CHAPTER - IV

SERVICE AREAS OF WEEKLY MARKET CENTRES

****

=o=o=o=o=o=o=o=o=o=o=o=o=o=o=o=o=o=o=o=o=o=o=o=o=o=o=o=o=o=o=o=o=

4.1 INTRODUCTION :

Market centres evolve because of the economic activity of exchange which results from the processes of production, distribution and consumption. Exchange transactions are located at convenient points of focus of producers and consumers, who keep visiting the points in order to carry out their business activities. Thus, market centres are not existed in isolation. However, their origin, growth and prospects of development depend on the surrounding area, where from producers and customers belongs and interacts. Since the market centres performs central functions, they are providing the services to their own population as well as the population of the surrounding region. The surrounding region also supporting the market centres by providing the local agrarian and other productions. Thus, the centre and its surrounding area interact to each other. Therefore, in spatial context, the area where from inhabitants interact with the particular point of focus or market centre, is known as the trade area or market area or service area of the market centre. The market area or the service area of the market centres has described with different terminology. Many scholars have interpreted the adjoining areas of market centre as influence area, command area, trading area, catchment area, service area, tributary area or hinterland in the literature of marketing geography. Here the adjacent area of market

centre has been described as service area. The objective of the present chapter, primarily, is to make an enquiry of the service area of market centres in Karmala tahsil. The areas influenced by the markets are related to their functional importance. The size of the markets and the inter market distance are the other factors which affect the zone of influence of market centres. Thus, the region economically and commercially attached to a market centre is a market area.

There have been two approaches in the identification and delimitation of service area or market area. The first has looked outward from the market place in order to identified the areas which are served by the market place. The second has looked inward from the surrounding region and has been more concern with consumers behaviour and the way in which people use the various functions available at the market centre (Carter, 1972). Thus, service areas are complex areal phenomena and are a result of the size of market, economic structure, nature of accessibility, range of goods and consumers behaviour.

4.2 DELIMITATION OF SERVICE AREAS OF MARKET :

Geographers have used several methods to delimit the urban field of influence but a few studies are available regarding delimitation of service area of market centres. In this regard the work done by Berry (1967), Carruther (1967), Huff (1964), Reilly (1931) is worth mentioning. In India the

work done by Dixit (1977 and 1988), Saxena (1984), Srivastav and Gupta (1977), Srivastav V.K. (1984) and Tamaskar (1984) is seen as significant contribution in the literature of marketing geography.

The service areas of the market centres in the Karmala tahsil have been delimited by both methods i.e. Empirical method and Theoretical method.

4.3 EMPIRICAL METHODS :

For the empirical method intensive field work has carried out and data of the following parameters have been collected.

i) Vegetable supply zone.

ii) The residence of the customers/marketers who visit market place, either for the purchase or sale of various commodities.

iii) The range of medical services penetrating in the adjoining areas or the medical customers attracting to the market centres.

By the way of interviews, observations, questionnaires etc., the first hand information and statistical data for above mentioned functions and services have been collected and the service areas of different hierarchic orders of market centres have been delimited and depicted in Figs. 4.1, 4.2 and 4.3 .

4.4 SERVICE AREAS OF MARKET CENTRES BY SELECTED PARAMETERS :

The service area delimitted by empirical method clearly shows that the area and population served by each parameter for each market centre varies considerably.

4.3.1 Vegetable supply zone :

It is an important function which provides daily supply of fresh vegetables to the dwellers of market centres. On specific market day the supply of vegetables is comparatively higher than the daily supply, as the higher level of the demand on that day. The vegetable supply ranges from 15 to 20 kms at the Karmala market centre which is the first ranking market centre in the study region. The medium size market centres (second orders and third orders in hierarchy) have the average ranges of supply extents 7 to 10 kms. In the case of small market centres (the fourth orders) the range is only 3 to 5 kms (Fig.4.1).

4.3.2 Customer's residence zone :

This empirical method is most suitable for detailed study of an individual market centre. At the same time, it also suits in the study of market area/trading area of a market place. In the study region large number of customers are assembled for the market transactions at Karmala market place. An enquiry in this matter reveals that nearly fourty

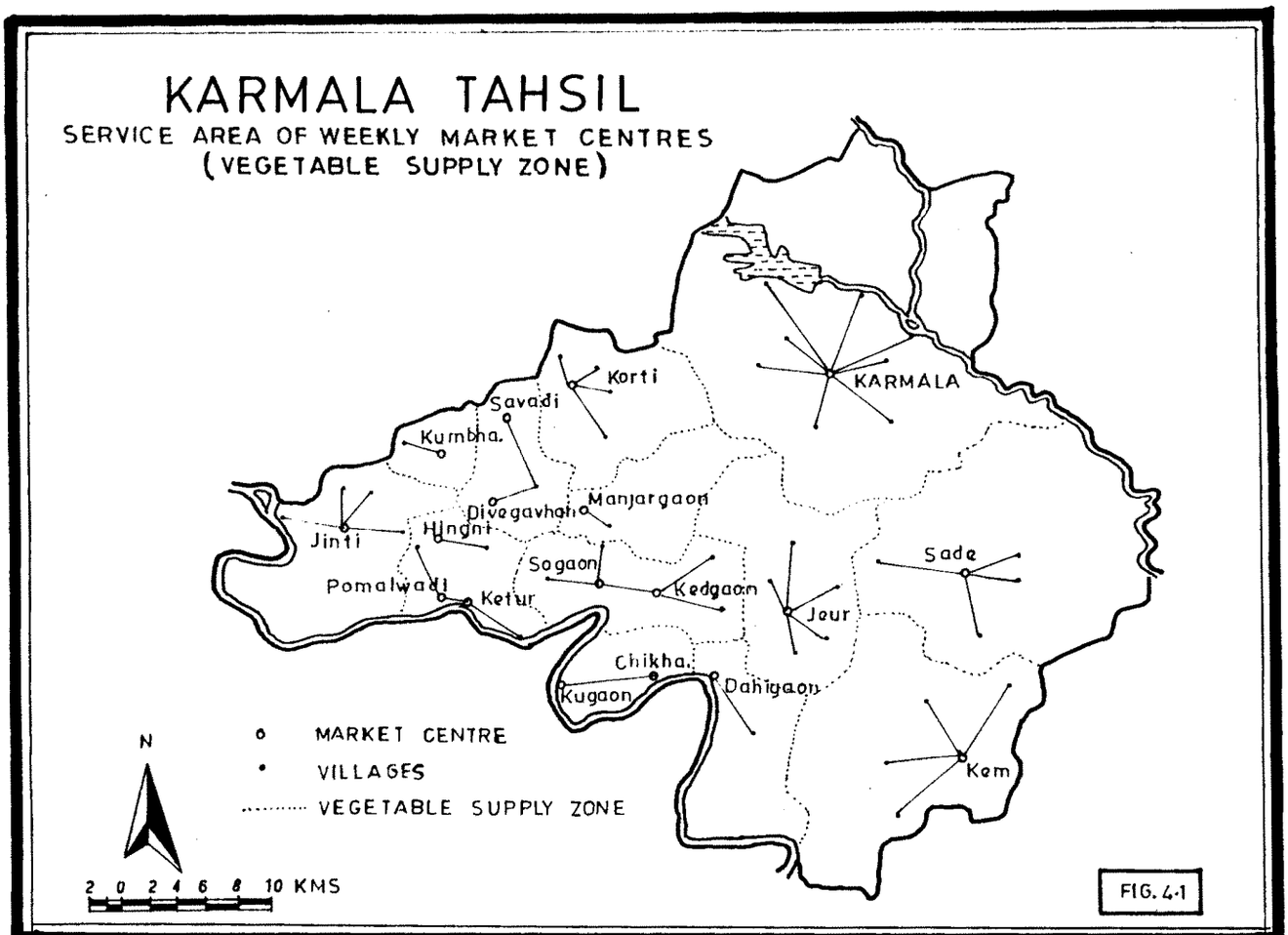
KARMALA TAHSIL
SERVICE AREA OF WEEKLY MARKET CENTRES
(VEGETABLE SUPPLY ZONE)
Korti
KARMALA
Savadi
Kumbha.
Manjargaon
Divegavhan
Hingni
Jinti
Sade
Sogaon
Pomalwadi
Ketur
Kedgaon
Jeur
Chikha.
Kugaon
Dahigaon
Kem
MARKET CENTRE
VILLAGES
VEGETABLE SUPPLY ZONE
N
2 0 2 4 6 8 10 KMS

FIG. 4.1

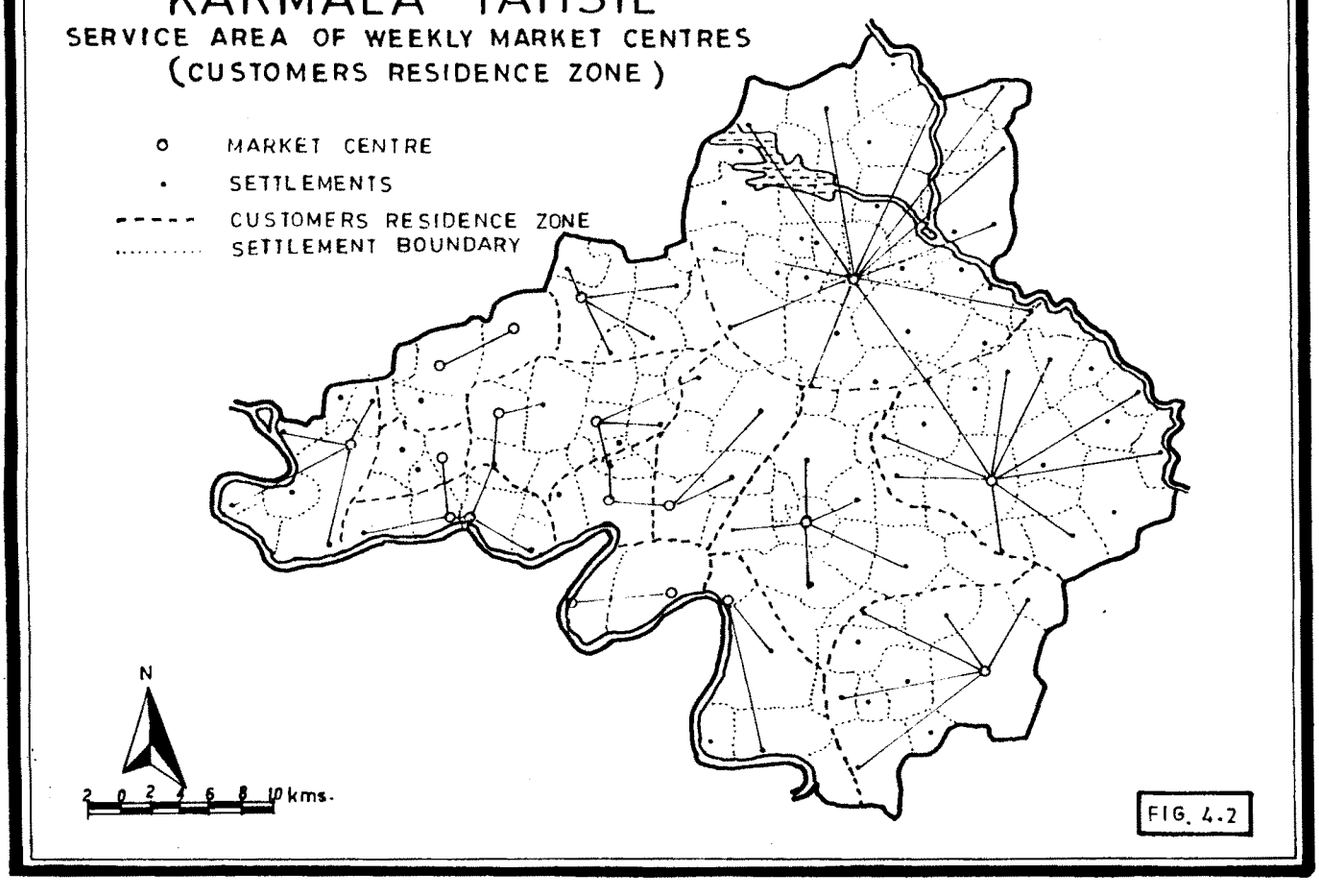
KARMALA TAHSIL
SERVICE AREA OF WEEKLY MARKET CENTRES
(CUSTOMERS RESIDENCE ZONE)
MARKET CENTRE
SETTLEMENTS
CUSTOMERS RESIDENCE ZONE
SETTLEMENT BOUNDARY
N
2 0 2 4 6 8 10 kms.

FIG. 4.2

villages have greater interaction with this regional market (1st order) centre. The villagers, by and large, prefer to travel 15 kms distance from their place of residence. Thus, Karmala is not only ranking first in population size, but also top the list in the size of service area and population served.

The second order, namely, Jeur and Jinti have 10 to 12 kms range, where from marketers visit these market centres either for selling or purchasing purposes.

The third order market centres including Kem, Ketur, Sade, Pomalwadi and Korti have the service area of 7 to 10 kms range.

The small (fourth order) market centres have comparatively very low range i.e. 5 kms with lower degree of interactions (Fig.4.2).

4.3.3 Medical service zone :

Besides the marketing services, medical services are also significant and available at market places. It is observed that the nearby villagers also avail the medical facilities on the market day. It is learned from the sample survey that on market day the out door patients are larger in numbers. Therefore, the medical services and their range also applied in the delimitation of service areas of market centres. It is observed that fourth order market centres have minimum range of medical services

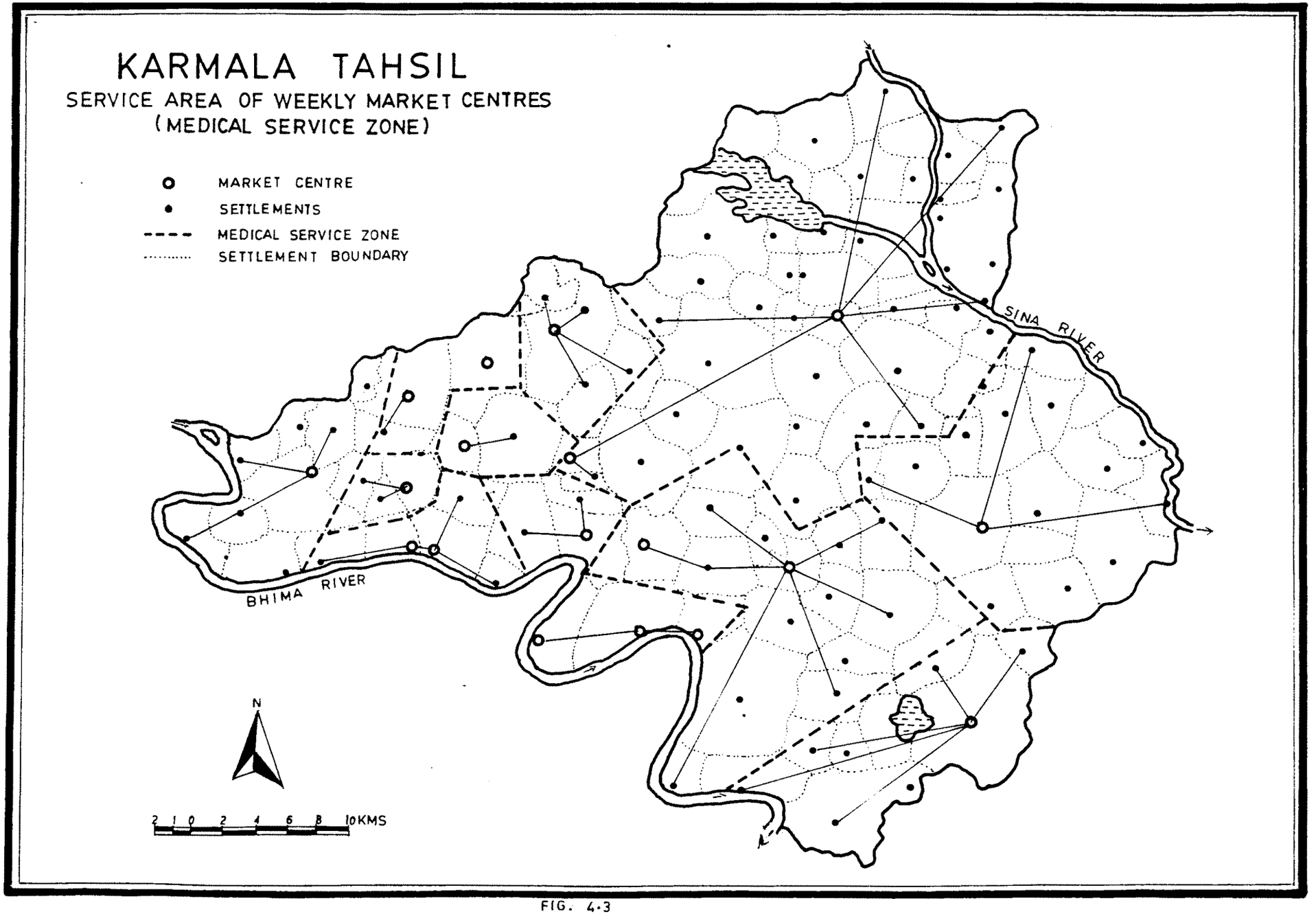
KARMALA TAHSIL
SERVICE AREA OF WEEKLY MARKET CENTRES
(MEDICAL SERVICE ZONE)
MARKET CENTRE
SETTLEMENTS
MEDICAL SERVICE ZONE
SETTLEMENT BOUNDARY
SINA RIVER
BHIMA RIVER
N
2 1 0 2 4 6 8 10KMS

FIG. 4·3

i.e. 5 kms. At the other end of the scale, the higher order market centres, where higher level of medical facilities are available, have maximum range of medical services i.e. 20 kms. Twelve to fifteen (12 to 15) kms range is observed in case of medium level of market centres (Fig.4.3).

Thus, it is interesting to note that, while identifying and delimiting the service areas of market centres in a rural landscape, the socio-economic parameters play a vital role and represents the reality of individual market centre and its service area.

The study of individual market centre and its service area can be undertaken by collecting first hand data, when the number of market centres are limited. But, when a large number of market centres are to be studied, the field data collection become laborious, time consuming and expensive. Under this circumstance empirical methods have little scope rather than the theoretical and quantitative methods.

The service areas of the market centres in the study region are also determined on the basis of the established method of V.L.S. Prakash Rao's (1958), and attempts are also made to introduce a method in a modified form.

4.5 NEW METHOD :

The new method is nothing but just a slight modification in the mathematically equation of V.L.S. Prakash Rao.

Rao's method includes the total number of urban population of the area and the population of the individual town to calculate the degree of influence of a town. We feel that, while calculating the degree of influence of a town, a merely population criteria may not be applied, however, the functional importance of a town (measured quantitatively in terms of centrality index), must be given due consideration, then the results may be more accurate and realistic. The same thred of thought keeping in mind the service areas of the market centres with a new method are calculated along with the original method and the results of both have been comparatively studied.

The original formula of V.L.S. Prakash Rao is as under.

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

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

Where, D - is the degree of influence

A - is total area of the region

U - is total urban population of the region

T - is town population

R - is the radius of a circle indicating the degree of influence

This formula has been slightly modified as under to determine the service areas of the market centres in the study region.

$$MSA = \frac{TC \times A}{C}$$

$$R = \sqrt{\frac{TC \times A}{C}}$$

Where, MSA - is the market service area,

TC - is the total centrality value of a market centre in terms of excess population served by selected functions

A - total area of study region

C - is total centrality of all weekly market centres in the study region in terms of total excess population served by selected functions and

R - Radius of a circle indicating the service area of the market centre.

(For the methodological details of the calculation of the centrality score used in this equation, please see Chapter - III).

Thus, the centrality values calculated by new, (excess population served) method have been considered to calculate the

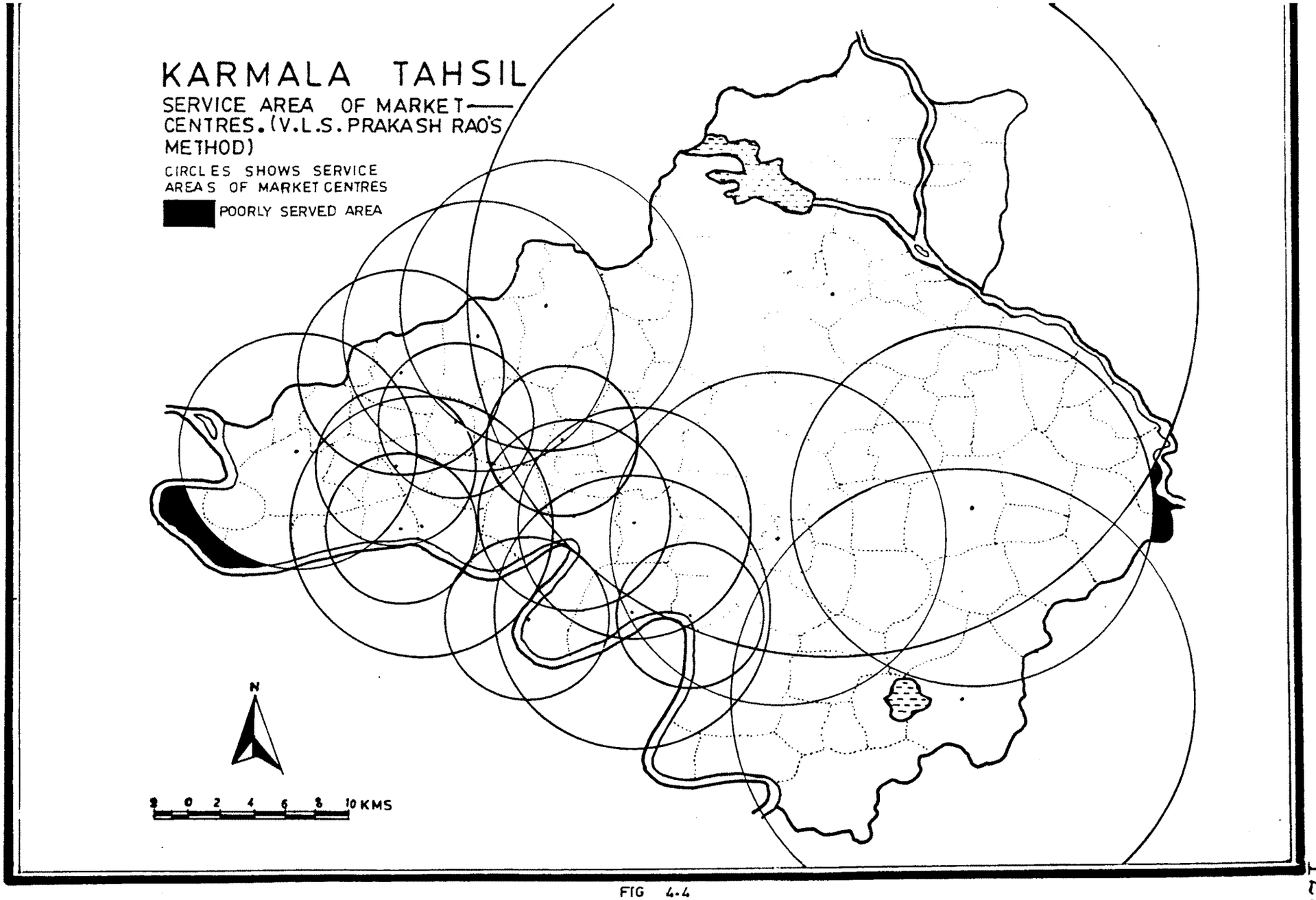
KARMALA TAHSIL
SERVICE AREA OF MARKET CENTRES. (V.L.S. PRAKASH RAO'S METHOD)
CIRCLES SHOWS SERVICE AREAS OF MARKET CENTRES
POORLY SERVED AREA
N
0 2 4 6 8 10 KMS

FIG 4.4

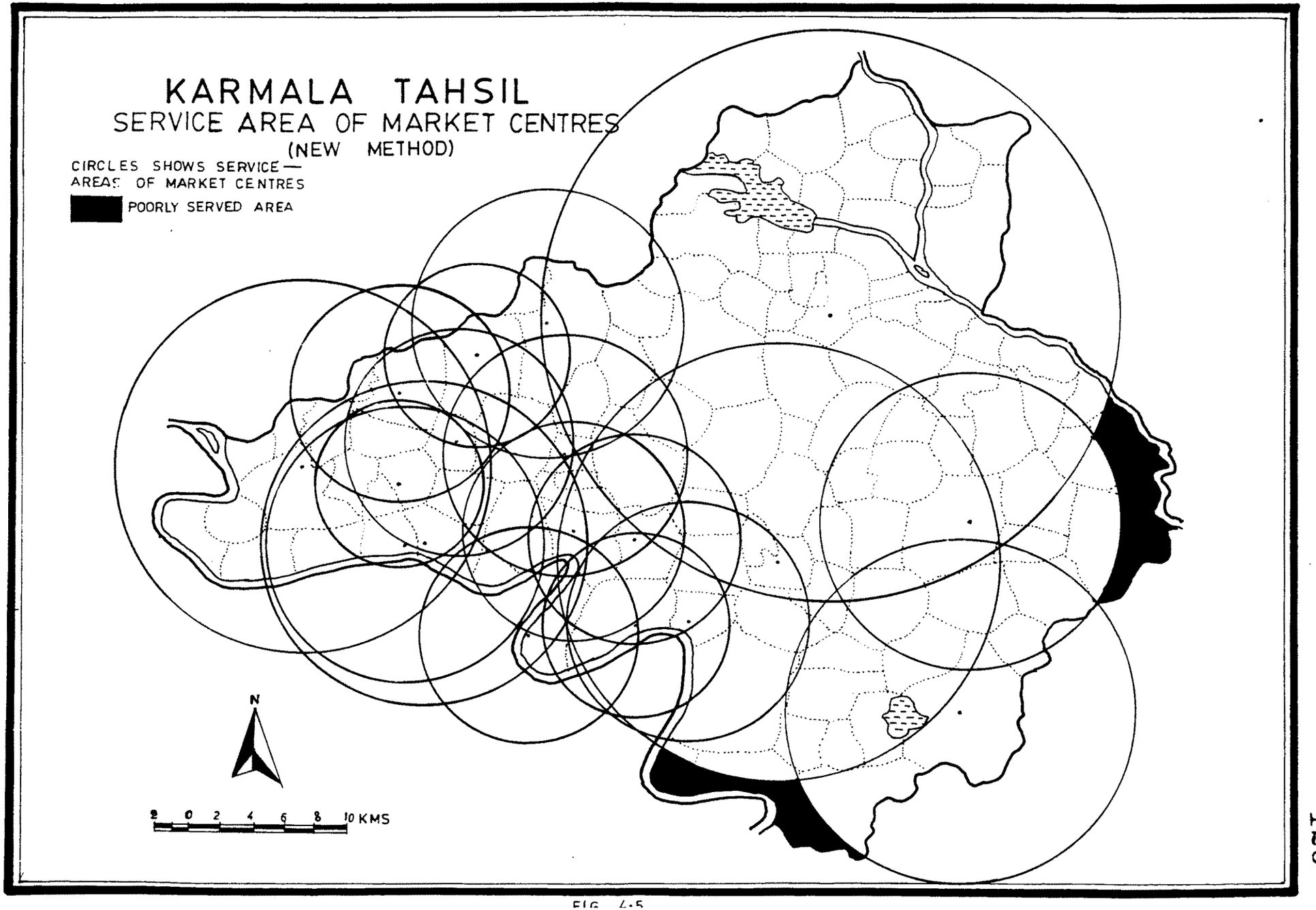
KARMALA TAHSIL
SERVICE AREA OF MARKET CENTRES
(NEW METHOD)
CIRCLES SHOWS SERVICE AREAS OF MARKET CENTRES
POORLY SERVED AREA
N
2 0 2 4 6 8 10 KMS

FIG 4.5

'R' values for all the market centres. To understand the suitability and even superiority of the modified new method, the 'R' values for all the weekly market centres have also been calculated by the V.L.S Prakash Rao's method (Table 4.1) and depicted in Figs.4.4 and 4.5 .

4.6 REGIONAL ANALYSIS OF SERVICE AREAS :

The comparative study of the service areas computed by the new method along with traditional, clearly reveals that if a market centre has got a greater functional magnitude, then it has a greater range of service, inspite of its smaller population size. This is evident from the following examples. Pomalwadi, Manjargaon and Dahigaon market centres have ranks of 17th, 16th and 18th in population size and have 8.91 kms^2, 7.71 kms^2 and 7.50 kms^2 range of service areas respectively. These ranges of the service areas are nearly double of the size of the service areas derived from the V.L.S. Rao's method.

The same is the situation of Jinti market centre which ranks 9th in population size, has a service area ranging upto 12.14 sq.kms. On the other hand, Chikhalthan and Savadi which ranks 6th and 7th in population size, have a limited range of service area upto 5.68 sq.kms and 5.58 kms respectively; because of their smaller functional magnitude and lower centrality. If the service areas of these two market centres are calculated by Rao's method, they have a range of 8.93 sq.kms and 8.38 sq.kms

TABLE 4.1 : Market centres, population rank, centrality rank and 'R' values by original and new Method.

Sr. No.	Name of weekly market centre	Population rank	'R'value by original method *	Centrality rank	'R'value by new method *
1	Karmala	1	22.94	1	18.35
2	Jeur	4	10.53	2	14.05
3	Jinti	9	7.44	3	12.14
4	Kem	2	14.55	4	11.20
5	Ketur	8	8.25	5	10.34
6	Sade	3	11.50	6	9.75
7	Pomalwadi	17	4.68	7	8.91
8	Korti	5	9.12	8	8.64
9	Manjargaon	16	4.78	9	7.71
10	Dahigaon	18	4.49	10	7.50
11	Divegavhan	14	5.05	11	7.24
12	Sogaon	12	6.15	12	6.99
13	Kugaon	15	4.92	13	6.96
14	Kumbhargaon	11	6.48	14	6.83
15	Kedgaon	10	7.18	15	6.56
16	Chikhalthan	6	8.93	16	5.68
17	Savadi	7	8.38	17	5.58
18	Hingani	13	5.07	18	5.22

* Values expressed in terms of degree of influence in sq.kms

SOURCE : Compiled by the Author.

respectively. With these sample cases and other observation it is generalized that the functional significance of a market centres must be given due consideration rather than merely population size, while delimitting their service areas. Table 4.1 shows details of the range of service areas of the market centres within the study region.

4.7 CHARACTERISTICS OF SERVICE AREAS :

By applying the modified method, the service areas of all the weekly market centres in the hierarchic has been delimited. Table 4.2 shows the information of hierarchy orders of market centres, area served, population served, number of lower order market centres served and number of villages served by individual market centre in the study region.

Karmala, being a first order market centre of the region served a large volume of population and area. It provides it's services to three lower order market centres and 75 villages. A closer examination of the market area characteristics shows that Karmala serves about 810 sq.kms area and it offers services to one lakh population, whose range of service is more than 18 sq. kilometers.

The second order of hierarchy includes two market centres; namely, Jeur and Jinti. Of these two centres, Jeur commands greater area and population than the Jinti market centre. Comparatively Jinti serves less areas and limited population, inspite of, its

TABLE 4.2 : Area, population and settlements served by different orders of weekly market centres.

Sr. No.	Name of weekly market centre	Hierarchic order of W.M.C.	Area served in sq.kms	Population served	Number of lower order market centres served					No. of villages served
					I	II	III	IV	Total	
1	Karmala	I	810.57	100,402	-	1	2	-	3	75
2	Jeur	II	595.96	63,648	-	-	1	4	5	43
3	Jinti	II	196.79	18,267	-	-	2	3	5	21
4	Kem	III	222.11	25,927	-	-	-	-	-	18
5	Ketur	III	210.57	21,507	-	1	1	6	8	23
6	Sade	III	279.67	31,884	-	-	-	-	-	25
7	Pomalwadi	III	144.46	15,435	-	1	1	2	4	17
8	Korti	III	176.36	13,586	-	-	-	2	2	16
9	Manjargaon	IV	193.75	19,560	-	-	-	3	3	18
10	Dahigaon	IV	166.04	18,565	-	1	-	2	3	13
11	Divegavhan	IV	170.00	18,390	-	-	2	4	6	19
12	Sogaon	IV	141.12	12,561	-	-	-	3	3	15
13	Kugaon	IV	59.14	5,857	-	-	-	1	1	6
14	Kumbhargaon	IV	100.73	11,511	-	-	-	3	3	12
15	Kedgaon	IV	128.80	12,500	-	-	-	3	3	14
16	Chikhalthan	IV	76.05	7,708	-	-	-	3	3	7
17	Savadi	IV	99.18	9,535	-	-	1	2	3	7
18	Hingani	IV	81.07	8,250	-	-	2	1	3	13

SOURCE : Compiled by Author.

second order in hierarchy (Table 4.2). It happens so, because Jinti serves a considerable larger area and population outside the study area.

Third order market centres includes Kem, Ketur, Sade, Pomalwadi and Korti, which serves the mean area of 206.63 sq. kms and mean population of 21,667. By and large, 20 villages are being served by each third order market centre.

Fourth order market centres are larger in number, however, the area and population served by them are small in size. Out of the total market centres, ten market centres, namely, Manjargaon, Dahigaon, Divegavhan, Sogaon, Kugaon, Kumbhargaon, Kedgaon, Chikhalthan, Savadi and Hingani are included in this order and served mean area of 121.59 sq. kms and mean population of 12,444. As well as 12 villages are being served by individual fourth order market centres (Table 4.3).

TABLE 4.3 : Mean area, population and villages served by hierarchic market centres.

Hierarchical order of weekly market centre	Mean area in sq.kms served	Mean population served	Mean No. of Villages served
I	810.57	100,402	75
II	396.38	40,958	32
III	206.63	21,667	20
IV	121.59	12,444	12

SOURCE : Compiled by Author.

The delimitation of service area/market area is one of the important research field of the marketing geography because such measurment is the basis of presenting marketing data evaluating the overall performance of market centre, studying interdependance of the market centres and the villages and the interaction that exist between the market centre and its service area. Both the empirical and theoretical methods discussed in this chapter reveals the variations in the size, range, population served and area served by market centres. The discussed theoretical and empirical methods are complementary to each other and open to criticism.

The service areas calculated by new method reveals the fact that there is a considerable overlapping in the service areas of the centres along the river Bhima, where more than 50 percent market centres are concentrated in the range of 7 to 9 kms. Therefore, this part of the region is relatively well served. On the other hand, the eastern part of tahsil and the Sina Valley region where Kem, Sade and Karmala dominates the region. Particularly Karmala dominates the larger proportion of the study region with an overlapping of the market areas of Sade, Jeur and Korti market centres and large number of the villages. The poorly served areas are observed at the marginal tracts.

The analytical study of service areas shows the fact that it varies in size and more dominant centres have large area. Another fact is that the service area of less dominant centres tends to nest in the service area of more dominant centres.

REFERENCES

1. Berry, B.J.L. (1967) : Geography of market centres and retail distribution. Englewood Cliffs, New Jersey, Prentice-Hall, pp. V, 125, 2, 3.
2. Carter, H. (1972) : The study of urban geography. Edward Arnold, London, pp.103-114.
3. Carruthers, I. (1967) : Major shopping centres in England and Wales. Regional Studies, I, pp.65-81.
4. Dixit, R.S. (1977) : On the delimitation of the Umland of a Metropolis Kanpur. National Geographer, xii,1.
5. Dixit, R.S. (1988) : Spatial organization of market centres. Jaipur, Jain Pointer Publishers.
6. Huff, D.L. (1964) : Defining and Estimating a trade area. Journal of marketing, 28, pp.34-38.
7. Prakash Rao, V.L.S. (1958) : Towns of Mysore State.
8. Reilly, W.J. (1931) : The low of retail gravitation. New York.
9. Saxena, H.M. (1984) : Geography of marketing. Sterling Publishers, New Delhi.
10. Srivastav, R.C. and Gupta, J.P. (1977) : Demarcation of market area regions of periodic markets of Kanpur metropolis. Indian Science Congress Proceedings.

11. Srivastav, V.K. (1984) : Socio-economic hierarchy of markets in North India. Geographical Review of India, 46, 2, pp.49-52.

12. Tamaskar, B.G. (1984) : The role of periodic market places as centres of diffusion. The Deccan Geographer, XXII, 3, pp.519-525.

ooo