

Chapter VI

URBAN-RURAL INTERACTION VIS-À-VIS RURAL DEVELOPMENT

In the final phase of the present investigation, the facets of Rural Development have been focused in the light of Urban-Rural Nexus. In other words, an association between these two attributes has been explored. Again, the influence of the selected urban centres has been viewed in the perspective of their rural surroundings to evaluate the process of interaction and associated development in an indirect way. In this context, Gibbs's observation may be quoted: "The influence of an urban centre on surrounding territory is manifested in a gradient, which appears in the tendency of the characteristics of rural population to resemble those of the urban population in a direct ratio to the proximity of the two populations"¹(Gibbs, 1961, pp.546).

The present analysis has been carried out in three parts, which are as follows:

- A. To measure the distance-decay effect of urban influence, the association between the distance from the nearest town on the one hand and the different demographic and socio-economic features of the respective village on the other has been worked out.
- B. The information on household (sampled) level indicators of development, clubbed into village level development index, has been regressed with the urban-rural interaction index to identify the impact of urban-rural interaction on rural development.
- C. A sketch of the people's perception regarding the urban-rural interaction and associated rural development has been given.

6.1 Hypotheses

In this part of analysis the following hypotheses (no. 7, 8 and 9 -- as mentioned in 'Introduction') have been verified:

- The population density, growth rate of population, literacy rate, percentage of workers in secondary sector, percentage of workers in tertiary sector,

agricultural labourer-cultivator ratio, infrastructures of the concerned hinterland are hypothesised to wane off with the increasing distance from towns

- The sex ratio, the work participation rate and the percentage of workers in primary sector are expected to rise as distance increases from the towns.
- Higher the levels of interaction between a town and its hinterland, higher may be the levels development of hinterlands (rural development), and vice versa, i.e. the levels of urban-rural interaction and levels of development of villages are directly correlated. Further, the process of urban-rural interaction has a positive impact on the levels of development of the villages.
- Higher the status of an urban centre, greater will be its impact on the development of the villages of its hinterland.

6.2 Methodology

The following methodology has been adopted here:

a) For studying the *distance-decay effect of urban influence*, a distance-wise distributional picture of the indicators mentioned hereafter has been illustrated. To obtain an average perception of the socio-demographic attributes of each urban-hinterland, simple mean of the following indicators has been worked out for each distance-zone of the hinterlands. Attempt has been made to bring out the commonalities and variations in each zone.

The *indicators* considered to evaluate urban influence are as follows:

1. Density of Population (per sq. km)
2. Growth Rate of Population (in percentage)
3. Sex Ratio (per 1000)
4. Literacy Rate (in percentage)
5. Work participation rate (in percentage)
6. Percentage of workers in the Primary sector
7. Percentage of workers in the Secondary sector
8. Percentage of workers in the Tertiary sector
9. Agricultural labourer-Cultivator ratio (per 100)

10. Composite index of Infrastructures in the village (The calculation has been made according to the formula discussed in ‘Methodology’ section of the ‘Introduction’)

b) To elicit the *levels of development*, data on various characteristics of surveyed households have been utilised and this household level information has been aggregated to form a village-level development picture. The method of ‘first principal component’ has been applied to construct the ‘*Index of Development*’. (The index has been made following the same procedure as that for ‘EUI’ and ‘RDI’, discussed in the ‘Methodology’ section of the ‘Introduction’). The parameters selected as the determinants of rural development are as follows-

- 1) Percentage of Rural Households with family income of Rs.12,000/month
 - 2) Percentage of Rural Households with per capita income of Rs.1001-2500/month
 - 3) Percentage of heads of the Rural Households with Higher Secondary level of education
 - 4) Percentage of Rural Households with more than 75% of Non-Farming Workers
 - 5) Percentage of Rural Households reading Newspapers
 - 6) Percentage of Rural Households with Pucca Houses
 - 7) Percentage of Rural Houses with electricity
 - 8) Percentage of Rural Houses with toilet
 - 9) Percentage of Rural Houses with Bathroom
 - 10) Percentage of Rural Households with Tape recorder
 - 11) Percentage of Rural Households with Refrigerator
 - 12) Percentage of Rural Households with Television
 - 13) Percentage of Rural Households with Motorbike
- c) To identify the relationship between the urban-rural interaction and rural development, correlation analysis has been made between the ‘*Index of Urban-Rural Interaction*’ and the ‘*Index of Development*’. A simple linear regression has also been

worked out between these two parameters taking the '*Index of Urban-Rural Interaction*' as independent variable and the '*Index of Development*' as the dependent variable to evaluate the impact of urban-rural interaction on rural development.

d) The people's perception about urban-rural interaction and associated rural development has been analysed from the graphs showing the distribution of heads of the rural households according to their opinion.

6.3 Distance-decay of urban influence on Demographic and Social Characteristics:

The recognition of demographic and social aspects in a study of urban influence on rural areas is of utmost importance as the process of urbanisation has a demographic connotation. The present section investigates the influence of the selected urban centres on the demographic and social features of their rural surroundings.

6. 3.i Density of Population

Density of population is an important demographic characteristic which speaks about the prevalence of the intensity of urban influence on the surrounding rural areas. So far as distance is concerned, one must have a look on how density of population varies in the different distance zones of hinterlands.

Table 6.1 states the average density of population of the hinterlands selected in different distance zones of the five selected towns.

Among the immediate vicinity (0-5 km.) of the five towns, the fringe of Koch Bihar has got the highest average density both in 1991 and 2001. But within 5 to 15 km, maximum density is observed for the hinterlands of Tufanganj and for the subsequent zones, i.e., within 15 to 25 km the hinterlands of Dinhata witness the highest density during 1991. This trend is for 1991. In 2001, Koch Bihar's hinterland in 5-10km distance-zone represents the highest average density; and, for the next zone, Jalpaiguri's hinterland tops the list. For the farthest zone, Dinhata's urban field has got the highest average density both in 1991 and 2001.

Table 6.1 **Distance-wise Distribution of Average Density of Population
in different Hinterlands**

| Hinterland of | Year | Density/ sq.km in the following distance zones (km) | | | | |
|---------------|------|---|---------|---------|---------|--------|
| | | 0--5 | 5---10 | 10--15 | 15--20 | 20--25 |
| Koch Bihar | 1991 | 1597.21 | 1007.71 | 997 | 643 | 472.58 |
| | 2001 | 2270 | 1165 | 1162 | 704.52 | 536.42 |
| Dinhata | 1991 | 1096.44 | 1055.47 | 776.80 | 1998 | 750.60 |
| | 2001 | 1176 | 1159.12 | 830.86 | 388.35 | 831.40 |
| Tufanganj | 1991 | 939.22 | 3260 | 1267.6 | 407.4 | 665 |
| | 2001 | 1169.48 | 831.08 | 1498.62 | 492.27 | 756.62 |
| Jalpaiguri | 1991 | 996.49 | 617.75 | 1270.09 | 488.77 | 320.88 |
| | 2001 | 866.96 | 626.93 | 1527.52 | 606.125 | 479.45 |
| Alipurduar | 1991 | 894.38 | 544.85 | 255 | 471 | 626.23 |
| | 2001 | 1094.18 | 588.93 | 256.62 | 547.24 | 803.48 |

Source: Computed from Census data

The density gradient is the most well-defined in the urban field of Koch Bihar for both the time periods. It is distinct in Dinhata and Alipurduar from the immediate periphery to 15 km, after which the gradient is distorted. In 2001, Dinhata's surroundings have experienced the gradient up to 20 km. In the surroundings of Tufanganj, no definite pattern can be discerned. In case of Jalpaiguri, two zones of density gradient have emerged, i.e., from 0 to 10, from 10 to 25. The larger geographical areas of the fringe villages of Jalpaiguri, viz., Kharia and Paharpur as compared to that of the remoter villages and that of the other adjacent villages of other towns is a reason for their (fringe villages) lower densities than that of the villages situated at the same distance zones of the other towns, in spite of the fact that those villages of Jalpaiguri have a larger population base.

Figure 6.1a and 6.1b shows a graphical illustration of the density gradient respectively for 1991 and 2001.

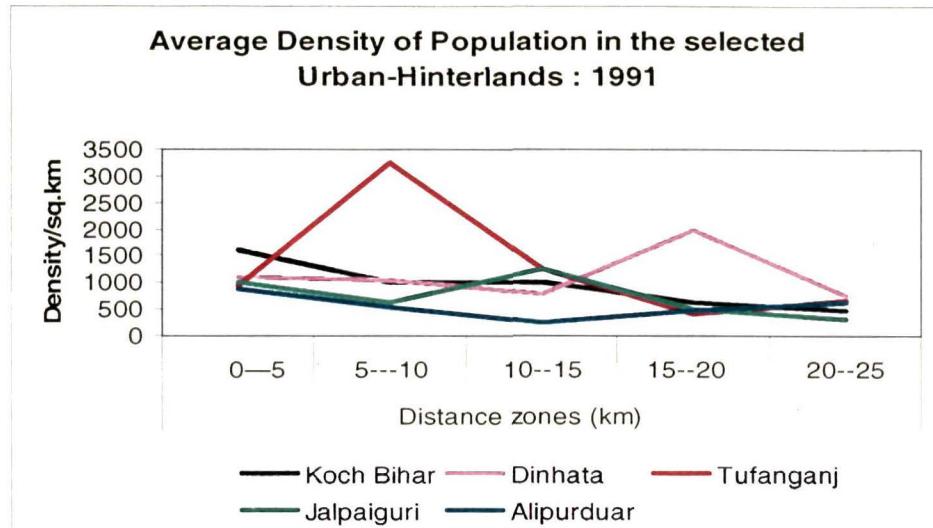


Figure 6.1a

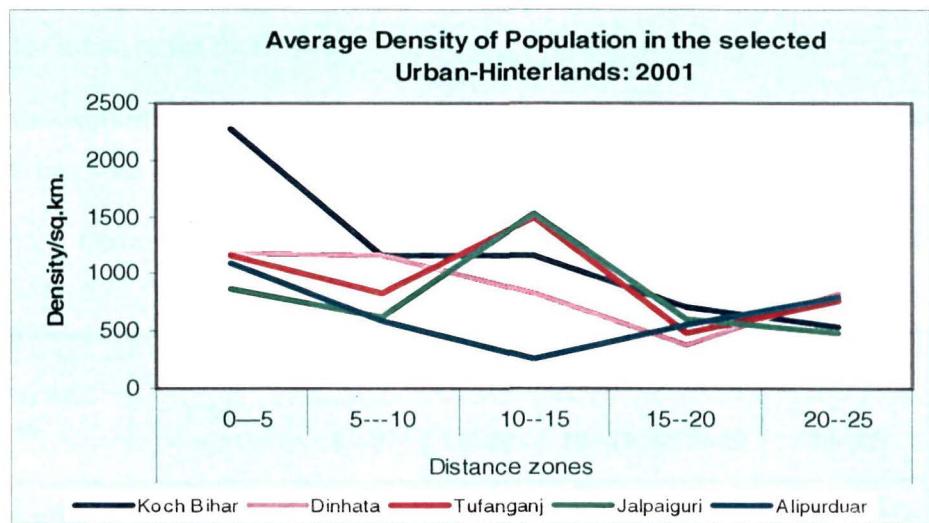


Figure 6.1b

A distance-decay tendency is noticeable for the villages around Koch Bihar and for the rural areas around Dinhata and Alipurduar up to 15 km, whereas the other areas do not show any definite trend. Of course, it is true that in general the close peripheries have much higher densities than that of the corresponding farthest peripheries. The investigation of the correlation between distance and population density reveals an inverse relationship which is moderately high (-.699) (significant at 1% level) only for the hinterland of Koch Bihar.

An examination of population density reveals that among the five towns, Tufanganj has the highest density, i.e., 18657/sq.km, which may be because of its very small geographical area (.88 sq.km which is the smallest among the five towns) and also for a large influx of population from Assam favoured by its proximity and connectivity with Assam through NH 31. The higher density of the town has been reflected in the densities of not of the adjacent communities but of the villages of the next distance-zones.

6. 3.ii Population Growth Rate

The gradient of urban influence in terms of population growth rate may be assumed to taper off with the increase of distance from cities, because of the decreasing migration rate from the urban to the rural areas.

A close examination of distance-wise variations in average growth rate of the selected hinterlands has been focused in table 6.2 and by figure 6.2.

Table 6.2 Distance-wise Distribution of Average Growth Rate of Population in different Hinterlands

| Hinterland of | Year | Population Growth Rate (%) in the following Distance Zones (km) | | | | |
|---------------|-----------|---|--------|--------|--------|--------|
| | | 0—5 | 5--10 | 10--15 | 15--20 | 20--25 |
| Koch Bihar | 1981-1991 | 91.78 | 22.96 | 26.94 | 42.06 | 13.28 |
| | 1991-2001 | 35.12 | 17.97 | 15.82 | 3.04 | 16.30 |
| Dinhata | 1981-1991 | 23.37 | 29.38 | 28.55 | 354.04 | 58.34 |
| | 1991-2001 | 7.37 | 11.56 | 6.81 | -80.42 | 10.63 |
| Tufanganj | 1981-1991 | 26.52 | 469.00 | 32.54 | 25.26 | 23.77 |
| | 1991-2001 | 23.56 | -74.38 | 17.74 | 20.27 | 12.92 |
| Jalpaiguri | 1981-1991 | 34.63 | 42.65 | -4.52 | 18.45 | -10.48 |
| | 1991-2001 | -13.00 | 1.49 | 24.2 | 26.45 | 69.18 |
| Alipurduar | 1981-1991 | 31.07 | 26.29 | 18.09 | 13.03 | 26.24 |
| | 1991-2001 | 20.79 | 8.00 | 0.69 | 16.35 | 28.35 |

Source: Computed from Census

The assumption of decreasing population growth rate with the increasing distance from towns has been distinctly noticed in the urban catchments of Alipurduar and Koch Bihar up to 20km for the period of 1981-1991 and 1991-2001 respectively and up to

Average Growth Rate of Population in the Distance-Zones of the selected Urban-Hinterlands

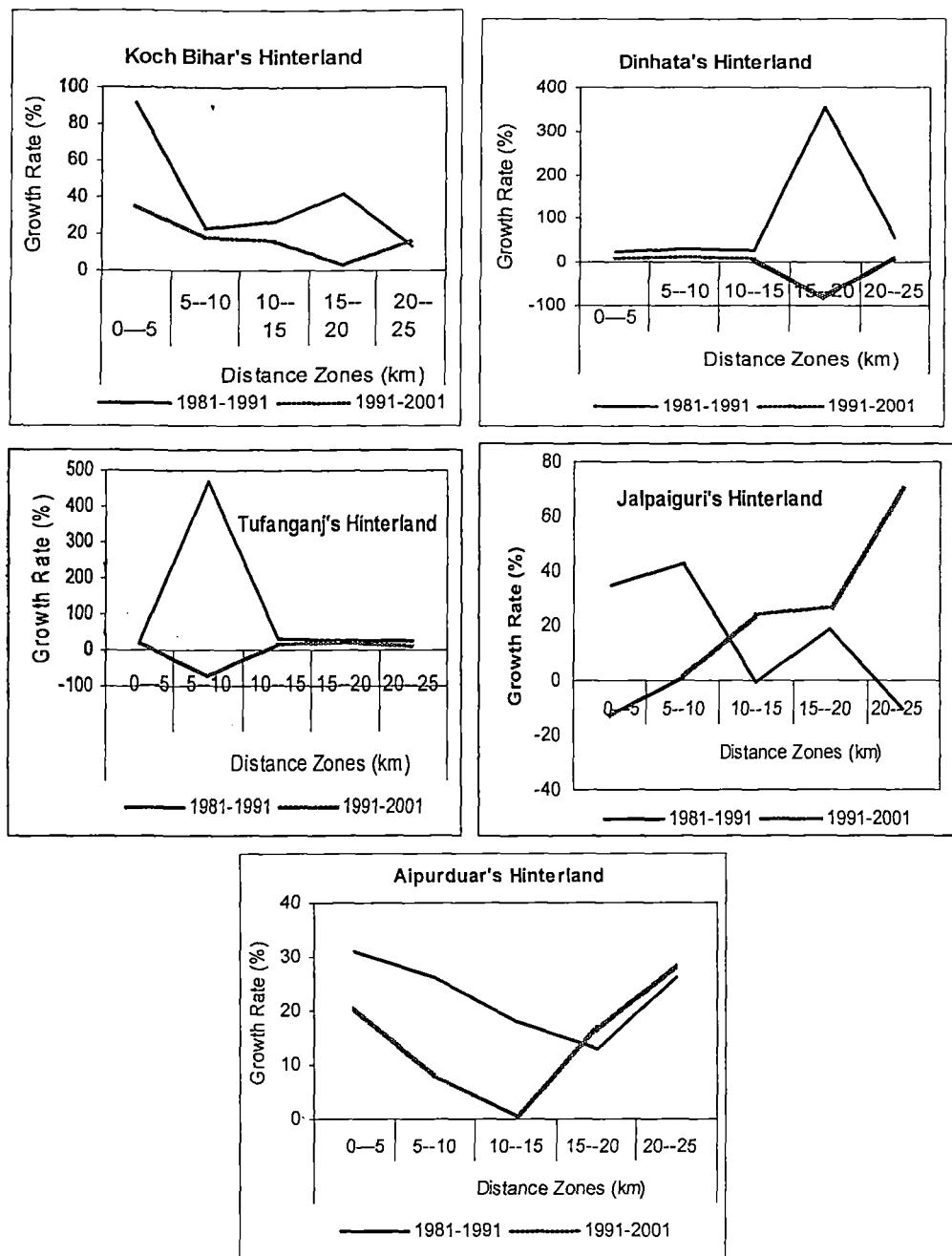


Fig. 6.2

15 km in the following decade for the hinterland of Alipurduar. But these two same regions do not reflect distance-decay of population growth rate respectively for the decades of 1991-2001 and 1981-91. An overall pattern of lower growth rates in the distant hinterland than in the close hinterland have been marked in Koch Bihar's urban field in 1981-91 and to some extent in Jalpaiguri's hinterland during 1981-1991,

although that pattern is not a steady one. Again, a distinct rising growth pattern has been marked in the hinterland of Jalpaiguri in 1991-2001.

For Tufanganj, the village lying in the immediate vicinity of the town has lower growth rate than that of the subsequent one, wherefrom the gradient of population growth rate has been operating steadily till the remotest zone. This finding may be corroborated by the fact of higher average densities in the same zone as has been discussed earlier in this chapter (section 6.3.i). It is also true that the higher land price in the town and its immediate periphery has repelled the migrants to settle there; thus the urban-ward migrants have settled in the adjacent zone of the immediate periphery, availing of benefits of the National Highway 31 to commute to the town.

The peripheries of Dinhata give a contrary image of the proposed hypothesis with the increasing tendencies of the growth rate in 1981-1991 up to 20km, while in the subsequent decade this region does not bear any clear pattern.

Thus, regarding population growth rate the urban field of Koch Bihar relates to distance more or less inversely which is more distinct than that of the other regions. Of course, similar pattern has emerged for the hinterland of Jalpaiguri in the decade 1981-91.

6.3.iii Sex Ratio

The implication of ‘sex ratio’ as an index of development lies in the demographic set-up of a region. It is generally found that the immediate surroundings of the city possess more males than females, although to a lesser degree than those in the city. It is because selective male migration takes place to those areas as the employment opportunities are offered by the city more to the males than the females. The masculinity of the population, therefore, falls or the femininity rises progressively at least up to a certain distance from the city periphery. Table 6.3 gives the distance-wise distribution of average sex ratio in the selected rural hinterlands.

The expected pattern of sex ratio has been detected only in the hinterlands of Dinhata up to a distance of 20 km during 1991, but in 2001 this region has experienced no regular pattern. A rising trend has been maintained from fringe settlements to the next zone (5-10 km.) surrounding Koch Bihar, Tufanganj and Alipurduar in 1991. The hinterlands of Jalpaiguri do not display any definite pattern regarding sex ratio. Thus, rural sex ratio has not responded much to the challenges of urbanisation in the present context.

**Table 6.3 Distance-wise Distribution of Average Sex Ratio
in different Hinterlands**

| Hinterland of | Year | Average Sex Ratio (per 1000) in the following Distance Zones (km) | | | | |
|---------------------|------|---|-------|--------|--------|--------|
| | | 0--5 | 5--10 | 10--15 | 15--20 | 20--25 |
| Koch Bihar (962) | 1991 | 947 | 951 | 918 | 901 | 967 |
| | 2001 | 952 | 902 | 949 | 928 | 922 |
| Dinhata (937) | 1991 | 911 | 914 | 936 | 942 | 742 |
| | 2001 | 942 | 895 | 930 | 956 | 945 |
| Tufanganj (957) | 1991 | 932 | 953 | 932 | 935 | 930 |
| | 2001 | 966 | 934 | 952 | 970 | 986 |
| Jalpaiguri (963) | 1991 | 948 | 911 | 932 | 906 | 897 |
| | 2001 | 949 | 941 | 960 | 941 | 920 |
| Alipurduar (782) | 1991 | 982 | 1030 | 937 | 963 | 932 |
| | 2001 | 940 | 940 | 919 | 974 | 935 |

Note: The figures in Parentheses represent the sex ratios of the respective urban centres.

Source: Computed from Census

6.3.iv Literacy Rate

The impact of urban influence on rural surroundings can be gauged by the proportion of rural literate persons. As an urban area is the centre for socio-cultural development, literacy rate is supposed to have a downward gradient from the city towards its peripheries.

In table 6.4, the mean literacy rates of the villages of hinterland of different towns have been given for the distance-zones of the selected urban-hinterlands.

It is found that the fringe habitats around Jalpaiguri have the highest average literacy (total, male, and female) compared to that of the same zones around other towns during 1991. But with the progress of time, i.e., in 2001, the fringe settlements of Dinhata have occupied the highest position in respect of the average literacy (total, male, female) rates. In regions between 5 and 25 km, the highest literacy is observed in the hinterland of Koch Bihar during 1991. In general, the proportions of literates have increased in all the regions during 2001, which is expected.

**Table 6.4 Distance-wise Distribution of Average Literacy Rate
in different Hinterlands**

| Hinterland of | Year | | Average Literacy Rate (%) in the following Distance zones (km) | | | | |
|---------------|------|---|--|--------|---------|---------|---------|
| | | | 0---5 | 5---10 | 10---15 | 15---20 | 20---25 |
| Koch Bihar | 1991 | T | 42 | 55 | 53 | 51.41 | 54 |
| | | M | 49 | 66.5 | 62 | 60.38 | 55 |
| | | F | 34 | 42.42 | 43 | 41.5 | 48 |
| | 2001 | T | 56.35 | 69 | 69 | 66.56 | 62 |
| | | M | 63 | 75 | 76 | 73.54 | 68 |
| | | F | 49.34 | 62 | 61 | 59 | 56 |
| Dinhata | 1991 | T | 49.42 | 32 | 34.14 | 37.25 | 35 |
| | | M | 59 | 39 | 44 | 46.22 | 44 |
| | | F | 39.3 | 24 | 24 | 27.75 | 29 |
| | 2001 | T | 64.75 | 54.76 | 56.07 | 68.75 | 56.28 |
| | | M | 72.52 | 62.51 | 64.73 | 75.56 | 65.38 |
| | | F | 56.51 | 46.13 | 46.745 | 61.63 | 46.62 |
| Tufanganj | 1991 | T | 37.05 | 34.52 | 45.83 | 27.16 | 37.18 |
| | | M | 46.64 | 45 | 55.18 | 39.34 | 48.42 |
| | | F | 26.76 | 23.12 | 35.8 | 14.13 | 25 |
| | 2001 | T | 55.46 | 52.69 | 62.31 | 48.46 | 50.54 |
| | | M | 63.92 | 60.94 | 68.57 | 57.31 | 57.33 |
| | | F | 46.70 | 43.84 | 55.73 | 39.33 | 43.66 |
| Jalpaiguri | 1991 | T | 55 | 37.58 | 40.67 | 32.64 | 31.40 |
| | | M | 62 | 46.30 | 48.56 | 44 | 40.5 |
| | | F | 47.66 | 28.00 | 38 | 20.5 | 21.25 |
| | 2001 | T | 60.38 | 54.34 | 63 | 52.14 | 51.915 |
| | | M | 67.59 | 61.44 | 69.41 | 60.025 | 61.25 |
| | | F | 52.80 | 46.79 | 56.535 | 43.720 | 41.54 |
| Alipurduar | 1991 | T | 48.40 | 30 | 17.67 | 53.82 | 28.61 |
| | | M | 56.00 | 39 | 26.31 | 68 | 36 |
| | | F | 40.23 | 20.24 | 8.45 | 39.45 | 20.51 |
| | 2001 | T | 62.055 | 55.33 | 41.64 | 61.02 | 52.13 |
| | | M | 68.58 | 62.91 | 52.18 | 70.96 | 60.30 |
| | | F | 55.115 | 47.26 | 30.17 | 50.82 | 43.39 |

Source: Computed from Census

The striking fact is that as a whole the hinterland of Koch Bihar shows either an increment or uniformity in the proportions of literates along with distance. Contrarily, with few irregularities (in the zone of 10-15km), the urban field of Jalpaiguri has witnessed an overall distance-decay of literacy rates. The distance-decay for literacy rates is effective from the closest periphery to 15 km for the surroundings of Alipurduar, while it is observed in a feeble way from the fringe to the next zone (5-10km) in case of Dinhata and Tufanganj where it has increased thereafter.

Thus, while the literacy pattern in the surroundings of Koch Bihar town is unconventional, the scenario of the hinterland of Jalpaiguri is quite expected. The

significant negative correlation coefficients of distance with literacy rates for Jalpaiguri's hinterland have been shown in Appendix XI.

6.4 Distance-decay of Urban influence on Rural Economic Characteristics

The diminution of urban influence is also conspicuous in the economic character of the rural surroundings. The following section deals with the various economic aspects of the selected hinterlands in the light of the distance from the respective urban centres.

6.4.i Work Participation Rate

It is generally assumed that the proportion of workforce to total population may be lower in areas closer to urban centres than the distant villages, as the poor rural economy compels the rural population to work more than the urbanites. Moreover, agriculture, the backbone of rural economy, is more labour-intensive than the urban industrial sector.

Classifying work participation into male and female, male workers' proportions are supposed to increase with the increasing distance from towns following the general principle of increase of work participation with distance.

The relevance of the rate of female participation in workforce arises from its close connection with the status (position) of women, which is very low in India, particularly in the rural areas. Despite the lower status of rural females than the urban females, the same reason (as for total work participation rate) of poor economic condition leads the rural females to participate more in work than that of urban females.

Hence, one may assume that villages closer to towns have lesser proportion of workforce (total, male and female) than that of the villages of the extreme periphery.

Barring some of the irregularities, a general rising trend has been noticed distinctly in total work participation and male work participation rate for the hinterlands of Koch Bihar, Dinhata, Jalpaiguri and Alipurduar, while a declining trend is observed in the total work participation of the villages around Tufanganj. Comparing the two time period of 1991 and 2001, it may be stated that the irregularities are much in case of 2001 as the proportion of workers has experienced rise and fall to a greater extent

than that in 1991. The female work participation rate bears no regularity, though the farthest hinterland of each town has witnessed higher FWPR than the fringe villages in many cases except in the hinterland of Koch Bihar for 2001, that of Tufanganj for both 1991 and 2001, that of Jalpaiguri in 1991 and Alipurduar in 2001.

Table 6.5 Distance-wise Distribution of Average Work Participation Rate in different Hinterlands

| Hinterland of | Year | | Average WPR (%) in the following Distance zones (km) | | | | |
|---------------|------|---|--|--------|---------|---------|-------|
| | | | 0---5 | 5---10 | 10---15 | 15---20 | 20—25 |
| Koch Bihar | 1991 | T | 29 | 29 | 29 | 31 | 36 |
| | | M | 49 | 50 | 51 | 56 | 50 |
| | | F | 7 | 6.3 | 6 | 3.5 | 30 |
| | 2001 | T | 32.76 | 39.34 | 38.03 | 38.48 | 35.56 |
| | | M | 51.27 | 56.82 | 54.94 | 53.11 | 58.94 |
| | | F | 13.31 | 19.70 | 20.23 | 22.77 | 13.02 |
| Dinhata | 1991 | T | 29.74 | 30.25 | 32 | 32.35 | 33 |
| | | M | 47.29 | 52.35 | 53.5 | 60 | 54 |
| | | F | 10.46 | 6 | 9 | 0.23 | 17 |
| | 2001 | T | 39.26 | 42.4 | 39.96 | 46.02 | 50.55 |
| | | M | 53.20 | 57 | 54.16 | 61.11 | 56.94 |
| | | F | 24.47 | 26 | 25 | 30.23 | 44.26 |
| Tufanganj | 1991 | T | 30.24 | 30.12 | 27.5 | 26.47 | 28.23 |
| | | M | 50.82 | 52.28 | 50.15 | 49.8 | 50.66 |
| | | F | 8.17 | 6 | 3.17 | 1.51 | 4.11 |
| | 2001 | T | 38.55 | 35.95 | 31.12 | 36.96 | 34.38 |
| | | M | 52.99 | 54.02 | 51.88 | 51.55 | 53.00 |
| | | F | 23.60 | 16.59 | 9.31 | 21.90 | 15.49 |
| Jalpaiguri | 1991 | T | 28.67 | 28.23 | 29 | 33 | 31 |
| | | M | 48.8 | 50.2 | 51.5 | 54.00 | 55 |
| | | F | 7.46 | 4.10 | 4.6 | 10.00 | 4.00 |
| | 2001 | T | 36.38 | 33.74 | 63.14 | 58.27 | 50 |
| | | M | 53.62 | 54.00 | 69.41 | 65.50 | 59.03 |
| | | F | 18.22 | 12.20 | 56.535 | 50.6 | 40.18 |
| Alipurduar | 1991 | T | 29 | 33.64 | 39 | 30 | 29.23 |
| | | M | 51.5 | 56 | 52 | 55.66 | 51.86 |
| | | F | 4.75 | 9 | 24.5 | 3.36 | 5.02 |
| | 2001 | T | 62.06 | 55.33 | 41.64 | 61.02 | 52.13 |
| | | M | 68.58 | 62.91 | 52.18 | 70.96 | 60.30 |
| | | F | 55.115 | 47.26 | 30.17 | 50.82 | 43.4 |

Source: Computed from Census

The postulated hypothesis of increasing MWPR along with distance from the towns has been statistically proved only for Jalpaiguri's hinterland, as the correlation value between the distance from towns and the work participation rate is .932 which is significant at 1% level of significance.

6. 4.ii Occupational Pattern

The urban influence on its rural surroundings may be evident in the rural occupational pattern in the sense that following the general economic definition of an urban area, i.e., 75% of the male workforce in non-farm pursuits, higher proportion of workers may be expected in secondary and tertiary sectors while lower proportion in primary sector in the adjacent villages and vice versa for the distant villages.

Let this hypothesis be tested in the present situation by analysing the averages of proportions of workers in the said three sectors of different distance zones of the selected hinterlands. These values are presented in table 6.6. Here, data for all the nine industrial classification, given in 1991 census, has been clubbed into the primary, secondary, and tertiary sectors, but since the 2001 census does not provide all these nine classifications and instead provides only four categories, the occupational type has been divided into agricultural and non-agricultural sectors and thus the secondary and tertiary sectors of 1991 can be matched with the non-agricultural sectors of 2001 and the primary sector of 1991 census is represented mostly by agriculture as shown in 2001.

Table 6.6 Distance-wise Distribution of Average Workers in different Occupational Sectors in Different Hinterlands

| Hinterland of | Year | Sectors | Workers (%) in different sectors in the following Distance Zones (km) of | | | | |
|---------------|------|----------|--|--------|---------|---------|---------|
| | | | 0---5 | 5---10 | 10---15 | 15---20 | 20---25 |
| Koch Bihar | 1991 | P | 3 | 48 | 59 | 81.26 | 84 |
| | | S | 13.20 | 17 | 12.5 | 3 | 8 |
| | | T | 44 | 36 | 27.4 | 15.7 | 8 |
| | 2001 | Agri | 16.58 | 31 | 43.55 | 72 | 72 |
| | | Non-agri | 83.42 | 69 | 56.45 | 28 | 28 |
| | 1991 | P | 48 | 80 | 54 | 86 | 86 |
| | | S | 20 | 4.33 | 6.26 | 1.4 | 5 |
| | | T | 32 | 16 | 7 | 12.6 | 9 |
| | 2001 | Agri | 42 | 72.34 | 67 | 82 | 82.5 |
| | | Non-agri | 58 | 27.66 | 33 | 18 | 17.5 |
| Dinhata | 1991 | P | 50.61 | 74.6 | 54.3 | 93.23 | 78 |
| | | S | 36 | 15 | 15 | 3.26 | 5.6 |
| | | T | 14 | 10.52 | 30.86 | 3.51 | 16.5 |
| | 2001 | Agri | 33.79 | 63.01 | 35.49 | 82.23 | 61.54 |
| | | Non-agri | 66.21 | 36.99 | 64.51 | 17.77 | 38.46 |
| | 1991 | P | 26 | 61 | 63 | 81 | 81 |
| | | S | 18.33 | 11 | 8 | 3.6 | 10 |
| | | T | 56 | 28.45 | 29 | 16 | 14 |
| | 2001 | Agri | 18.19 | 32.51 | 44 | 54.74 | 60 |
| | | Non-agri | 81.81 | 67.49 | 56 | 45.23 | 40.4 |
| Tufanganj | 1991 | P | 54.5 | 95 | 98.4 | 83 | 78.35 |
| | | S | 16 | 0.3 | 0.54 | 3 | 10.42 |
| | | T | 30 | 5 | 1 | 14 | 12 |
| | 2001 | Agri | 39 | 78.90 | 82.12 | 72.39 | 38.38 |
| | | Non-agri | 61 | 21.10 | 17.88 | 27.61 | 61.62 |

Note:

P—Primary Sector

S—Secondary Sector

T—Tertiary Sector

Agri: Agricultural Sector

Non-agri: Non-Agricultural Sector

Source: Computed from Census

The upward gradient of primary workers and downward gradient of secondary and tertiary workers corresponding to the increasing distance are conspicuous in the entire hinterland of Koch Bihar, Jalpaiguri and Alipurduar. The hinterlands of Dinhata and Tufanganj witness inter-zonal ups and downs with ultimate decelerating result of

non-farm activities as one advances far from the towns. The temporal change in the share of workers in different pursuits of occupation shows the same tendencies.

Among the non-farm activities, the tertiary sector employs the major proportions of workers in all the sampled rural habitats except in the immediate surroundings (0-10 km) of Tufanganj. This fact points towards the tertiary economic base of the towns considered here.

The above patterns have further been studied with the help of correlation analysis. Table 6.7 shows only the results of significant correlation.

Table 6.7 Results of Correlation Analysis between the Proportions of Rural Workers in different sectors of occupation and the Distance of the Villages from the nearest towns

| Hinterland Villages of Core towns of | Correlation coefficients ('r') between Distance and workers in | | | | |
|--|--|------------------|-----------------|--------------------|------------------------|
| | Primary (1991) | Secondary (1991) | Tertiary (1991) | Agriculture (2001) | Non-Agriculture (2001) |
| Koch Bihar | .776** | -.730** | -.770** | .815** | -.815** |
| Dinhata | | | | .766* | -.766* |
| Tufanganj | | -.945* | | | |
| Jalpaiguri | .723* | | | | |
| KochBihar District (Combined) | .618** | -.657** | -.506** | .619** | -.619** |
| Koch Bihar and Jalpaiguri Districts (Combined) | .586** | -.588** | -.489** | .509** | -.509** |

Note: ** Significant at .01 level of significance

* Significant at .05 level of significance

Computed by the author

According to table 6.7, there exists a highly significant direct relationship between distance and proportions of primary workers in the hinterlands of Koch Bihar and Jalpaiguri. Contrarily, high negative correlation has been established between distance and workers in secondary sector for the surroundings of Koch Bihar and Tufanganj, and between distance and workers in tertiary sector only for the surroundings of Koch Bihar. Hence, the postulated hypotheses of inverse relationship between distance and non-agricultural workers and of positive relationship for distance and primary workers seem to be valid.

Based on the foregoing observations, it may be inferred that in view of occupational pattern, the hinterland of Koch Bihar is the most responsive to the spread effect of urbanism, followed by the hinterlands of Tufanganj and Jalpaiguri for the year

1991. In 2001, both the hinterlands of Koch Bihar and Dinhata show a high and significant positive relation with the percentage of rural workers in agriculture and the distances of their villages from their core towns. That is why, in view of the occupational disposition, rural settlements in the district of Koch Bihar bear urban influence more than that of the Jalpaiguri district on an average.

6.4.iii Agricultural Labourer-Cultivator Ratio

An important indicator of effect of urbanisation may be envisaged by the proportion of agricultural labourer and cultivator in the rural counterpart. Generally speaking, the proportion of cultivators may be expected to be more as one advances far from the urban centres because of the greater intensity of agriculture and also on account of the sole dependence on agriculture in those interior places. On the contrary, the percentages of agricultural labourer may be higher closer to towns as a large section of them tend to be engaged by some low-paid urban temporary jobs in the lean period of agriculture.

The actual scenario in our present study has been revealed by table 6.8.

A distinct decelerating tendency in the agricultural labourer-cultivator ratio has been marked with the increasing distance from the towns of Koch Bihar and Jalpaiguri and Alipurduar up to 20 km and 15 km respectively. According to 2001, the decreasing trend has been observed for the hinterland from 5 to 25 km around Koch Bihar town. The other two urban centres in Koch Bihar district do not conform to the above trend, i.e., to the postulated hypothesis in 1991. The statistical relationship between distance and agricultural labourer-cultivator ratio shows a high negative significant (-.802**) correlation only for the hinterland of Koch Bihar for 1991, whereas for other regions the relationship is insignificant. It may therefore be inferred that only the hinterland of Koch Bihar town accords with the postulated hypothesis. For 2001, no significant correlation has been marked for any single region.

Table 6.8 **Distance-wise Distribution of Average Agricultural Labourer--Cultivator Ratio in Different Hinterlands**

| Hinterland of | Year | Agricultural labourer per 100 Cultivator in different distance-zones (Km) | | | | |
|---------------|------|---|--------|---------|---------|---------|
| | | 0---5 | 5---10 | 10---15 | 15---20 | 20---25 |
| Koch Bihar | 1991 | 173.57 | 71.5 | 65.00 | 30 | 41.34 |
| | 2001 | 74 | 89 | 61.34 | 56.47 | 51.63 |
| Dinhata | 1991 | 93 | 96 | 50 | 47 | 90.1 |
| | 2001 | 98.78 | 76 | 61.53 | 0 | 51.56 |
| Tufanganj | 1991 | 75 | 72 | 89 | 40 | 96.34 |
| | 2001 | 87.11 | 92.48 | 64.49 | 78.49 | 36.00 |
| Jalpaiguri | 1991 | 119.33 | 54.66 | 62 | 96.4 | 74 |
| | 2001 | 103 | 61 | 83 | 59 | 44 |
| Alipurduar | 1991 | 78 | 75 | 26.38 | 28.44 | 31.27 |
| | 2001 | 108 | 66.76 | 23.95 | 46.43 | 67.65 |

Source: Computed from Census

6.5 Distance-decay of Urban Influence on Infrastructural Facilities of the Hinterlands:

Urbanisation leads to an increased availability of a wide range of services in terms of housing, education, medical or health care, transport, communication, electricity, drinking water etc. Therefore, in analysing the role of urban cores on the development of their rural peripheries, the availability of these benefits to the rural hinterlands should also be taken into consideration.

Of course, unlike the demographic and the socio-economic indicators, the availability of facilities in rural areas is not a direct manifestation of urban influence. In terms of services and facilities, urban influence can be straightforwardly measured by considering the diffusion of proper urban benefits (like educational services, medical services, bus services, retail trade etc.) to rural surroundings, which has already been discussed in chapter IV. Yet, an indirect analysis of urban influence has been brought out here in terms of the presence of different types of facilities in rural hinterlands. In this connection, it may be assumed that the villages closer to the towns will have the better levels of infrastructural facilities than the remote villages.

In order to have an overall picture of the availability of facilities in different hinterlands, the facilities considered here are: a) education b) medical or health care c) drinking water d) post and telegraph office e) communication f) power supply g) approach to village h) number of sitting days of rural hat or market i) banking facilities. The data for number of sitting days of rural hat or market is not available for 2001. The data for banking facilities is not given for 1991 census. But as these two sets of information relate to very necessary services to rural people, these have been taken into consideration for whichever time period these were available.

Since each of these facilities are of different sorts (such as, educational facilities consist of primary schools, middle schools, high schools, colleges etc.), therefore, weightage is given for them on the basis of their importance as shown by their distribution types. (Ref. 'Methodology'-- 'Introduction').

Table 6.9 states the average composite index values of different facilities for the selected hinterlands

It is observed from table 6.9 that distance does not have much bearing on the existence of infrastructure in rural hinterland, since in many cases the far-away villages possess more number of infrastructures than the proximate villages (e.g., the average composite values is higher for the villages at 10-15km, than that at 0-5km. in case of Koch Bihar in 1991 and Tufanganj in 1991 and 2001 etc.). The question of distance is important for the urban field of Jalpaiguri, which experiences sharp downward gradient with some alteration in between 20-25 km. Again, the closest peripheries possess more facilities than that of the remotest one.

The dissociation of rural infrastructures with their core towns has been statistically proved as there exists no significant relationship between distance from towns and the availability of infrastructures in rural hinterlands except in the urban field of Jalpaiguri which accords with the hypothesis by a significant negative relation (correlation coefficient is -.822* and -.882* for 1991 and 2001 respectively).

Table 6.9 Distance-wise Distribution of Composite Index of Infrastructural Facilities (Average) in Different Hinterlands

| Hinterland of | Year | Composite Scores of Infrastructural Facilities in different distance-zones (km) of | | | | |
|---------------|------|--|--------|---------|---------|---------|
| | | 0---5 | 5---10 | 10---15 | 15---20 | 20---25 |
| Koch Bihar | 1991 | 56.65 | 18.11 | 66.87 | 25.78 | 13.09 |
| | 2001 | 218.73 | 66.43 | 176.75 | 66.58 | 45.55 |
| Dinhata | 1991 | 28.6 | 19.8 | 13.2 | 3.27 | 15.98 |
| | 2001 | 98.56 | 45.23 | 46.21 | 47.26 | 58.3 |
| Tufanganj | 1991 | 93.93 | 57.21 | 210.04 | 35.11 | 6.53 |
| | 2001 | 30.66 | 80.48 | 304.53 | 25.29 | 22.79 |
| Jalpaiguri | 1991 | 606.33 | 176.83 | 55.82 | 55.75 | 61.27 |
| | 2001 | 944.74 | 401.31 | 75.15 | 89.04 | 58.81 |
| Alipurduar | 1991 | 29.92 | 7.48 | 12.32 | 13.88 | 12 |
| | 2001 | 108.01 | 33.18 | 49.97 | 29.28 | 65.99 |

Source: Computed from Census

Thus from the examination of the influence of urban cores on rural peripheries, some significant patterns have come into limelight. It has already been pointed out that the presence of infrastructures in the villages cannot be much influenced by the proximity to their core towns except for the hinterlands of the town of Jalpaiguri.

6.6 Determinants of Development of the hinterlands in the light of their distances from the nearest towns

The phenomenon of interaction between the urban cores and the surrounding rural territory leads to the transformation of the rural setting into urban way of life, which is regarded as better developed than the rural way of life. Development may be thought of as the changes of life style in positive direction. A study of development of any area requires a temporal analysis. But, in the present situation, the spatial interaction has been measured in view of the geographical proximity of the villages to the concerned core towns, where time-series analysis is beyond the scope.

In accordance with our pre-conceived supposition that urban-rural interaction leads to progress in rural areas, the following section has attempted to evaluate the levels of development of the selected villages in the light of the levels of interaction with their respective core towns.

In this regard, the rural transformation may be foreseen in terms of socio-economic condition of the villagers along with the quality of their lives. Here, the *determinants of development* may be spelt out as:

- a) Economic condition, b) Level of Education, c) Occupation, d) Awareness, e) Quality of Life and f) Prosperity.

6.6.i Economic Condition

It is perceived that higher the levels of interaction of the villagers with the core towns, higher will be their potentiality to earn. (It does not however necessarily follow that all the villagers with higher income have good connection with the towns). As one of the aspects of development, the *economic capability* of the villagers has been taken into consideration by estimating the percentage of households belonging to higher income group (i.e. households with a family income of rupees 12,000/- and above per month) and percentage of households in middle income group (i.e., proportion of households with a per capita income of rupees 1001-2500/- per month).

Table 6.10 gives the distance-wise percentage distribution of average households (surveyed) of the rural hinterland according to these two categories.

An inter-hinterland comparison (depicted in table 6.10) brings out that the hinterland villages around Jalpaiguri possess the highest proportion of households in the higher income group (represented by the households earning rupees 12,000/- and above as their total family income) as compared to the other urban fields. It is interesting to note that a substantial proportion of this category of household is present in the distant hinterland also. Table 5.4 (chapter V) supports this observation by showing a section of this particular category, who are employed in the core town.

**Table 6.10 Distance-wise Distribution of Average Households in
Higher-income and Middle-income groups**

| Hinterland of | Income Group | Average Proportions of Households (%) in the following distance zones (km) | | | | |
|------------------|-----------------|---|-------|---------|---------|-------|
| | | 0---5 | 5--10 | 10---15 | 15---20 | 20—25 |
| Koch Bihar | Higher | 10.05 | 9.31 | 1.71 | 0.81 | 1.45 |
| | Middle | 17.66 | 35.23 | 17.44 | 2.44 | 8.70 |
| Dinhata | Higher | 13 | 6 | 2.2 | 3 | 2.38 |
| | Middle | 8 | 5.90 | 11.70 | 5 | 11.43 |
| Tufanganj | Higher | 10 | 6.67 | 2 | 0 | 0 |
| | Middle | 15 | 10 | 7.84 | 5.88 | 4.35 |
| Jalpaiguri | Higher | 7 | 14 | 6 | 14.32 | 1.5 |
| | Middle | 15.32 | 27.91 | 14 | 25 | 15.97 |
| Alipurduar | Higher | 11 | 9 | 0 | 13 | 0 |
| | Middle | 26.25 | 20 | 7.69 | 28.57 | 7.69 |

Source: Field Survey

Regarding the spatial variation, the percentage of this higher income class of households follows downward gradient in the entire hinterland of Tufanganj, up to 20 km around Koch Bihar and up to 15 km around Dinhata. In the case of Alipurduar, although a decreasing pattern has been noticed up to 15 km, yet the more distant hinterland (the zone of 15-20 km) possesses the higher average proportion of high-income families than that of the closest periphery. The rural regions in the surroundings of Jalpaiguri shows complete dissociation of the average proportion of households in the higher income group with distance from the towns, as it shows both upward and downward trends.

The distance-wise gradient in the ratio of the households having a per capita income of Rs.1001-2500/, representing the middle-income families, is marked only in the hinterland of Tufanganj and up to 15 km centring Alipurduar town. Otherwise, for other regions, no regular pattern has been discerned either in upward or in downward direction.

Thus, the proximity or remoteness of the nearest towns shapes the very presence of the higher-income rural households to a greater extent than that of the middle income group in the present context.

6. 6.ii Education level

In order to judge social and psychological development, the *education level* of the villagers is an important matter of concern. The percentage of household-heads with higher levels of education (higher secondary in the present survey) has been preferred as an indicator of development with the idea that the heads of families with higher educational background may have a bearing on their families to accept the changes resulting from urban-rural interaction. In our sample, higher secondary education has been found to be the attainment of higher level of education by a larger section of the heads of the families; therefore the proportion of heads with H.S. background has been selected for representing the educational development of the households.

According to the picture in table 6.11, the proportions of heads attaining H.S. degree have experienced distance-decay in the hinterland of Tufanganj in a steady pattern and also in the urban fields of Koch Bihar, Jalpaiguri and Dinhata towns with

**Table 6.11 Distance-wise Distribution of Average Household-heads
with Higher Secondary Level of Education**

| Hinterland of | Average Proportion of Heads of Rural Households (%) in distance zones (km) of | | | | |
|------------------|--|--------|---------|--------|-------|
| | 0---5 | 5---10 | 10---15 | 15--20 | 20—25 |
| Koch Bihar | 14.55 | 10.05 | 4.87 | 0.81 | 2.9 |
| Dinhata | 10 | 2.56 | 3.2 | 3 | 2 |
| Tufanganj | 18 | 10 | 8.82 | 5.88 | 5.8 |
| Jalpaiguri | 30 | 32 | 13.75 | 5.91 | .80 |
| Alipurduar | 7.57 | 5 | 7.7 | 6.67 | 0 |

Source: Field Survey

slight distortions. Around Alipurduar, the average proportions of heads of households with H.S. show almost uniformity, from the town's closest neighbour to 20 km from it, of course with ultimate decline in the distant region. Thus, the educational levels of the heads of the rural households happen to be distance-shaped. It has become more distinct from the figure 6.3.

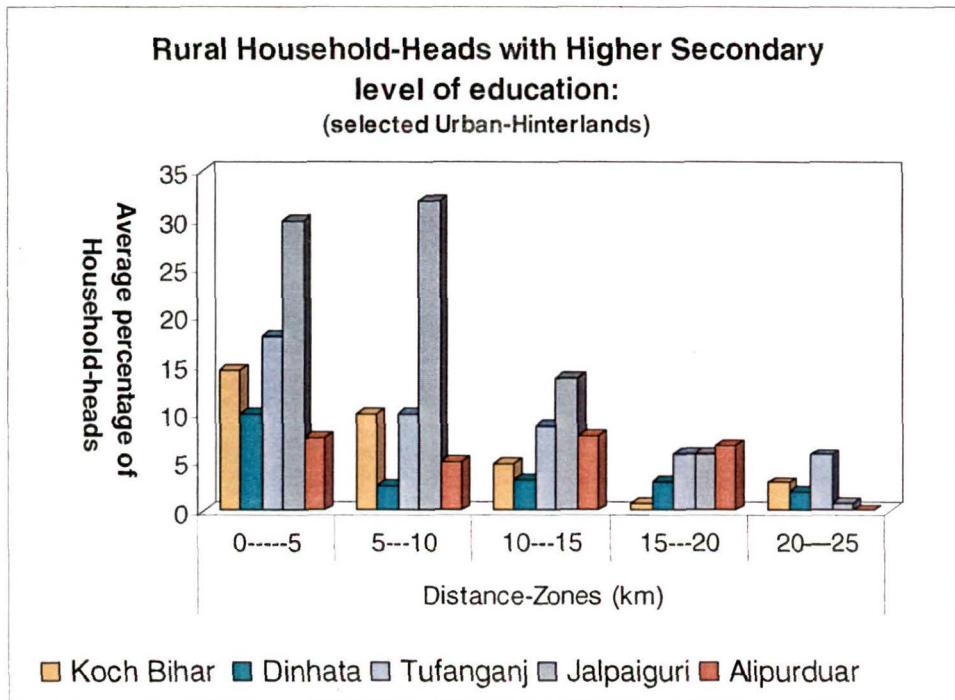


Fig. 6.3

In terms of the educational attainment of the heads of the rural households, the hinterland of Jalpaiguri is more developed as a whole, compared to the other regions. This has been distinctly illustrated by figure 6.3, as the proportion of household-heads with H.S. level is much higher in Jalpaiguri's urban field than that of the other regions. It may be inferred that, the spread effect urban influence of Jalpaiguri is much greater in educational field, than that in the other regions. This may be supported by figure 4.7, showing the educational hinterland of Jalpaiguri.

Thus, a high significant negative correlation is observed between the distances from core towns and the proportions of heads of households with H.S. degree for the hinterland of Jalpaiguri and Tufanganj (correlation coefficients are -.867** and -.945* respectively) while for the hinterland of Koch Bihar it is moderately high as the 'r' value is -.596*.

6.6.iii Awareness

The village *household reading newspapers* is a sign of the mental awareness of the members of family about current affairs which certainly indicates social advancement. The awareness of rural population may be an outcome of their spatio-functional

interaction with the urban life and so it may be hypothesised that the higher the levels of interaction, the higher will be the levels of education and the propensity to read newspapers. In that sense, the percentage of rural households reading newspaper is an important pointer to rural development.

Table 6.12 gives an idea about the spatial distribution of rural households reading newspapers in the different distance-zones of the five selected urban centres.

Table 6.12 Distance-wise Distribution of Average Households Reading Newspaper

| Hinterland of | Average Proportions of Households (%) in different distance zones (km) | | | | |
|----------------------|---|----------------|----------------|---------------|--------------|
| | 0----5 | 5----10 | 10---15 | 15--20 | 20—25 |
| Koch Bihar | 41 | 22.70 | 33.67 | 16.33 | 16.33 |
| Dinhata | 45 | 34.33 | 27.5 | 5 | 19.5 |
| Tufanganj | 36 | 28 | 28 | 24 | 23 |
| Jalpaiguri | 65 | 42 | 17.5 | 26.5 | 17 |
| Alipurduar | 39.5 | 11 | 10 | 47 | 46 |

Source: Field Survey

It has been noticed that the average tendencies of the rural population to read newspaper follow a gentle downward slope around Tufanganj, while in the surroundings of Dinhata it slopes down sharply up to 15km after which it has registered a rise. The hinterlands of Jalpaiguri and Koch Bihar have witnessed a decline in the average propensity towards newspaper reading up to 15 and 10 km respectively from the towns with the gradual lessening of the proportions of readers. But distance has not played any role in the hinterland of Alipurduar; on the contrary, a rising trend towards reading newspapers has been noticed around the town. These trends can be well understood from figure 6.4 .

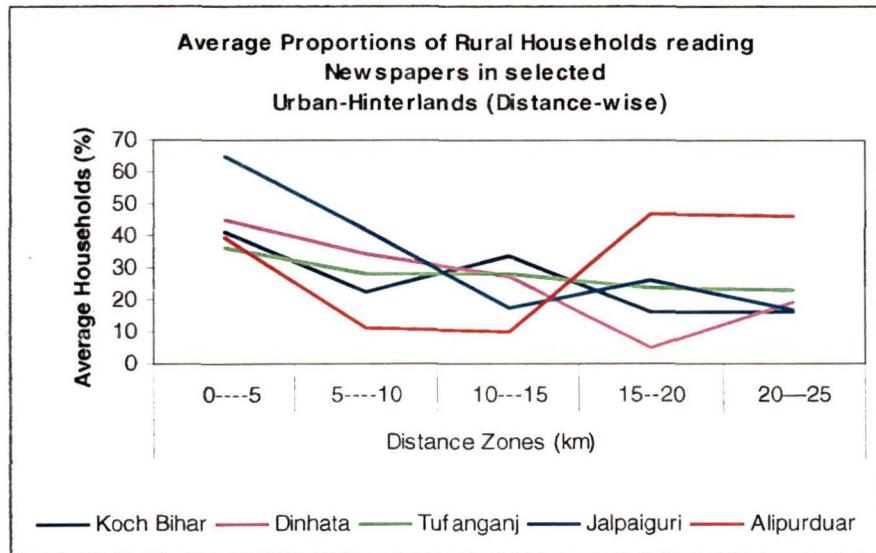


Fig. 6.4

The emerging trend thus leads one to conclude that the remoteness from urban core cannot restrict the villagers to be acquainted with the cheapest and the most easily available media represented by newspaper in the urban field of Alipurduar and to some extent in the intermediate zones of the urban fields of Koch Bihar (10-15 km) and of Jalpaiguri (15-20 km). The spatial pattern of awareness, measured in this way, though determined largely by the distance from the core towns, yet has been influenced by communication linkage of the destination village with their core towns; this trend has been evident in the remote hinterland of Alipurduar, as the percentages of newspaper readers in the villages of Dakshin Sonapur (16km) and Silbari Hat (21 km) are much higher than that of the villages in the previous zone.

6.6.iv Occupation

The proportion of family members engaged in *non-farm employment* including service, business etc. determines *urbanism in the rural occupational pattern*, which is supposed to be consequential upon the process of urban-rural linkage. As Duncan says, “the more urban the county, the higher is ratio of rural-nonfarm to rural-farm population”² (Duncan, 1961, p.551). The concept of development takes into account the ratio of non-agricultural employment as a vociferous index.

Table 6.13 shows a well-defined declining trend of households with more than 75% non-farm family members in the hinterlands of Koch Bihar and Jalpaiguri as we move farther from those towns. Around Alipurduar, the trend is more or less decelerating up to 20 km, of course with an increase in 10—15 km.

Table 6.13 Distance-wise Distribution of Average Households with 75% and above members in Non-Farm activities

| Hinterland of | Average Proportions of Households (%) in different distance zones (km) of | | | | |
|------------------|--|--------|---------|---------|-------|
| | 0----5 | 5---10 | 10---15 | 15---20 | 20—25 |
| Koch Bihar | 85.30 | 67.41 | 60.5 | 40 | 36 |
| Dinhata | 65 | 36.33 | 50 | 20 | 36 |
| Tufanganj | 64 | 57 | 62 | 32 | 42 |
| Jalpaiguri | 84 | 67 | 44 | 41 | 38.5 |
| Alipurduar | 71 | 37 | 46 | 20 | 62 |

Source: Field Survey

It is quite interesting to note that in the surroundings of the smaller towns of Koch Bihar district, viz., Dinhata and Tufanganj, the downward gradient has been observed only up to 10 km; an increase in the said proportions after that zone (ref. Figure 6.5) is discernible and this leads one to deduce a strikingly less dependence on agriculture.

The reasons for less dependence on agriculture on an average in the intermediate zones of 10-15 km in the hinterlands of Dinhata and Tufanganj and in the remotest hinterland of Alipurduar town may be as follows:

1. The two selected villages, viz., Khalisa Gosanimari and Ruier Khuthi in the 10-15 km distance zone around Dinhata are characterised by poor infertile sandy soil which hinders agriculture to a great extent. That is why, a large section of people have no other alternatives but to be absorbed in non-agricultural pursuits.

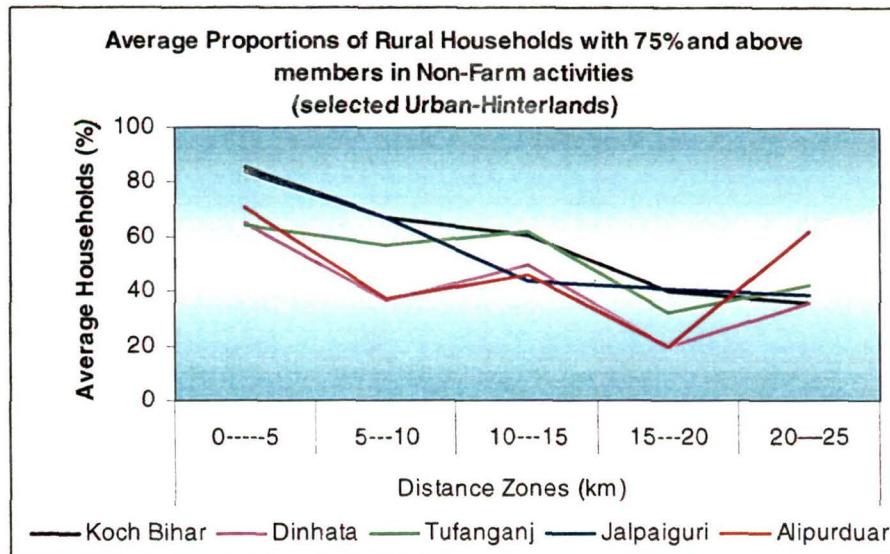


Fig. 6.5

2. The village Khalisa Gosanimari, with its age-old tradition and temple, is a tourist spot which attracts people. For this reason, small scale business which provides employment to the native population has developed here.
3. Situated on the NH 31, Silbari Hat, the farthest rural habitat centring Alipurduar, is 22 km from the town of Falakata (District Jalpaiguri), which has influenced a lot in providing non-agricultural employment to the villagers. Therefore a substantial number of households (62%) has 75% of family members engaged in non-farm activities.

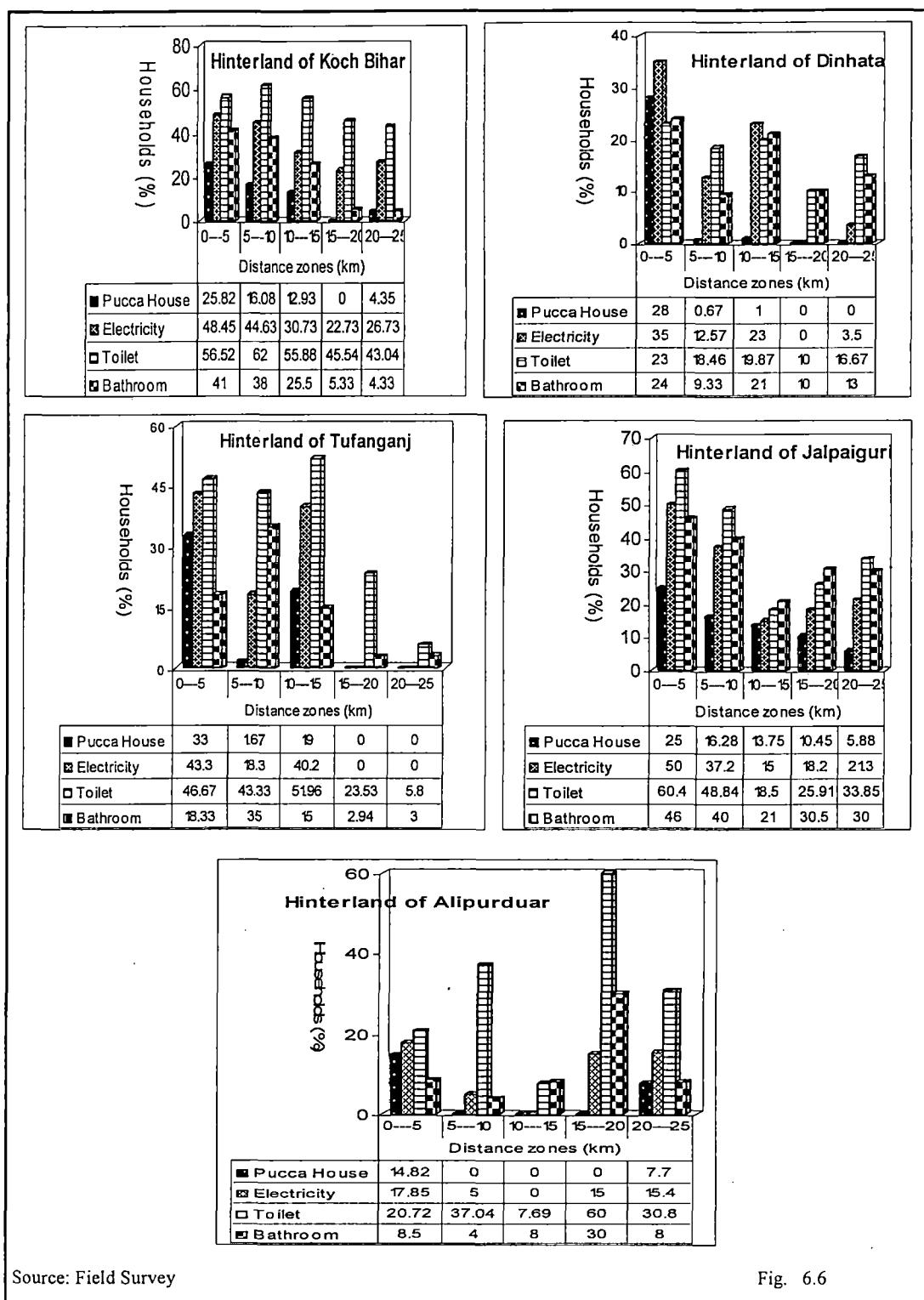
From this analysis, it may be concluded that the occupational structure of the hinterland population has been influenced more by the towns of Koch Bihar and Jalpaiguri than by the other towns.

6.6.v Quality of life

The concept of ‘quality of life’ is a ‘complex notion concerning the general state or condition of a population in a given area’³ (Small & Witherick, 1986, p. 173) which refers to the general well-being of human life. It includes several dimensions as access to services, diet, housing, employment prospects, social opportunity, affluence, safety and security.

In the present context, the percentages of rural households with a) *pucca houses* b) *electricity* c) *toilet* and d) *bathroom* have been estimated as the *indices* of the *quality of life*, signifying rural development.

Distance-wise Distribution of Average Households with Housing infrastructures



Source: Field Survey

Fig. 6.6

A better contact with urban area promotes the provision of more infrastructures in the life pattern of the rural people, for which people are expected to possess some of the urban amenities indicating structural development of rural environs.

As revealed by figure 6.6, the proportions of houses with the infrastructure of pucca houses, electricity, toilet and bathroom have almost steadily declined in the hinterlands of Koch Bihar and Jalpaiguri as distance increases from the towns, with slight distortions in the infrastructures of toilet in Koch Bihar's region in 5-10km zone and regarding bathroom beyond 15 km in Jalpaiguri's surroundings. The average proportions of pucca houses are less and in some cases are nil in the distant hinterlands of Dinhata and Tufanganj as compared to their close counterparts.

At the same time, these two hinterlands (of Dinhata and Tufanganj) do not show the steady declining effect of distance on the proportions of houses with electricity, toilet and bathroom although the houses of the contiguous settlements are obviously much ahead of their distant counterparts in possessing the selected infrastructures. The villages around Alipurduar disregard the factor of distance in respect of all these facilities. Thus, the quality of life, measured in terms of the indicators discussed heretofore, follows an almost distance-decay relationship in the hinterlands of the two district towns only.

6.6.v Prosperity

The spread effect of urbanism in consequence of urban-rural interaction leads to economic prosperity of the villagers. Households having high-priced consumer goods, electronic gadgets and home appliances indicate affluence of the people and thus may be considered as an index of economic development. As we know, households with cycle or households with radio should also be included in the lists; yet from our field experience we have come to know that irrespective of economic capability or the levels of interaction, villagers possess cycle and radio to fulfil their requirements. That is why, households having these omnipresent consumer goods have been omitted for representing the levels of development

From table 6.14, it is observed that the average proportions of households having the aforementioned consumer goods (Tape recorder, Refrigerator, TV, Byke) are the highest in the contiguous villages of Jalpaiguri (as compared to that of the other

hinterlands) which witness a declining trend concerning the proportions of households with Tape recorder Refrigerator and Byke. But the households with TV are irregularly patterned with the ultimate lowering in the farthest rural settlements as compared to that of the adjacent villages.

In the hinterland of Koch Bihar distance has played a distinct role in reducing the households' percentage in case of those with refrigerator, TV and motorbyke. But for the households with tape recorder, the closest periphery lags behind the next two zones, though the distant villages have far lesser households with tape recorder than those in the neighbouring areas.

Table 6.14 Distance-wise Distribution of Average Households with selected Consumer goods

| Core Town | Consumer Goods | Average Proportions of Households (%) in different distance zones (km) | | | | |
|------------|----------------|--|--------|--------|---------|-------|
| | | 0---5 | 5---10 | 10--15 | 15---20 | 20—25 |
| Koch Bihar | Tape Recorder | 24.47 | 25.74 | 25.47 | 5.36 | 8.56 |
| | Refrigerator | 2.36 | 1.45 | 0.83 | 0 | 0 |
| | TV | 42.38 | 39.17 | 35.94 | 5 | 7.25 |
| | Motorbike | 4.45 | 6.76 | 2.12 | 0 | 0 |
| Dinhata | Tape Recorder | 28 | 11.44 | 10.75 | 10 | 4 |
| | Refrigerator | 0 | 0 | 0 | 0 | 0 |
| | TV | 20 | 16.33 | 16 | 8 | 16 |
| | Motorbike | 12 | 2.63 | 2 | 5 | 3 |
| Tufanganj | Tape Recorder | 26.67 | 21.67 | 28.43 | 2.94 | 2.9 |
| | Refrigerator | 3 | 0 | 0 | 0 | 0 |
| | TV | 23.33 | 30 | 46.08 | 8.82 | 14.5 |
| | Motorbike | 13 | 0 | 12.75 | 2.94 | 0 |
| Jalpaiguri | Tape Recorder | 40 | 25.58 | 22.5 | 7 | 15 |
| | Refrigerator | 10 | 9.3 | 3.5 | 2.3 | 5.88 |
| | TV | 49 | 51 | 21.25 | 28.18 | 27.74 |
| | Motorbike | 17 | 11.63 | 10 | 9.09 | 3.74 |
| Alipurduar | Tape Recorder | 38 | 3.7 | 15.38 | 33.33 | 30.77 |
| | Refrigerator | 2 | 0 | 0 | 0 | 3 |
| | TV | 20.72 | 11.11 | 7.7 | 46.67 | 23.08 |
| | Motorbike | 7.5 | 0 | 0 | 0 | 7.69 |

Source: Field Survey

In Dinhata's urban field the same decelerating tendencies of the average village households with tape recorder, TV, byke has been observed in general (along with slight distortions marked in table 6.14) as one proceeds farther away from the town. This hinterland does not possess any households (among the surveyed) with refrigerator.

Roaming through the hinterland of Tufanganj, it may straightforwardly be stated that the average village households having tape recorder has not varied much in between 0-15km after which it has experienced a sharp downfall. Very few households possess refrigerator which is confined mostly to the contiguous region and the villagers (surveyed) of the subsequent zones do not have that. The percentage of average households with TV increases from the nearest habitat up to 15km after which it has registered a decline; it rises again in the outlying zone, although the proportion is much lower than that of the zones in 0-15 km. The ratio of surveyed households with byke has decreased with distance in general.

The factor of distance is totally disregarded in the hinterland of Alipurduar regarding the percentage of households with the consumer goods specified heretofore.

Thus, the measurement of economic prosperity of the villagers (according to our frame of reference) has considered the factor of distance of those hinterland villages from the towns of Koch Bihar, Jalpaiguri, Dinhata and to a little extent from Tufanganj; while for Alipurduar's hinterland, the factor of distance in respect of the prosperity of the villagers comes to be disregarded.

Since it is the question of economic prosperity, a correlation has been calculated between the higher-income households (with family income of Rs.12,000/ and above) and the percentage of households with the aforementioned consumer goods. Only in Koch Bihar's hinterland the proportion of households with byke and fridge has got a high positive correlation with the higher-income households (the respective correlation values are .789** and .803**) while no other correlation is significant. Of course, in spite of the insignificant correlation in some cases, there exists high positive association between these two indicators. For instance, the households with tape recorder and refrigerator have got a correlation value of .710 and .789) with higher-income households. These insignificant relations indicate that the relationship would have been significant with a larger number of observations.

Thus the economic prosperity of the rural families in the hinterlands of five selected towns has been influenced by the distance of those villages from the core towns, the economic condition of the villagers and the transport linkage of the villages with the core towns.

6.7 Levels of Development

As development is a comprehensive concept, the determinants discussed above, have been clubbed together to get a composite picture of development. The correlation matrix of the selected indicators and the weightages assigned to them are given in the Appendix XII. A postulation has been made that higher the level of interaction of a village with its nearest town, higher will be its level of development.

Table 6.15 displays the levels of development of the hinterland villages studied here, in the light of their distance zones. The villages have been arranged in descending order in terms of the composite scores of development

The salient features brought out by table 6.15 are as follows:

- a) There exists a wide disparity in the levels of development (both intra-hinterland and inter-hinterland) as the highest score is 36.48 and the lowest one is -24.26, which are interestingly acquired by the two villages around the two larger towns. In other words, the highest scorer is the village Kharia in Jalpaiguri's hinterland while the village Daharerpar, lying at a distance of 21 km from the town Koch Bihar, remains lowest in rank.
- b) The development levels of the villages have an apparent association with their distance from the core towns, because in many cases, the developed villages are situated closer to their server towns than that of the less developed villages.
- c) The foregoing deduction does not imply that the closest villages are the most developed in all the cases. For example, the highest scoring villages in the hinterlands of Koch Bihar and Dinhata are not their closest neighbours. Again the farthest village around Koch Bihar (viz., Chhat Singimari) has scored much higher values than the comparatively nearer villages (e.g. Nageswarguri, Sajherpar Ghoramara, Barapak,

Table 6.15 Villages arranged in descending order of Development Index:
A Distance-wise Distribution

| Hinterland of | Villages (with J.L.No.) | Distance (km) from Core Town | Distance Zone (km) | Index of Development |
|---------------|------------------------------|---------------------------------------|--------------------------|-------------------------|
| Koch Bihar | Baneswar (33) | 11 | 10--15 | 21.01 |
| | Chakchaka (107) | 10 | 5--10 | 18.49 |
| | Takagach (134) | 4 | 0---5 | 17.73 |
| | Ghughumari (131) | 5 | 0---5 | 14.53 |
| | Talliguri (116) | 10 | 5--10 | 13.75 |
| | Chatra Chekapdara (262) | 21 | 20--25 | 1.33 |
| | Nawabganj Balasi (251) | 15 | 10--15 | -1.32 |
| | Kaljani (30) | 12 | 10--15 | -2.42 |
| | Dhumpur Balasi (257) | 17 | 15--20 | -8.37 |
| | Chhat Singimari (6) | 25 | 20--25 | -11.43 |
| | Sajherpar Ghoramara (3) | 19 | 15--20 | -11.67 |
| | Barapak (258) | 20 | 15--20 | -17.59 |
| | Nageswar Guri (41) | 10 | 5--10 | -20.81 |
| | Daharerpar (261) | 21 | 20--25 | -24.26 |
| Dinhata | Gokunda (126) | 8 | 5---10 | 16.97 |
| | Bhangni Dwitiya Khando (110) | 1 | 0---5 | 15.19 |
| | Khalisa Gosanimari (6) | 15 | 10--15 | 2.80 |
| | Salmara (92) | 22 | 20--25 | -2.39 |
| | Chhota Sakdal (103) | 7 | 5--10 | -7.72 |
| | Ruier Khuthi (72) | 12 | 10---15 | -9.31 |
| | Raja Khora (29) | 8 | 5---10 | -10.73 |
| | Atialdanga (220) | 24 | 20---25 | -18.32 |
| | Pet Bhata Seora Guri (81) | 18 | 15--20 | -20.29 |
| Tufanganji | Chamta (92) | 1 | 0---5 | 11.70 |
| | Bhanukumari (65) | 12 | 10--15 | 4.08 |
| | Deocharai (89) | 8 | 5---10 | 0.58 |
| | Takoamari (25) | 20 | 15---20 | -8.79 |
| | Chhat Barochowki (1) | 21 | 20---25 | -9.62 |
| Jalpaiguri | Kharia (6) | 4 | 0---5 | 36.48 |
| | Paharpur (7) | 9 | 5---10 | 20.06 |
| | Berubari Nagar (19) | 15 | 10---15 | 6.87 |
| | Gujrimari (8) | 20 | 15---20 | 3.04 |
| | Kismat Sukhani (10) | 22 | 20---25 | -0.83 |
| | Sakati (20) | 20 | 15---20 | -1.56 |
| | Boalmari (29) | 22 | 20---25 | -12.56 |
| | Nandanpur (26) | 15 | 10---15 | -16.89 |
| Alipurduar | Birpara (45) | 1 | 0---5 | 18.01 |
| | Dakshin Sonapur (27) | 16 | 15---20 | 13.54 |
| | Silbari Hat (19) | 21 | 20---25 | 10.55 |
| | Dakshin Majher Dabri (55) | 3 | 0----5 | 2.19 |
| | Chapatali (43) | 13 | 10---15 | -14.56 |
| | Naottoartari (35) | 10 | 5---10 | -16.35 |

Daharerpar etc.). Such instances may be corroborated by Salmara and Chhota Sakdal in Dinhata's urban field, Bhanukumari and Deocharai in Tufanganj's hinterland, Nandanpur and Gujrimari in Jalpaiguri's hinterland etc.

In spite of these exceptions, it is also true that the majority of the remote villages belong to the lowest scale of development on the whole.

d) The distance factor is not at all important in shaping the development levels of the villages in the surroundings of Alipurduar.

e) In comparison with the hinterlands of Jalpaiguri and Koch Bihar, the spatial disparities in the levels of development are lower in the other three hinterlands. Though the qualitative ranges of the development index in the hinterlands of Koch Bihar, Dinhata and Alipurduar vary between 'high' to 'very low' levels, the villages around Koch Bihar are much disparate than the villages of Dinhata and Alipurduar, in terms of the values of the index. The villages around Tufanganj shows the least disparities in this regard, as those are grouped under 'moderately high' to 'low levels' of development'.

A qualitative cataloguing of the villages on the basis of the levels of development, (Appendix XIII) depicted in the figures 6.7, 6.9, 6.11, 6.13, 6.15 shows that the highest level has been acquired only by the adjacent village of Jalpaiguri located at 4km from the town. These figures provide a vivid illustration of the spatial variation in the levels of development of the villages.

The villages falling in the high level in the scale of development are situated in between 0—15 km from the concerned towns.

Except for the hinterland of Tufanganj, the closest villages of the other four towns belong to progressively higher levels of development. The nearest neighbour of Tufanganj has been categorised as moderately high in terms of development index. (ref. figure 6.11)

The surveyed villages in Koch Bihar's urban field (figure 6.7) range between high to very low according to the levels of development while the villages around Jalpaiguri fall between very high to very low levels of development with a gap in the moderately high category. Thus the spatial inequality of village-development is the

KOCH BIHAR : BLOCKS I AND II

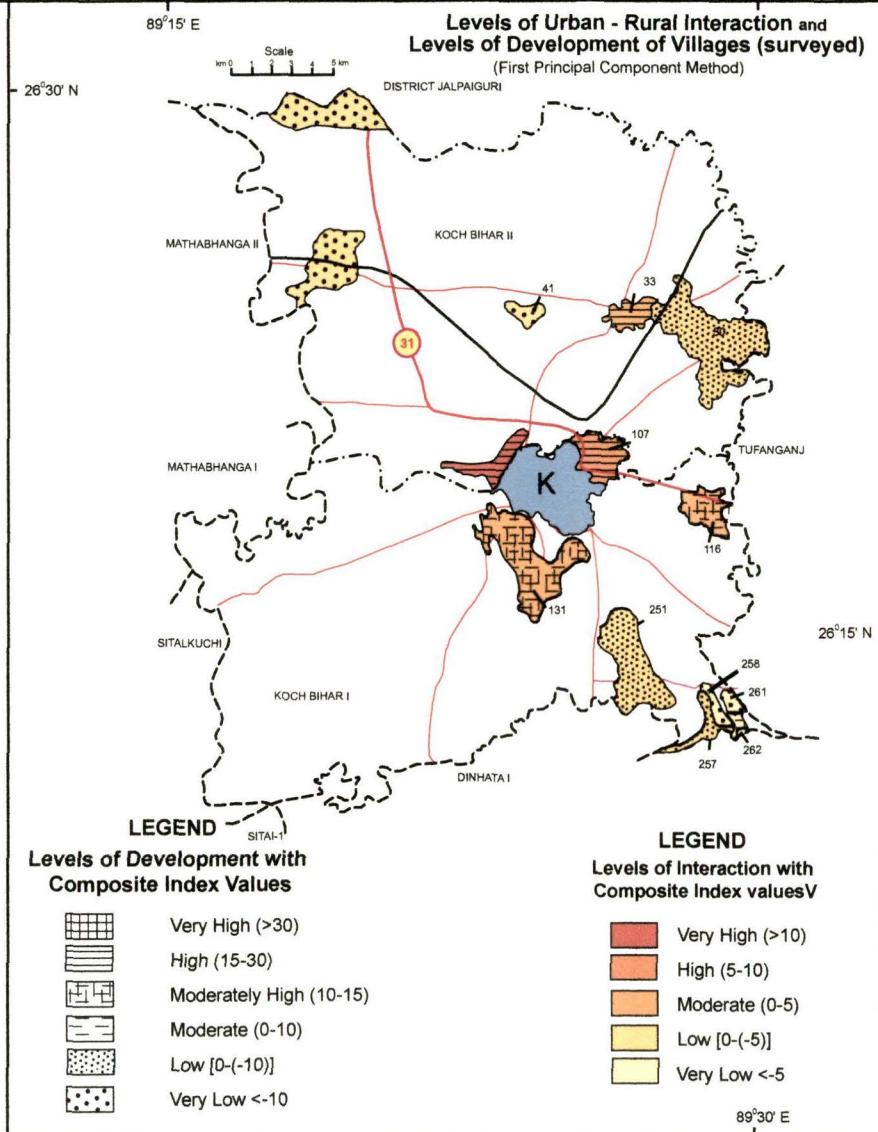
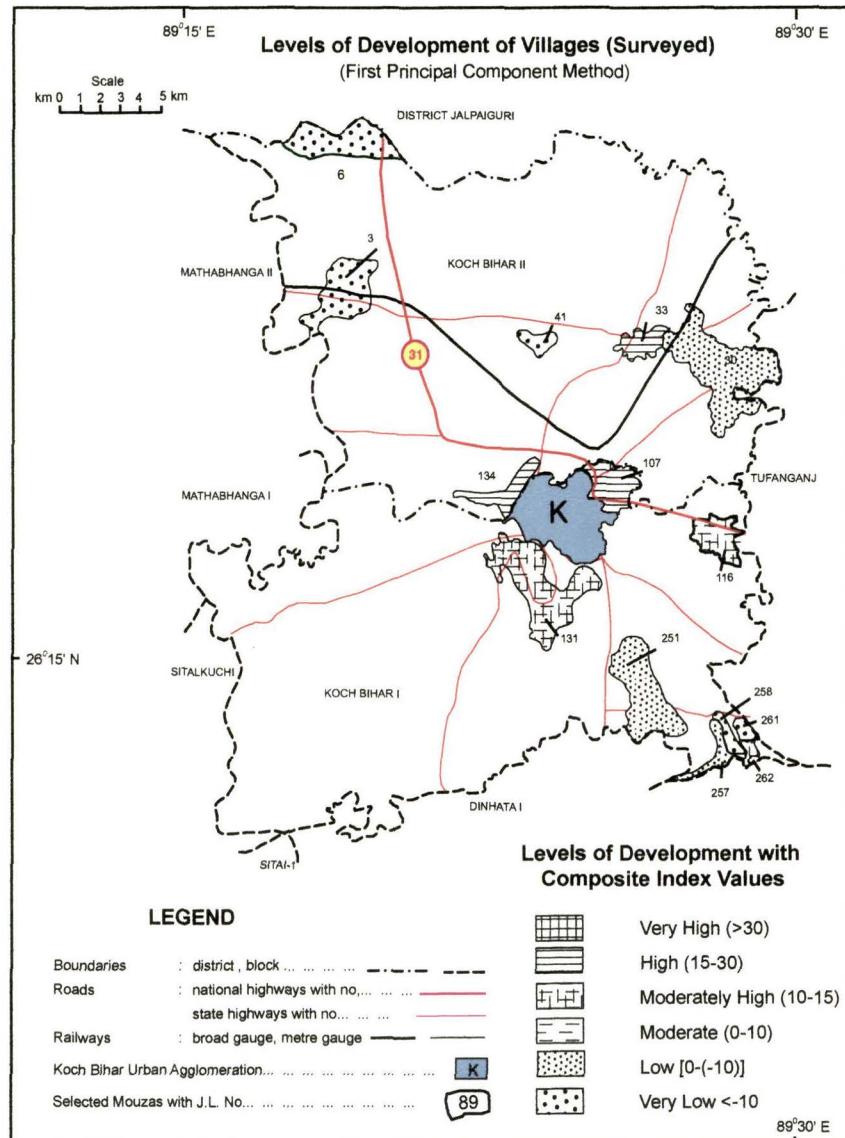


Fig. 6.7

Fig. 6.8

maximum in Jalpaiguri's hinterland among all the five hinterlands. The spatial disparity is the least in the urban field of Tufanganj as the villages range between moderately high to low levels, numerically represented by 11.70 and -9.62 (ref table 6.15).

It is interesting to note that the villages with moderately high levels of development fall in the distance-zones of 0-5km to 20-25 km as a whole.

6.8 Association between Urban- Rural Interaction and Levels of Development

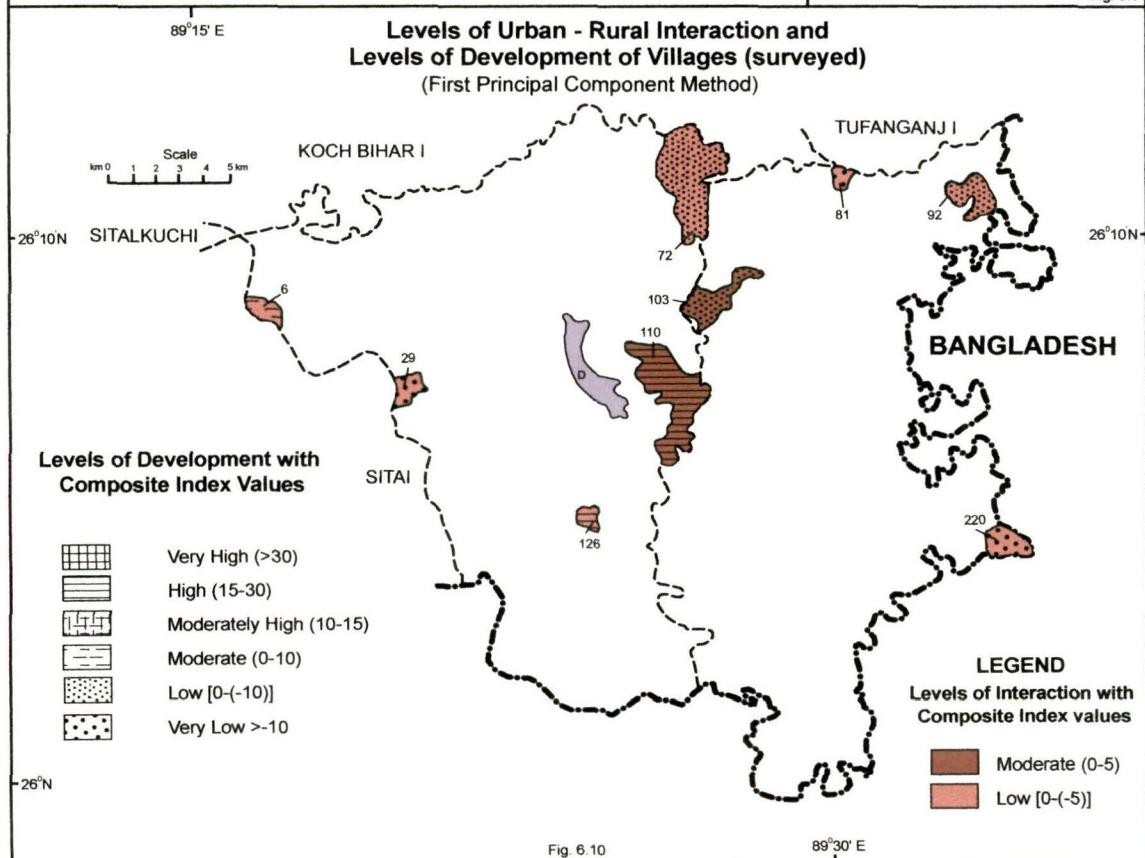
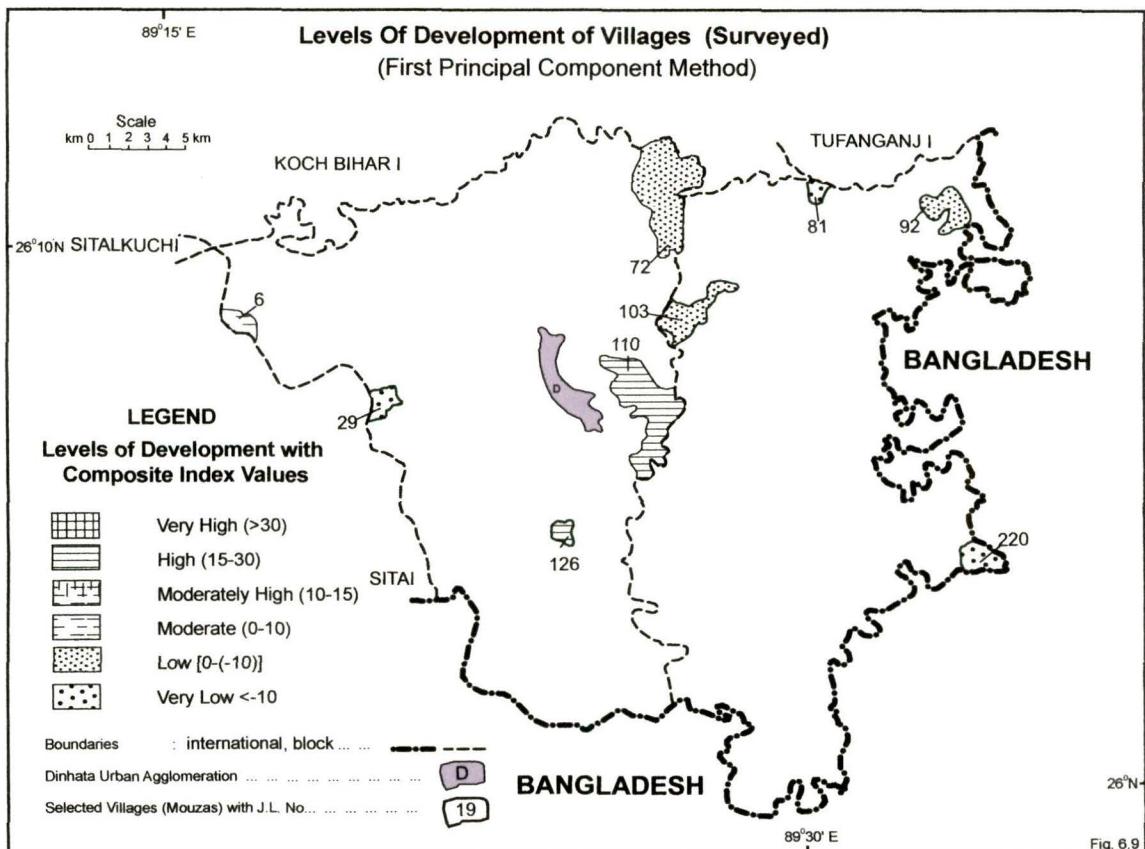
In accordance with the ultimate objective of finding out the correlation between the urban-rural interaction and the levels of rural development, the 'Index of Development' has been superimposed cartographically on the 'Index of Urban-Rural Interaction' to obtain a visual illustration of the association. Figures 6.8, 6.10, 6.12, 6.14, 6.16 show the superimposed maps of the five regions.

Figure 6.8 shows that in the hinterland of Koch Bihar, the closest village—Takagach—is the only village having very high level of interaction and this village has the high level of development. Among the other villages with high levels of development, Chakchaka has high interaction level, while Baneswar is moderately interactive with Koch Bihar. The development levels of Ghughumari and Talliguri are moderately high, while their interaction levels are moderate. An interesting pattern has been marked by Baneswar, i.e. with moderate interaction level it has been classed in high level of development.

Again, though the village of Chatra Chekapdara has got very poor interaction with the town, it is characterised by moderate level of development. Apart from these villages, the magnitude of development of the other villages almost correspond with their degree of interaction, since those belong to low to very low levels both in terms of interaction and development.

As observed in figure 6.10, the situation in Dinhata's surroundings is different from that of Koch Bihar. Though, the hinterland villages of Dinhata range between 'high' to 'very low' levels of development, the interaction levels of these villages are

DINHATA : BLOCKS I AND II



not so much disparate, ranging from ‘moderate’ to ‘low’. That is why, the closest village—Bhangni Dwitiyo Khando---has high level of development with moderate level of urban-rural interaction. Further, Gokunda and Bhanukumari, being characterised by low levels of interaction show high and moderate levels of development respectively. Thus, it appears that the process of development in Dinhata’s hinterland does not depend much on the process of interaction of the villages with Dinhata town.

In contrast, the urban field of Tufanganj has shown an overall correspondence between urban-rural interaction and rural development. As illustrated by figure 6.12, the villages in this particular region, being classified as ‘high’ to ‘low’ levels of interaction are characterised by ‘moderately high’ to ‘low’ levels of development.

The urban field of Jalpaiguri (figure 6.14) is marked by a distinct association between the development levels of the villages and their interaction with the town of Jalpaiguri. That is to say, the villages having higher levels of interaction have higher levels of development.

The rural settlements in Alipurduar’s hinterland, though categorised as only ‘high’ and ‘low’ levels of interaction, belong to ‘high’, ‘moderately high’ ‘moderate’ and ‘very low’ class in terms of their development levels (fig. 6.16). Therefore, it seems that the two phenomena of interaction and development are not much associated in this particular region.

The foregoing analysis of the levels of development of the surveyed villages in association with their interaction levels has been verified statistically by correlation and regression analysis between the ‘index of urban-rural interaction’ and ‘index of rural development’. The results are shown in the table 6.16

TUFANGANJ : BLOCKS I AND II

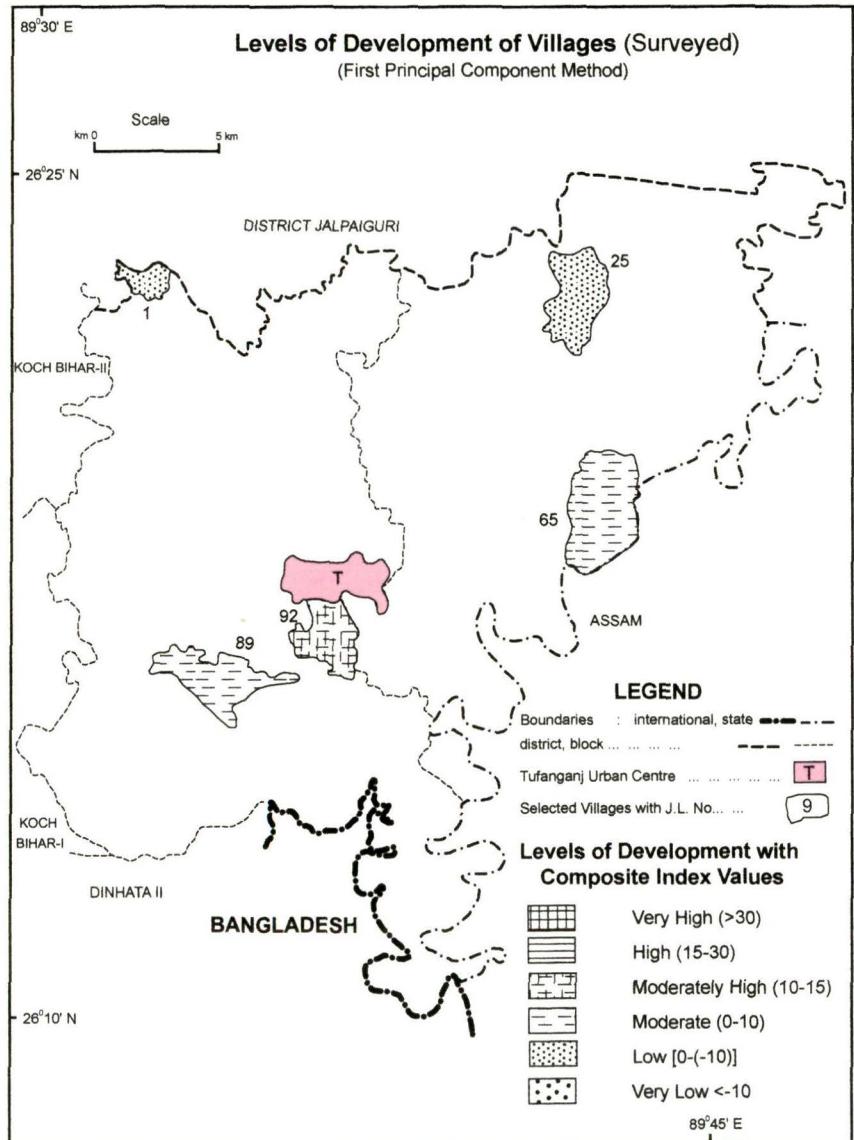


Fig. 6.11

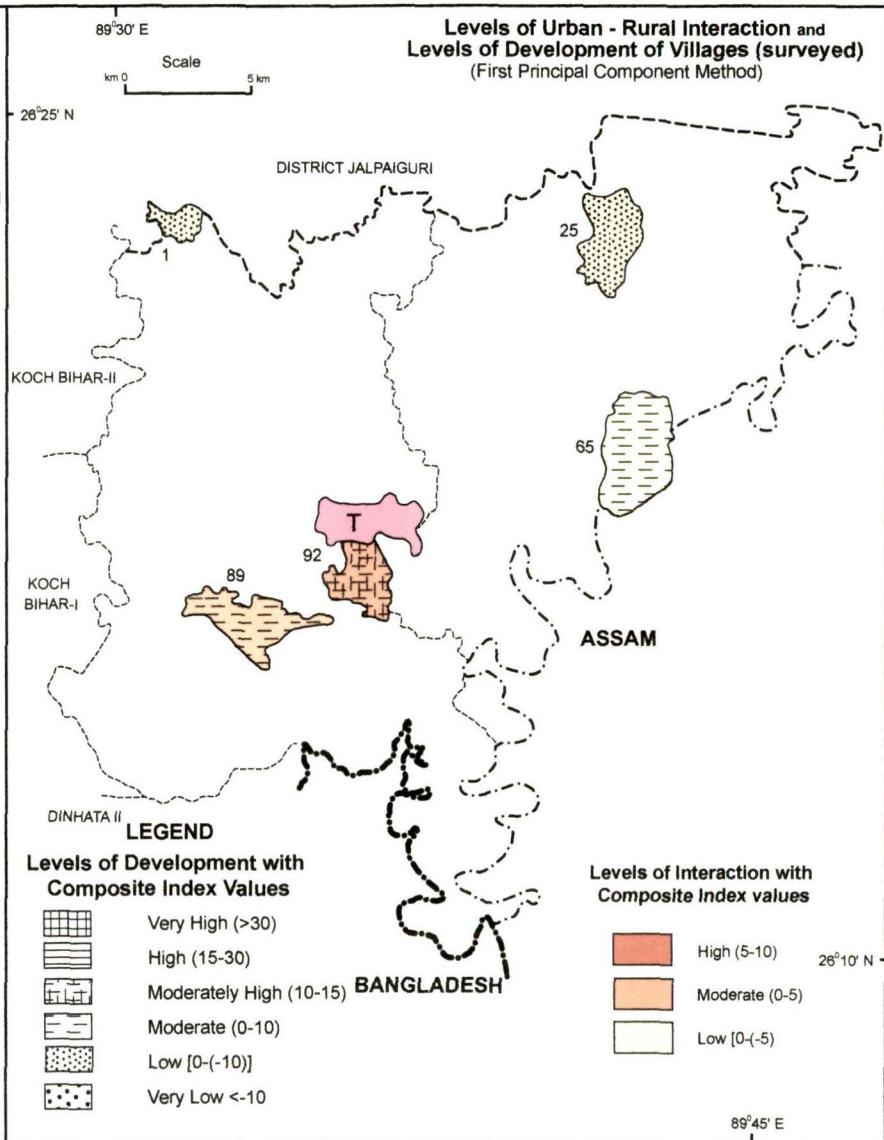


Fig. 6.12

Table 6.16 Results of Correlation and Regression analysis explaining the ‘Index of Development’ of the Hinterland villages by the ‘Index of Urban-Rural Interaction’

| Hinterland Villages of Core towns | Correlation Coefficient ('r') | Regression Coefficient ('b') | Regression Constant ('a') | R ² | t-statistics | F-statistics | Standard Error |
|--|-------------------------------|------------------------------|---------------------------|----------------|--------------|--------------|----------------|
| Koch Bihar | .801** | 2.15 | .983 | .642 | 4.64** | 21.54** | .46 |
| Dinhata | .605 | 2.91 | .486 | .367 | 2.01 | 4.05 | 1.44 |
| Tufanganj | .882* | 1.78 | -.699 | .778 | 3.24* | 10.52* | .54 |
| Jalpaiguri | .929** | 2.73 | -.822 | .862 | 6.13** | 37.53** | .445 |
| Alipurduar | .142 | -.321 | 2.77 | .020 | -.286 | .082 | 1.12 |
| KochBihar District (Combined) | .750** | 2.18 | .245 | .563 | 5.79** | 33.52** | .37 |
| Jalpaiguri District (Combined) | .495 | 1.31 | 1.12 | .245 | 1.97 | 3.89 | .66 |
| Koch Bihar and Jalpaiguri Districts (Combined) | .658** | 1.81 | 0.02854 | .432 | 5.52** | 30.47** | .328 |

Note:

** Significant at .01 level of significance

* Significant at .05 level of significance

Computed

The positive correlation between the ‘index of urban-rural interaction’ and the ‘index of development’ has been statistically significant for the hinterlands of Koch Bihar, Jalpaiguri and Tufanganj towns, while the hinterlands of Dinhata and Alipurduar towns show insignificant relationship in this regard. Though all these regions show high correlation, yet the magnitude of correlation is comparatively higher in case of Jalpaiguri’s hinterland. In the case of Dinhata the insignificant relation shows a moderately high positive relation.

The inter-district comparison reveals a low and insignificant relation characterising the urban fields of Jalpaiguri district as a whole in contrast to the high and significant correlation for Koch Bihar district. For the two districts combined together, the association is moderately high and statistically significant.

JALPAIGURI AND PART OF RAJGANJ BLOCKS

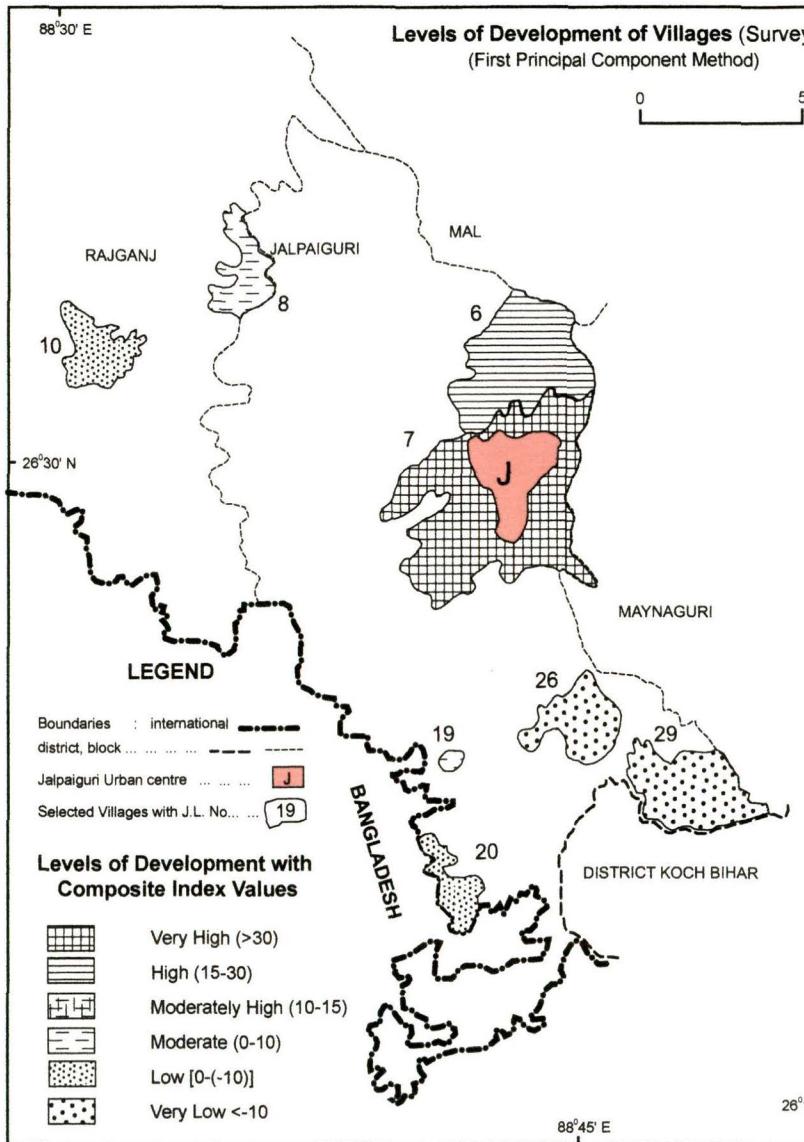


Fig. 6.13

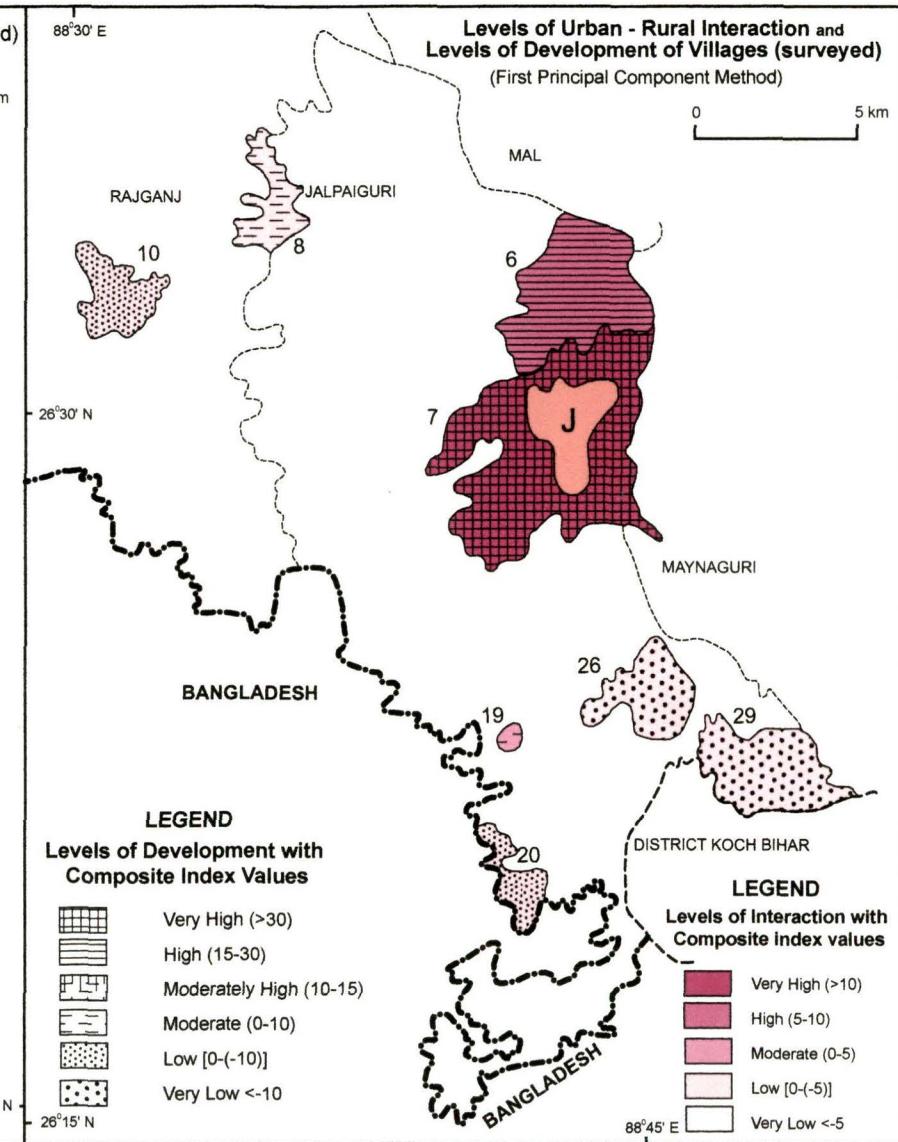


Fig. 6.14

Considering the coefficient of determination (R^2), it may be inferred that urban-rural interaction has explained 64% variations in rural development in the hinterland of Koch Bihar town. This proportion is 86%, and 78% respectively for the hinterlands of Jalpaiguri, Tufanganj towns. The regression equations for these three hinterlands are as follows:

$$Y = .983 + 2.15 (X) + u \quad (\text{For the hinterland of Koch Bihar town})$$

$$Y = -.822 + 2.73 (X) + u \quad (\text{For the hinterland of Jalpaiguri town})$$

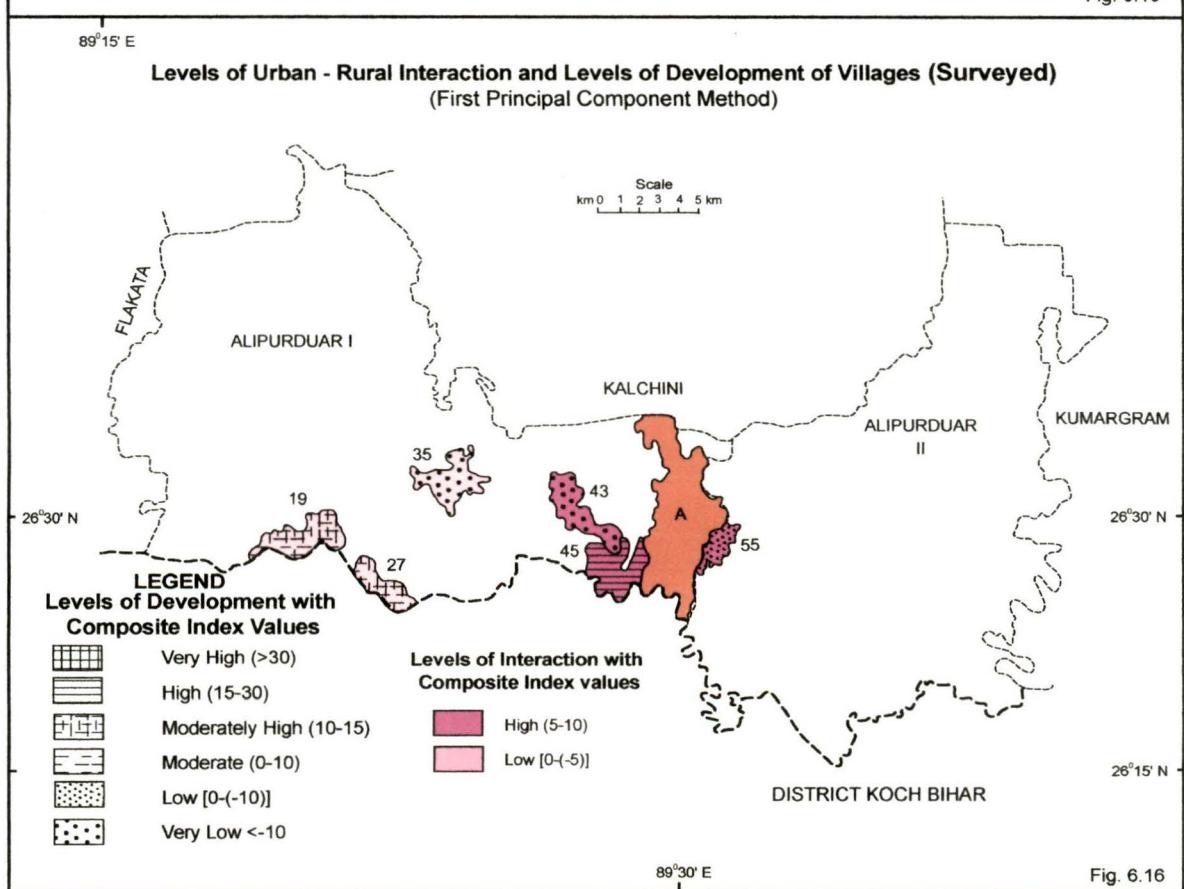
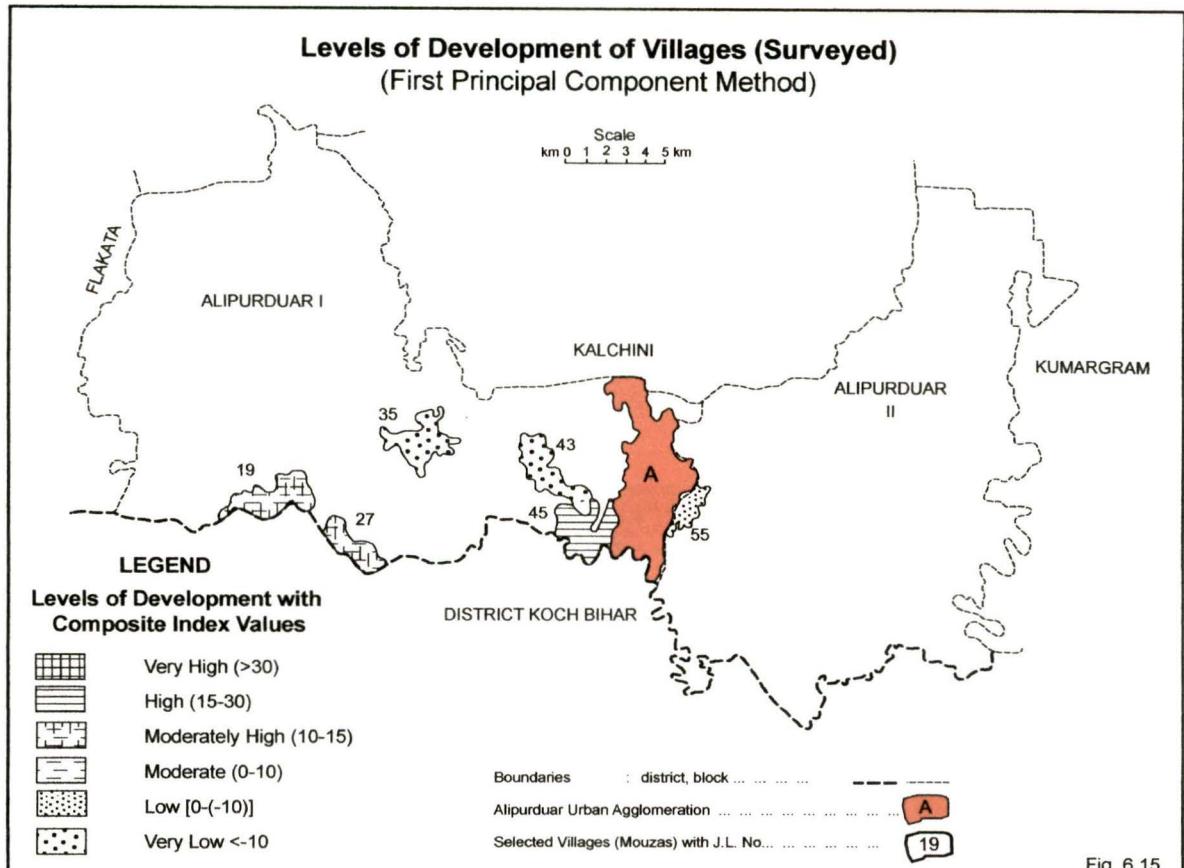
$$Y = -.699 + 1.78 (X) + u \quad (\text{For the hinterland of Tufanganj town})$$

Where, $Y = \text{'Index of Development'}$ (dependent variable), $X = \text{'Index of Urban-Rural Interaction'}$ (independent variable), $u = \text{error term}$

These can be interpreted as that the index of development of the villages increases by 2.15 unit, 2.73 unit and 1.78 unit for each unit change in the urban-rural interaction index, respectively for the hinterlands of Koch Bihar, Jalpaiguri and Tufanganj towns. Since for all these three cases the regression coefficient (b) and R^2 are significant, then it can be said that the relationship is statistically significant.

It can be inferred that the process of rural development in Jalpaiguri's surroundings depends largely on the extent of the interaction of the villages with the town followed by that of Tufanganj, Koch Bihar. This fact leads one to deduce that the town of Jalpaiguri has played the most crucial role in developing its surroundings. The most striking fact in this regard is that, being the smallest town (of the surveyed five), the town of Tufanganj has higher contribution (than Koch Bihar) for developing its surroundings through urban-rural interaction. On the contrary, the town of Alipurduar could not initiate any spread effect reflected in the process of interaction on developing their rural neighbours and the town of Dinhata has got little role in this regard. Therefore, the hypothesis (no.9 as stated in the 'Introduction') that the towns of higher status in terms of administrative characteristics have greater influence on the development process of their hinterland villages has been validated partly.

ALIPURDUAR BLOCKS I AND II



The inter-district comparison reveals that the process of urban-rural interaction of the district of Koch Bihar as a whole, has explained 56% variations in the process of rural development; the contribution is much less (25%) in the case of Jalpaiguri district as a whole. Such a low contribution for Jalpaiguri district is a reflection of complete dissociation of these two processes in the hinterland of Alipurduar. Of course, since the regression coefficient (b) and R^2 for the urban-hinterlands of Jalpaiguri district are insignificant, the relationship is statistically insignificant for this particular case.

The two districts, taken together, show a 43% variation in the development of the hinterland villages contributed by the process of interaction with their respective nearest towns. The regression equations are as follows:

$$Y = .245 + 2.18(X) + u \quad (\text{For the hinterland of the towns of Koch Bihar District})$$

$$Y = .029 + 1.81(X) + u \quad (\text{For the hinterland of the towns of Koch Bihar and Jalpaiguri districts})$$

These equations can be interpreted as that the index of development of the villages increases by 2.18 unit and by 1.81 unit for each unit change in the urban-rural interaction index, respectively for the hinterlands of the towns of Koch Bihar district and of the two districts combined together.

Since for all two cases the regression coefficient and R^2 are significant, then it can be said that the relationship is statistically significant.

Thus, the hypothesis of positive relationship between urban-rural interaction and development of rural settlements has been established for the hinterland villages of Koch Bihar, Jalpaiguri and Tufanganj towns for the urban-hinterlands of Koch Bihar district and also for the urban-hinterlands of the two districts considered together. Again, for these regions the assumption of a positive impact of the process of urban-rural interaction on the levels of development of the villages has been substantiated for the same regions. The said hypothesis has been insignificantly proved for Dinhata's hinterland and for the urban-hinterlands of Jalpaiguri district, while it has been totally nullified for the urban-field of Alipurduar.

6.9 People's Perception regarding urban-rural interaction and rural development: An Impressionistic view

In pursuing the present exercise, the perception of the village people about a better interaction of their native villages with the core towns leading to the development of villages has been taken into consideration. The village people have reacted in a variety of ways to the questions of whether they are satisfied with the existing levels and nature of interaction of their village with the core town, and when not satisfied, they have expressed their opinion on what should be done for better interaction. The opinions of the villagers have been accorded importance since the necessities of the villages concerned are defined by the needs and aspiration of the villagers. The following section deals with the opinion and reaction of the heads of the households in this respect.

Opinion of the villagers

The figures 6.17– 6.22 illustrate the proportion of the heads of the households in terms of their suggestions for better interaction with the town from which varieties of suggestion made by the heads of the households may be observed.

There are some villagers who are satisfied with the existing degree of interaction. Persons belonging to this category are comparatively more in the nearer villages than those in the distant villages. The proximity of their habitats from the towns, leading to a better level of relationship with the concerned urban centres, explains their satisfaction. These people belong to Takagach, Ghughumari, Chakchaka, Baneswar in the hinterland of Koch Bihar, Bhangni Dwitiyo Khanda, Chhota Sakdal, Gokunda in Dinhata's hinterland, Chamta, Deocharai, Bhanukumari in Tufanganj's hinterland, Paharpur in Jalpaiguri's urban field and Birpara, Dakshin Majher Dabri, Chapatali in Alipurduar's hinterland.

Yet, apart from this general trend, villagers from far-away places, e.g., Chhat Singimari (Koch Bihar), Dakshin Sonapur and Silbari Hat (Alipurduar) express their satisfaction about the level of interaction because of the fact that these villages have got a well defined transport linkage (discussed in the section 4.3 chapter IV) with the respective villages which has made a favourable relationship of interdependence.

Distribution of the Rural Household-Heads according to their Suggestions for better Interaction with town (Koch Bihar) and associated Development of their Villages

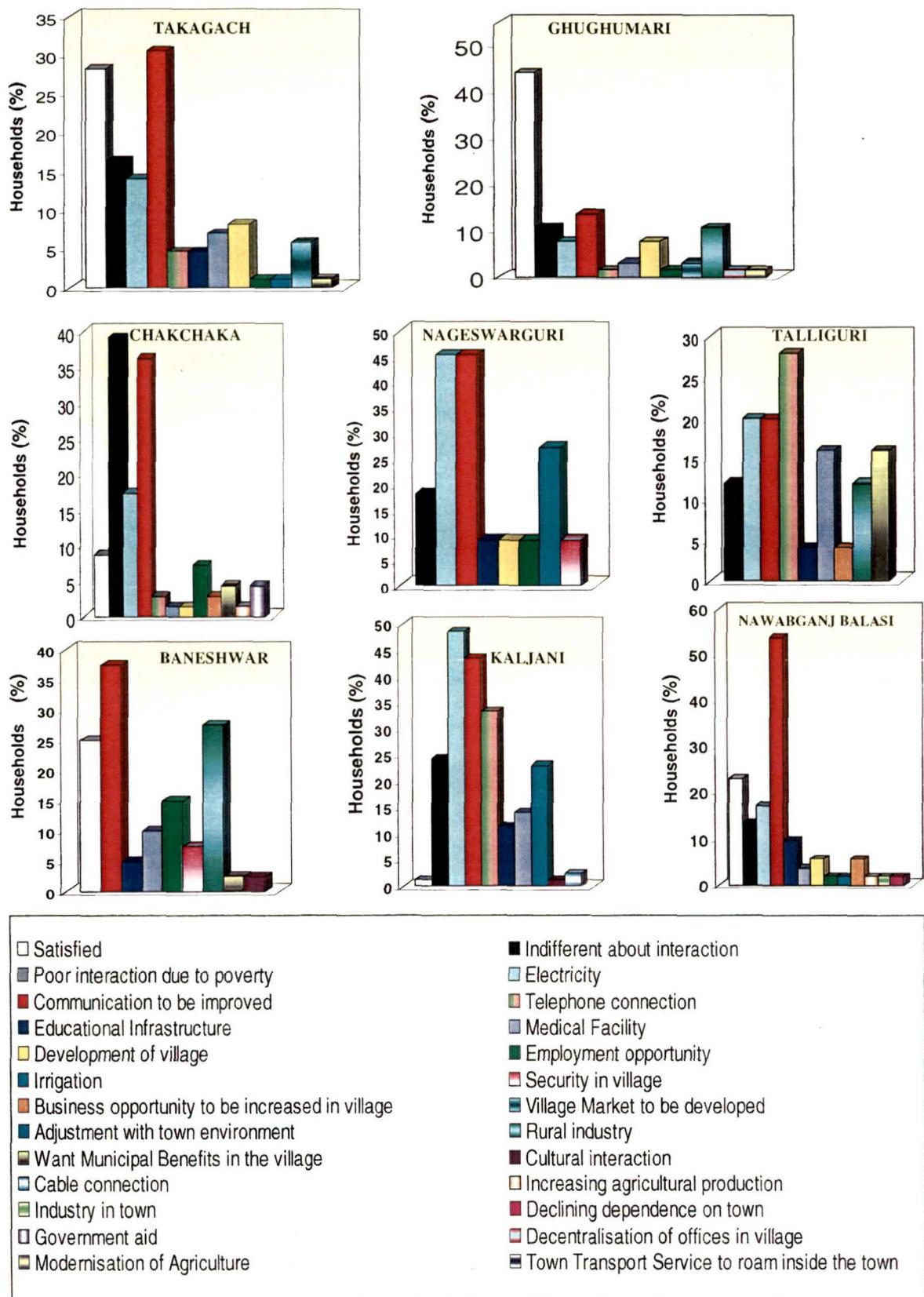


Fig 6.17

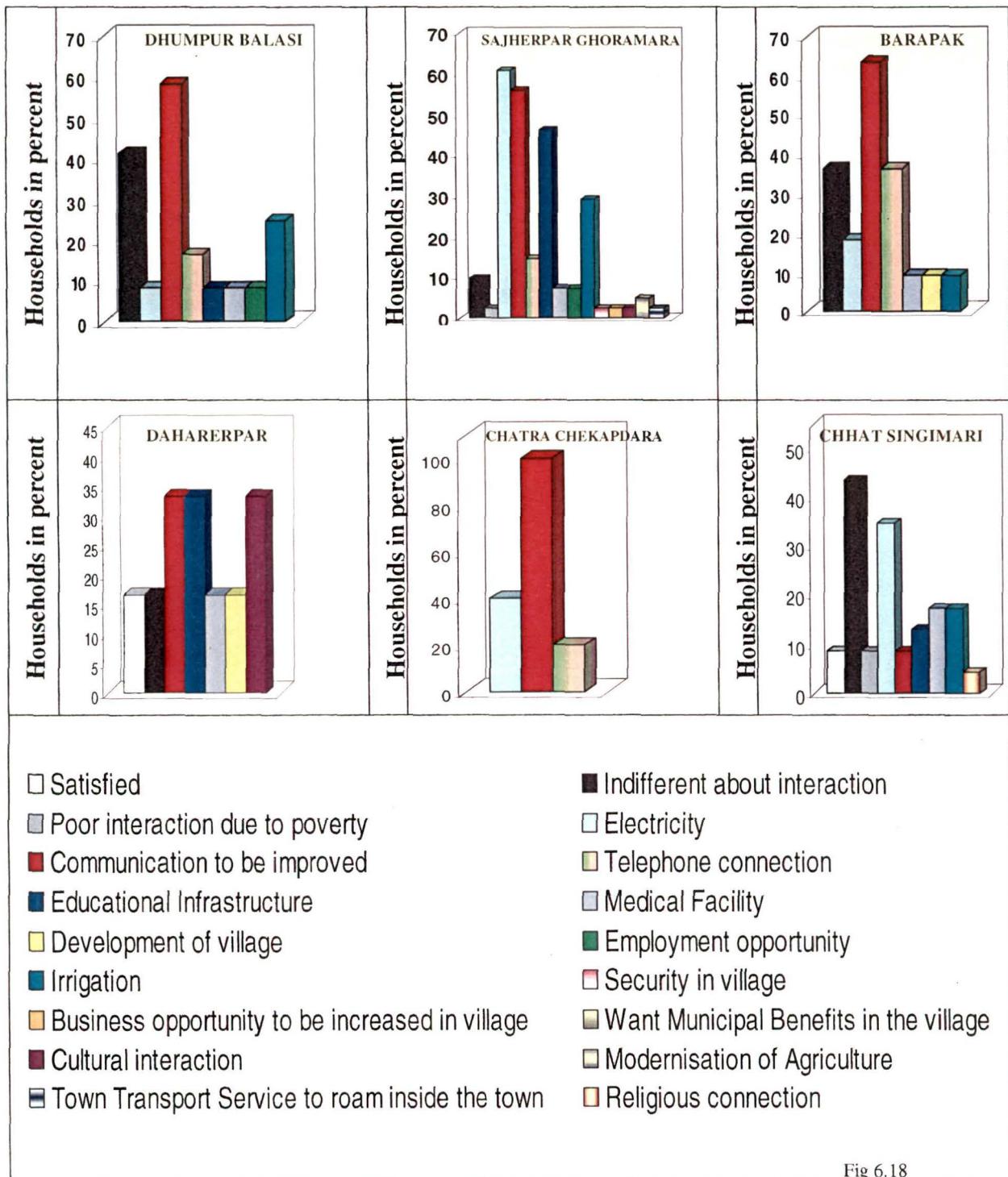
Contrary to this category of persons, a large number of villagers however has raised a number of problems hindering the urban-rural interface. The problems may be broadly categorised as follows:

- a) problems relating to the *direct contact* with the concerned urban centre,
- b) problems arising from the *lack of infrastructural facilities* in villages,
- c) other problems of the villages,
- d) problems relating to the town areas

a) The *problem of communication* has been identified as the first and foremost problem relating to the direct contact with the town. People of almost all of the villages (except that of Birpara and Chapatali) have pinpointed the factor of communication as one of the major obstacles for the desired relationship with their urban cores. Even in the adjacent villages or in the villages with good transport linkage people want the improvement of existing *road communication* for the betterment of urban-rural interface. For instance, despite a good frequency of buses plying between the village and Koch Bihar town, the villagers of Takagach (4 km from Koch Bihar town) want the renovation of the bridge on Torsha that connects Takagach with Koch Bihar. Again, the people of Kharia (4 km from Jalpaiguri) and the people of Bhangni Dwitiyo Khando (1 km from Dinhata) face the problems of traffic-congestion in commuting to the respective towns.

The problems of communication are acute for the villages with no bus service or less frequency of buses plying between them and the towns. According to the villagers of Nageswarguri, Dhumpur Balasi, Barapak, Daharerpar (in Koch Bihar's surroundings), Raja Khora, Ruier Khuthi, Pet Bhata Seora Guri, Atialdanga (in Dinhata's surroundings), Takoamari, Chhat Barochowki (in Tufanganj' hinterland), Sakati (in Jalpaiguri's hinterland), Naottoartari (in Alipurduar's rural peripheries) people cannot avail of the health services of towns even for patients in very crucial stages and consequently death takes its toll out of their lives. This is the maximum baneful effect of lack of communication that the villagers face. This makes communication with towns a vital necessity for the rural population. Apart from this, on account of the difficulties in communication, interaction is hindered in the field of education, economy and socio-cultural activities which ultimately degrade the levels of

Distribution of Rural Household-Heads according to their Suggestions for a better Interaction with core town (Koch Bihar) and associated Development of their Villages



- Satisfied
- Poor interaction due to poverty
- Communication to be improved
- Educational Infrastructure
- Development of village
- Irrigation
- Business opportunity to be increased in village
- Cultural interaction
- Town Transport Service to roam inside the town

- Indifferent about interaction
- Electricity
- Telephone connection
- Medical Facility
- Employment opportunity
- Security in village
- Want Municipal Benefits in the village
- Modernisation of Agriculture
- Religious connection

Fig 6.18

interaction. That is why, all the heads of the households (surveyed) in Chatra Chekapdara, 90% in Raja Khora, Pet Bhata Seora Guri and Naottoartari, 70% -80% in Sakati, Gujrimari, Boalmari, Takoamari, 50%-60% of the heads of the households in Kaljani, Nawabganj Balasi, Dhumpur Balasi, Sajherpar Ghoramara, Barapak have suggested that improvement of communication facilities should be given greater priority for an efficient urban-rural interface.

Among the other problems relating to the direct contact with the server towns, rural inhabitants of nine out of fourteen villages feel the necessities of *telephone connection* with the town of Koch Bihar. It is interesting to observe that more people have a demand for telephone connection in Talliguri than for communication. The road communication of this village through NH 31 with the town of Koch Bihar has declined the demand for road communication and thus, for a better relationship the want for telephone connection is evident. The suggestion for telephone connection has come from many of the villagers in other hinterlands. The lack of road and telephone communication keeps the villages isolated from the towns and so the direct contact with the town is essential by making easy of these communication facilities easily available.

The *circulation of daily newspaper* in the village would be another mode of assisting the course of urban-rural interaction as has been thought by some of the villagers of Deocharai in the hinterland of Tufanganj.

The direct contact with the town has again been manifested through the initiation and the expansion of interaction in the sphere of *administration, banking, culture, religion* etc.

b) A number of suggestions to *develop the intrinsic characteristics of villages* have been made by the heads of the surveyed households. Among these suggestions, to introduce and improve electrification, educational, medical infrastructure in the villages, to modernise agriculture through the development of irrigation system, rural industrialization, improvement of village markets, increasing business potentials and employment opportunities in villages are important. In this context, our question was on how the introduction of these facilities will lead to more interaction to which the villagers' reply appear to be very logical. For instance, people of Nageswarguri, Talliguri, Kaljani, Sajherpar Ghoramara, Chhat Singimari, Chhota Sakdal, Raja Khora, Ruier Khuthi, Salmara, Chhat Barochowki, Takoamari, Sakati, Boalmari, Chapatali,

Distribution of Rural Household-Heads according to their Suggestions for a better Interaction with core town (Dinhata) and associated Development of their Villages

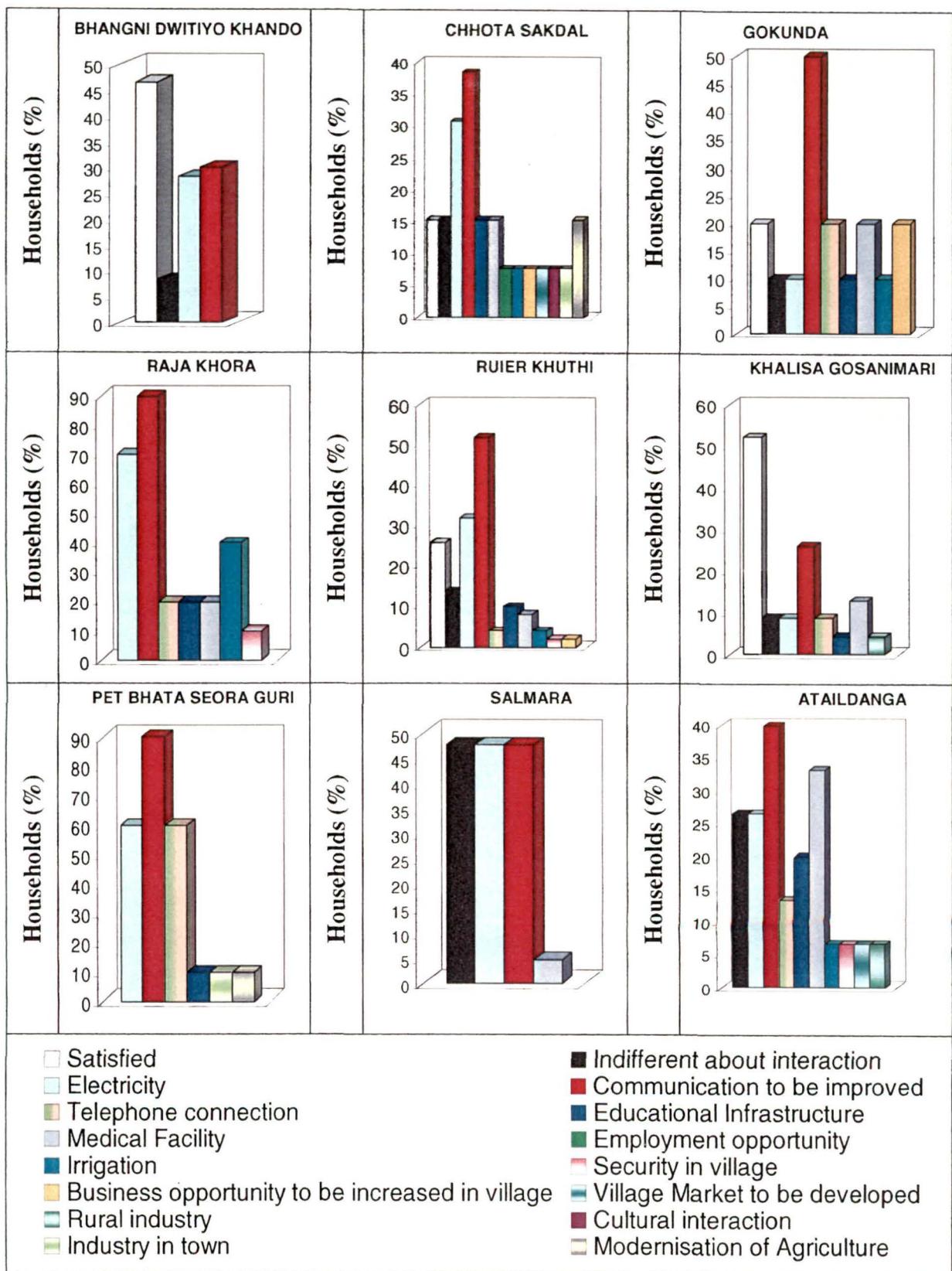


Fig 6.19

Silbari Hat suggesting *electrification* opined that introducing electricity may facilitate the progress of education of their children which in turn may lead to their educational interaction with the town. Again, electricity would further irrigation system which in turn promote agricultural production and this again would promote the sale of agricultural produces in the towns facilitating economic interaction with the town.

A sizeable section of villagers desire for the *development of educational and medical infrastructures* in the rural areas which indicates the spread of urban services in the villages associated with the movement of urban doctors and teachers to the rural centres.

Though Chamta is the nearest neighbour of the town Tufanganj, people of this village feel that *employment opportunities in the village* will be favourable for upgrading their relationship with Tufanganj. Similar opinion has been derived from the heads of the households of Bhanukumari, Nageswarguri, Chakchaka, Baneswar, Chhota Sakdal, Dakshin Sonapur, Naottoartari, Silbari hat etc. Actually these people have suggested that increasing employment potentials in the village as well as in the respective towns would improve the economic relations between their village and the core town.

Likewise, people of the villages of Chakchaka, Talliguri, Nawabganj Balasi in Koch Bihar's hinterland, of Gokunda, Chhota Sakdal in Dinhata's hinterland have opined that the *promotion of business* in their villages will provide them an alternative employment. If business increases in volume, villagers will move to the towns more for the transaction of commodities and thereby their economic interaction will be stronger with the core towns.

A *link between the rural markets with the urban market* can be developed in a proper way by setting up *well-infrastructure village markets*. This has been desired both by the people of neighbouring villages, e.g. Takagach, Ghughumari, Dakshin Majher Dabri, Paharpur, Chhota Sakdal and by the people of distant villages e.g. Atialdanga, Gujrimari, Sakati as well.

The necessity for *rural industrialisation* has been mentioned by the heads of the households of the villages with good transport linkage with the respective nearest towns. Here, the industries mean basically the cottage and small scale household industries. The villages falling in this category are Ghughumari, Talliguri, Baneswar, Paharpur, Gujrimari, Boalmari, Dakshin Sonapur, Atialdanga etc. The last one in the

Distribution of Rural Households according to their Suggestions for a better Interaction with core town (Tufanganj) and associated Development of their Villages

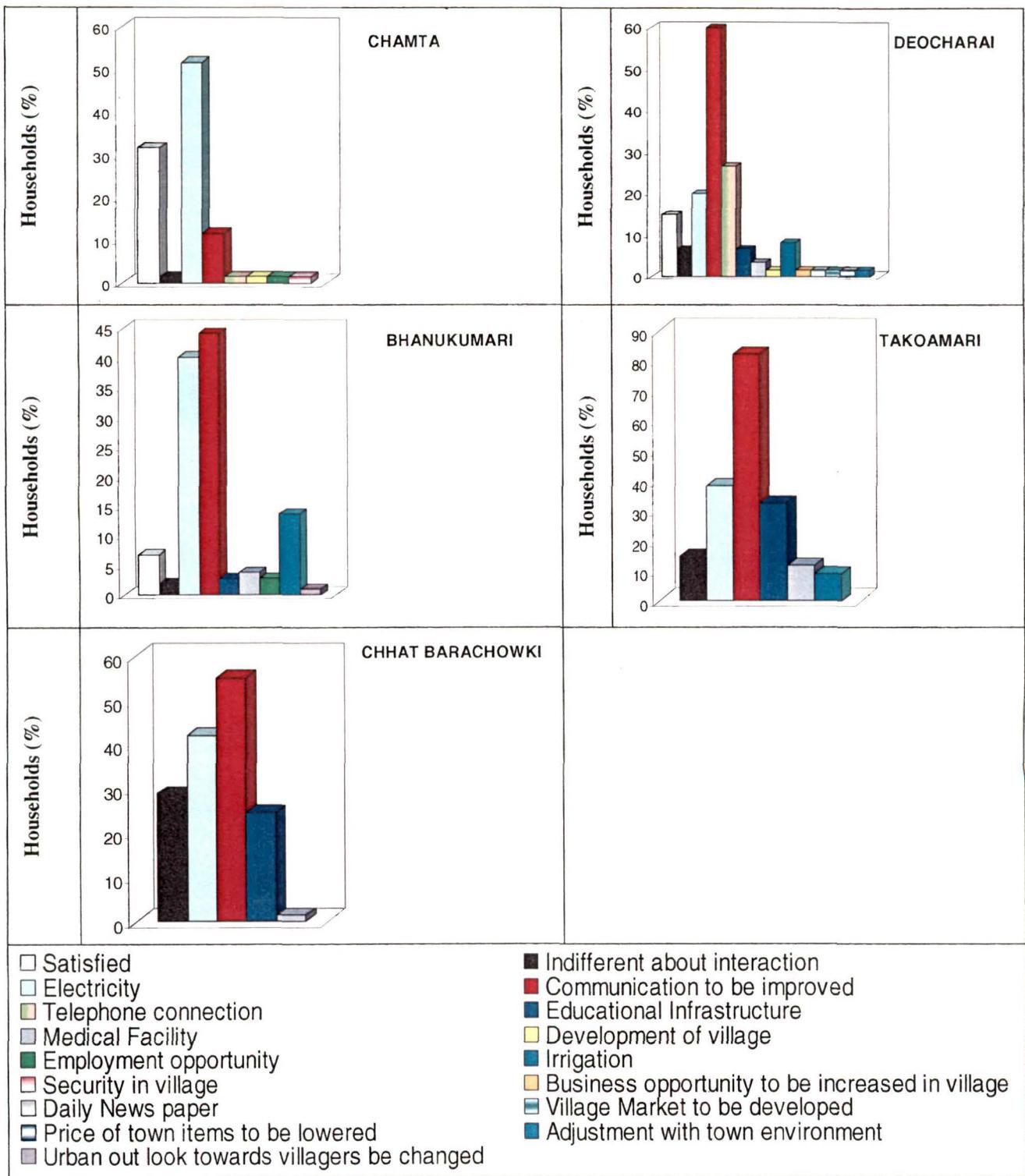


Fig 6.20

list (Atialdanga) has poor transport connection with the town of Dinhata, but its poor agricultural scenario has compelled its people to think in the line of rural industrialisation. The rational for this particular necessity in promoting the process of urban-rural interaction is obvious as, expectedly, the urbanites would have a demand for the products of rural industries; such demand in turn would create a link between the two sectors.

The necessity for *modernisation of agriculture* playing a role in integrating the rural and urban areas has been suggested by the villagers of Ghughumari, Chakchaka, Sajherpar Ghoramara, Nawabganj Balasi, Chhota Sakdal, and Pet Bhata Seora Guri. According to them, the improvement of agriculture would certainly be associated with economic solvency of the villagers facilitating the villagers' movement to the towns and thereby enhancing interaction between the two.

The necessities of the people of the adjacent and neighbouring villages have also been manifested in their desire for *provision of municipal benefits in their villages*. For example, 50% heads of the surveyed households of Kharia (the adjoining habitat of Jalpaiguri) want extension of municipal water connection up to the village.

There are some people in village Chhat Singimari, who have expressed their financial incapability to move to towns and thus to interact with the town. That is to say, *poverty has thwarted the process urban-rural interaction in this regard*.

It may therefore be inferred that a large section of village people associates the interaction between their villages and the respective core towns as a way to an overall development of those villages.

c. Among the *other suggestions* made by some of the villagers, for a desired urban-rural interaction, *ensuring security* of the villagers is significant. Villagers face political, social, religious trouble which disrupts the security of their lives. For example, the villagers of Sakati (Jalpaiguri), Atialdanga (Dinhata) lying in the border of Bangladesh, complain for the inefficiency of BSF (Border Security Force) personnel for which they feel insecure. Again the people of Chamta—the next-door neighbour of Tufanganj, face the problems of urban criminals. Besides, the villagers have to face other social problems for which they do not have any help from the local administration in time. In view of these problems, the villagers desire a proper, timely intervention of the urban people which may ultimately lead to a healthy interaction with the towns.

Distribution of Rural Household-Heads according to their Suggestions for a better Interaction with core town (Jalpaiguri) and associated Development of their Villages

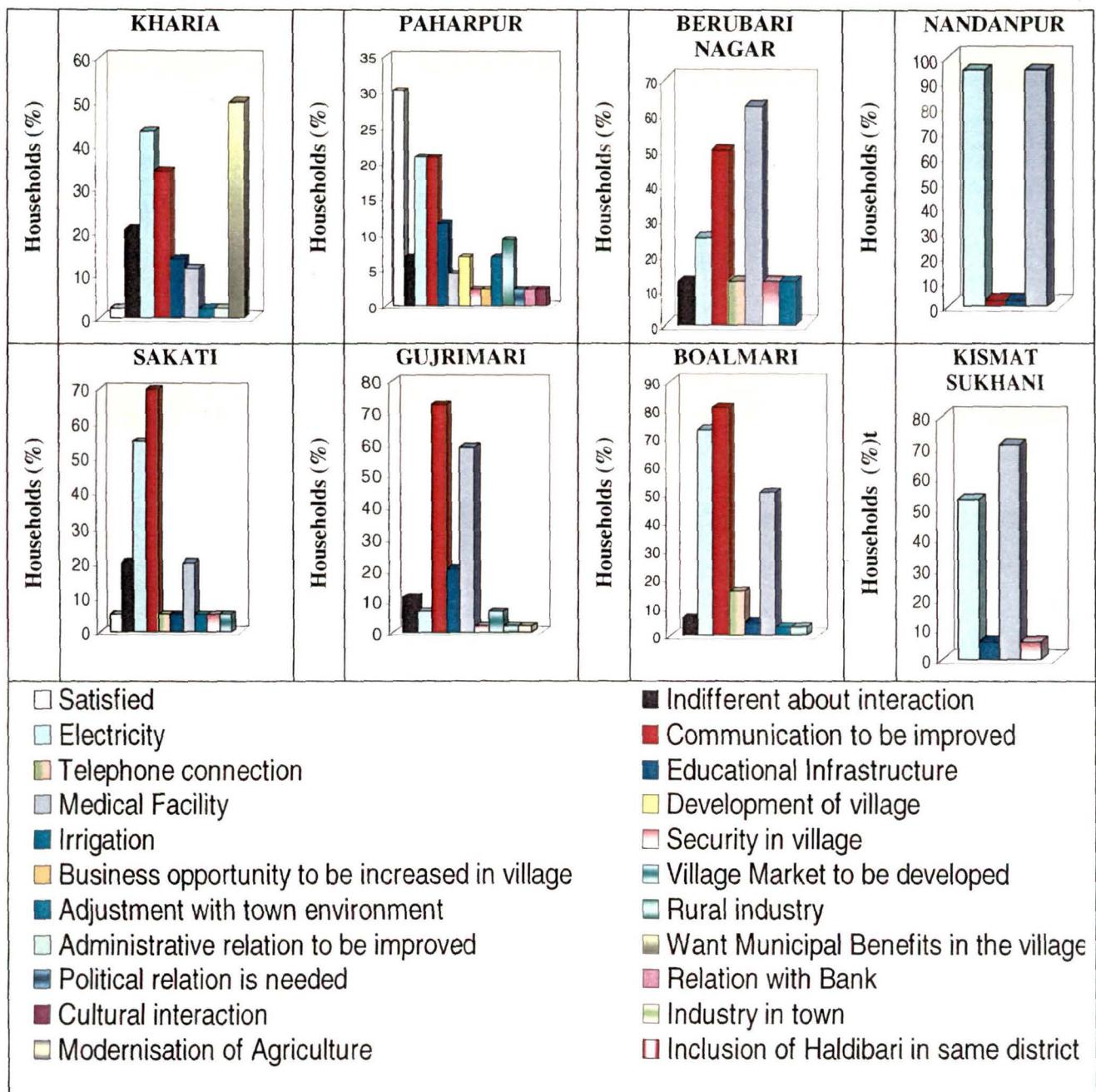


Fig 6.21

d. The *problems relating to the town* areas refer to the problem of adjustment of the villagers with the urban environment. The villagers sometimes feel alien in the urban environment particularly when they come for some specific work in the offices of towns, or in the urban markets. That is why, the outlook of the urbanites towards them should be changed so that the hesitation of the villagers be removed.

Again the transport services inside the town may encourage the villagers to move to all parts of the towns.

Along with all these suggestions specified in the foregoing paragraphs, a substantial proportion of the interviewees have shown their indifference to our question of improving better interaction. The spatial distribution of these villagers is observed in many of the sampled villages showing a lack of consciousness among them.

Distribution of Rural Households according to their Suggestions for a better Interaction with core town (Alipurduar) and associated Development of their Villages

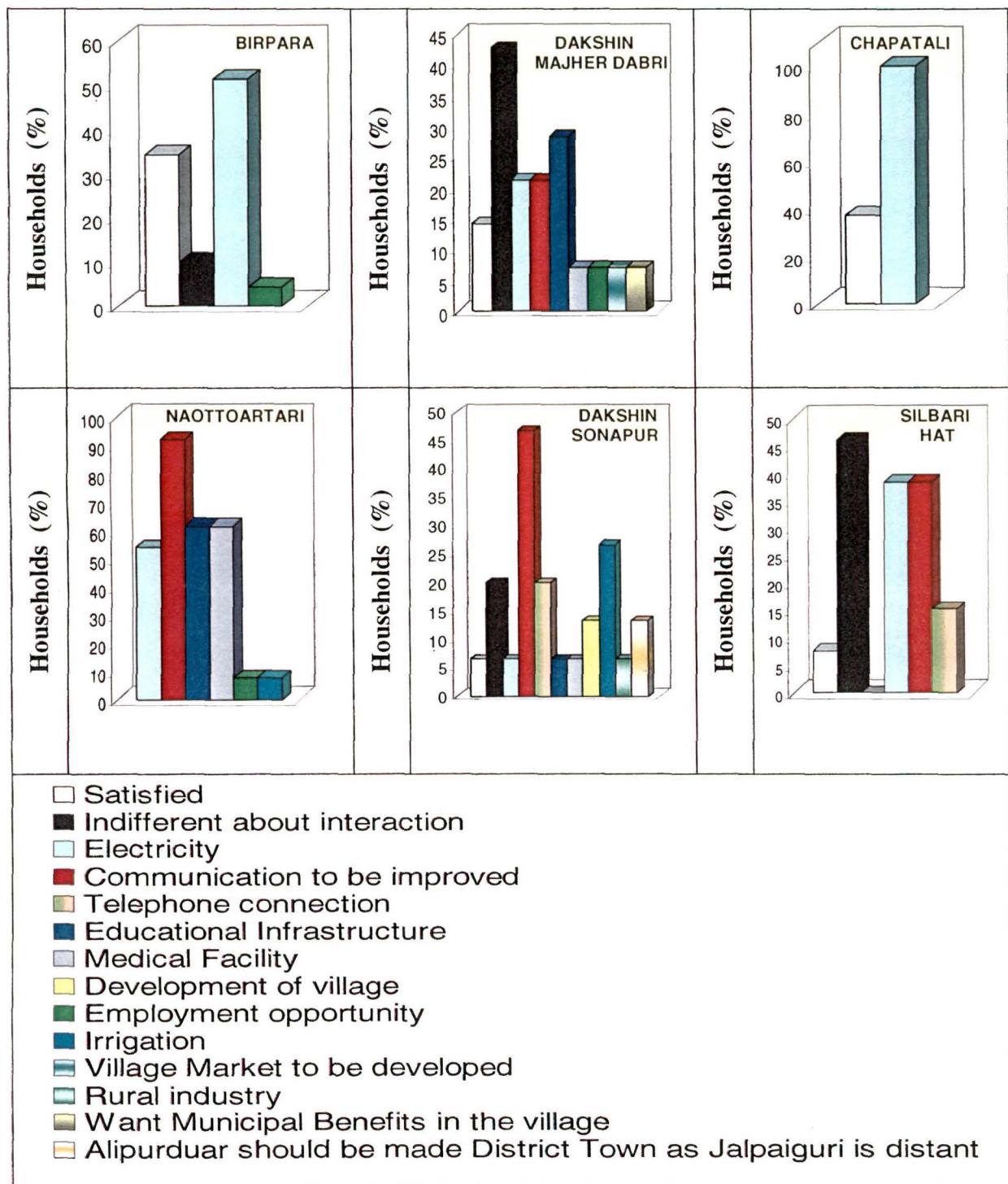


Fig 6.22

Summary

The salient features emerging out of the afore-mentioned analysis are as follows:

1. The *gradient of urban influence* has been the most prominent in Koch Bihar's hinterland in view of the density of population there.

The distance-decay of population growth rate is comparatively distinct in the rural neighbourhood of Koch Bihar than in the other regions.

The sex ratio gradient can be identified in the peripheries of Dinhata.

The urban field of Jalpaiguri is important in terms of distance-decay of literacy rate and work participation rate. An interesting fact has been illustrated by the upward and the uniform trend of literacy in the urban field of Koch Bihar.

The rural occupational pattern has been affected by the distance from the nearest town for all the sectors of occupation only in the hinterland of Koch Bihar.

In respect of the proportions of agricultural labourer and cultivator, only Koch Bihar's hinterland has got correspondence with the hypothesised pattern.

The availability of rural infrastructures has been influenced by distance from Jalpaiguri town. Otherwise, it shows complete dissociation from the distance (from the core towns) and this suggests that establishment of any infrastructure in villages does not at all depend upon the proximity or the remoteness of the concerned village from its nearest town.

Thus the gradient of urban influence is prominent in respect of the demographic and the economic characteristics of the villages; but in respect of the rural infrastructure, the gradient is not marked. So the hypothesis no.7 (spelt out in 'Introduction') has been proved partly.

The towns Koch Bihar and Jalpaiguri can produce relatively greater spread effect than the towns of Alipurduar, Dinhata and Tufanganj. Of the two district towns, Koch Bihar appears to have greater influence than Jalpaiguri.

2. Among the *Determinants of Development* a) the *economic condition* has been measured by the *proportion of high-income households* (family income of Rs. 12,000/ and above) and *middle-income households* (per capita income of Rs. 1001-2500/). As

observed in our study, for the majority of cases (except the hinterland of Jalpaiguri), the presence of high-income families has followed the distance-gradient either for the whole hinterland or for certain distance limits. On the contrary, the average proportion of the middle-income families has not been shaped by the physical distance of the villages from their core towns except in the region of Alipurduar.

- b) The higher *educational level* (as measured by the percentage of household-heads with higher secondary background) has been greatly affected by the distance of the villages in the hinterlands of Tufanganj, Jalpaiguri and Koch Bihar from the respective towns.
- c) The spatial distribution of *awareness*, measured in terms of the *proportions of village households reading newspapers*, has followed a more or less downward gradient (along with distortions) in all the regions, except in the hinterland of Alipurduar, where in contrast it follows a rising trend corresponding with distance. Thus distance determines awareness in all the regions except in Alipurduar where transport linkage is the deciding factor.
- d) The *non-farm employment* of the rural hinterlands has been patterned by the proximity of the two district towns of Koch Bihar and Jalpaiguri.
- e) In view of the rural *quality of life*, the distances from Koch Bihar and Jalpaiguri towns have played important role, whereas the same characteristics of the other regions are indifferent to the distance from their core towns.
- f) The distance from the urban core has determined the *economic prosperity* of the villagers centring the towns of Koch Bihar, Jalpaiguri and Dinhata principally and of Tufanganj to some extent. The transport link and the income pattern are also important for this.

3. a) Considering the comprehensive *levels of development* of the hinterland villages, wide disparities have been marked in the intra-hinterland of the district towns of Koch Bihar and Jalpaiguri; the disparities are comparatively lesser in the hinterlands of the three subdivisional towns. In the urban field of Tufanganj, the disparity is the least.

- b) The development levels of the villages in the surroundings of Jalpaiguri, Koch Bihar and Tufanganj responds to the distance from the respective urban centres (with few exceptions), while the development of the hinterland of Alipurduar and of Dinhata is indifferent to the distance from the town.
- c) There exists a high positive correlation between the two processes of urban-rural interaction and rural development in the urban fields of Jalpaiguri, Koch Bihar and Tufanganj. On the contrary, the hinterlands of Alipurduar and Dinhata do not show any significant relationship between these two aspects.

Comparing the two districts, the district of Jalpaiguri, as a whole, exhibits insignificant relationship between these two aspects. This is because of the total indifference of the region of Alipurduar to this relationship.

Thus the hypothesis (no.8, as spelt out in the ‘Introduction’) of positive relationship between urban-rural interaction and rural development has been statistically established for the hinterlands of Jalpaiguri, Koch Bihar and Tufanganj towns, for the hinterlands of the towns of Koch Bihar district as a whole and also for the entire region considered together.

The phenomenon of rural development has been influenced by the process of urban-rural interaction to the maximum extent in the case of the hinterland of Jalpaiguri, followed by those of Tufanganj and Koch Bihar. The contribution of Koch Bihar town in explaining the variation of development of its hinterland is much lesser than the contributions of Jalpaiguri and Tufanganj. It is an interesting finding that although Tufanganj is the smallest town in the present study, it has a much greater effect in developing its hinterland than the district town of Koch Bihar.

Thus it may be concluded that though the district town of Jalpaiguri shows that it can initiate maximum spread effect on the progress of its hinterland, Tufanganj, the smallest town under study, has also been able to integrate the development of its surrounding villages with urban-rural interaction to a larger extent than the other district town, i.e., Koch Bihar. In this context, the hypothesis (no.9 as stated in the ‘Introduction’)—that the higher the status of an urban centre, the greater will be its impact on the levels of development of its hinterland villages—has been substantiated partly. It is interesting to note that while interaction with the subdivision town (Tufanganj) of Koch Bihar district may have a considerable influence on the development of its hinterland villages, the total indifference of the subdivision town of

Jalpaiguri district (Alipurduar) to this relationship has a net effect on the district of Jalpaiguri as a whole witnessing an insignificant relationship.

However, the postulated (positive) relationship between the two processes of Urban-Rural Interaction and Rural Development has been validated for the entire region (considered together) under study. It has also been established that the course of interaction has a moderate impact (which is of course positive) on the process of rural development for the entire region.

Notes

1. 'r' values with ** indicates that the correlation is significant at 1% level of significance and with * indicates that the correlation is significant at 5% level of significance.

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