80	77.07
Basmath	78.65	87.64	69.15	73.88	85.24	61.91	83.43	90.05	76.39

Source: *Census of India, 2011.*

Hingolitahsil has high proportion of literacy. Hingoli, Kalamnuri and Basmath these three tahsils have shown high literacy and AundhaNagnath, Sengaon have shown low literacy which was much less than the average literacy rate of the district.


Graph No. 2.2 : Populatin Literacy Structure, 2011
100
90
80
70
60
50
40
30
20
10
0
Literacy Rate
Total
Male
Female
Total
Male
Female
Total
Male
Female
Total Literacy
Rural Literacy
Urban Literacy
Literacy
Sengaon
Hingoli
Aundha Nagnath
Kalamnuri
Basmath

2.10 ***Urban-Rural Population Ratio:***

Urban population comprises 15.17 percent of the total population in Hingoli district, which is far less than state average (45.23%). It is observed that Hingoli has high urban-rural population than district level and also national level.

Remaining tahsils have recorded lower urbanization i.e. Kalamnuri 10.69 percent, Basmath 23.66 percent of urban population. Sengaon and AundhaNagnathtahsils in the district are mainly rural.

2.11 ***Settlements:***

Settlements are human dwelling of various sizes distributed in geographic space by a set of occupational forces within the environmental consideration related to water supply, fertile soils, and safe location (Hugar, 2000). The distributional characters of settlements refer to their frequency and spatial organization in a given space. An attempt has been made to study the size of villages and urban centres and their characteristics.

2.11.1***Rural Settlements:***

As per the 2011 census, there were 669 inhabited villages in Hingoli district. These villages vary in their population size. The number of villages at tahsil level reveals that Basmathtahsil has highest number (149), while the lowest number of villages is in AundhaNagnathtahsil (117).

There were 13 percent villages with a population of less than 500. The medium size villages with a population size of 500-2000 were 66.80 percent, which form a major population size. Further there were 17.80 percent villages with a population size of 2000 to 4999. However, the

large sized villages with more than 5000 population were only 2.40 percent.

Village Population Size Group, 2011

Sr. No.	Tahsil	Classification of Villages According to Population size			
		Below 500	**500 to 1999**	**2000 to 4999**	**5000 & Above**
1	Sengaon	87	79	29	04
2	Hingoli	19	99	17	02
3	AundhaNagnath	14	85	15	03
4	Kalamnuri	15	97	24	03
5	Basmath	24	87	34	04
Total		159	447	119	16
Percentage		13	66.80	17.80	2.40

Source: *Census of India, 2011.*

2.11.2***Urban Settlements:***

There are three urban centres in the district. These three urban centres have municipalities, namely Hingoli, Basmath and Kalamnuri.

There are three towns in Hingoli district ranging from class II and III with total area about 39.1 sq.km. The two towns (Hingoli and Basmath) are class II towns and Kalamnuri town is class III. The total area of urban centre is about 39.1 sq.km. The largest area is 16.4 sq.km. ofHingoli urban centres. The lowest area is of Kalamnuri urban centre which is 10.8 sq.km.

According to 2011 census year, the total population of urban centres is 178871. The highest urban population is observed in Hingoli 85137, whereas lowest urban population is found in Kalamnuri 24997.

Urban Area- General Statistics, 2011

Urban Centres	Area in km^2	Population	Density of pop. In km^2	Status	Class	Sex Ratio	Rainfall in mm.
Hingoli	16.4	85137	5191.3	M	II	--	990
Basmath	11.9	68937	5793.0	M	II	927	667
Kalamnuri	10.8	24797	2296.0	M	III	910	585

M = Municipality

Population Size I – Above 100000, II – 50000-100000, III – 20000-50000, IV – 10000-20000, V – 5000-10000, VI – Below 5000

2.12 ***Main features of Regional Economy:***

Economic characters and economic activities i.e. primary, secondary and tertiary in an area affect the per capita income and purchasing power of the population which in turn affects the growth and development of the market centres.

It has been observed that generally large number of weekly market centres is concentrated in an area, where primary activities are dominant.

2.12.1*Occupational Structure:*

The term 'Occupational Structure' is often used in a boarder sense. The occupational structure is divided into three classes i.e. cultivators, agricultural labourers and household industries, production services and repairs. These sectors provide the functional characteristics to an area.

Occupational Structure, 2010

Sr. No.	Population	Hingoli District		
		Total	Male	Female

1	Total Population	987160	505373	481787
2	Rural Population	833130	425840	407290
3	Urban Population	154030	79533	74497
Major Occupational Classes				
		Persons	**Males**	**Females**
4	Cultivators	206434	113635	92799
5	Agricultural Laborers	174847	80101	94746
6	Household industries, Production, Services and Repairs	78697	65738	12959

Source:*Socio-Economic Abstract, 2010*

2.13 ***Landuse:***

Agriculture is one of the oldest basic primary economic activities of man; generally,it is understood of man both cultivation of food and fiber crops and rising of livestock'seven today over the years in spite of growing industrialization in organization in the world.And nearly 50% of working population is still engaged in agriculture.The agricultural development through which a shift takes place from the traditionalagriculture to the modernized one result in an increase in productivity and production perunit of various resources. The process aims at getting maximum advantage of the availableresources on micro and macro level, which finally result in on overall development of the region.

Landuse is geographical concept which involves specific areas. The study of the landuse pattern of Hingoli district covers the proportion of area under different landuse at a point of time. It is based on the census classification of the land and it is grouped under two major types

The crops area in Hingoli district of Kharip season it seen that the less crops area2009-10 i.e. 73200 Hector and high crops area in the year

2010-11 i.e. 91900 Hector.Rabbi season it seen that the less crops area 2009-10 i.e. 12450 Hector and high cropsarea in the year 2010-11 i.e. 17700 Hector.

Geographical Landuse in Percent, 2010

Tahsil	Area in Hectors	Percentage of Cultivable area to Total Area	Percentage of Irrigate area to Tribal Cultivable area
Sengaon	110770.00	84.2	11.3
Hingoli	91538.00	86.9	3.6
AundhaNagnath	82846.00	76.0	6.4
Kalamnuri	90821.21	81.7	9.1
Basmath	90215.00	85.0	27.8
Total District	**466190.21**	**82.9**	**11.8**

Source: *District Socio Economic Abstract, 2010 and Census of India, 2001.*

Total geographical area of the district is 48026.0 hectare in 2011. In the study region, total forest area 29080.0 hectare, land not available for cultivation area 19100.0, other uncultivated land area 24890.0, fallow land area 16360.0 and net sown area 390830.0 heactare.

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Chapter III

Analysis of the Market Centres in the Study Region

Chapter III

Analysis of the Market Centres in the Study Region

3.1 ***Introduction:***

In the beginning chapter second researcher have attempted to study the physical and socio-economic elements of the study region, location and boundary, physiography, drainage system, climate, soils, natural vegetation and population characteristic etc. points analyzed.

In this chapter introduction, spatial distribution characteristics of market centres, rural market centres and their distance from nearest town, distributional pattern of market centres, day-wise distribution of market centres and market cycles growth Characteristics of Market Centres etc. points discussed in detail.

3.2.1*General Distribution:*

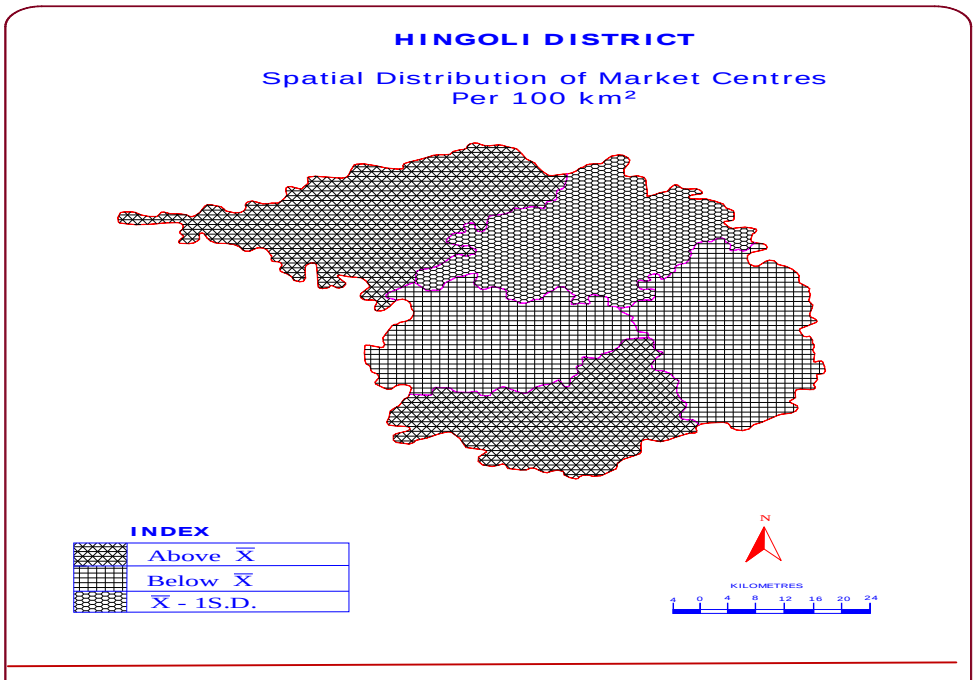
The general spatial distribution of market centres in Hingoli district is analysed for five tahsils of the district.

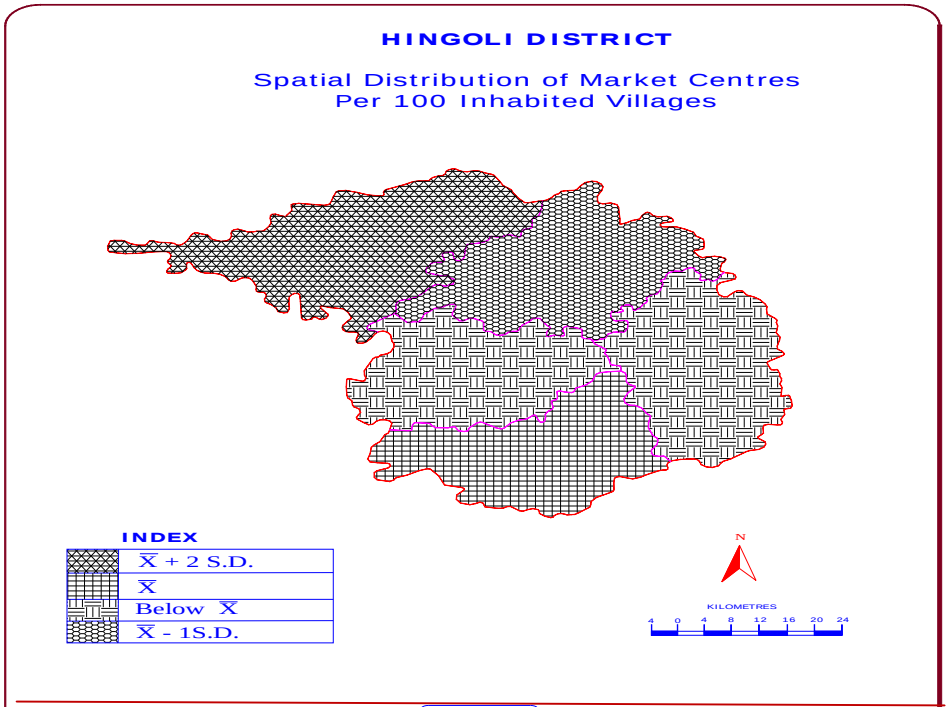
Sengaon has the highest number of market centres. It exceeds the mean by more than three standard deviation $\bar{X}$ + 3S.D. and is followed by Basmath which is grouped in the class of $\bar{X}$ + 1S.D. Kalamnuri and Aundha Nagnath is very near to mean, out of five tahsils only one Hingolitahsil have $\bar{X}$ – 1S.D Class.

3.2.2 *Area and Market Centres Ratio:*

As the number of market centre per 100 km^2 of area are 0.77 for the whole study region. In Sengaontahsil the ratio is 1.25 which considerably decreased to all tahsils for Hingolitahsil 0.41, AundhaNagnath 0.60,

Kalamnuri 0.64 and Basmath 0.85 respectively. It is also seemed that the one tahsil fall in the classes above $\bar{X}$ (mean).





Out of which AundhaNagnath and Kalamnuri in the class below$\bar{X}$. And Hingoli fall in the class $\bar{X}$ -1 S.D.

Notwithstanding, it is observed that the co-relation between these two variables is significant (r = 0.98789). It is due to the location and fertility of the area status is very essential to support the population as a threshold to give base to the market centres.

3.2.3 ***Inhabited Villages and Market Centres Ratio:***

In the study region the number of Market Centre per 100 inhabited villages is 05.50 ratio, ranges from 10.85 in Sengaontahsil to 2.90 in Hingolitahsil. Basmathtahsil fall in the class near to the Mean. Out of which Sengaon fall in the class $\bar{X}$ + 2S.D., Basmath fall in the class $\bar{X}$., two tahsils are below $\bar{X}$. and Hingoli fall in the $\bar{X}$ - 1S.D.

The correlation (r = 0.991706) analysis between two variables shows important relationship. It is seen that the density of settlement in the central area is more and market centres are less. In the plain area density of settlement and number of market centres are more. It is

because the size of the settlement, which is big in plain and small in other area in the study region.

3.3 ***Distributional Pattern of Market Centres:***

The spatial distribution of the market centres denotes that there is a difference from tahsil to tahsil based on cultivation, population and unbalanced transport network. It is noteworthy to study the existing pattern of spatial distribution market centres in Kalamnuri, Hingoli and Basmattahsils being the most fertile tract are developed in irrigation and transport network. These tahsils have a large number of market centres of varying sizes.

'Nearest Neighbour' method has been adopted for the distribution of the market centres. Which involves the comparison between the mean distance in an area of a point from its nearest neighbour and the mean distance which could be expected in a random distribution pattern in the same area. The plant ecologist Clark and Evans (1954) was the first to develop this technique and it has been used to measure the patterns of incidence of different species of plants. In recent time many geographers has been employing to the study of the spatial distribution pattern of settlement. The following formula developed by Hamond and Mcullahgh (1974) has been employed for the present study.

$$\text{Rn} = \frac{\bar{D}obs}{\bar{D}ran}$$

Where,

$\bar{D}obs$ = is the measured mean distance between the nearest neighbor point observed in a given area.

$\bar{D}ran$ = is the expected mean distance for a similar number of points distributed in the same area.

Rn = is the nearest neighbor index.

$$\bar{D}ran = \frac{1}{2\sqrt{\frac{N}{A}}}$$

Where,

N = is the number of market centres in the study region.

A = is area of study region / spatial unit below

Hence,

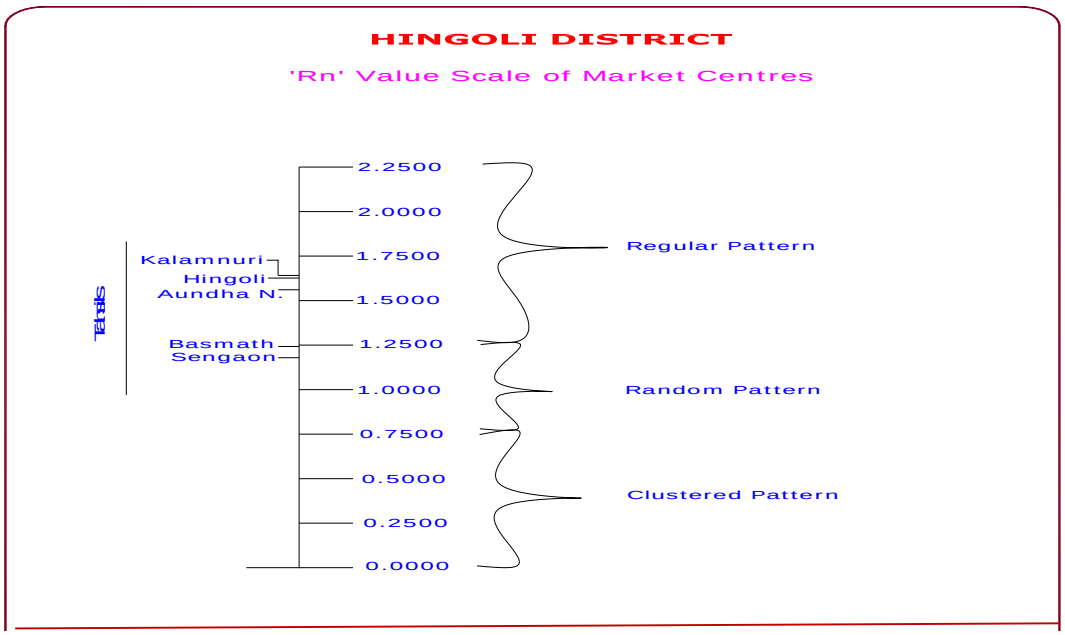
$$Rn = \frac{\bar{D}obs}{1 \div (2\sqrt{\frac{N}{A}})}$$

It can be expressed in a simplified form as below:

$$Rn = 2\bar{D}obs\sqrt{\frac{N}{A}} \text{ or } Rn = 2\bar{d}\sqrt{\frac{N}{A}}$$

The values of the Rn will fall between 1.17 to 1.62. The Value of 0.0000 showing clustering at the point and the value of 1.62 showing a hexagonal distribution can be shown with the help of scale also when the value is one the pattern is completely random (Dacey 1960, 1961 King 1962).

Since the study area presents a visible contrast in the density pattern and spacing of market centres, the Rn values at tahsil level are also calculated. In such situation different Rn values for different tahsil, are obtained in order to find out the association of the market centres with each other Rn value for the study region has been calculated.



Nearest Neighbour Statistics of Market Centres

Tahsil	$\bar{D}obs$ km	$\bar{D}ran$ km	'Rn' Values
Sengaon	5.25	4.48	1.17
Hingoli	12.46	7.78	1.60
AundhaNagnath	9.94	6.46	1.54
Kalamnuri	10.15	6.26	1.62

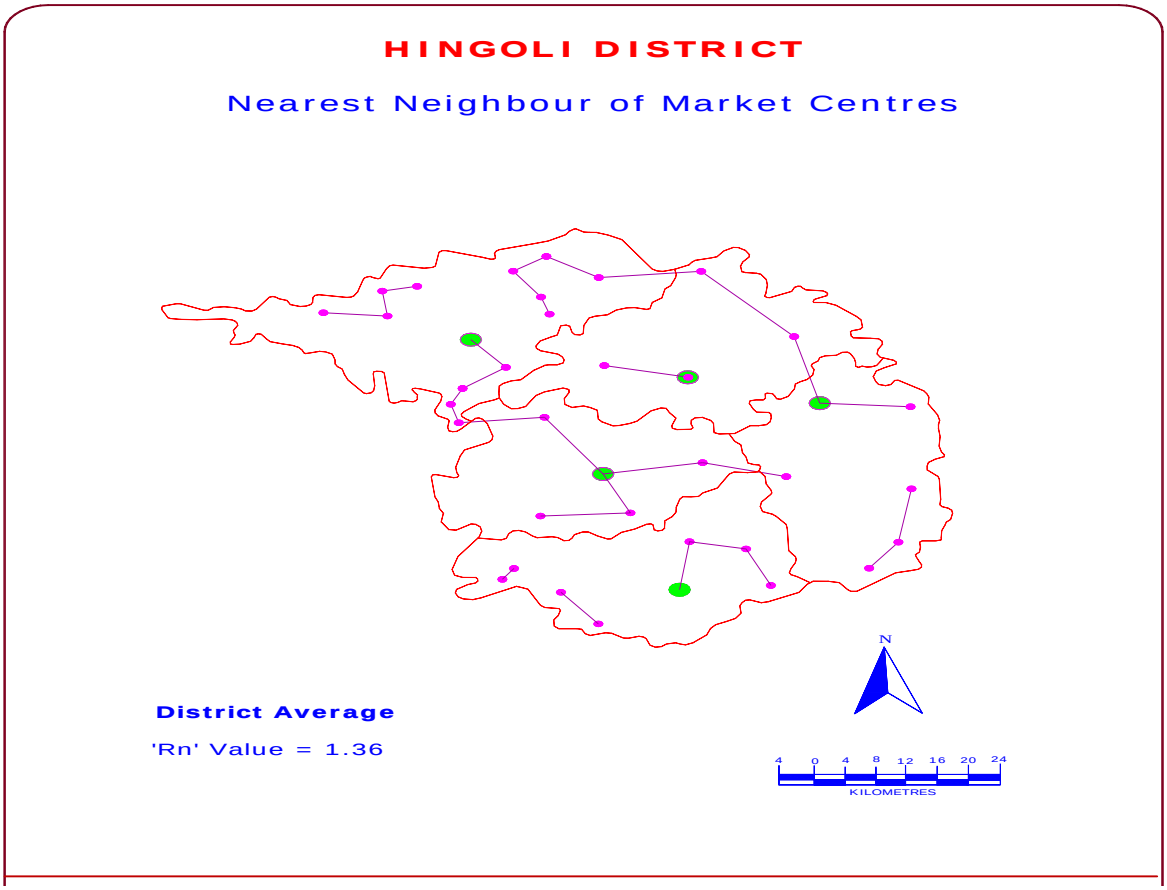
Basmath	6.65	5.40	1.23
Total District	7.75	5.70	1.36

Source: *Compiled by Researcher.*

The analysis reveals that the market centres have noticed a near to uniform distribution, where the degree of randomness is 1.36. In the study region the comparative analysis of the values of randomness shows that tahsils like Sengaontahsils having Rn value of 1.17 has randam pattern. The market centresHingoli, AundhaNagnath, Kalamnuri and Basmathtahsils having Rn value above 1.2 to 1.62 has uniform pattern.

In the study region the spacing of market centres is a uneven because transport facilities for the movements of people and goods are also unevenly distributed. The northern hilly part of the region has inadequate facilities which prevent the farmers range of marketing their production.

Sengaontahsil situated in the north and north-east part of Hingoli district is having more hilly area where the land under cultivation is less and productivity is not considerable. Therefore per capita income of people residing in this area is less, as a result their creativity affected. It is not affordable for these people to reach major market centres to make ordinary purchase of the goods required for daily needs by spending huge amount on transportation. As it is hilly area, there are many villages with small population.



There is very low frequency of transport facility, hence market centres are found in a large scale in Sengaontahsil. There are 14 market centres in the tahsil. This number is greater than all.

Hingoli is a district place; therefore the frequency of transport facility is in a large quantity. People from surrounding villages come to the major Hingoli daily market hence the number of market centres in Hingolitahsil is less in numbers.

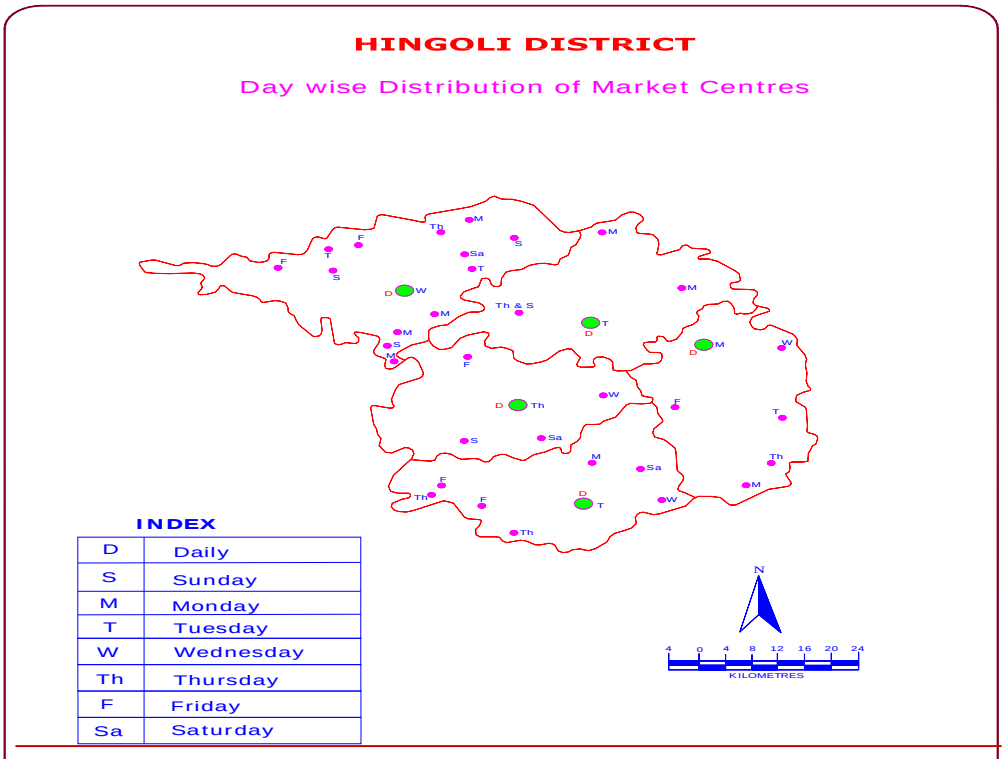
3.4 ***Day-Wise Distribution of Market Meetings:***

In the study region there are 63 market meetings held per week

Day-wise Distribution of Market Meetings

Tahsil	Sun	Mon	Tue	Wed	Thus	Fri	Sat	Total No. of Market Meetings
Sengaon	03	05	03	01	02	03	02	19
Hingoli	01	03	01	01	02	01	01	10
AundhaNagnath	02	02	01	02	01	01	01	10
Kalamnuri	01	02	02	02	02	02	--	11
Basmath	--	02	01	02	03	03	02	13
Total District	07	14	08	08	10	10	06	63

Source: *District Census Handbook, Hingoli, 2001.*



The highest number of market meetings is 19 and it is observed in Sengaontahsil which is economically and socially backward. Basmattahsil also have 13 market meetings. Basmat is daily market centre. Basmattahsil is rich in agricultural and economical development. Whereas the lowest number of marker meetings is 10 in Aundhatahsil which is recently established tahsil and Hingolitahsil in the study region. Remaining tahsil namely Kalamnuri have 11 market meetings.

But there is no great variation in the number of market meetings held on various days in Hingoli district, Monday has highest number of market meeting that is 14 market meetings followed by Thursday and Friday each 10 market meetings, Sunday 7, Wednesday 8 and Tuesday 8 market meetings. Monday is opening day of the week. So highest number of market meetings are held on Monday.

3.5 ***Market Cycles:***

In geographical studies of periodic markets, the most widely studies aspect is the 'market cycle'. Periodic markets in a region are inter-linked in a system which controls the movement of traders as well as consumers in some cases. The integrated system of occurrence of periodic markets in various parts is commonly known as 'market cycle' (Silverman, 1959, Hodder, 1966, Geertz, 1978, Bromley, 1980). Some other terms have also denoted for the same concept such as, 'ring' (Hodder, 1961), 'round' (Thomas, 1924), 'circle' (Poleman, 1961) and 'circuit' (Hill, 1966). Although these terms have subtle differences, in general they are interchangeable and denote the regularity in transactions and movement of goods and people between producer and the consumer. Bromley (1980) has suggested an 'aggregate' and 'individualistic' approach in the study of market cycles. The first aggregate approach is older and has been applied by Hodder, Ukwu and Tinkler. Accordingly, markets are interconnected with neighbouring periodic markets taking

place on different days of the week. In Yorubaland, Hodder (1961) pointed out that there was ‘a complete and integrated sequence of markets’ while Ukwu has described the Iboland marketing landscape as ‘a panoramd of honey combs in regular circuit’ (Hodder and Ukwu has 1969). Symanski and Webber (1974) have developed the individualistic approach in the study of market cycle. They are of the opinion those markets cycles should be studied in terms of individuals, i.e. traders, middlemen, consumers, etc. who are the actual participants.

The study of spatio-temporal character of marker centres led us to know the existence of market cycle or rings the concept of market cycle is related to the time, whereas that of market rings relate to space. (Good, 1975, Tamaskar, 1983, Srivastava 1987). In the integrated system of occurrence of sequence of market centres in which mobile traders go on attending different markets on different days till the end of week in semi-circular or ring–like track so that they will return to their home at the week- end rest. The arrangement of periodic markets in sequential order is generally known as market cycle or ring (Hodder, 1965, Skinners, 1964, Brimbley, 1971, Tamaskar, 1978, and Dixit, 1981, 1986).

Generally market centres are interconnected with neighboring markets, which are held of different days of the week and so these tends to be shift of market meeting from settlement to neighbouring and other settlements on different days of the market week. For the planning and development purpose geographers have identified complete market cycles and in complete market cycles in different economies of developing countries.

Today mechanized transport is available almost in all states of India and hence traders who are urban-based tend to attend markets of their choice every day and come back to home–base every night (Wanmali, 1981, Dixit 1981 and Hugar 1984).

3.6 ***Market Cycle in the Study Region:***

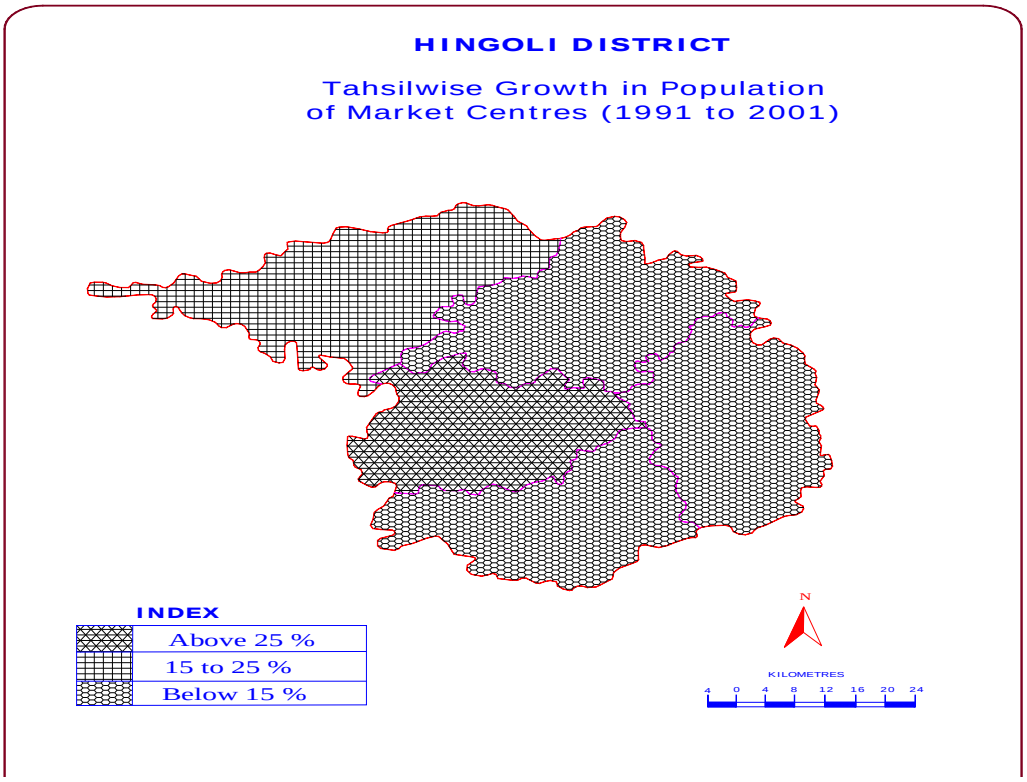
South and eastern parts of the study region are agriculturally developed, well watered and connected by the transportation network. This area is a part of Godavari basin (Purna tributary) it is fertile, Plain and irrigated area. Whereas physiographic impediments in the western and north part has restriction on the development of agricultural and communication network. As a result the market cycles of the different nature and characteristics are observed in the study region.

A complete cycle is that cycle where marketing activity is available continuously 6-7 days of week for trading communities. Incomplete cycle indicates the development of market cycle for a part of the week. In the study region both the complete and incomplete market cycles are observed. Many Indian geographers have deviated themselves by including only rural markets in the study of market cycle (Hugar, 2000). In the present study it is observed that daily market centres tend to provide a base for mobile traders and their active participation in the trade transactions. Further, urban markets provide maximum transactions for all kinds of mobile traders. Hence, many of these mobile traders would not be able to complete all transactions in one day. So, urban markets not only provide maximum transition but also initiate the mobile trading activity.

3.7 Tahsilwise Growth of Population of Market Centres: (1991-2011)

Tahsilwise changes in population of market centres are considered here. The Table No. 3.8 denotes tahsilwise growth of opulation of market

centres for the decade 1991-2001 and 2001-2011.



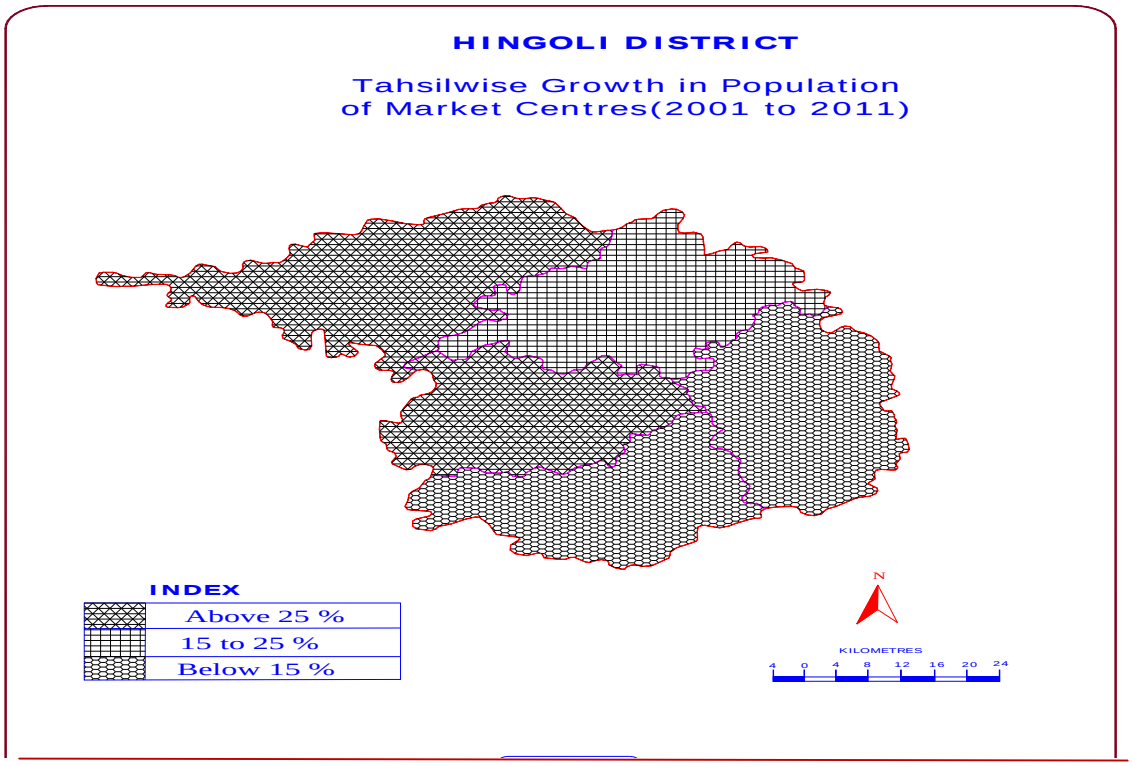
It is observed that there are some remarkable variations in the population growth rate of market carters at different tahsils. The population change in the market centres at show that the during the year 1991-2001 the changing pattern of the growth rate of the population of market centres for the region is 12.42 percent. AundhaNagnathtahsil shows high growth rate i.e. 42.21 percent. Whereas Sengaontahsil belongs to a group of medium growth rate (15 to 25 percent) it has 18 percent growth rate of population. Remaining tahsils belong to the lowest growth rate of population that is below 15 percent. They are Kalamnuri (14.32 percent) Basmath (7.50 percent) and Hingoli (06.65 percent)

Tahsilwise Growth of Population of Market Centres (1991-2011)

Tahsils	Actual Growth of Population		Growth in Percentage	
	1991-2001	**2001-2011**	**1991-2001**	**2001-2011**
Sengaon	6206	13366	17.95	32.78
Hingoli	4945	17297	06.65	21.80
Aundha N.	8489	13078	42.21	45.73
Kalamnuri	5501	7021	14.32	15.99
Basmath	6632	20475	07.50	17.73
District Total	**31773**	**71237**	**12.42**	**24.77**

Source: *District Census Handbook, Hingoli.*

In the year 2001-2011, it is observed that changing pattern of growth rate of the population of the market centres for the study region as a whole is 24.77 percent. The tahsilsAundhaNagnath and Sengaon have a high growth rate (more than 25 percent) i.e. 45.73 percent and 32.78 percent respectively. Whereas, the tahsils viz., Hingoli, Basmath and Kalamnuri are in a group of moderate growth rate between 15 to 25 percent.



The medium growth rate is found in Hingoli 21.80 percent, Basmath 17.73 percent and Kalamnuri 16 percent. No any tahsil belong to the lowest growth rate of population.

It is mainly due to the development of big market centres nearby; some small markets have been closed. For example the development of Hingoli daily market centres has adversely affecting on the marketing function and closed market centres these are Raholi, Sawad, Digras (K) and Khudaj.

It has also observed for both the decades that the high growth rate of population is found in AundhaNagnathtahsil. This was due to development of JawalaBajar market centres and started two new market centres i.e. Pimpaldari and Bhosi.

3.8 ***Growth Rate of Market Centres According to their Population Size:***

Here, an attempt has been made to study the tahsilwise market centres according to their size of population. The market centres have been classified into six categories.

It is observed from that there is change in the number of market centres. However, category-wise and tahsilwise classification of shows considerable shift in categories of markets. In the first category (below 1000 population) there were 02 market centres in the year 1991 in the whole study region, which has reduced by one market centres in the year 2001 and in 2011 increased by one market centre. In the second category of the market centres (1000 to 2000 population) there were 09 market Centres in the year 1991 in the study region, which has reduced by seven market centres in the year 2001 and increased by tow market Centres in the year 2011. In the third category (2000 to 3000 population) of the market centres has shown constant trend from 05 to 05 in the years 1991 to 2011. The fourth category (3000 to 4000) of the market Centres has shown declining trend from 07 to 02 in the years 1991 to 2011.

It has reduced by five market centres. In these decades, the fifth category (4000 to 5000 population of the market centres there were 07 market centres in the year 1991 which has reduced by six market centre in the year 1991 to 2001. and increased by 07 market centres in the year 2011. The sixth category (above 5000) of market centres has recorded increase in number from 11 to 16 and thereafter there are constant.

Growth of Market Centres According to their Population Size (1991-2011)

Tahsils	Years	Number of Market Centres in Each Category						
		Below 1000 population	1000 to 2000	2000 to 3000	3000 to 4000	4000 to 5000	Above 5000	Total
Sengaon	1991	--	--	--	--	--	--	--
	2001	--	--	03	02	--	04	09
	2011	02	01	04	01	02	04	14
Hingoli	1991	01	06	03	03	04	03	20
	2001	--	01	01	--	--	02	04
	2011	--	--	01	--	01	02	04
AundhaNagnath	1991	--	--	--	--	--	--	--
	2001	--	--	--	--	--	03	03
	2011	--	01	--	--	01	03	05
Kalamnuri	1991	01	02	01	01	--	03	08
	2001	01	01	--	01	--	03	06
	2011	--	02	--	--	01	03	06
Basmath	1991	--	01	01	03	03	05	13
	2001	--	--	01	01	01	04	07
	2011	--	--	--	01	03	04	08

District Total	**1991**	**02**	**09**	**05**	**07**	**07**	**11**	**41**
	2001	**01**	**02**	**05**	**04**	**01**	**16**	**29**
	2011	**02**	**04**	**05**	**02**	**08**	**16**	**37**

Source: *Compiled by Researcher from district Census Handbook, 1991 to 2011.*

The tahsilwise analysis in all categories has shown the high-test number of market centres (09) in Sengaontahsil and lowest number of market centres are (03) in AundhaNagnathtahsil in the year 2001. Basmathtahsil have 07 market centres in all categories followed by Kalamnuri (06) and Hingoli (04).

In the year 2011, there were 37 market centres in the study region. The highest market centres were 14 in Sengaontahsil. The lowest market centres were 04 in Hingolitahsil. 08 market centres were found in Basmathtahsil followed by 06 in Kalamnuri and 05 in AundhaNagnathtahsil.

This is due to increase in the size of population of small market centres, during the period under investigation.

3.9 ***Summary:***

The foregoing analysis clearly shows that the spatial distribution of market centres is characterized by their uneven distribution throughout the region. There are 05 daily, 1 bi-weekly and 31 weekly market centres. Market meetings are held in a week in this region as a whole. The lowest market meetings are 10 held in Hingoli and AundhaNangnathtahsil and highest number of market meetings is 19 in Sengaontahsil. Spatial distribution of market centres are affected by physiography, development of transportation network, development of economic activities and population. The daily markets are concentrated in south and east part of

the study region, which is relatively plain, fertile and well developed part of the region. Further it is noted that the present market day cycle are not properly synchronized. A specific day marketing meetings are being held at many centres which are very near to each other and it creates many interruptions in the market cycle. To avoid the interruption and competition among the market centres, to increase the functional capacity of the market centres and to make it convenient to the mobile traders there is need of restructuring the existing market cycles. However, to realize the relative importance of market centres in the region, investigations concerning of centrality, hierarchy and sphere of influence of individual market centres need to be under taken.

Thus, the overall study of the collected data clearly shows that there is constant increase in the population of Hingoli district. Hingoli (27.6) and Sengaon (21.0) tahsils have the highest percentage of population growth rate whereas Kalamnuri (17.5) and Basmath (13.3) have lowest percentage of population growth rate in district in last decade. In the study region there is gradual growth of market centres during last decades. However, it is noteworthy that the growth of market centres in last two decades has fluctuated from decade to decade. Multiple factors are responsible for this situation. The changing socio-economic, political factors and increase in population are the some of the encouraging factors for this situation. Other factors include increasing density of communication network, commercialization, development of irrigation, development of agricultural etc. Beside this better medical facility, telephone facilities, electricity is also contributing factors.

In the last decade study region has experienced increase in the number of market centres. Growth of population is a cause of the increase in number of market centres, there after increased transportation facilities

is a reason of increasing the number of market centres. Limited source of earning is a main reason of increase in market centres in Sengaontahsil.

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Chapter IV

Typology of the Market Centers

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Typology of the Market Centres

4.1 ***Introduction:***

An understanding of the typology of market centres is necessary in a study of spatial organization of market centres. Classification, normally, brings to light a number of features about market centres which have bearing on the differing interaction patterns between the market and its customers, the market and its sellers and in a totality, the market and its hinterland. It, thus, aids in planning and programming further

development at the centre, or that development at the periphery and hence. At the grass roots, ensues as a natural consequence.

In the previous chapter third deals with introduction, spatial distribution of market centres i.e. ratio of area and market centres, ratio of inhabited villages and market centres, population and Market Centres Ratio, rural market centres and their distance from nearest town, distributional pattern of market centres, distribution of periodicity of market centres, day-wise distribution of market centres, market cycles, regional growth characteristic and summary etc. points analysed in detail.

This chapter throws light on typology of market centres in the study region. Classification of market centres on different bases discussed. Persons engaged in tertiary activities, estimated average attendance, function and exchange orientation, major commodities, market meeting days and their periodicity, number of shops, location of market place or site, areal coverage of market meeting place, length of marketing hours etc. bases considered for the classification of market centres in Hingoli district.

Studies on typology have been done by various geographers who have also discussed the method of going about such work. McKim has observed, 'The classification can be approached through the analysis of specific information for such market concerning the selection of goods and services available in the market, the number of firms involved and their scale of operation and the size and nature of the area served by the market for varying functions'. However, he cold not adopt this definitive approach in his classification of periodic markets of Ghana due to practical difficulties and adopted Skinner's classification based on size and function (Skinner, 1964). Scott (1972) has noted that 'any classification which attempts to be all inclusive must include market orientation, function and periodicity'. Accordingly, he distinguished five

types of market centres in Nigeria. But he expressed his dissatisfaction: theoretically all of these are low order markets and are difficult to classify (Scott, 1972). Hodder and Ukwu have used functional criteria for a hierarchical classification of periodic markets in eastern Nigeria whereas Jackson (1971) has classified the periodic markets in southern Ethopia into two classes on the basis of commodity specialization. Webber and Symanski (1933) have made a meaningful economic location analysis of periodic markets on the basis of their characteristics: periodicity, the mobility of sellers and the agglomeration of sellers.

Bromley (1974) has made a valuable bibliographic study of 'Periodic Markets', 'Daily Markets and Fairs' in which some aspects of classification of market centres have also been taken up.

In India, such taxonomic studies of market centres are only a few. Singh (1962) and Vishwanath (1967) classified rural markets and urban centres only on the basis of some of the industrial categories mentioned I the Census Handbooks. Tamaskar (1966) classified the weekly markets in the Sagar-Damoh Plateau on the basis of population size, area, commodity and attendance. Mukherjee (1968) also classified the market centres of Darjeeling area. Ghosh (1972) and Saxena (1975) attempted classifications of market centres. On the basis of population served, and the service area. Duggal and Mallick (1974) classified the markets of Haryana. Wanmali (1976) restricted his study tot eh distribution pattern of consumer goods in periodic markets of Singhbhum District, South Bihar. Jana (1978), Srivastava and Gupta (1979), Tamaskar (1979), Singh (1980) have made a detailed analysis of periodic markets and regulated market systems in India. Dixit (1980-1986) and Nath and Jain (1981), Singh and Dixit (1982) have worked out a detailed functional typology of market centres in the Umland of Kanpur Metropolis. Ghosh (1982) and

Khandwe (1982) have presented the typology on the basis of attendance in a market centre on a marketing day.

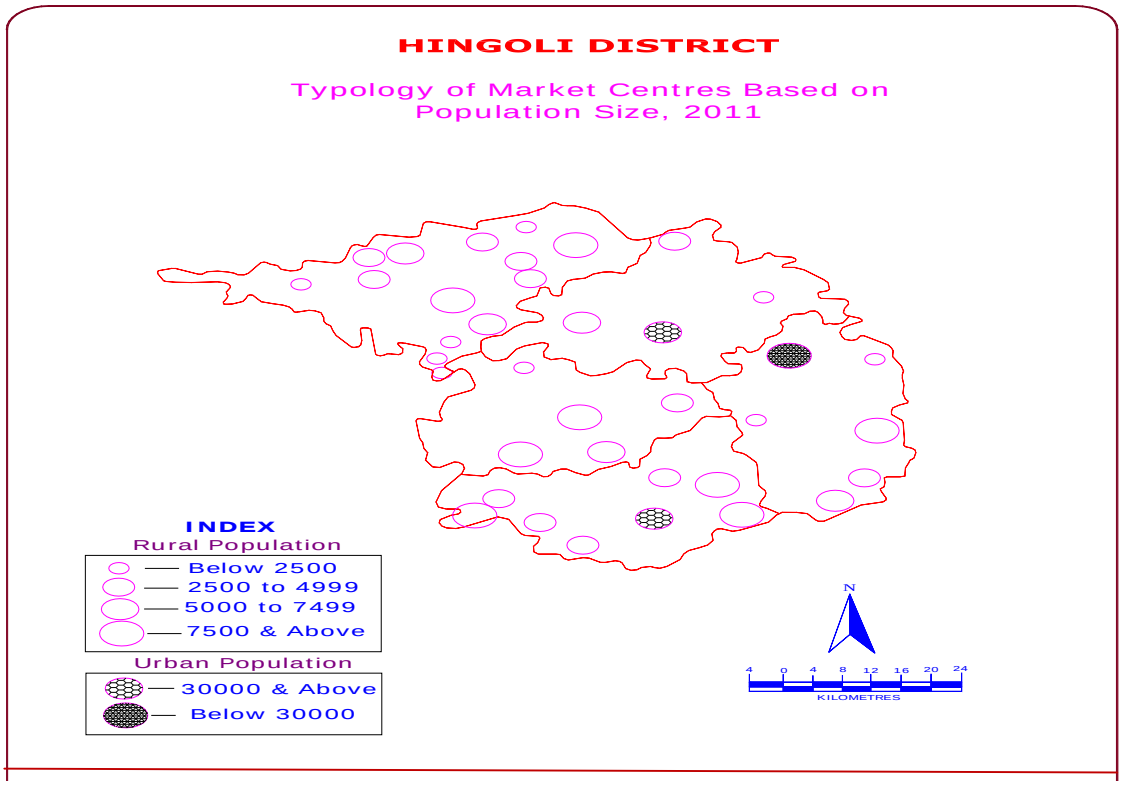
4.2 ***Classification Based on Population Size:***

Dixit (1985) classified of market centres based on human numbers. Tamsaskar (1966) classified the weekly markets in the Sagar, Damoh plateau on the basis of population size, area, commodities and attendance.

Four classes have been made for rural centres and two for urban centres and classified in details of market centresin the study region on the basis of population size. Among the rural market centres four classes are identified. They are below 2500, 2500 to 4999, and 5000 to 7499 and above 7500. Among the urban market centres two classes are indentified. They are below 20000 and above 30000populations. In the group of rural market centres, 09 market centres belongs to below 2500 population size.

In it the highest number of market centres are five in Sengaon i.e. Lingpimari (141), Adol (1012), Khillar (800), Kapadsingi (2326) and Kendra BK. (2366), lowest number of market centre is one each in Hingoli and AundhaNagnathtahsil i.e. Sirsum (BK) in Hingoli and Bhosi in AundhaNagnathtahsil. GoulBajar and Bolda these two market centres belongs to below 2500 population sizeBetween 2500 to 4999 population size 12 rural market centres arelocated. Out of 11 market centres highest number of market centres are Five in Sengaontahsil i.e. Palashi (2745), Kahakar (2836), Shakhara (3006), Jaipur (4123), and Ajegaon (4204) and lowest number of market centre is one each in Hingoli, AundhaNagnath and Kalamnuri i.e. Kanhergaonaka (3213), Pimpaldari (4277) and WarangaPhata(4010). Such types of four market centre in Basmathtahsil i.e. Aral (3387), ChoundiAmba (4196), Hayatnagar (4377) and Adgaon (4426).

Between 5000 to 7499 population sizesfive market centres are situated. Out of these highest two market centres are located in Sengaontahsil i.e. Pusegaon (5992) and Pankanhergaon (6229). Lowest number of market centre are each in Hingoli, AundhaNagnath and Kalamnuritahsil i.e. NarsiNamdev (5988), ShiradShahapur (7385), Dongarkada (6956).



Typology of Market Centres Based on Population Size 2011

Tahsils	Number of Market Centres					
	Rural Population				Urban Population	
	Below 2500	2500 to 4999	5000 to 7499	7500 to Above	Below 30000	Above 30000
Sengaon	05	05	02	02	--	--
Hingoli	01	01	01	--	--	01
AundhaNagnath	01	01	01	02	--	--

Kalamnuri	02	01	01	01	01	--
Basmath	--	04	--	03	--	01
District Total	**09**	**12**	**05**	**08**	**01**	**02**

Source:*Compile by Researcher Based on Field Work.*

Eight market centres are located in above 7500 population size out of these three are located in Basmathtahsil they are Hatta (8238), Girgaon (9614) and Kurunda (12324), Sengaon (8466) and Goregaon (9896) located in Sengaontahsil, AundhaNagnath (14892), and JavalBajar (13233) located in AundhaNagnathtahsil and AkhadaBalapur (12521) located in Kalamnuritahsil.

There are three urban market centres in the study region. All these market centres are tahsils headquarters. They are Hingoli (85137) Basmath (68937) and Kalamnuri (24797).Hingoli and Basmath are classified into above 30000 population size and Kalamnuri classified into below 30000 population size.

4.3 ***Classification Based on Persons Engaged in Tertiary Activities:***

The census of 2011 shows that people are mainly engaged in trade and commerce. It comprises servicing, repairs, household industries etc. in one particular category. In the wide sense that are generally included under the tertiary activities. This category can serve as an important retailing and whole sailing sector of economic activity. The following table denotes such classification of market centres in the study region.

Typology of Market Centres Based on Persons Engaged in Tertiary Activities, 2011

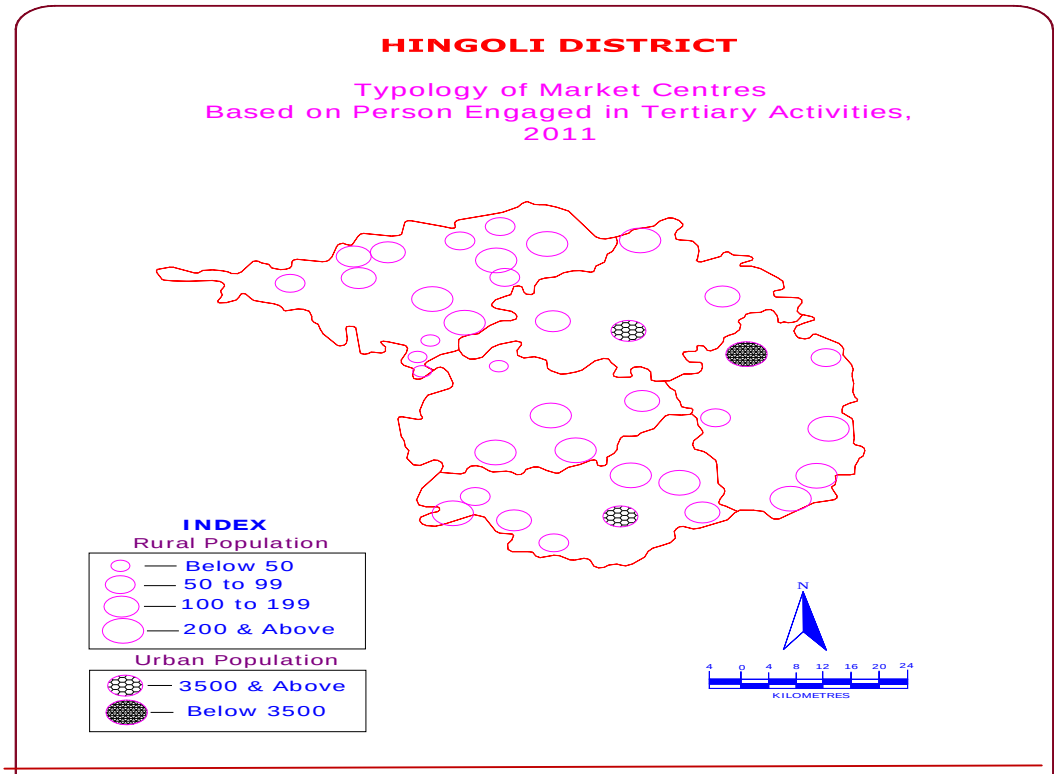
Tahsils	Number of Market Centres					
	Rural Population				Urban Population	
	Below 50	50 to 99	99 to 199	200 and Above	Below 3500	Above 3500
Sengaon	03	04	03	04	--	--
Hingoli	--	--	02	01	--	01
AundhaNagnath	01	--	01	03	--	--
Kalamnuri	--	02	--	03	01	--
Basmath	--	02	02	03	--	01
District Total	04	08	08	14	01	02

Source: *Compiled by Researcher Based on Field Work.*

Among the rural market centres there are four classes and in urban centres there are two classes in this classification. The rural classes run as below 50, 50 to 99, 100 to 199 and 200 and above persons engaged in tertiary activities, on the contrary, urban classes, the numbers run as below 3500 and above 3500 persons

The four classes of rural market include 34 market centres. The class below 50 belongs 04 market centres. Out of 04 markets centres the highest number of market centres 03 are in Sengaontahsil i.e. Lingpimpari (36), Khillar (28), Adol (40). The lowest number of market centres is only one and it belongs to AundhaNagnathtahsils. They are Bhoshi, the exceptions to this group are Hingoli, Kalamnuri and Basmathtahsil.

The class between 50 to 99 consists of 08 market centres. Out of eight the highest number of market centres is 04 in Sengaontahsil they are Kapadsingi (75), Kahakar (80), Palashi (99), and Kendra BK (99).



Two market centres each belong to two tahsils i.e. Kalamnuri (GoulBajar 80, Bolda60) and Basmath (Adgaon99, Hayatnagar90) Hingoli and AundhaNagnathtahsils are exceptions to this class.

The class between 100-199 includes 08 market centres. Out of these 03 markets centres are in Sengaontahsil. They are Pankanhergaon -165, Sakhara-140, Jaipur-110. Two market centres each in Hingoli (Sirsum-120, Narsi Namdev-190) and Basmath (Aral-160, Girgaon-180). And only one market centre in AundhaNagnathtahsil i.e. Pimpaldari-120. Kalamnuritahsil is exception to this class.

The class 200 and above includes 14 market centres. Out of these the highest number of market centres are four in Sengaontahsil. i.e. Sengaon -2100, Goregaon -500, Pusegaon-430, and Ajegaon-202. Three thsils consist 03 market centres each. They are AundhaNagnath -1240, Jawala Bajar-1200, Shiradshahapur in AundhaNagnathtahsil. AkhadaBalapur -1300, Waranga-380, Dongarkada-280 in

Kalamnuritahsil and Choundi Amba-290, Hatta-470, Kuranda-940 in Basmathtahsil. Remaining one market centres in Hingolitahsil i.e. kanhergannaka-420.

Out of three urban market canters in Hingoli district one include to the class below 3500 tertiary population i.e. Kalamnuri and two market centres includes to the class 3500 and above tertiary population. They are Hingoli-4800 and Basmath -6040. AundhaNagnath and Sengaon are exception to the class.

4.4 ***Classification Based Major Commodities:***

A different variety of commodities arrive at a market with a purpose to be traded. The term major is related with the arrival of a particular type of commodity. Jackson (1971) has classified the periodic markets in southern Ethiopia into two classes on the basis of commodity specialization (local and specialized).

The number of major commodities has been classified into rural and urban markets. Rural markets into four classes and urban markets into three are divided. A tahsil–wise break up has been demonstrated. It is observed that maximum number of market centres 12, offer below 3 kinds of commodities for sale, followed by 08 market centres which offer3 to 4 kinds of major commodities for trade. 08 markets have trading 5 to 6 commodities. Six markets have trading seven and above commodities.

Out of three urban market centres one which function at the local level i.e. Kalamnuri, this is below the district level trade. One market centres function at the district level i.e. Basmath. There is only one market centre which function at the above district level. The commodities have considerable trade over larger areas in the case of this one centre. The district level market centres either import or export commodities within the district limit.

Typology of Market Centres Based on Major Commodities

Tahsils	Number of Market Centres						
	Rural				Urban		
	Below 03	03 to 04	05 to 06	Above 07	Local	Dist.	Above Dist.
Sengaon	06	03	03	02	--	--	--
Hingoli	--	02	01	--	--	--	01
AundhaNagnath	02	--	01	02	--	--	--
Kalamnuri	02	--	02	01	01	--	--
Basmath	02	03	01	01	--	01	--
District Total	**12**	**08**	**08**	**06**	**01**	**01**	**01**

Source:*Compiled by Researcher Based on Field Work.*

4.5***Classification Based on Number of Shops:***

In rural markets the shops are not permanent. The sellers come when the market meets. Sometimes these sellers are seen engaged in some other occupations for example labours and cultivators etc. there are some fulltime sellers but they have no permanent shops. They travel from market to market in search of customers. These are the mobile shopkeepers or traders. All such traders found at any one market i.e. local- temporary-permanent and mobile traders. In spite of it there are also the outsider mobile traders who come from neighboring villages.

On the basis of the number of shops the classification has been four rural classes and two urban classes of market. The rural classes run as below 100, 100 to 4999, 500-999 and 1000 and above number of shop.

On the other hand two urban classes run as below 2000 and above 2000 number of shop.

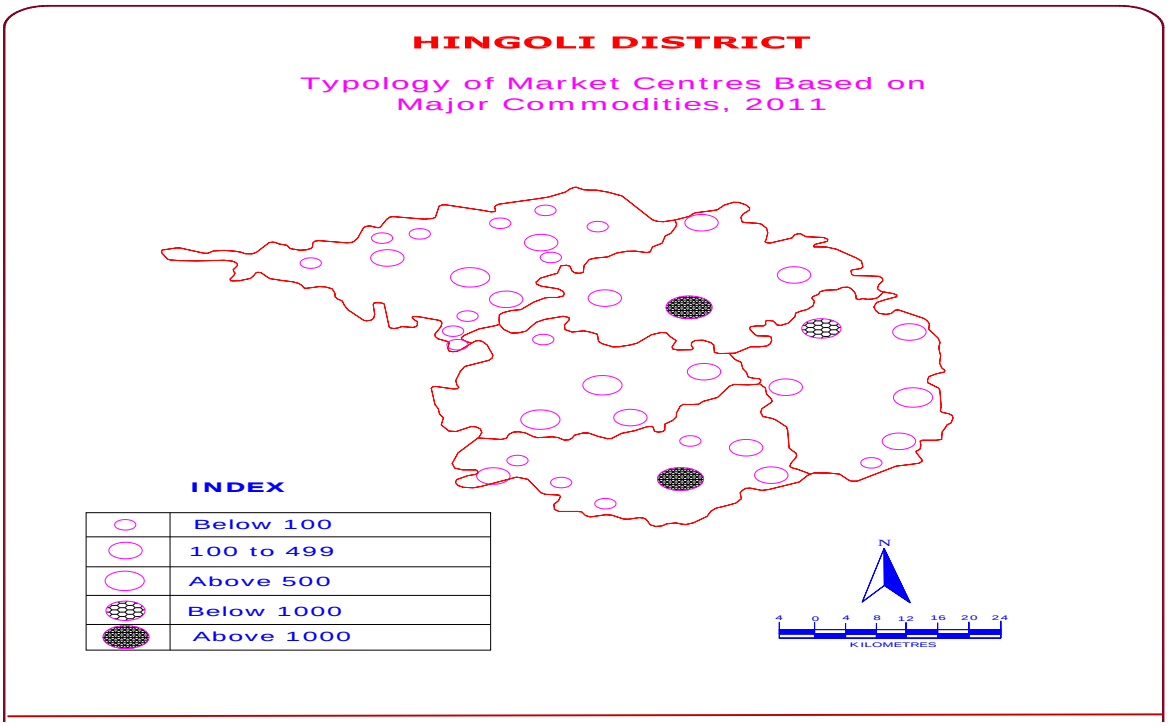
Typology Market Centres Based on Number of Shops

Tahsils	Number of Market Centres					
	Rural				Urban	
	Below 100	100 to 499	500 to 999	Above 1000	Below 1000	Above 1000
Sengaon	10	03	01	--	--	--
Hingoli	--	03	--	--	--	01
AundhaNagnath	01	02	02	--	--	--
Kalamnuri	01	03	01	--	01	--
Basmath	04	03	--	--	--	01
District Total	**16**	**14**	**04**	**--**	**01**	**02**

Source: *Compiled by Researcher Based on Field Work.*

Out of 34 rural centres 16 market centres belong to the class below 100 number of shop it is highest number of market centre. The lowest number of market 04 belongs to 500 to 999 classes. Rest of it 14 market centres belongs to 100 to 499 class. All there urban market centres belong to the class below 200 number of shop.

Out of 34 rural markets centre sixteen market centres belong to the class below 100 numbers of shops. The highest number of market centres is ten in Sengaontahsil i.e. Geregaon18, Jaipur 33, Lingpiari 35, Adol 40,



Kpadsingi 59, Khillar 60, Kendra BK 82, Khakar 90, Pankahnergaon 90, and Palashi 94. The lowest number of market centrePalashi 94. Hingolitahsil is an exception to this class.

To the class 100 to 499 belongs 14 market centres these are Shakhara (119), Ajegaon (140), Pusegaon (138), Narsi (127), Sirsam (102), Kanhergaonnaka (160), Pimpalari (129), Shiradshahapur (102), AjgadaBalapur (354), Bolda (347), GoulBajar (122), Girgaon (142), Hatta (150), and Kurunda (331)

The class 500 to 999 includes 04 market centres two in AundhaNagnathtahsil and one in Sengaon and Kalamnuritahsil each. Rests of two tahsils are exceptions to the class.

It is observed that out of three urban market centres all three market centres. Belong to the class below 1000 number of shop i.e.Kalamnuriand tot eh class above 1000 number of shops is observed in Hingoliand Bashmathtahsils. Rest of Sengaon and AundhaNagnathtahsils are exception to the class.

4.6*Classification Based on Location of Market Place or Site:*

Attendance is affected by the location of the market place. If the market place is at the main road, people can easily come and buy something. It also provides an opportunity to the outsiders, to purchase some items while travelling. The location of market near the tank proves an ideal, specially where there is the scarcity of water. People gather at the tank to wash, clean and carry water for their needs. So it is easy for them to buy items from the market. The religious places as temples and mosques are important for site because at these places festivals are celebrated and fairs are held frequently with great merriment and happiness. Therefore these factors have been chosen to classify markets and their closeness to the factors

Webber and Symanski (1973) have made a meaningful economic location analysis of periodic markets on the basis of their characteristics, periodicity, the mobility of sellers (between locations and occupations) and the agglomeration of sellers. Above three, four factors are responsible for the growth of market centre and the urban market centre are developed on roads. Means of transportation, tanks played a vital role in the development of these market centres.

Typology of Market Centres Based on Market Location

Tahsils	Number of Market Centres					
	Rural				Urban	
	No Factor	One Factor	Two Factors	Above Two Factors	Below Three Factors	Above Three Factors
Sengaon	07	04	02	01	--	--
Hingoli	01	01	01	--	01	--

AundhaNagnath	02	--	02	01	--	--
Kalamnuri	--	03	02	--	01	--
Basmath	03	04	--	--	01	--
District Total	13	12	07	02	03	--

Source:*Compiled by Researcher Based on Field Work.*

Out of 34 rural market centres, 13 market centres are not located near any above said factors; only local needs of the people have been playing the causative role in its development. There are 12 market centres in the rural environment situated near only one factor, 07 are located near two factors and 02 are located near more than two factors. Out of 03 urban market centresHingoli situated near main road and central market zone of the city and Dasara "grond (open space for parking) Kalamnuri situated near main road and bus stand. Basmath situated on main road.

4.7***Classification Based on Shape of Market Site:***

Market centre can be classified using geometrical shapes of the marketing sites. The study region shows different shapes on which the classification is based for example rectangular, square, triangular and elongated etc.

The shows typology of market centres based on shape of market site in study region. The classification of rural market centres is in above various shapes of marketing site. The circular shape of marketing site includes 12 market centres which is the highest second number of market centre in rural area. Out of 12 numbers market centres five are in Sengaontahsil, two are AundhaNagnath, Kalamnuri and Basmathtahsils. The lowest number of market centre in circular shape of market site is only one in Hingolitahsil.

Typology of Market Centres Based on Shape of Market Site

Tahsils	Number of Market Centres							
	Rural					Urban		
	Circular	Rectangular	Square	Triangular	Elongated	Rectangular	Circular	Triangular
Sengaon	05	01	02	02	04	--	--	--
Hingoli	01	01	--	--	01	--	--	01
AundhaNagnath	02	--	--	01	02	-	--	--
Kalamnuri	02	--	01	--	02	01	--	--
Basmath	02	--	--	01	04	--	01	--
District Total	**12**	**02**	**03**	**04**	**13**	**01**	**01**	**01**

Source:*Compiled by Researcher Based on Field Work.*

Two Rectangular shape of marketing site are observed in the study region. Out of two numbers market centres one is in Sengaon and one in Hingolitahsils. Out of three Square shape of market site are found in the study area. Highest two square shape of market site are noticed in Sengaontahsil and only one square shape of market site are situated in kalamnuritahsil.

Four market centres are observed in the shape of triangular and thirteen elongated. Out of four triangular shape of marketing site two marketing centres are observed in one tahsil i.e. Sengaontahsil. In remaining two tahsils there is one market centres each. They are in AundhaNagnath and Basmathtahsils.

Out of thirteen market centres in the elongated shape of market places in four market sites each tahsils have two market centres i.e.

Sengaon and in Basmathtahsil. Two each tahsils have two centres i.e. in AundhaNagnath and in Kalamnuritahsil. One market centre in the elongated shape of market place in Hingolitahsil.

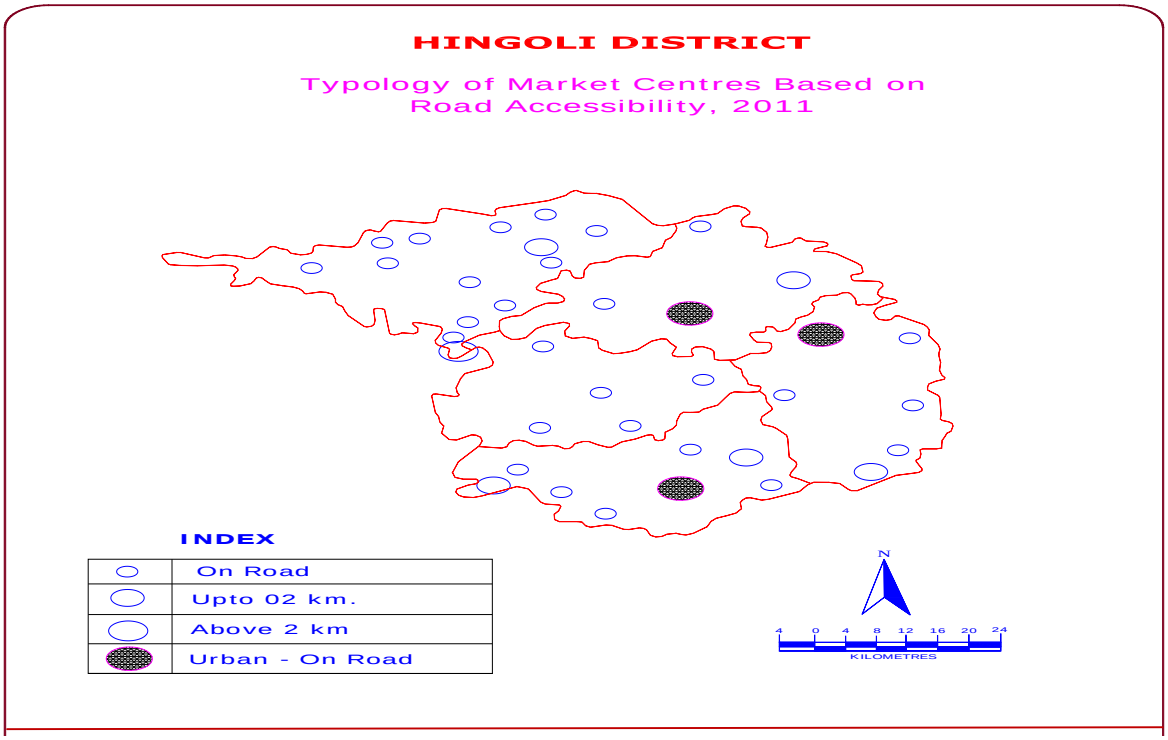
All three urban market centres belongs to rectangular shape of market place they are Hingoli, Basmath and Kalamnuri. Rest of two tahsils is exception to it.

4.8 ***Classification Based on Road Accessibility:***

Road accessibility plays vital role in marketing. It is an important factor in this regard. The whole study region is connected by metelled roads either already constructed or under construction.

34 rural market centres are classified in four categories based on the distance of the market centre from the road. As i) on the road, ii) distance from the road 1 to 2 km. iii) 2 to 3 km. distance iv) above 3 km. distance from the road.

28 market centres are located on the road i.e. the first category of on the road. Out of these highest numbers of market centres located on the road are twelve in Sengaontahsil. Two market centres located on the road are Hingolitahsil. Five market centres located on the road each tahsils i.e. AundhaNagnath and Basmathtahsils.



In one tahsils four market centres are located on the road i.e. Kalamnuri

In the second category of distance of market centre from the road i.e. 1 to 2 km. five market centres are situated. Out of it, the highest numbers of market centres are two in Basmathtahsil. One market centres are found in three tahsils each i.e. in Sengaon, Hingoli and Kalamnuri.

Typology of Market Centres Based on Road Accessibility

Tahsils	Number of Market Centres				
	Rural				Urban
	On Road	1 to 2 km. from Road	2 to 3 km. from Road	Above 3 km. from Road	On Road
Sengaon	12	01	01	--	--
Hingoli	02	01	--	--	01

AundhaNagnath	05	--	--	--	--
Kalamnuri	04	01	--	--	01
Basmath	05	02	--	--	01
District Total	**28**	**05**	**01**	**--**	**03**

Source:*Compiled by Researcher Based on Field Work.*

One market centre is located in third category of distance from road i.e. 2 to 3 km distance i.e. Sengaontahsil. Urban market centres situated on the road are three except Sengaon and AundhaNagnath. All of the three market centres are located on the road.

4.9 ***Classification Based on Railway Accessibility:***

Out of 37 market centres 34 rural market centres are divided in four categories based on the distance of the market centre from the railway station i) On railway line, ii) Distance from railway station below 15 km., iii) Distance-between 15 to 30 km. from railway station, iv) Distance above 30 km. from the railway station. Purna-Akola railway heads towards Washim via Basmath through Hingoli district.

Two rural market centres are located on railway line in Hingoli district; they are Kalamnuri (Bolda) and Basmath (ChoundiAmba).

In second category eight market centres are situated three such market centres are located in Basmathtahsil. Two market centres each is found in Hingoli and AundhaNagnathtahsils. One market centre is located in Sengaontahsil.

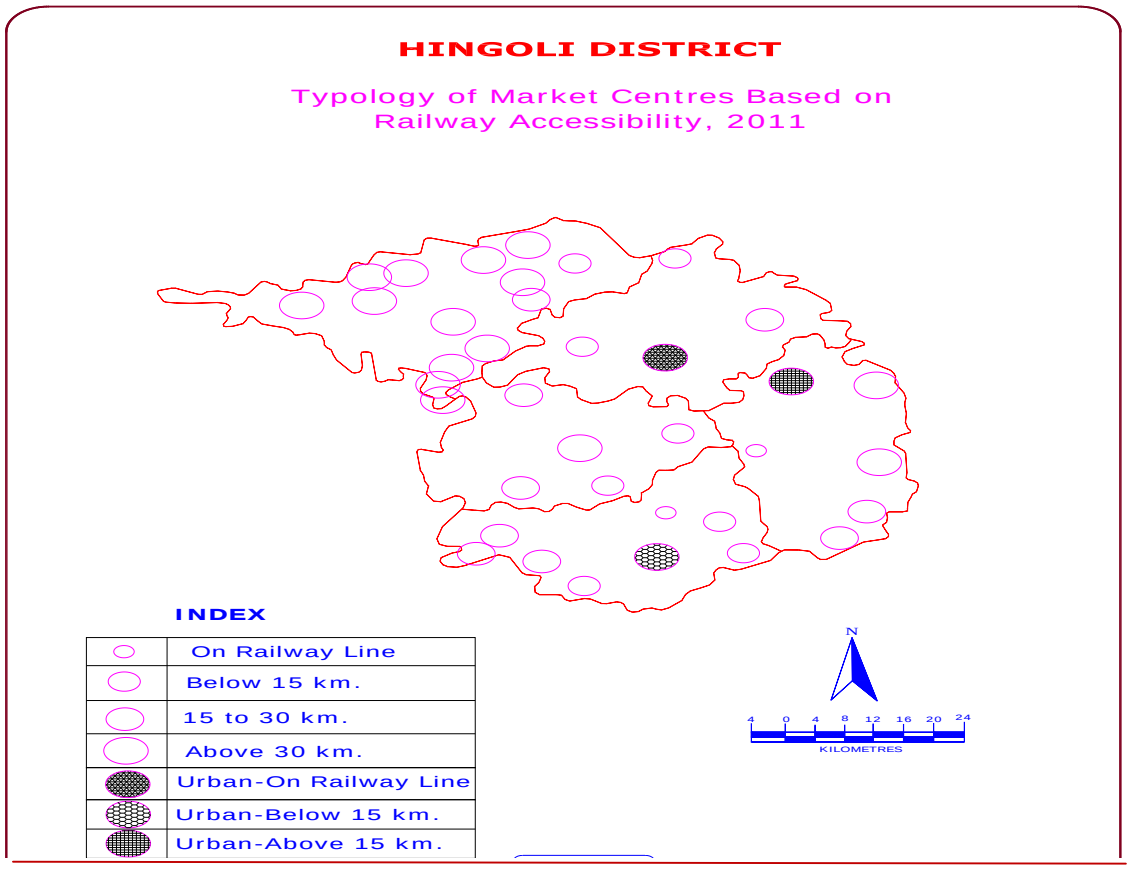
Typology of Market Centres Based on Railway Accessibility

Tahsils	Number of Market Centres						
	Rural				Urban		
	On Railway line	Below 15 km from R.St.	15-30 km from R.St.	Above 30 km from R.St.	On Railway line	Below 05 km from R.St.	Above 05 km from R.St.
Sengaon	--	01	01	12	--	--	--
Hingoli	--	02	01	--	01	--	--
AundhaNagnath	--	02	02	01	--	--	--
Kalamnuri	01	--	02	02	--	--	01
Basmath	01	03	03	--	--	01	--
District Total	**02**	**08**	**09**	**15**	**01**	**01**	**01**

Source:*Compiled by Researcher Based on Field Work.*

The third category of the distance from the railway station between 15 to 30 km. contains nine market centres. Out of these three market centres found in Basmathtahsil. Out of these two market centre each are found in two tahsils i.e. AundhaNagnath and Kalamnuritahsils. The lowest number of market centre is one each in two tahsils namely Sengaon and Hingolitahsils.

Fifteen market centres are found in the last category of the distance from the railway station above 30 km. out of fifteen market centres, twelve market centres are situated in Sengaontahsil. Two market centres are found in Kalamnuri and one in AundhaNagnathtahsil. Rests of all tahsils are exceptions to the fourth category.



There are three urban market centres located in the entire district and are classified in three categories i) such as on railway line ii) below 15 km. distance from the railway station and iii) above 15 km. distance from the railway station. Only one urban market centre are located on railway line i.e. Hingoli. Below 15 km distance from urban market centre is located on Basmath and One urban market centres found in distance above 15 km. from the railway line of the third category i.e. Kalamnuri.

4.10 ***Summary:***

The typological analysis of market centres is based on as many factors. When the development of several topologies is considered, it shows many important factors the come out.

The examination of the typology indicates that the types of market centres are dissimilar. It is the result of undulating Physiography and other physical factors, problems of transportation facilities the problems

in supplying of goods and services, uneven distribution of population density, lack of communication facilities etc.

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Chapter V

Hierarchy of Market Centers

Chapter V

Hierarchy of Market Centres

5.1 ***Introduction:***

The last chapter deals with the study of typology of market centres. The present chapter aims to present an analysis of centrality and hierarchy of market centres in Hingoli district. At the same time several hierarchical classes are also included in the present study.

Indeed, the wealth of descriptive terms available illustrates this notion; hamlet, village, town, city, metropolis and the like (Berry and Garrison, 1958). The term 'central place' was first used by Mark Jefferson (1931) to denote a settlement which is the focal point of one or more economic and social activities of its surrounding area. Walter Christaller (1933) popularized the term which is in wide use now. Reilly (1929) realized the relationship between the size of a settlement and its complementary region and stated that the complexity of functions prevailing in a larger settlement is much more than that of a smaller one and hence size of the central place is highly correlated with the size of its hinterland. According to Christaler, a hierarchical class system is inevitable in a spatial model of central places which belong to one or the other class. Three basic models were postulated by him on the basis of the assumption of an isotropic surface where hexagonal patterns of centrality emerge.

In India, studies on hierarchy of market centres have been carried out by Singh (1962). Vishwanath (1967), Mukherjee (1968), Sinha and Mandal (1974), Saxena (1975), Srivastava (1976) and Jana (1978). The last named has clairred to present a composite hierarchy considering the attendance at a market, the quality and quantity of goods traded, the periodicity of market centers and other factors (1978). Srivastava (1976) has put up a new methodology based on the number of shops and the total shop openings at the market centers of Naugarhtahsil of Basti district,

U.P. Dixit (1979, 1984), Singh and Dixit (1980) and Sharma (1984) have also made significant attempts in this direction.

5.2 ***The Concept of Centrality:***

Consideration of market centres shows that they differ from each other in respect of population size, functional capacity and aggregate importance. Here, an attempt has been made to study the problem of calculating the centrality values of the market centers in Hingoli district.

The concept of centrality refers to the measure of importance of a place regarding its functional capacity to meet the needs of the people in the surrounding area of the market centers. The centrality of market centres may be indicated, qualitatively as the low and high centrality and quantitatively with the help of values of centrality. The centrality of market centres can be calculated by converting the functional base of market centre into scores and on the basis of frequency and the importance of functions performed by the place. The centrality of market centre depends on central functions and these functions definitely have a certain range beyond the limits of the surrounding region.

The term 'Central Place' was first used by Jefferson (1931, 1939) and it is popularized by Walter Christaller (1933, 1966). Central place is a point where settlement of economic or social activities takes place. Central place is platform to exchange goods and services to their hinterland. Therefore, the centrality of market place is an important aspect of its functional magnitude which is necessary for the population of its hinterland.

Shelter is one of the basic needs of mankind. If we consider history of human civilization, we will find that they were settled in a very small shape and size. The technological development and the population growth have made the rural settlement multifunctional. Similarly, later on every

settlement obtained some functional importance in the region. The physical setting of settlement at all centres differs due to the geographical factors such as climate, topography and water resources are not same. In this sense, the term central place has been used.

According to Singh (1977), each and every place has certain importance more or less in accordance with its belongings of certain functions or services not only for its internal population, but also for surrounding area. Theoretically, a central place enjoys centrality in a given area or region with respect to a variety of functions or services for its adjacent area/ influenced area. To meet the socio-economic needs of neighbouring settlements, the permanent settlements have certain functions or activities.

5.3 ***Choice of Methods for Present Study:***

There are many methods used by different geographers to determine the centrality of market place. These methods can be classed into two groups, single functional method and multifunctional method. The multifunctional method has been adopted for the present study in which 58 different parameters have been considered (Appendix II). The values of centrality have been obtained by using 'Location Quotient Method' of W. K.D. Davies (1967).

5.3.1 ***Measurement of Centrality by Davies Location Quotient Method:***

Davies has used this method for South values. In this method, a score for any single unit of function is calculated by following formula:

$$C = \frac{t}{T} X\ 100 \ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots\ldots (I)$$

where;

'C' = Score for any function't'

‘t’ = One unit of function ‘t’

‘T’ = Total number of functional units of function‘t’ in the Area

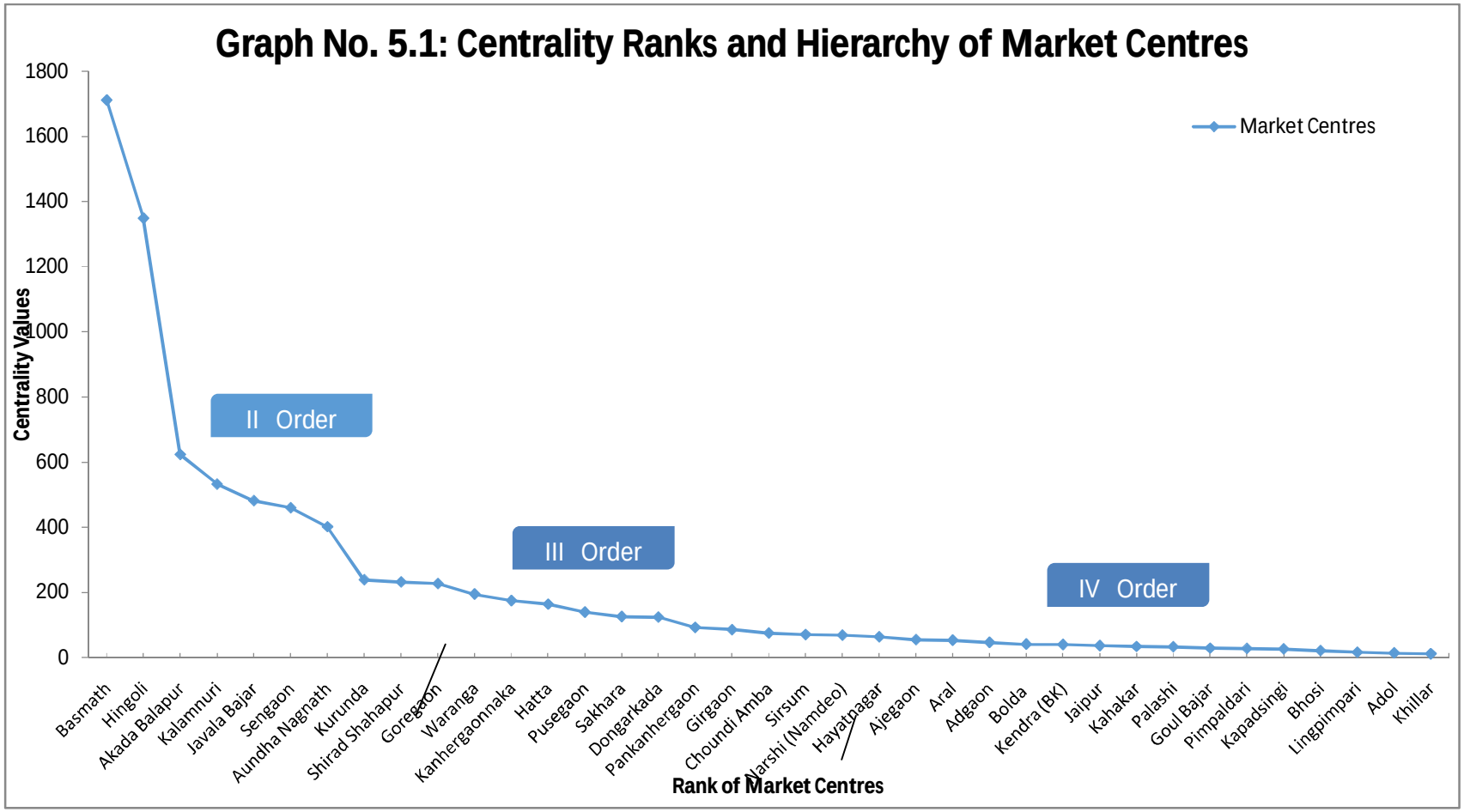
The weightage scores of all the market centers have been considered to calculate the centrality score for the variables calculated by adding up all values of single variable. We get composite centrality value or index for each market centre (Appendix II). The centrality values of market centres calculated by Location Quotient Method are given in.

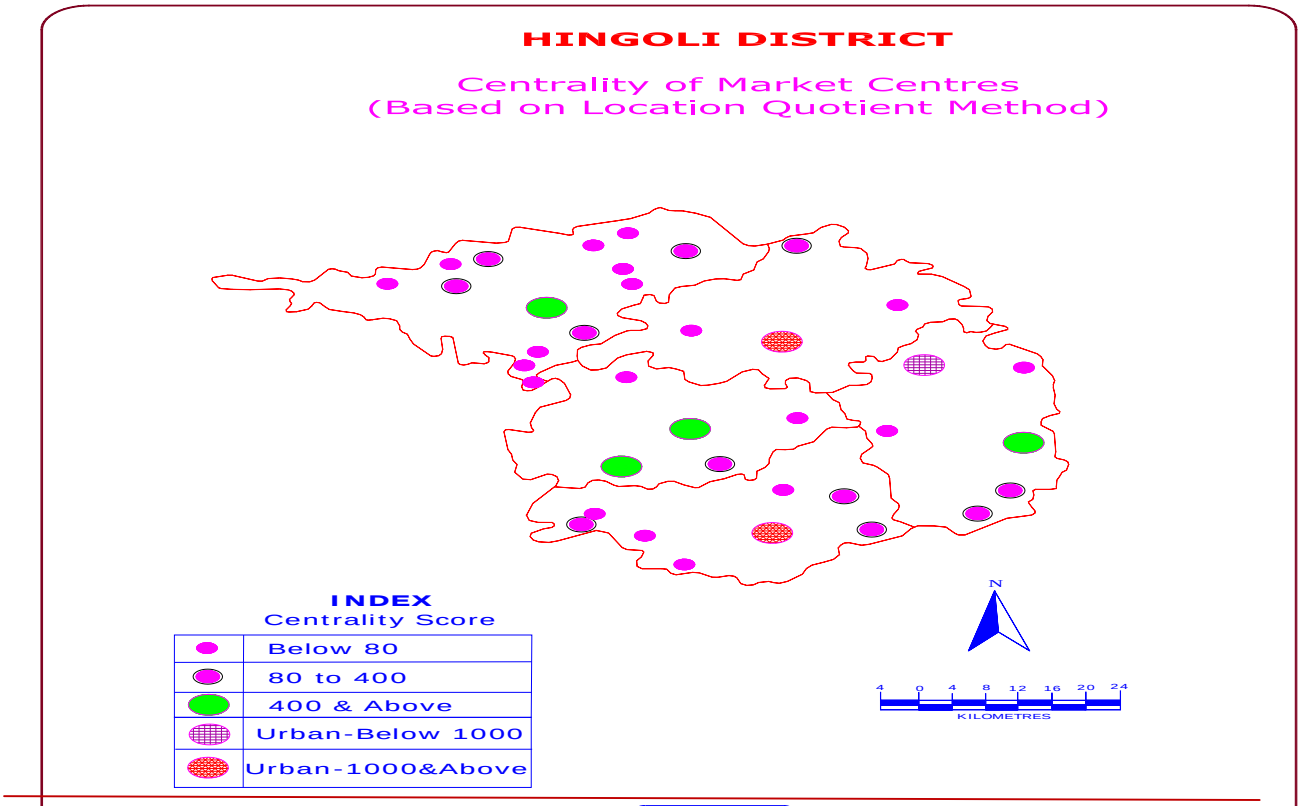
Centrality Scores of Market Centres Calculated by ‘Location Quotient Method’ and their Ranks

Name of Market Centres	Centrality value by Location Quotient Method	Rank	Name	Centrality Value	Rank
Basmath	1712	1	Sirsum	70	20
Hingoli	1349	2	Narsi (Namdeo)	68	21
AkhadaBalapur	623	3	Hayatnagar	63	22
Kalamnuri	532	4	Ajegaon	54	23
JavalaBajar	481	5	Aral	52	24
Sengaon	459	6	Adgaon	46	25
AundhaNagnath	401	7	Bolda	40	26
Kurunda	238	8	Kendra (BK)	39	27
ShiradShahapur	231	9	Jaipur	36	28
Goregaon	226	10	Kahakar	33	29
Waranga	194	11	Palashi	32	30
Kanhergaonnaka	174	12	GoulBajar	28	31
Hatta	163	13	Pimpaldari	27	32
Pusegaon	139	14	Kapadsingi	26	33

Sakhara	125	15	Bhosi	20	34
Dongarkada	123	16	Lingpimpari	15	35
Pankanhergaon	92	17	Adol	13	36
Girgaon	85	18	Khillar	11	37
ChoundiAmba	74	19			

Source:*Compiled by Researcher*.


Graph No. 5.1: Centrality Ranks and Hierarchy of Market Centres
Centrality Values
1800
1600
1400
1200
1000
800
600
400
200
0
Market Centres
II Order
III Order
IV Order
Basmath
Hingoli
Akada Balapur
Kalamnuri
Javala Bajar
Sengaon
Aundha Nagnath
Kurunda
Shirad Shahapur
Goregaon
Waranga
Kanhergaonnaka
Hatta
Pusegaon
Sakhara
Dongarkada
Pankanhergaon
Girgaon
Choundi Amba
Sirsum
Narshi (Namdeo)
Hayatnagar
Ajegaon
Aral
Adgaon
Bolda
Kendra (BK)
Jaipur
Kahakar
Palashi
Goul Bajar
Pimpaldari
Kapadsingi
Bhosi
Lingpimpari
Adol
Khillar
Rank of Market Centres



5.4 ***Regional Analysis of the Centrality:***

The spatial distribution of the centrality values calculated for each market centre.

The composite scores of centrality gained by Davies (1967) location quotient method clearly show the notable difference between the higher and lower values. All the centrality values of each market centres is taken into account from higher to lower in the study area. The highest centrality values is obtained by Basmath market centre (1712) and is followed by Hingoli (1349), AkhadaBalapur (623), Kalamnuri (532), JawalaBajar (481), Sengoan (459) and AundhaNagnath (401). The above said market centres are important for the study region. Out of these, five market centres are tahsil headquarters.

Whereas 80 to 400 centrality values are found by Girgaon (85), Pankanhergaon (92), Dongarkada (123), Sakhara (125), Pusegaon (139), Hatta (163), Kanehragaonnaka (174), Warangaphata (194), Goregaon (226), ShiradShahapur (231) and Kurunda (238).

Below 80 centrality values are observed in Khillar (11), Adol (13), Lingpimpri (15), Bhosi (20), Kapadsingi (26), Pimpaldari (28), Goulbajar (28), Palshi (32), Kahakar (33), Jaipur (36), Kendra BK (39), Bolda (40), Adgaon (46), Aral (52), Ajegaon (54), Hayatnagar (63), NarsiNamdev (68), Sirsum (70) and ChoundiAmba (74).

5.5 ***The Concept of Hierarchy:***

Geographical study of market centres is related to their location, distribution and spatial interaction. The study area includes spatial organization of roads. Market centres and their infrastructures are important components of a spatial organization. Every market centre has a tendency of concentration of different activities which form a foundation for spatial interaction. The relative locational pattern of market centres can be examined in terms of hierarchy.

The concept of hierarchy has been, widely, used by many Geographers, scholars, economists and specialists of different disciplines. In geography the concept of hierarchy is used not merely for identification of various categories of market centres but also for organizing market centres within entire study region. The study of hierarchy is nothing but gradation and grouping into tires of size classes. In every region there are some large in size regional market centres, a medium size or sub regional and local or primary / small market centres which perform complementary functions. There are many bases and foundations to determine the hierarchical orders or hierarchies, the basis of number of retail or wholesale establishments threshold, size of market area, volume of commodity

arrivals, total turnovers, size of population persons engaged in tertiary activities etc. thus, the pattern of market hierarchy based on the detailed analysis have provided a base for planning and development of the market centres.

A study of hierarchical pattern helps to understand the following elements.

i. Spatial interdependence of the centres
ii. Functional / wholeness of the system, and
iii. Clear classification of centres

The major problem of hierarchy is the determination of successive categories of the market centres in a region.

There are different geographical studies, which have tried to determine in a best way. They all are of different nature in terms of variables and also in methodology. These studies can be classed into two categories.

i. Studies based on equipment
ii. Studies based on functioning of equipment

According to Scott (1970), there is a much importance to the uniform value of all elements. He insists that classification should be based on overall importance. Considering composition of different types of trade, forms of organization, size of establishments, size and structure of market area, Scott has come to the conclusion that it is not easy to measure all the elements in terms of numerical value and also to correlate to all these elements with each other. The hierarchy of market centre is determined on the basis of each of the above region. The total number of shops in a market centres and size of the market area may be considered as two variables. This is helpful to identify the hierarchy in a simple manner.

The functioning of equipment based on the sum total of annual turnover in the form of total value and marketed arrival is another method to determine the

hierarchy of market centre. But collecting of data about annual turnover and total marketed arrival is very difficult, particularly in a developing region.

Marke Jefferson (1931, 1939) was the first to use the term 'central place' denoting a settlement, which is the central / focal point of economic and social activities of its surrounding area. Later on Walter Christaller (1933) used the term and it became popular onwards. It is frequently used now days. Railleries (1929) find out the relationship between the size of settlement and its complementary region and stated that the complexity of functions prevailing in a larger settlement is much more than that of a smaller one and therefore size of the central place is highly correlated with the size of its hinterland. In the view of Christallar, a hierarchical class system is unavailable in a spatial model of central places, which belongs to one or the other class sets/ sub-sets. He postulates three basis models on the basis of the assumptions of tropic surface where hexagonal pattern of centrality has emerged. He has developed three controlling principles for the central place hierarchy.

Thus:

i. The marketing principle k=3, all areas are served from a minimum set of central places.
ii. The transport principle k=4, here the distribution is such that as many places as possible lies on the main transport routes connecting the higher order centres.
iii. The administrative principle k=7, better administration is the controlling factor of this principle.

Christaller's central place theory is an argumentative and much discussed theory. Very few accept all the aspects of his work. In spite of criticism, his work has impulse and inspired some of the most advanced as well as scientific work in geography.

August Losch (1939) is another scholar who modified the central place theory. His economics of location was concerned with the central problem of location of economic activity. Losch gave more importance to the economic factors which are very important for spatial pattern of service centre or settlements. He also believed that the equal distribution pattern spaced because of forces of concentration and of the operation of economic of scale (Saxena, 1990).

Thrope (1968) has developed hierarchy of services and trade centres on the basis of sales figures of all English centres in the UK. He comes out with seven types of centres.

Another scholar Carruthers (1967) proposed a complex method to decide the hierarchy by using three indices. The first proportion of non-food scales to the total, second difference between the volume of actual and theoretical sales and third is related to the presence in each centre of six types of shops i.e. shoes, men's wear, female clothing, furniture and furnishing radio, electrical goods and cycles, jewelry, leather and sports goods.

Another scholar Berry's (1967) identification of the hierarchy of central places in Southern Iowa, South Dakota and Chicago is the most remarkable work in USA. He also has identified seven levels of hierarchy. They are hamlet, village, large village, small town, regional centre, regional metropolis and national metropolis and it is based upon variables and their correlations.

Richard E. Preston (1971) has identified a new method to determine the hierarchy of central place. Preston has used the technique of moving average, the cumulative averages of differences when plotted on a graph reflect more than one slope. These different shops can be seen as different groups of central places of different order.

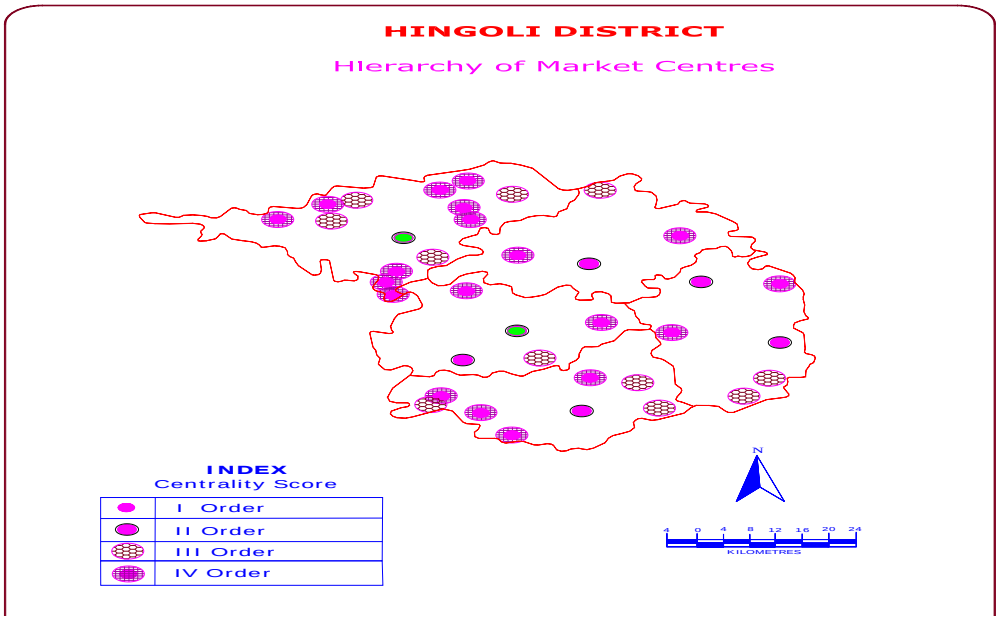
There are some Indian scholars who have studied the hierarchy of market centres. They are Vishwanath (1967), Mukharjee (1968), Sinha and Mandal

(1974), Saxena (1975), Shrivastava (1978) and Jana (1978). Jana in his study claimed to represent a composite hierarchy considering the attendance at a market, the quality and quantity of goods trade, the periodicity of market centres and other factors. Shrivastava (1976, 1978) has presented a new methodology which is based on the number of shops and the total openings at the market centres of Naougarhtahsil of Basti district in Uttar Pradesh. Dixit, another Indian scholar, also has made an attempt in this regard.

The above mentioned views of various studies of hierarchic class order shows that there is no uniform or composite index or scale to classify the central place or the hierarchy of central place.

5.6 ***Tahsilwise Distribution of Hierarchical Order of Market Centres:***

It has been observed that the tahsil wise analysis of hierarchical orders of market centres in the entire study region are uneven. The highest hierarchical order i.e. Ist order has no anyone market centre in the study area. In the second order, there are 07 market centres. Out of these, excluding AkhadaBalapur and JawalaBajar, all are tahsil headquarters.



So far as third order is considered, there are 11 market centres. As tahsilwise analysis shows that, four market centres are found in Sengaontahsil. Basmath has three market centres and Kalamnuri has two market centres. Hingoli and AundhaNagnath belong one market centres each

Tahsilwise Distribution of Hierarchical Orders of Market Centres

Tahsil	Number of Market Centre	Number of Market Centres in Various Hierarchical Orders			
		I	II	III	IV
Sengaon	14	--	01	04	09
Hingoli	04	--	01	01	02
AundhaNagnath	05	--	02	01	02
Kalamnuri	06	--	02	02	02
Basmath	08	--	01	03	04
District Total	**37**	**--**	**07**	**11**	**19**

Source: *Compiled by Researcher.*

19 market centres include in fourth order of market centres. The highest nine market centres are located in Sengaontahsil. It is followed by Basmath four market centres. Hingoli, AundhaNagnath and Kalamnuri belong to two market centres.

5.7 ***Application of Christaller's Central Place Theory:***

In the view of Christaller's 'central place theory', the size and distribution of central places is, particularly, based upon principle of marketing (K-3), the widely known important marketing principle (K-3) system model. In it, the frequency of occurrence of different levels of central places have followed the progression from large to small as 1, 2, 6, 18, 54 and so on.

In the present study area, the observed frequency of central places is 07, 11 and 19. So far as the comparative study of it is concerned, it seemed that there is

total application of Christaller'scentre place theory. In the study region, no first order market centres are seen the number in theoretical central places. But the observed higher level numbers of market centres are much more than the theoretical number. Then, the deviation from the theoretical number can be demonstrated clearly by the fact that the preliminary selection of 37 places was arbitrary. The reason behind it is that we consider all market centres of the study region as a central place, but in reality most of them are not perfect / adequate in the criteria of central places. Therefore the conclusion of it is that the hierarchy of market centres in the study region is analyzed in terms of the marketing principle of Walter Christaller and he developed his model by considering the following characteristics (Christaller, 1933).

i. The area was a featureless, plain devoid movement was made features.
ii. A situation described as an isotropic surface movement was possible in any and every direction.
iii. The uniformly distributed population and purchasing power of consumers.
iv. The consumers act vocationally in space according to the principles of distance minimization.

Theoretical and Existing Hierarchy

Order of Market Centres	No. of Central Places	
	Theoretical	Observed
IV th Order	18	19
III rd Order	06	11
II nd Order	02	07
I stOrder	01	Nil

Source: *Compiled by Researcher.*

As it is observed that the lack of transportation facilities in the hilly area in the study region, freely movement is not possible as the situation described in an isotropic surface. It is also seen that population and purchasing powers of

consumers is also unevenly distributed in the study region. Though, it is so, consumer act rationally in space according to the principles of distance minimization and availability of transportation facilities. (Personal observation) Therefore the results / consequences obtained do not match perfectly with his theoretical numbers.

5.8 ***Summary:***

To decide the importance of a place in relation to its functional capacity to serve the needs of the people in concerning area, centrality as a measure plays an essential role. So far as the study of the importance of the market centres in Hingoli district is considered, the centrality score is taken in view. It is remarkable that the urban part is highly developed, prosperous, agriculturally developed and infrastructural well-bestowed. Therefore urban market centres belong to high order of centrality, while rural market centres belong to low order of centrality. It is due to the inadequate agricultural, transportation facilities. Therefore these market centres are economically backward.

The market centres which are situated in the urban area provide more services and facilities to the population, whereas market centreslocated in rural area are more in number but provide fewer facilities to concerning population than urban market centres. It is also noteworthy that it will furnish the information and encourage the planners and decision makers in the regional planning point of view and the total development of the study region as well.

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Chapter VI

Trade Areas of Market Centers

6.1 Introduction

6.2 Choice of Methods in Present Study

6.3 Jackson's Method

6.4 Saxena's Modified Method

6.5 Summary

Chapter VI

Trade Areas

6.1 Introduction:

The previous chapter includes the concept of centrality, methods of measuring centrality i.e. Davies' location quotient method, regional analysis of the centrality, concept of hierarchy, tahsilwise distribution of hierarchical order of market centres, application of Christallar's central place theory etc. which have been discussed in detail.

In this chapter, an attempt has been made to delimit the trade area of market centre individuality. Market centre is related to various aspects such as surrounding area which is known as trade area, service area or selling area. Consumer and sellers are attracted towards this area. The trade area is concerned with distance between the markets and their size. These factors have relative importance of their own. It comprises the study of the sphere of influence areas whether it is well-served or poorly served with the help of the measurement of service areas which is also important to comprehend marketing data, performance of market centre, the settlement and development of shops, play of the traders and customers etc. Such study proves importance of the planning for developmental purpose. Many geographers and scientists have employed different methods to delimit trade area of market centers. It is seen that all these applied methods are based on gravity models, some theoretical formulas or empirical methods which are based on field work and study.

Market centres play vital role to exchange the goods and services. It is the place where diffusion of innovations and ideas take place. This is how market centres work as a linkage between the centre regional interrelations and forms a part of marketing system of the region (V. Trivedi, 1994). The location of market centre is an importance aspect that supports to attracts the sellers and consumers.

They all meet at this place and carry out their selling, buying activities and also fulfill their wants and needs. Hence, it is important to study the base of market centre. The importance of market centre is based upon the consumers, traders or the population which is dependent on the region on which they live. Therefore, the sphere of influence is most important in this sense. The spatial impact of the service centers on the surrounding areas is discussed by various geographers (Hart Shorne, 1980).

The trade area is a phenomenon which is abstract, complex and a combined result in the size of market itself, functional attractions of the market, its accessibility, availability and development of transportation network, the range of goods and services, the attitudes of customers and sellers and the unexpected population behaviours. These areas or the boundaries of trade areas are simply generalized and determined one. Each commodity has its own range of goods and its own trade area.

In this sense, the present chapter largely deals with the demarcation of trade areas which have different hierarchical trade areas of market centers in the spatial and population content in the study region. The methods as theoretical and empirical are employed to the delimitation of trade areas of market centers and on that basis, the study also becomes important in their various relative aspects.

The linkage of market centers to the other places outside the market centre limit is determined in the location, size and space point of view. Every market centre has its own area bounded and determined by economic and social bonds, the market centre may big or small and it serves the needs of population living in this area and connects with its surroundings. The above said various factors play important roles in determining the size of trade area. Thus the physical, and at limited sense, the political factors are also important.

So far as the demarcations, delimitations or identifications and analysis of the trade areas of market centers are concerned, it is prerequisite for regional and national planning. These studies are also necessary to understand the spatial organization on land and it is a core of geography. To delimit the trade area is a difficult and complex exercise. It is the outcome of multiplicity of functions, each one of them having its own range of goods and services, consequently a special functional hinterland. The data of central functions available at market centers and the villages which are dependent and this data collected through the field work is very necessary to delimit and determine a trade area of the market centers.

Two approaches are used for the delimitation and identification of trade area. The first is outwardly from the town regarding to identify from the trade area and the second is an inwardly from the countryside and it is more related with consumer's behavior (Cater, 1972).

Notwithstanding, in the countries like India i.e. developing countries, the precise and up-to-date data essential to delimit and identify the trade area is not possible to get. So there is a practical difficulty to acquire precise and correct information. This is a solution to this problem and it is to obtain the data by the way to fieldwork. It is also expensive, laborious and difficult to study a large number of market centre. Therefore, in this type of cases, the theoretical methods and quantitative methods are to be used and empirical methods are discarded. The theoretical and quantitative methods can give better result.

6.2 Choice of Methods in Present Study:

It is not meant that a demarcated service area boundary is rigid and absolutely the cause is that, broadly speaking, there is a different service area for every different commodity and human behavior as well as subjective and is possibly to change with changing circumstances. In spite of it, by and large, a

service area depicts the generalized picture of composite command area of a trade centre.

It has been clarified before although empirical method requires intensive fieldwork, the result gained by these methods is more realistic and true. In this sense, the method i.e. empirical method has been applied to find out the area of influence of each market centre. Four methods have been used to find theoretical trade area. These are:

i) Means are population and villages served by each market centre.
ii) Saxena's modified methods
iii) Empirical method

6.3 Jackson's Method:

In the present study, the study region has been demarcated by Jackson's (1971). There is influence of 37 market centres in the study region. Jackson has used this method to demarcate the service areas of South Ethiopian markets. His formula is given below.

$$\text{Trade Area} = \frac{Total\ Area}{Number\ of\ Market\ Centres}$$

Here, the average area, average number of inhabited villages and average population served by a market centre has been computed. By and large, it reflects a generalized picture to give an idea of the proportions prevailing in each tahsil of the study area.

i) Area Context:

As the area context is considered, the total area of each tahsil was divided by the total number of market centres in the same area, as follows:

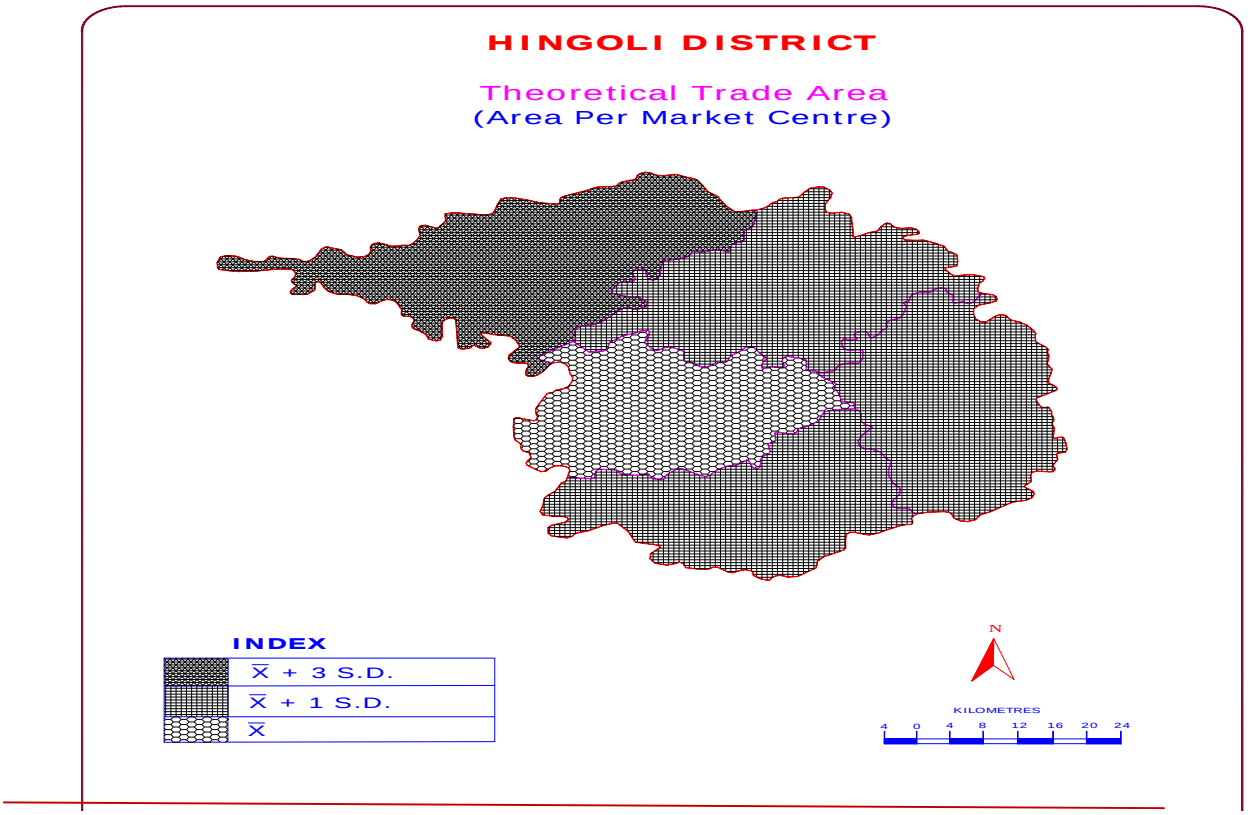
$$\text{Trade Area Km}^2 = \frac{Area\ in\ Km^2}{Number\ of\ Market\ Centres}$$

It is seen that theoretically every market centre supports an area of 130.46 km^2 on an average provided in the study region and it is in the space point of view.

Theoretical Trade Area of Market Centres

Tahsil	Number of Market Centre	Area Per Market Centre in Km^2		No. of Inhabited Villages per Market Centre		Population per Market Centre	
Sengaon	14	80.29	V	09.21	V	14626.28	V
Hingoli	04	242.35	I	34.50	I	67395.25	I
Aundha Nagnath	05	167.00	II	23.60	III	36277.00	IV
Kalamnuri	06	156.97	III	23.67	II	38654.50	II
Basmath	08	116.55	IV	18.13	IV	36414.00	III
Region	37	130.46		18.16		31864.14	

Source:*Compiled by Researcher.*



The largest trade area market centre is in the Hingoli tahsil (242.35 km^2). In Sengaon tahsil, the trade area of each market is on the lowest average which is 80.29 km^2. It is due to the fact that though the number of market centre in this

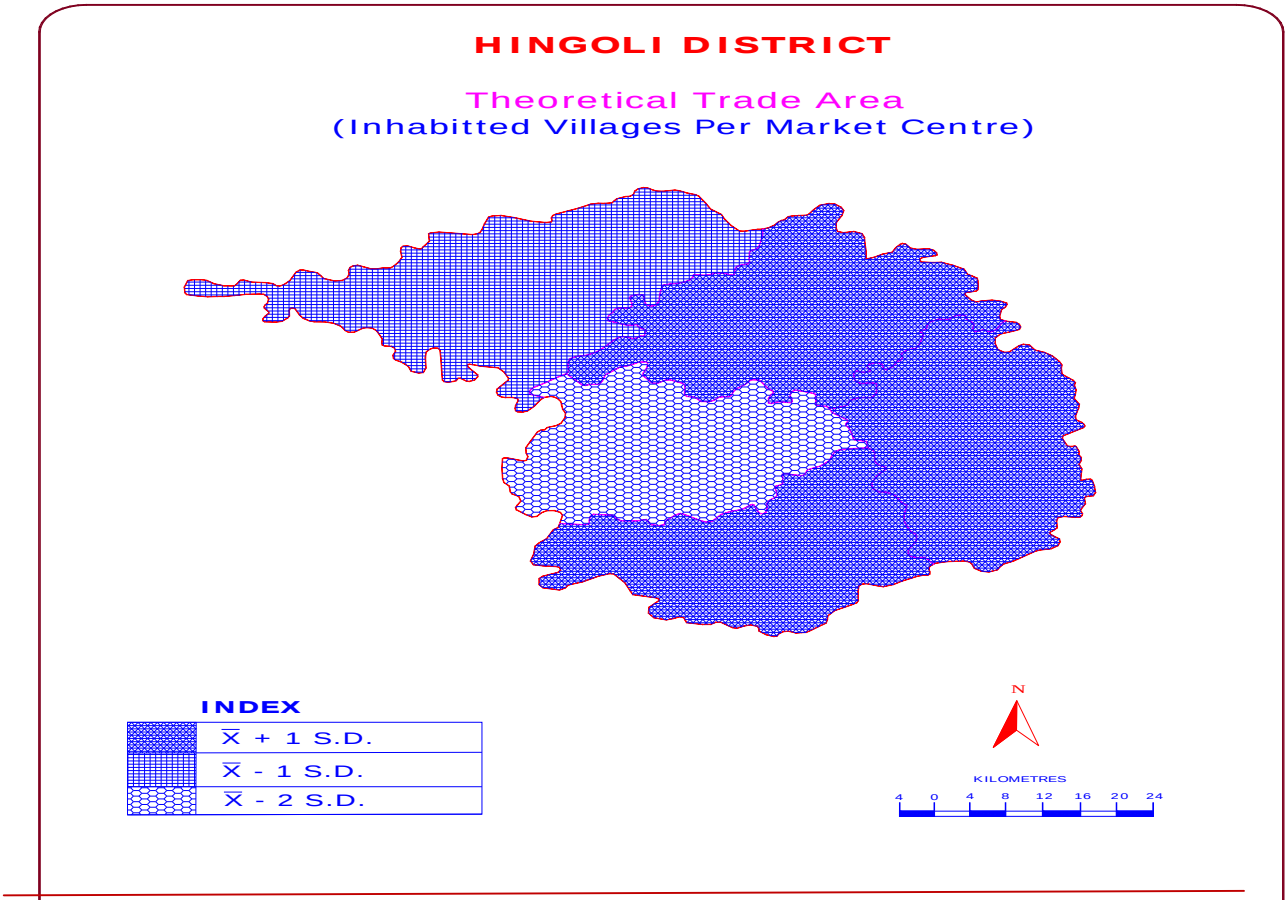
tahsil is high, the total area is also less as compared to other tahsils. Kalamnuri and Sengaon tahsils have the value less than district value of area per market centre and remaining tahsils have higher value of district level of this context. The rank orders of tahsils in this context, run as i) Hingoli (242.35) ii) Aundha Nagnath (167.00) iii) Kalamnuri (156.97) iv) Basmath (116.55) and Sengaon (80.29)

ii) *Village Context:*

There are 672 inhabited villages served by 37 market centres in the study region. In this way, on an average 18.16 villages are taken care by each market centres in the study region, when the values were calculated for the five tahsils. It explains that theoretically the market centres of Hingoli tahsil provide 34.5 villages each whereas Sengaon tahsil serves 09.21 villages each. The trade area in terms of the number of inhabited villages per market centres of the various tahsils has been calculated in the following formula:

$$\text{Trade Area Considering Villages} = \frac{Number\ of\ Inhabited\ Villages}{Number\ of\ Market\ Centres}$$

It is observed that as many as three tahsils have comparatively larger trade areas of their respective market centres, whereas, the two tahsils have smaller trade areas as their influencial area. The statistical classes of trade areas of market centre of various tahsils of the study area have been shown in has also been illustrated cartographically.



The rank orders of various tahsils of the study area in this context run as follows: i) Hingoli (34.5), ii) Kalamnuri (23.67), iii) Aundha Nagnath (23.60), iv) Basmath (18.13) and v) Sengaon (09.21)

iii) *Population Context:*

The trade area of market centres of various tahsils of the district have also been calculated in view of population served by market centres in each tahsil which have been calculated by following formula:

$$\text{Trade area considering popualtion} = \frac{Population}{Number\ of\ Market\ Centres}$$

Most important indicator is population for the consideration of the extent of trade areas of various market centres. The study region has population of about 1178973 which is served by 37 market centres. On an average, 31864.14 persons

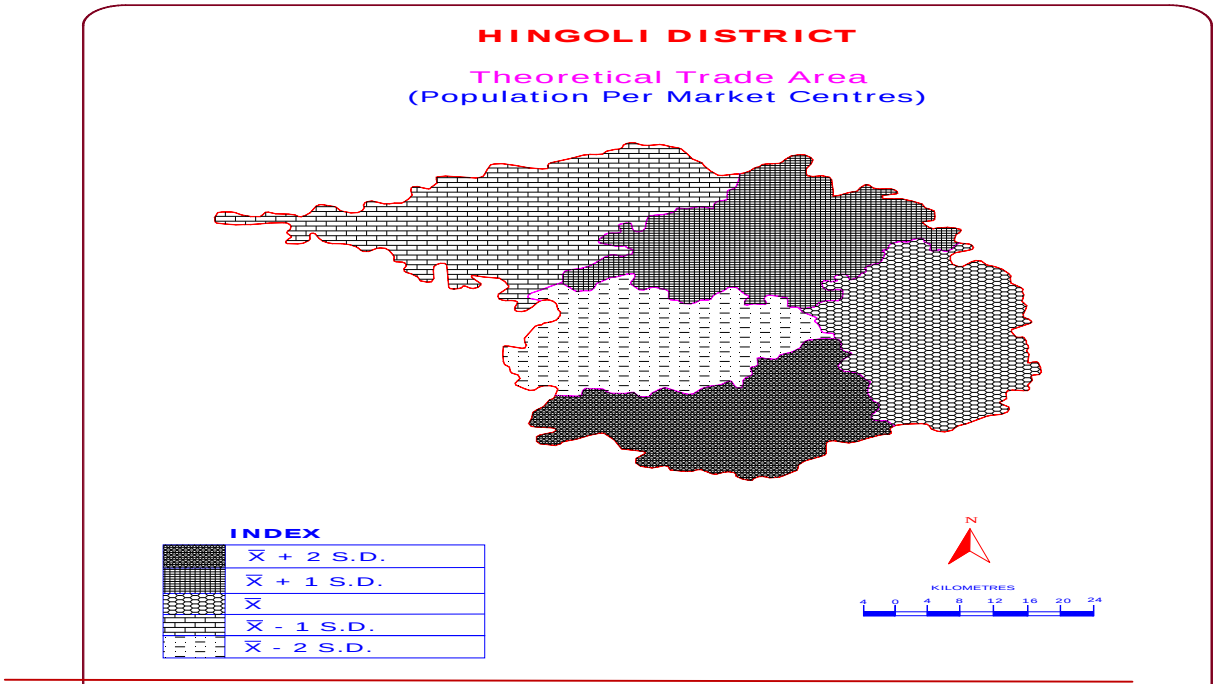
are served by each of the 37 market centres in the study region. The population of the five tahsils varies from tahsil to tahsil.

Statistical Trade Area Classes of Market Centres

Tahsil	Number of Market Centre	Area	Inhabited Villages	Population
Sengaon	14	$\overline{X}$ + 2 S.D.	$\overline{X}$ - 1 S.D.	$\overline{X}$ - 1 S.D.
Hingoli	04	$\overline{X}$ + 1 S.D.	$\overline{X}$	$\overline{X}$ + 1 S.D.
Aundha Nagnath	05	$\overline{X}$ - 2 S.D.	$\overline{X}$ - 2 S.D.	$\overline{X}$ - 2 S.D.
Kalamnuri	06	$\overline{X}$	$\overline{X}$ + 1 S.D.	$\overline{X}$
Basmath	08	$\overline{X}$ - 1 S.D.	$\overline{X}$ + 1 S.D.	$\overline{X}$ + 2 S.D.

Source: *Compiled by Researcher.*

The statistical classes are like these it has also been illustrated with the help of the number of persons served by each market of different tahsils. The rank orders of various tahsils in this context run as i) Hingoli (67395.25), ii) Kalamnuri (38654.50), iii) Basmath (36414), iv) Aundha Nagnath (36277), v) Sengaon (14626.28)



6.4 Saxena's Modified Method:

So far as the demarcation of sphere of influence is considered to demarcate the zone of influence of 37 market centres, the therotical method of Saxena has been applied in the present study with the help of total area of the region, total population of market centres, total area of the region and total population of area.

$$\text{Redius} = \frac{(Total\ Area\ of\ Region)(Total\ Population\ of\ Market\ Centres)}{Total\ Population\ of\ the\ Area}$$

It is modified as:

$$\text{Redius} = \sqrt{\frac{(Total\ Area\ of\ Region)(Total\ Population\ of\ Market\ Centres)}{Total\ Population\ of\ the\ Area}}$$

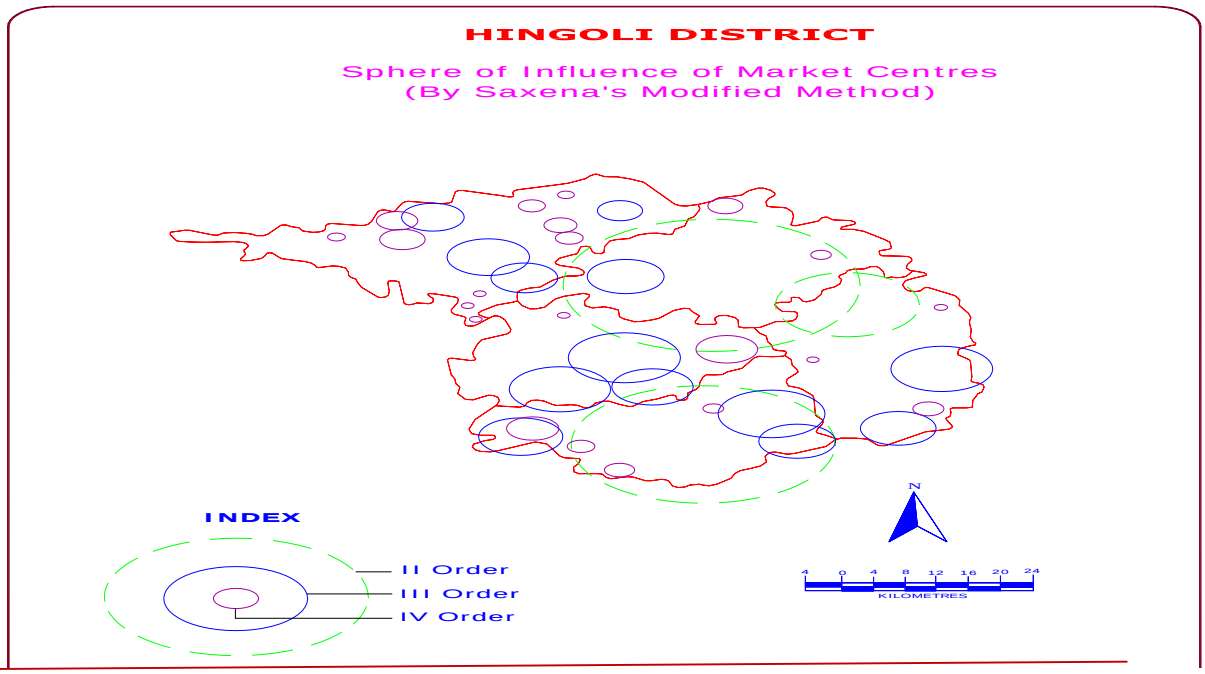
i) Regional Analysis:

So far as the regional analysis is concerned, the result gained by the modified formula of Saxena represents that Sengon highest range (5.88 km^2) and it

is the first order of services. The second order includes Kapadsing (3.08 km^2) and Pimpaldari (4.18 km^2) is the last market centre in this order out of 22 market centres in the second order market centres.

Third order comprises of six market centres which range from Kalam (10.07) to Goul 2.23 kms. This order belongs to the market centres as Kalam (10.07), Akhada Balapur (07.15), Dongarkada (5.33), Waranga (4.05), Bolda (2.42) and Goul (2.23 km^2).

This fourth order ranges from 16.80 km for Basmath to Aral 3.72 kms. This is the last market centre in this order, total 08 market centres.



6.5 Summary:

It has been observed that to demarcate trade area of a limited number of market centers, empirical method can be used suitably but in the study of large numbers of market centers, mathematical equal and theoretical models are used to get best result. An attempt is made to use appropriate method in demarking trade areas of the market centers in study region. The four methods applied to demarcate the trade area and the result of empirical method and other methods are not similar.

Saxena's modified method provides some quantitative results. The size and length of service areas are basically dominated by the topography, transportation network and density of population. It is seen that increasing areas and population of service centre of any order increase with the range of market centres. It is also seen that, with increasing order of market centres, the size of service areas of the lowest level market centres have also increased. Broadly speaking about the services, the central part of the region is fairly served. It is because, the area is agriculturally, industrially prosperous, having a well transportation network facilities, the moderately served area observed in Northern part of the study region, it is due to the ranges of Ajantha brings abstracts in the way of service area. So far as poorly served area is considered, it is southern part of the study region. The area is poorly served due to lack of agricultural, industrial, economical transportation network and communication facilities.

Furthermore, it is seen by the fieldwork observation that various villages are captivated towards market centres to satisfy their needs. It is observed by the empirical study that the market centres of higher order provide goods and services in wholesale to the lower order market centres. Moreover the lower order of market centres provides the goods and service in retail to the population of the area concerned.

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Chapter VII

Other Spatial Perspectives

7.1 Introduction

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Chapter VII

Other Spatial Perspectives

7.1 ***Introduction:***

There is specific place to marketing in Geography. It is well known that marketing geography is an applied branch of geography. Marketing geography can provide a base for development and the planning of the markets and the marketing. Marketing is an important aspect of economy. So far as the development and planning process is considered there are several ways to consider it. Every system has its own merits and demerits. The strategic development of market centres is one of the several ways to deal with rural development. Marketing is considered an important aspect of the complete package of services and exchanges and so no specific analysis is available except for the two studies made by Johnson. It is related, largely, with market centers and their importance for rural development in India.

In the previous chapter largely deals with the demarcation of trade areas which have different hierarchical trade areas of market centers in the spatial and population content in the study region. The methods as theoretical and empirical are employed to the delimitation of trade areas of market centres and on that basis the study also becomes important in their various relative aspects.

In this chapter an attempt is made to study the association of market centres in rural development, as well as the study has been made to investigate, intra-regional disparities and to suggest the development planning strategies for the overall development of market system in the study area. here some suggestion are given to add new market centres for the development and planning of the study by taking in view each village as on areal unit. Broadly speaking the urban and rural development or regional development are long term and integrated process and so,

there is urgent need of broad base of development planning in order to save time and space.

Every study of the spatial organizational aspects of market centres must include distribution, typology, hierarchy and trade area of various market centres of the study area. Besides, there are some other significant spatial perspectives too, without which any in-depth study would be rather incomplete. Mention must be made of such perspectives; synchronization, market cycles/ circuits/ rings, traders' movement / travel patterns, market designs and the last but not the least important is that of development planning. All the above perspectives, when considered, would certainly make a study on spatial organization- the wole, the total or the complete one. It is indispensable, therefore, to analyze such perspectives of market centres of the present case as well.

So far as the market centres are concerned they are centres of marketing activity as well as they are nucleus of development. Market centres have a lot of importance that may be culturally, socially and economically and they assist to improve social contacts, and serve as centres of diffusion. They are the focal point of political, social and other activities. These market centres also work as controlling points of marketing system. They have a vital role in impulsing production, consumption and also assist to accelerate the rate of economic development. In this way, it is observed that the development of market centres represent the economic development and their growth. It always follows the development of agricultural, transportation network, and industries, which consequently, lead to the overall regional development.

Moreover, to the regional development planning has to think the existing distribution of market centres. Thus, the study of market centres in the study region plays a vital role in providing services to villages. And these services are partly moveable and partly fixed. Mobile traders, is a common and unique feature of

markets, who meet a particular market centres. In that place number of buyers and sellers gather with certain hopes and intentions as well as where the price offered and paid by each is affected by the decisions of others (Belshaw, 1965).

7.2 ***Development Planning Strategy:***

The primary purpose is to suggest the planning strategy for the development of network of market centres in the study area. And it can be particularly, helpful for the various agencies and the authorities related.

It is the need of time to make development of market centres and marketing system. It would assist to increase the standard of living of the folks. The development of market centres can't be promoted exclusively by agricultural development. Therefore, the spatial importance to be given to market centres development. For making integrated rural development, the allocation of separate plants for the development of market centres is very essential.

Following planning strategies are suggested for the integrated development of the rural economy.

1) Improvement of information and transportation network
2) The synchronization of market days
3) Planning for proposed new market centres
4) Other strategies

7.3 ***The Synchronization of Market Days:***

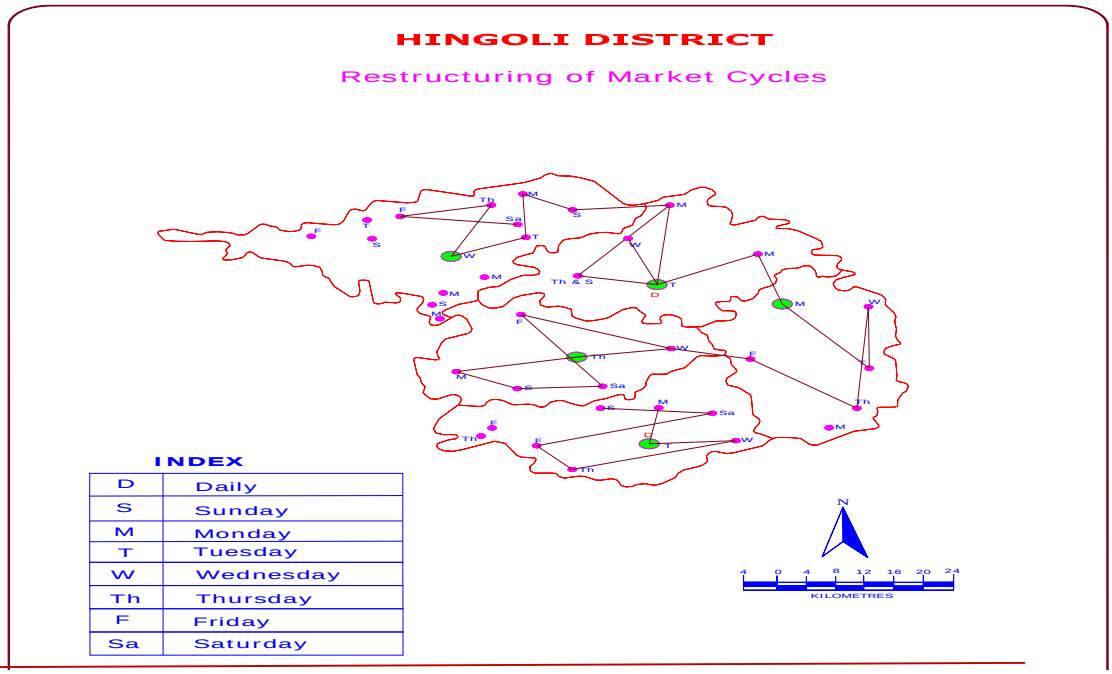
The present study shows that weekly market centres dominate the marketing system of the region. it is noteworthy to see that the existing market day cycles are not properly synchronized and as the specific day marketing meeting are being held at many centres the market centres are very near to each other, consequently, it creates many interruptions in the market cycles.

The present market cycles needs to be modifying to avoid the interruption and competition among market centres, to increase the functional capacity of the market centres as well as to make it convenient to the mobile traders. It should be modified in the following ways.

1) Sengaontahsil has 14 market centres. In this tahsil there is no proposed market centre, there is no need of any change.

2) In Higolitahsil 04 existing market centres are running on separate day and there is one proposed market centre i.e. Bhandgaon.

3) In AundhaNagnathtahsil only five market centres exist. But one market meetings are arranged on the same day. i.e. Monday (Gojegaon). The changing market meetings of Gojegaon (Monday), AkhadaBalapur (Tusday), Pinpaldari and Goulbajar (Wendsaday), Waranga (Thursday), Bolda (Fryday) and ShiradShahpur (Saturday).



4) In Kalamnuritahsil there is six market centres exist and it need not any change.

5) In Basmathtahsil there are eight market centres for the convenience of mobile traders for the increase of the functional capacity of market centre. There is only one proposed market centre i.e. Nahad

7.4 ***Planning for Proposed New Market Centres:***

The study of spatial distributional pattern of market centres, their proportion to the dependent villages, their market areas, and the population served is useful in planning for proposed new market centres.

It is observed that the potentiality of certain villages may be upgraded as market centres. From the overall development and planning it is important to upgrad villages as market centres in the study area. in consideration of all these things and with the notice to improve the market and dependent village ratio and to fill the market settlement gaps the new proposing market centres on favorable sites are tried to present here

Existing and Proposed Market Centres

Tahsils	Existing Market Centre	Proposed Market Centre	Total Number of Market Centre
Sengaon	14	Nil	14
Hingoli	04	01	05
AundhaNagnath	05	01	06
Kalamnuri	06	Nil	06
Basmath	08	01	09
District Total	**37**	**03**	**40**

Source: *Compiled by Researcher.*

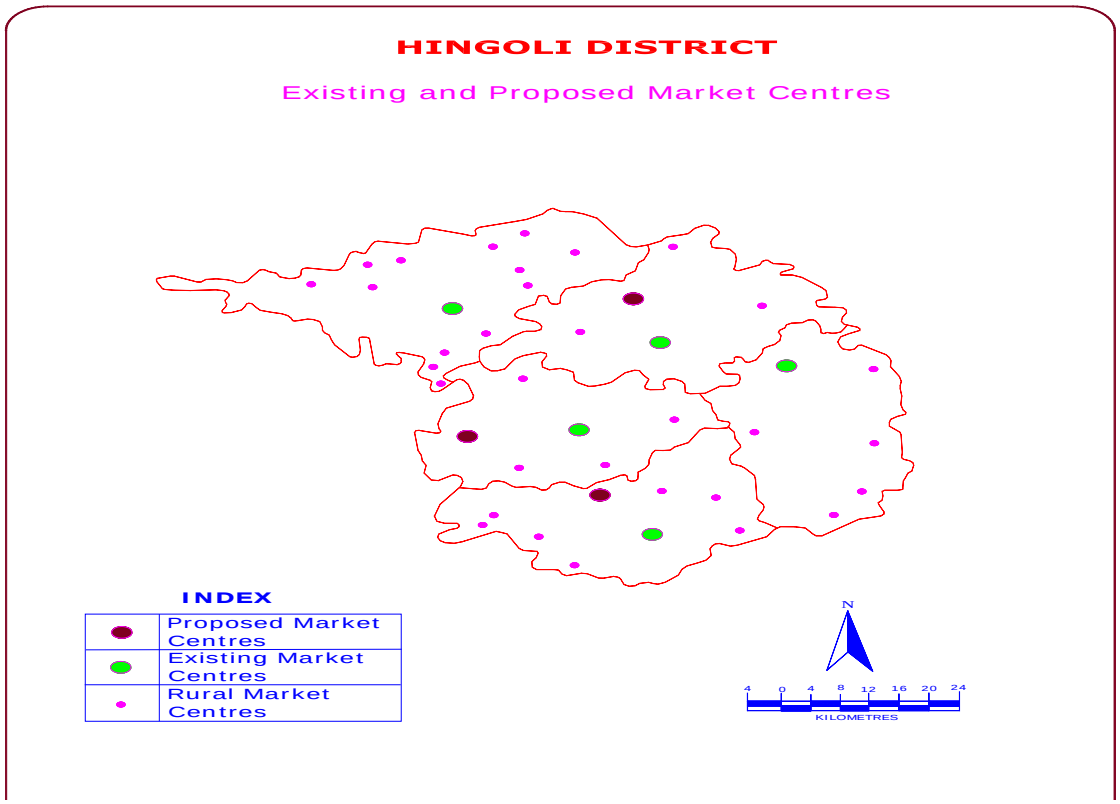
So far as the proposed market centres are concerned, 03 villages are proposed as sites for new market centres. these sites of proposed market centres have been decided in terms of following important components i) Size of the population ii) Centrality iii) Easy accessibility iv) Transport Facilities and distance from the existing market centres and the urban centres v) Hinterland and vi) Site suitability etc. In spite of all these factors, empirical evidences of the consumer's, preference of the market centres are also taken into consideration and in the identification of the sites of new market centres. By taking in consideration all these things the spatial reorganization of market centres would definitely improve efficiency of marketing system by decreasing the market village ratio as well as by filling up the market settlement gaps. The present centre and proposed market centres are shown in this way it will certainly increase the efficiency and reduce some unemployment it will save the time and money of the population. The increase in trade and exchange of goods, the farmer's commodity will get reasonable rates and will help in agricultural development, consequently all these factors combinly and positively enhance the rural development. The increase in market centres will also change the service scenario.

Proposed Market Centres

Tahsils	Number of Proposed Market Centres	Name of the Proposed Market Centres
Sengaon	Nil	---
Hingoli	01	Bhandegaon
AundhaNagnath	01	Gojegaon
Kalamnuri	Nil	---
Basmath	01	Nahad

District Total	**03**	**---**

Source: *Compiled by Researcher.*



Because of the proposed market centres there would be rational proportion of market and dpendent village ratio, market and population ratio and area proportion. In consequence of all these factors, it would certainly increase the efficient functioning of marketing systems and ultimately lead to spatial economic and rural development. The tahsils as Sengaon (14) and Kalamnuri (06) have no proposal for new market centres and present markets to the related villages. All these tahsils have more market centres, urban market centres and total dependent number of villages is less. For the tahsils viz. Hingoli, AundhaNagnath and Basmath have a proposal of only one new market centres for each tahsils. It is also seen that, to avoid the wastage of time and money, most of the villages go for the

nearest market sites and generally, do not visit frequently to the market plaes of longer distance.

It is observed that, during the field work, the various department stores are well developed and they cater all the needs of the people. These stores provides in spite of daily required goods and items, the specific facilities to the peasant society such as quality seeds, fertilizers, pesticides, agricultural implements, utensils, clothes etc. on affordable price. Despite of all these, some co-operative departmental stores spread the free consultancy in terms of agricultural inputs and practices etc. Therefore, it is strongly recommended that the departmental stores as above said should be started/ initiated at least at each tahsil head quarter and at big daily market centres.

7.5 ***Other Strategies:***

To captivate the large portion of population there is a need for the development of efficient market centres and it requires large number of facilities and concerning institutions. The complementary institutions contains well developed educational system as schools, colleges, training centres, hospitals, cinema halls and other entertainment places, different factories etc. it is noteworthy that most successful and effective markets must be provided by the wide range of goods and services and it will be easily available to customers. If the market centres is developed once it also creates positive atmosphere for many governmental agencies for introducing their products, innovations and to contact with the large portion of population for the implementation of different schemes and policies.

The following suggestions would be helpful to the overall development of market centres.

1) In All market centres i.e. Hingoli, Kalamnuri, Sengaon, AundhaNagnath and Basmath the space provided for market gathering seems to be inadequate

and insufficient to accommodate large proportion of the population and marketing commodities. This may be also resulted in wastage of goods and becomes troublesome to the people. Therefore, sites and the locations of market centres should be extended or shifted in any other open space nearby and cordoned off from cattle's market.

2) Adopting the following precautionary measures it is possible to avoid the malpractices.
   i. A general supervision under the control of a shop/ market inspector.
   ii. The notification of current price structure on general notice board.
   iii. The frequent checking of rates and measurement effectively.
   iv. Adequate fresh drinking water and a large space for parking.
3) For the diffusion of innovations in agricultural and irrigation, the use of market centres by private and governmental agencies.
4) Social awareness about medical, healthcare, natural hazards, total diseases and family welfare programme through such market centres.

7.6 ***Summary:***

The overall analysis, clearly, shows that there is unevenness in the distribution of market centres and their trade areas. It is seen that the central and western parts of study region is endowed with well facilities by market centres. In contrast to it, the northern and southern parts are less facilitated by market centres. Bearing this scenario in mind three new market centres are proposed in the study region. This re-organization, spatially, of market centres might obviously improve the present system as well as increase the pace of the efficient functioning of market system, the present market centres and proposed market centres, transportation facilities and communication facilities, and their increase and other locational strategies might be implemented in the study region. It is obviously to

provide the services to the whole study region remarkably to gain recognizable result in increasing the per capita income, standard of living, agricultural, industrial, economical development and overall development of the entire study region.

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Chapter VIII

Conclusions and Suggestions

8.1 Introduction

8.2 Conclusion

8.3 Suggestions

Chapter VIII

Conclusions and Suggestions

8.1 *Introduction:*

The present chapter entitled Conclusion and Suggestions deals with the present situation and expected future prospects of market centers in Hingoli district. For the success of proposed results of the present investigation, it is the time and desire to represent all the related matters and concerns in a microcosm in the study of market centres and marketing system as well. The consequent result and analysis in the preceding chapters presents the following conclusions and suggestions.

8.2 *Conclusions:*

Some of the conclusions drawn from the present research work. Major conclusions related with distribution and growth of market centers and largely based upon physical, social and economic factors because these factors play a vital role in the growth of market centers.

The climate is important factor in physical setting of the study region. The climate of Hingoli district can be included in the sub-tropical temperate category, characterized by medium rainfall and moderate temperatures. Comparatively, this climate is hot and dry. The mean daily maximum temperature is observed 41.9^0c in summer and the mean daily minimum temperature is found 12.6^0c in winter (December) sometimes due to cold waves over northern India; temperatures may drop to about 6^0c. May and December are the hottest and coldest months of the year respectively. On the basis of climatic conditions, the year can be divided into four seasons:

i) Summer season from March to May with maximum temperature

ii) The rainy season from June to October

iii) North eastern monsoon from October to November

iv) Winter season from December to February with minimum temperature.

The northern upland area of the district consisting of Sengoan, Hingoli, Northern Kalamnuri and AundhaNagnathtahsils have light soils (shallow black soil) which are sandy loam in texture, brownish black in colour and underlaid with murum derived from the basaltic rocks. These soils are most suitable for Kharif crops like Jowar, Bajri and Groundnuts etc.

The southern portion of the district occupying Basmath, southern part of AundhaNagnath and Kalamnuritahsils have medium to deep black soils, which vary in texture from clay to clay loams. These soils are retentive in moisture and rich in plant materials such as lime, magnese, iron and alkalies. These soils suit both Kharif and Rabi crops.

The trees like Teak, Tirmar, Salani, Palas, Dhawada, Sagwan, Ain, Khair, Mahua, Tembhurni, Babhul, Bor, Ayoni, Kona and Orange, Mango, Custard apple such fruits etc. are found in the study region. In grass area, Pawanya, Kusal, Raj and Rosha grass are seen in the region. The forests also have medicinal plants and large grassy area. Tembhurni leaves, gum, mahua flowers, fruits and charoli seeds collection is the major occupation in forest area.

The main cause of rapid growth of population is the decline in the death rate and increase in the birth rate. It is thus, clear that the regional population is growing at a rapid rate since 1961, but there was decrease in growth rate of population in 2001 and 2011.

Accordingly about 77 percent population of the district was literate in 2011. When the literacy rate of the states as a whole was 82.91 percent, Hingolitahsil has the highest percentage of literate population i.e. 80.42 percent.

Urban population comprises 15.17 percent of the total population in Hingoli district, which is far less than state average (45.23%). It is observed that Hingoli has high urban-rural population than district level and also national level.

As per the 2011 census, there were 669 inhabited villages in Hingoli district. These villages vary in their population size. The number of villages at tahsil level reveals that Basmathtahsil has the highest number (149), while the lowest numbers of villages are in AundhaNagnathtahsil (117). There were 13 percent villages with a population of less than 500. The medium size villages with a population size of 500-2000 were 66.80 percent, which form a major population size. Further there were 17.80 percent villages with a population size of 2000 to 4999. However, the large sized villages with more than 5000 population were only 2.40 percent.

There are three towns in Hingoli district ranging from class II and III with total area about 39.1 sq.km. The two towns (Hingoli and Basmath) are class II towns and Kalamnuri town is class III. The total area of urban centre is about 39.1 sq.km. The largest area is 16.4 sq.km. ofHingoli urban centres. The lowest area is of Kalamnuri urban centre which is 10.8 sq.km.

It has observed that generally large number of weekly market centres is concentrated in an area, where primary activities are dominant.

Major market centres i.e. 14 centres found in Sengaontahsil. This tahsil has hilly region and transportation network is not adequate. Due to this, people could not visit to the surrounding urban centres for their daily needs. Therefore, five market centres are newly created except old market centres in this tahsil.

Lowest i.e. four market centres found in Hingolitahsil, because of the good transportation network, people visit Hingoli city frequently.

High centrality market centres are found in south and east part of the district. High development areas are found in Vasmattahsil and after that Hingolitahsil, whereas low development area is observed in AundhaNagnath and Sengaontahsils.

The foregoing analysis clearly shows that the spatial distribution of market centres is characterized by their uneven distribution throughout the region. There are 05 daily, 1 bi-weekly and 31 weekly market centres. Market meetings are held in a week in this region as a whole. The lowest market meetings are held in Hingoli and AundhaNangnathtahsil and highest number of market meetings is 18 in Sengaontahsil. Spatial distribution of market centers are affected by physiography, development of transportation network, development of economic activities and population. The daily markets are concentrated in south and east part of the study region, which is relatively plain, fertile and well developed part of the region. Whereas weekly market centres are dominant in the north and north-west part of the region which is hilly and economically backward part of the study region.

It is also observed that the region has random, regular to regular, uniform distributional pattern of market centers. Near about 22 percents of rural market centers are located below 20 km distance, 43 percent of rural market centers are situated between 20 to 40 km. distances from the nearest town. The analysis of the market cycles reveals that the complete cycle is observed in Sengaon and Basmattahsil.

Further it is noted that the present market day cycle is not properly synchronized. On a specific day, marketing meeting being held at many centers which are very near to each other and it creates many interruptions in the market cycle. To avoid the interruption and competition among the market centers, to increase the functional capacity of the market centers and to make it convenient to the mobile traders, there is need of restructuring the existing market cycles. However, to realize the relative importance of market centers in the region, investigations concerning of centrality, hierarchy and sphere of influence of individual market centers need to be undertaken.

Thus, the overall study of the collected data clearly shows that there is constant increase in the population of Hingolidistrict. Hingoli (27.6) and Sengaon (21.0) tahsils have the highest percentage of population growth rate whereasKalamnuri (17.5) and Basmath (13.3) have lowest percentage of population growth rate in district in the last decade. In the study region, there is gradual growth of market centers during the last decades. However, it is noteworthy that the growth of market centers in last two decades has fluctuated from decade to decade. Multiple factors are responsible for this situation. The changing socio-economic, political factors and increase in population are the some of the encouraging factors for this situation. Other factors include increasing density of communication network, commercialization, development of irrigation, development of agricultural etc. Besides this better medical facility, telephone facilities, electricity is also contributing factors.

In the last decade, study region has experienced the increase in the number of market centers. Growth of population is a cause of the increase in a number of market centers, thereafter increased transportation facilities are reasons of increasing the number of market centers. Limited source of earning is a main reason of increase in market centers in Sengaontahsil.

The typological analysis of market centers is based on as many factors. When the development of several topologies is considered, it shows many important factors to come out.

The examination of the typology indicates that the types of market centers are dissimilar. It is the result of undulating physiography and other physical factors, problems of transportation facilities the problems in supplying of goods and services, uneven distribution of population density, lack of communication facilities etc.

To decide the importance of a place in relation to its functional capacity to serve the needs of the people in concerning area, centrality as a measure, plays an essential role. So far as the study of the importance of the market centers in Hingoli district is considered, the centrality score is taken into consideration. The method of Davies clearly indicates high difference between the lower and higher values of the score of centrality. It has been clearly seen that the urban places are with high centrality whereas the low centrality is observed in the rural parts of the study region. It is remarkable that the urban part is highly developed, prosperous, agriculturally developed and infrastructural well-bestowed. Therefore urban market centers belong to high order of centrality, while rural market centers belong to low order of centrality. It is due to the inadequate agricultural, transportation facilities. Therefore these market centers are economically backward.

It has been observed that to demarcate trade area of a limited number of market centers, empirical method can be used suitably but in the study of large numbers of market centers, mathematical equal and theoretical models are used to get best result. An attempt is made to use appropriate method in demarking trade areas of the market centers in study region. The four methods applied to demarcate the trade area and the result of empirical method and other methods are not similar.

Saxena's modified method provides some quantitative results. It is also seen that, with increasing order of market centers, the size of service areas of the lowest level market centers also increase. Broadly speaking about the services the Southern part of the region is fairly served. It is because, the area is agriculturally, prosperous, having well transportation network facilities, the moderately served area observed in central part of the study region. So far as poorly served area is considered it is Northern part of the study region. The area is poorly served due to lack of agricultural, industrial, economical transportation network and communication facilities.

The second order of market centers varies in distribution in the study region. These market centres are located in agriculturally industrially developed and transportation network facilitated area of the study region. The third order market centers are situated in southern part of the study region, which is plain and fertile area and moderate density of population is observed. This area is agriculturally prosperous. The fourth order of market centres has no regularity in their shape, and this is undulating parts with low density of population and also lack of transportation and communication facilities. It is also seen that the range of goods and services furnished by this order (IV^{th}) varies from area to area. The service areas of lower order market centre's in the vicinity of large cities are small in size and small in range of goods, it is due to the large market centers overshadow these small market centers.

The overall analysis for the chapter seven, clearly, shows that there is unevenness in the distribution of market centre's and their trade areas. It is seen that the central and western parts of study region is endowed with well facilities by market centers. In contrast to it, the northern and southern parts are less facilitated by market centers. Bearing this scenario in mind three new market centers are proposed in the study region. This re-organization, spatially, of market centers might obviously improve the present system as well as increase the pace of the efficient functioning of market system, the present market centers and proposed market centers, transportation facilities and communication facilities, and their increase and other locational strategies might be implemented in the study region. It is obviously to provide the services to the whole study region remarkably to gain recognizable result in increasing the per capita income, standard of living, agricultural, industrial, economical development and overall development of the entire study region.

8.3 ***Suggestions:***

So far as the findings stated above is considered, there are some viable suggestions for the improvement of the market centers and marketing system in the study region which have been mentioned in the last chapter.

The synchronization of market days is concerned; there is a market week of seven days. All market cycles have sequential meetings on various days of the week and having one 'break' as a rest day in a week. But the existing market day schedules are not appropriately synchronized in the study region. It is seen that a particular day market meets at many centers which are very near to each other, so much so that, it creates many disturbances in the market cycles.

It is also needed to reconstructing of existing market cycles. The present existing market cycles are not properly synchronized in the study region. Because of it there raised various problems particularly for the mobile trades and consumers and interruptions in the market cycles. It adversely affects the functioning and growth of market centre.

There should be the market regulation and other strategies so far as the inadequacies speeded over the study region for the development of market centre and marketing system is concerned. There are following facilities to be improved.

1. There is a need to control the existing malpractices by general supervision of shop by market inspector, the notification of current price structure and stock on general notice board and by the regular checking of weights and measurement effectively.
2. There is lot of disturbance of the strayed cattle like donkey, pigs, cows etc. and to avoid this, market centers should be cordoned off and the compound walls should be built around the market centers. So sites and location of market centre should be either extended or shifted in nearby open space.

3. To avoid the problem of traffic, there should be large space in parking the vehicles especially for the big market centers.
4. Basic facilities like drinking water, toilets, parking etc. will be provided at the market meeting places.
5. Inspection of weights and measures is necessary for the consumer's interest.
6. Implementation of prohibition of adulteration law is necessary.
7. Financial support will be provided for mobile traders.
8. Transport network especially roads will be developed.

There is a need of the development of the transportation network. By the detailed survey, the transportation network facility in the region helps to prepare on improved transportation network facilities. On the other hand to develop the road accessibility, the link road should be constructed between market centers and villages. There should be an extension of southern central railway line from Hingoli to other regional market centers.

There is necessity to plan for proposed market centers. The potentiality of certain villages needs to be upgraded or improved market centers to remove the market centre gap areas in the study region.

Addition of market centers, the structure of regional marketing and its pattern would be changed and there would be national proportion of market village's ratio (1:9), market population ratio (1:15532) and market area ratio (1:68). So far the success of co-operative departmental stores should be started at least at each tahsil headquarter and big market centers. And this additional market centre and departmental stores would certainly accelerate the efficient functioning of marketing system.

The above said suggestions and restructured market cycles, locational strategies, efficient departmental stores and market regulations, measures would

combine to affect the existing marketing system and would accelerate the overall development in the study region.