

CHAPTER - IV

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THE SPHERE OF INFLUENCE

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1. INTRODUCTION :

The impact of city on daily living over wide outline territories is essentially a twentieth century phenomenon in India. In 1970s signaled a great surge in this involvement as the automobile came into wide use. After the independence easy mobility and rapid communication within and among the cities have greater impact on the countryside.

The location and spacing of the cities clearly owes much to the manner in which individual urban settlements are linked to places outside their own limits. As a result considerable attention has been given to the delimitation of the areas joined by social and economic bonds to a particular urban settlement. Towns and cities are functioning as service centres.

The area linked socially and economically to an urban centre has been given various nomenclature. Some geographers adopts the German term 'Hinterland' originally applied to the region served by a port, others have felt that 'Umland' would be linguistically more accurate, particularly for inland towns which have dealings in all directions, but unfortunately this term also been apply to the immediate environs of an urban centre as well as to the larger area served by it.

A.E.Smailes has coined the graphic expression 'urban field' drawing an analogy from the study of magnetism. But the comparison is not exact and it is perhaps dangerous to

rely on a term from another scientific discipline, since the relation between towns and their surroundings do not operate with the regularity of a physical law.

Other expressions like 'zone of influence', 'tributary area', 'catchment area' have also been used. The area influenced by an urban centre is two dimensional feature not a sphere, nor does it necessarily form a continuous zone, for that matter, goods and services flow both into and out of an urban centre. Most modern urban settlements and their hinterlands are economically interdependent rather than one being a tributary to the other.

Various authorities in the subject tries to describe and define the concept of zone of influence. 'The support of a city depends upon the services it performs not for itself, but for a tributary area', - R.E.Dickinson. 'Cities do not grow of themselves but countrysides set them upto do task that must be performed a central places', - M.Jafferson.

'A town does not exists in a isolation. It depends for its maintenance and life on many things outside its limits. It is a living organism depends for its vitality not only on its internal resources, but also on its capacity to tap the sap for its growth from a vast area surrounding it, such area in which the region and cities are culturally, economically and politically interrelated, interdependent, iteracted, forms the umland or hinterland of that particular town or city', - R.L.Singh.

2. THE DELIMITATION OF SPHERE OF INFLUENCE :

The relationship between an urban settlement and its surrounding is described as 'urban hinterland'. It is more important to delimit the zone of influence. An analysis of the rural area served by a market town gives some indication of the relationship between town and country, which is of practical application in examining the provision of goods and services in an urban centre.

There have been two approaches to the identification and delimitation of sphere of influence. The first has looked outward from the urban centre in order to identify the various areas which are served by it. The second has looked inward from the countryside and has been more concerned with consumer behaviour and the way in which the people used the various functions.

The study of growth and functions of Miraj city in the preceding chapters clearly indicates that, there exists a great relation, both economic and cultural, between the city and its surrounding countryside.

Miraj being the important industrial centre of Sangli district has great influence over a considerable part of surrounding area, from which it receives men and material for its factories and supplies finished articles for consumption and trade. It is the major marketing and commercial centre of the district inviting daily large number of buyers and

sellers. It is also important educational centre consisting of several distinguished educational institutions of different grade, catering for the needs of not only the city dwellers but of a vast countryside around it. In addition, the city is a great medical service centre providing medical services to the surrounding districts. The city is also a seat of local administration.

The surrounding region in its turn provides the city with the articles of daily use, such as fresh vegetables, milk and milk products, grain, fruits, labour force and raw materials. The city depends upon the surplus of essential production of cultivators, miners and foresters. But before the consumption of primary products, they are processed or manufactured. Therefore, a chain is welded in production, transportation, manufacturing and services. Thus, the city is linked both economically and culturally, with its surrounding region.

In this chapter an attempt has been made to delimit the sphere of influence of Miraj city and to find out the area which is closely linked with the city in respect of social and economic bonds.

The sphere of influence of Miraj city has been delimited by empirical as well as theoretical method. For empirical method the intensive fieldwork was carried out and the data of the following aspects have been collected.

- i) Secondary school service area
- ii) Vegetable supply zone
- iii) City bus, transport area
- iv) Milk and milk product supply zone
- v) Medical service area
- vi) S.T. Bus service area
- vii) Petrol and Diesel distribution service area

By the way of interviews, observations, questionnaire etc. the first hand information and the statistical data for the above mentioned functions and services has been collected, these functions and services have been carefully selected to serve the purpose.

In order to find out the zone of influence of the Miraj city, the theoretical method of V.L.S. Prakashrao has been used.

V.L.S. Prakashrao (1961) while studying the towns of Mysore state has derived a equation which indicate that the influence of a town on the surrounding area. In this equation he has considered the population of an urban centre, area under study and the total population of an area. In this method, he has used the following formulae.

$$D = \frac{T \times A}{U}$$

$$R = \sqrt{\frac{T \times A}{U}}$$

Where, D = Degree of urban influence
 A = The total area of the region
 U = The total urban population of the study region
 T = Town population
 R = Radius of the circle indicating the degree of urban influence.

With this formula one can find out the zone of influence of any urban centre.

In 1969, Mahadeo and Jayshankar have calculated the zone of influence of Mysore and Bangalore cities. They have used Gravity Potential Model in delimiting the zone of influence.

R.L.Singh (1955) has studied the Umland of Banaras. He has considered the supply of foodgrain, milk and vegetables to the city.

Ujagir Singh (1961) has studied the Umland of Allahabad. He has considered following aspects for forming the boundary of zone of influence.

- i) Retail trade area
- ii) Food supply
- iii) Vegetable supply
- iv) Milk and milk product supply and
- v) Higher secondary education zone.

Dwivedi (1964) has studied an Umland of Allahabad. N.R.Kar (1963) studied the Umland of Calcutta. Dr.Dixit and

Sawant have delimited the zone of influence of Hyderabad.

A.B.Mukerjee (1962) has studied the Umland of Modinagar.

3. SPHERE OF INFLUENCE OF MIRAJ CITY :

1) Delimitation of sphere of influence by Empirical Method :

The immediate Umland or the sphere of influence of Miraj city delimited by empirical method clearly indicates that the area and population served by each parameter varies considerably.

i) Secondary school service area :

The secondary school service area serves the maximum range of 20 kms towards the east, nearly 15 kms towards south and only 5 kms to 10 kms towards the western and northern areas of the city and it includes 25 villages. The north-western boundary of secondary education is truncated because of proximity of Sangli city, whereas the boundary is well extended in the northeast and southeast direction. Many students daily visit Miraj for their secondary and higher secondary education from these villages. This zone comprises the rural settlements like Vadai, Dhavali, Kalambi, Takali, Malgaon, Bolwad, Bedag, Savali, Dhamani, Bamni, Deshing, Kharshing, Arag and others.

ii) Vegetable supply zone :

It is an important function which provides daily supply of fresh vegetables to city dwellers. The data of vegetable supply was collected from the local market of Miraj city i.e. Laxmi market. It is a wholesale vegetable market where the

varieties of vegetables and fruits have sold and purchased in large quantity on the basis of auction. The other vegetable market localities are Loni bazaar, Mangalwar peth (Shivaji Chowk), Gavali Katta, Udgaon wes and the environs of fodder market. From these localities the statistical information of the influx of vegetables and fruits has been collected through personal interviews. From the information collected it has been generalized that, Miraj is a centre of wholesale and retail vegetable trade, where the different type of vegetables and fruits have been brought from the river side villages of Sangli and Kolhapur districts. On an average 15 to 20 tempos containing flowers, tomatoes, onians, brenjal, cabbage etc. are imports from countryside. It is also reported that nearly three trucks of vegetables have been exported to the centres like Kolhapur, Barshi and Solapur (Daily Pudhari, 4th March 1988 - Special report on Miraj market).

During the interviews of vegetable traders and farmers, it has found that nearly 50-60 villages located within the range of 25 kms serves the vegetable needs of Miraj city. The shape of the boundary of the vegetable supply zone is oriented in a north-south direction. Typically in a southern extended portion villages adjoining river Krishna and the villages along the roads and rail routes are included. Vegetable being a perishable in nature, it has to be transport quickly from the areas of production to areas of consumption. Miraj and its adjacent area both have a efficient system of transport through which vegetables and fruits

from the distance of 25-30 kms have brought for the city dwellers (Fig.4.1).

iii) City bus transport area :

The fringe zone and the immediate Umland of a city is usually served by city bus transport. The city bus service area covers 12-15 kms radius around the Miraj city. The places like Sanglwadi, Digraj, Mhaisal, Madhavnagar, Sangli, Budhagaon, Kupwad, Bedag, Malgaon, Takali, Kalambi etc. are well connected to the Miraj city. The city bus survey shows that there is a maximum interaction between Miraj and Sangli. Nearly 150 city bus trips are arranged daily within Miraj and Sangli; it shows the greater level of interaction between these two places. The nearby villages have daily bus frequency at the interval of one hour. The city bus operation zone has shown in Fig.4.1.

iv) Milk and milk product supply zone :

The milk is collected through different mode of transport, it is brought by bicycles from 10 kms distance. By milk vans from 50 kms and by trucks from 80 kms distance. Miraj is a centre of Government Dairy as well as Co-operative and private dairies. Government Milk Supply Dairy is a prominent establishment. Besides it, the other institutions includes, Vasant Dada Co-operative Milk Supply Sangh, Krishna Khore Milk Supply Sangh, etc. It is observed that large number of the villages in Kolhapur district and Walwa, Atpadi, Tasgaon, Jath, Kawathe Mahankal etc. tahsils collect the milk at sub-milk collection centre and these milk

MIRAJ CITY

ZONE OF INFLUENCE

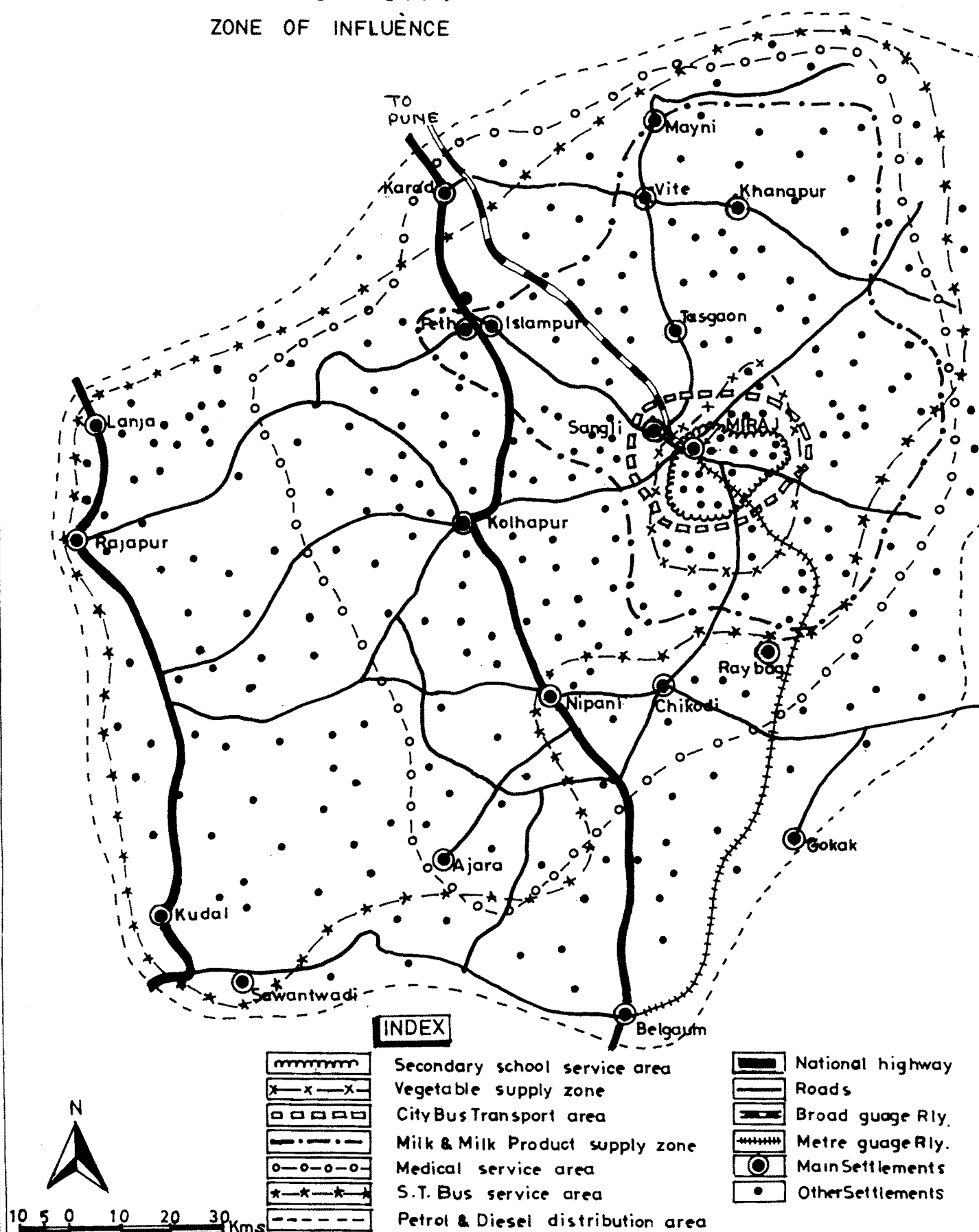


FIG 4.1

collection centres supply the milk to Miraj. The biproduct of milk and the milk have been supplied to larger urban centres like Pune and Bombay.

v) Medical service area :

From the medical service point of view, Miraj is a centre of health care and centre of hospitals and famous throughout the South India for its Mission Hospital which was started by Dr. Wanless in 1891. At present there are 350 private hospitals, 36 private dispensaries, 32 private medical practitioners along with the well qualified and specialized medical staff in the city. In all, there is an arrangement of 1500 beds for indoor patients. About 150 medical stores and 50 drug distributors are well engaged in these medical services. Due to large establishment of Mission Hospital, the experts in the medical line and their concentration is found at this place. The healthy and salubrious climatic conditions and with facilities of specialized treatment Miraj has earned a reputation as health resort in Southern Maharashtra region. Such medical service centre attracts thousands of patients from a considerable distance. It is rather difficult to delimit the immediate zone of influence of medical services of the city Miraj. The analysis of patient statistics visiting Miraj for medical treatment indicate that 100 kms range is a patient catchment area. The medical service area again follow the north-south orientation with elongated shape. Almost all the villages of the Sangli

district; Hatkanangle, Shirol, Karveer, Kagal etc. tahsils of Kolhapur district; Karad, Patan, Koregaon tahsils of Satara district and other several villages of Bijapur District of Karnataka State, are under the influence of Miraj medical services.

vi) S.T.Bus service area :

The S.T.Buses which served the surrounding area of Miraj city after 8.30 p.m. onwards are considered and the data has collected of the places where buses made night halts. From such statistical information it is observed that S.T.Bus service area covers nearly 15 kms range. This range of 15 kms includes 24 villages, where the S.T. Buses left the Miraj for night halt. This is an immediate zone of influence demarcated by using the night halt of S.T.Buses. However, the external and extensive S.T.Bus service has extended at a considerable distance. The places like Rajapur, Lanja, Sawantwadi, Malvan etc. in Konkan region are connected with Miraj. Most of the tahsil headquarters of Kolhapur and Sangli districts, the places like Pandharpur, Bijapur, Mangalwedha etc. also have a notable S.T.Bus frequency with Miraj. By and large the extensive zone of S.T.Bus service includes most of the South Maharashtra region and boundary area of Bijapur and Gulbarga Districts of Karnataka State.

vii) Petrol and Diesel distribution area :

Miraj being a important railway junction on South Central Railway line, play a significant role as a centre of petrol and

and diesel collection and distribution. Petrol and diesel are not the local products. The supply of such fuel is from the areas of fuel production. Miraj and its environs are the consumption areas of the such fuel. There is a main petrol and diesel distribution establishment in the city. The statistical information pertaining to petrol and diesel supply area has been collected from the main distribution agency. A close examination of petrol and diesel distribution shows that the places at the distance of 120 kms in western portion receives the petrol and diesel supply from Miraj. The places like Sawantwadi, Kudal, Kankavali, Deogad, Lanja etc. receive the fuel from Miraj. Comparatively the boundary of petrol and diesel supply at the east of Miraj is below 60 kms. Most of the tahsil headquarters of Kolhapur and Sangli districts receives the petrol and diesel from Miraj. It is very interesting to note that the S.T. Bus service area boundary and petrol and diesel distribution area boundary are having similar pattern (Fig.4.1).

Thus, the delimitation of the zone of influence calculated for various aspects shows different service areas.

2) Delimitation of sphere of influence by theoretical method :

In order to find out the general zone of influence of Miraj city, the theoretical method of V.L.S. Prakash Rao is employed. This method gives the general zone of influence and such degree of urban influence depends upon the population size of the city and its functional magnitude.

In the present study the area of Miraj tahsil (926.1 sq.kms) and the total urban population of Miraj tahsil (268,988, - 1981) have been considered. The Miraj city population is 105,455 (1981). According to V.L.S. Prakash Rao's method the degree of urban influence is calculated as below.

$$A = 926.1 \text{ sq.km}$$

$$U = 268,988$$

$$T = 105,455$$

$$\begin{aligned} \text{Hence, } D &= \frac{T \times A}{U} \\ &= \frac{105,455 \times 926.1}{268,988} \\ &= 363.07149 \end{aligned}$$

$$\begin{aligned} \text{Therefore, } R &= \sqrt{\frac{T \times A}{U}} \\ &= \sqrt{363.07149} \\ &= 19.05 \text{ kms.} \end{aligned}$$

With the application of the V.L.S. Prakash Rao's model, the 'R' value is 19.05 kms as the general zone of influence of Miraj city. The calculated zone of influence has been represented in Fig.4.2. It clearly indicates that the Miraj city serves the entire Miraj tahsil and adjacent areas.

MIRAJ CITY

SPHERE OF INFLUENCE (THEORETICAL METHOD)

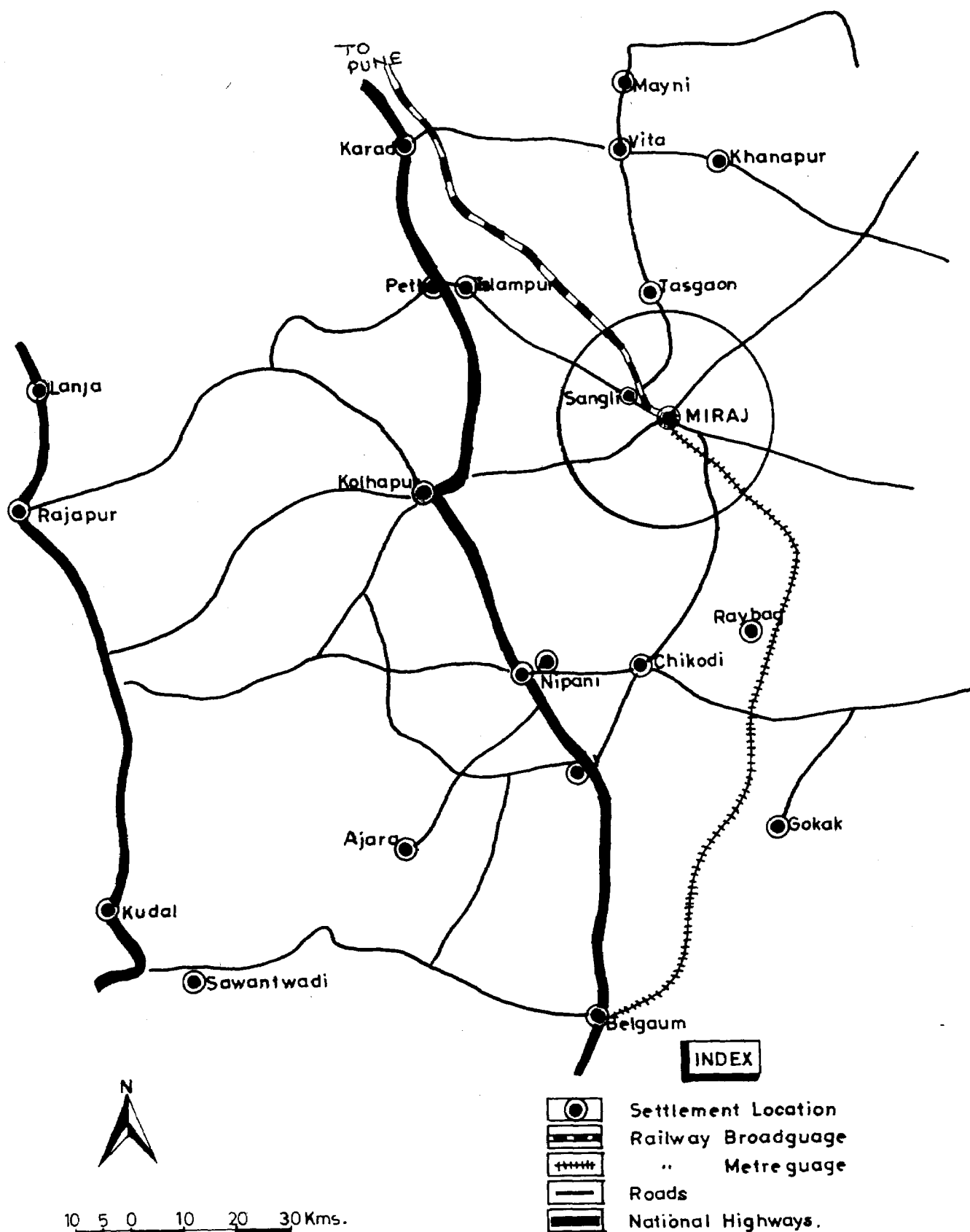


FIG 4-2

Summarizing the various aspects of urban influence, empirically demarcated zones for various parameters have great variations in size, range, population served and area served. The degree of urban influence calculated by theoretical method reveals, the fact that there is a considerable dominance of the Miraj city at 19.05 kms distance.

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