Commuting is an important parameter of urban-rural interaction. Numerous authors from various streams have used the criterion of commuting as a parameter of urban-rural interaction. To mention a few are: Kaur (2007), who has used commuting as one of the parameters to look into urban-rural relations of Inter-State Chandigarh Region. Gould (1985) and O’connor (1983) have given due consideration to the movement of people in urban-rural linkages. Gould has suggested that these flows of people are not only symptoms of development process but are themselves active features in the transformation of rural and urban places. This has been possible because of availability of more remunerative work in urban centres and easy commuting feasible to the work places. Chaudhuri (2001) also considers commuters and migrants as important urban-rural linkages.

In the present case study of district Hisar, commuting has been used as a parameter in defining urban-rural relations. Due to lack of direct data available on this parameter, two proxy-indicators have been used to serve the purpose. These indicators are: (i) proportion of non-agricultural workers and (ii) availability of pucca road in the villages. These indicators have been taken on the assumption that diversification of rural economy and better connectivity, both will encourage commuting. Among the non agricultural workers, persons engaged in tertiary services like health, education and administrative services play a vital role in strengthening urban-rural relations.

Upto middle of 19th century, the district had only one important road i.e. Delhi-Sirsa road which passed through Hansi, Hisar and Agroha. Only a small portion of this road around Hansi and Hisar was metalled. Most part of this road and other roads used to be kutcha. Kutcha roads made commuting difficult in those days. People used camels as their mode of transport.

In 1889-90, two principal roads were constructed i.e. Delhi-Sirsa and Hansi-Bhiwani. Other roads were from Hisar to Bhiwani, Tosham, Tohana and Hansi to Barwala. These roads were also unmetalled except few portions near towns. Cart traffic was used along the roads where soil was firm but in sandy tracts, these carts were
replaced by camels. During rains, travel became difficult on these *kutcha* roads (Gazetteer, 1987).

After independence, more emphasis was laid on the development of communication and many roads were constructed. But, the progress of road development was remarkable after the formation of Haryana in 1966. Initially, increase in metalled roads mainly took place under state highways and district major roads; there was no increase in other category of roads. In 1970, the govt. started a crash programme to link every village with a metalled road.

Before independence, only a few private transport companies operated their buses in the district but later on, the passenger transport was shared between public and the private sector. However, in 1972, the passenger transport was entirely nationalized in the district and Haryana roadways took over the routes operated by private companies. This led to expansion and improvement in the frequency of bus services. The passenger transport spread over the district extensively and every corner of the district was connected with important places in and outside the state, which made commuting even much easier (Gazetteer, 1987).

Moreover, various special farms and institutes have made Hisar city a special destination for commuting. Horse Breeding Farm, Sheep Breeding Farm, Govt. Livestock Farm, Indo-Australian Cattle Breeding Farm, Pig Breeding Farm, National Research Centre of Equines, Indo-Britain Agro Farm, Krishi Gyan Kendra, Warehouses of Food Corporation of India and Central Warehousing Corporation, Industrial Training Institute and Central Tractor Training Institute have been major features of attraction. Various categories of employees and people visit these farms/institutes for their service and consultation respectively.

Wool grading cum marketing centre, cotton ginning and pressing, dal making, cloth manufacturing, oil mill, re-rolling, moulding and machine manufacturing, utensil making, bolts and nuts and galvanizing of buckets and ice factory were the manufacturing units. Labour force for these manufacturing units commuted from nearby villages. But, very little progress was made regarding establishment of modern industries till formation of Haryana in 1966.
After independence, education spread at a rapid pace. A number of new schools and colleges were opened. The Punjab College of Veterinary Sciences (1948), Government College (1950), Dayanand College (1950), Fateh Chand College for Women (1954), the College of Agriculture (1962) and the College of Basic Sciences and Humanities (1964) established at Hisar city were prominent ones. Pace was accelerated after 1966. City developed fast after formation of Haryana and is now one of the most well provided city of the state.

After formation of Haryana, increased agricultural production due to Green Revolution led to the economic prosperity of the agriculturists. This improved their standard of living and they began to adopt modern facilities. They started having their own vehicles, which facilitated commuting. People became more employment conscious and era of commuting for educational gains began. Though at lower level, education was made available at village itself, yet for higher level education, villagers commuted even for longer distances if feasible (Chauhan, 1990).

Moreover, after formation of Haryana state, Hisar city emerged as an important industrial, commercial, educational and administrative centre. Its development as a multi-functional city worked as a pull factor to attract people from surrounding villages.

At present, 46 large and medium scale and 3,675 small scale industrial units are functioning in the district. Large and medium scale industrial units mainly produce cotton yarn; steel pipes and tubes; steel strips; vanaspati ghee; flour, maida and suji; poultry vaccines; guar split; certified seeds; steel billets; mustard oil; oxygen gas; firebricks, magneside bricks, tableware and kitchenware of bone china and soft porcelain; cotton ginning, pressing, crushing of cotton seeds and soft drinks. Small scale industrial units mainly deal in production of agricultural implements, flour mill, cotton ginning and pressig, oil and dal mills, light engineering, steel fabrication, steel wires, aluminium and stainless furniture and utensils, paper product, chemical, rubber, printing, wood-work, leather work and ice making. Most of these industrial units were the result of Green Revolution and for these large, medium and small-scale industries was provided mainly by rural areas contributing to commuting to a large extent.
A centrally sponsored scheme to help industrial development in rural areas was undertaken in 1971-72, which resulted in fast growth of small-scale industries. State government started the Rural Industrialisation Programme in 1977-78 to generate employment opportunities in rural areas (Gazetteer, 1987). This proved to be a catalyst in promotion of commuting to and from these areas.

Another important development was in the field of education. College of Animal Science (1966), Chhaju Ram Memorial College (1967), Chhaju Ram College of Education (1968), Haryana Agricultural University (1970), College of Sports and College of Home Science (established in 1972 and 1973 respectively, constituent colleges of H.A.U.), Guru Jambheshwar Technical University and Bhagwan Vishwakarma Engineering College (1994) were established after formation of the state. Students from nearby villages commuted to these institutes for higher educational gains. Though education and service availability was there in Hansi and to some extent in other urban centres also, yet the quality attraction made the Hisar city as a preferred commuting destination even for far-off villages.

Public offices like New Mini-Secretariat and District Session Court, Police Station, Offices of Irrigation, Electricity and Communication and Banks also contributed to commuting to some extent from nearby villages. Rajguru Market, New Anaj Mandi, Auto Market, Red Square Market, Cloth Market and New Sabji Mandi are the commercial structures which also contribute to make Hisar city a major commuting destination.

Thus, commuters form a sizeable group of people who play an important role in the cultural symbiosis that takes place between the town and the country. Sellers of agricultural produce, vegetables and milk and labourers and servicemen who are the inhabitants of the villages surrounding the town go to the urban centres for appropriating their economic interests. Commuters come in great numbers to run factories, shops and offices and after getting their job done, return to their homes in rural areas. Commuting manifests itself in two ways: i) in connection with daily movements to and from work places and ii) in connection with residence. It results into direct culture-contact and social and ideological transformation of the rural way of life (Garnier and Chabot, 1967)
Reilly has formulated a rule inspired by Newton’s law, which has been called the law of gravitation of retail trade. According to this rule, towns exert their influence in direct proportion to their population, but their influence decreases outwards in proportion to the square of the distance. Hisar being the largest town of the district attracts maximum number of commuters.

This chapter has been divided into two sections. In the first section, spatial patterns of commuting have been discussed from 1971 to 2001; whereas in the second section, change in levels of commuting has been discussed in the duration of 40 years period.

SECTION-I
I. SPATIAL PATTERNS OF URBAN-RURAL COMMUTING: 1971

In 1971 index of commuting, calculated on the basis of percentage of non-agricultural rural workers and availability of metalled roads, differed widely at the village level. It varied from a high of 100 in Hisar (Rural) village of Hisar-II block to a low of 0 in Isharheri and Ghuskani villages from Barwala and Hansi-II blocks respectively in the district, giving a range difference of 100. In other words, villages at the bottom were not mobile at all, whereas the village at the top had full connectivity and diversification of economy to promote commuting. For a detailed analysis, the villages in the district have been categorised as High, Moderate and Low by identifying the critical breaks in distribution of index values at village level (Map 4.1).

(a) Areas of High Level of Commuting

Only 66 villages or slightly more than one-fourth of the total villages in the district were categorized as high on the index of commuting. Index values ranged from a high of 100 in Hisar (rural) village of Hisar-II block to a low of 60.07 in Parbhuwala village of Uklana block in the district, giving a ratio of 3:5 between the lowest and highest values and co-efficient of variability of 10.30 per cent. This indicates that the intra-category variations in case of areas having high level of commuting were of moderate level (Table 4.1).
District Hisar
Index of Commuting, 1971
(Data by Villages)

Highest Index Value: 100 (Hisar Rural)
District Average: 37.96
Lowest Index Value: 0 (Isharhen & Ghuskani Villages)

Source: District Census Handbook, Hisar (1971)
Table 4.1

District Hisar: Levels of commuting and their average, standard deviation and coefficient of variability, 1971

<table>
<thead>
<tr>
<th>Levels of commuting</th>
<th>Average value for category</th>
<th>Standard deviation</th>
<th>Coefficient of variability</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>65.76</td>
<td>6.77</td>
<td>10.30</td>
</tr>
<tr>
<td>Moderate</td>
<td>56.31</td>
<td>2.23</td>
<td>3.96</td>
</tr>
<tr>
<td>Low</td>
<td>7.48</td>
<td>4.54</td>
<td>60.63</td>
</tr>
</tbody>
</table>

Villages having high level of urban-rural commuting were characterized by proximity to urban centres, location on national or state highways or main transport routes, big population size and diversified base of rural economy.

(b) Areas of Moderate Level of Commuting

91 villages or one-third of the total villages in the district had a moderate level of commuting. The index value varied from a high of 59.97 in Bass Azam Shahpur village of Hansi-II block to a low of 50 in Dhamian village of Hansi-I block in the district. This gave the range difference of 9.97, which revealed that the index value of the village at the top was approximately 10 points higher than that of the village at the bottom. The coefficient of variability of 3.96 per cent also revealed very low intra-category variations. In fact, it was the lowest of all the three categories of the villages in commuting.

Moderate level of commuting was mostly found in villages situated adjoining the villages of high level of commuting and on or close to the major transport routes. These villages also had big size of population in most of the cases. Steps towards diversification of rural economy had been taken in these villages to some extent.

(c) Areas of Low Level of Commuting

115 villages or slightly less than half of the total villages in the district registered a low level of commuting. The index value varied from a high of 22.4 in Shala Dheri village of Hansi-I block to a low of 0 in Isharheri and Ghuskani villages from Barwala and Hansi-II blocks respectively in the district. The ratio between the lowest and highest value was 0:22.4 which indicates very wide intra-category variations
in commuting in this category. The same is also supported by the highest (60.63 per cent) value of coefficient of variability.

Low level of commuting in such a large number of villages reveals that rural economy in a vast part of the district was least diversified. In other words, there were few links of the rural economy with the outside. This was basically because of physical isolation of the villages due to lack of roads. Most of these villages were located away from the urban centres and major transport routes and had comparatively small size of population. Construction of link roads to these villages was a later day phenomenon as compared to the major transport routes.

In sum, a large number (42 per cent) of villages in the district revealed a low level of commuting. Since roads to most of these villages were constructed after launch of the crash programme of the state government to link every village with a metalled road in 1970. There were a few links of the rural economy with the outside world for these villages at that time. High level of commuting was a feature of only those villages which were located close to the urban centres and on the main transport routes. Diversified rural economy and bigger size of population were their other characteristics. Villages having moderate level of commuting were located adjacent to the villages with high level category. Most of these villages located along the major transport routes were heading towards the diversified economic base. In comparison, intra-category variations were the least for the moderate category of areas and maximum for the low category areas.

II. SPATIAL PATTERNS OF URBAN-RURAL COMMUTING: 1981

In 1981 also, there were wide variations regarding index of commuting calculated at village level. It varied from a high of 100 in Satrod Khurd village of Hisar-I block to a low of 0 in Isharheri village of Barwala block in the district, giving a range difference of 100 i.e. village at the bottom had 0 value regarding connectivity and diversification of economy, whereas the village at the top had full connectivity and diversification of economy to promote commuting. For a detailed analysis, the villages in the district have been categorised as High, Moderate and Low by identifying the critical breaks in distribution of index values at village level (Map 4.2).
Map 4.2

District Hisar
Index of Commuting, 1981
(Data by Villages)

Highest Index Value: 100 (Satrod Khurd)
District Average: 61.03
Lowest Index Value: 0 (Isharheri)

(a) Areas of High Level of Commuting

140 villages or a little more than half of the total villages in the district were categorised as high on the index of commuting i.e. 74 more villages were added in this category as compared to 1971. Index values ranged from a high of 100 in Satrod Khurd village of Hisar-I block to a low of 60 in Dhingtana village of Barwala block in the district, giving a ratio of 1:1.67 between the highest and the lowest value and coefficient of variability of 10.53 per cent. Thus, intra-category variations in case of areas having high level of commuting were not much (Table 4.2).

Table 4.2
Hisar: Levels of commuting and their average, standard deviation and coefficient of variability, 1981

<table>
<thead>
<tr>
<th>Level of commuting</th>
<th>Average value for category</th>
<th>Standard deviation</th>
<th>Coefficient of variability (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>67.16</td>
<td>7.07</td>
<td>10.53</td>
</tr>
<tr>
<td>Moderate</td>
<td>56.74</td>
<td>2.37</td>
<td>4.18</td>
</tr>
<tr>
<td>Low</td>
<td>8.08</td>
<td>5.54</td>
<td>68.54</td>
</tr>
</tbody>
</table>

Villages having high level of urban-rural commuting were characterized by proximity to the urban centres. Hisar city had a wide spread of this category villages around it within a radius of 30 kilometers. Location on or close to major transport routes (national or state highways or major district roads), diversified economy and bigger size of population were the characteristics of the villages in this category.

(b) Areas of Moderate Level of Commuting

126 villages or slightly less than half of the total villages in the district had moderate level of commuting. The index value varied from a high of 59.91 in Ugalan village of Uklana block to a low of 48 in Shala Dheri village of Hansi-I block. The range difference of 11.91 revealed that the index value of the village at the top was nearly 1.25 times higher than that of the village at the bottom. The coefficient of variability of 4.18 per cent was also testimony to the very low intra-category variations. In fact, it was the lowest of all the three categories of areas in commuting.

Moderate level of commuting was found even in the extremities of the district because of increasing diversification of rural economy and road accessibility even to the far-off villages by 1980s.
(c) Areas of Low Level of Commuting

Only 6 villages in the district registered a low level of commuting in 1981. The value varied from a high of 12.36 in Kheri Barkesh village of Hansi-I block to a low of 0 in Isharheri village of Barwala block in the district, which indicates wide inter-village variations in commuting. This is also supported by the highest (68.54 per cent) value of coefficient of variability, which is the highest of all the three categories.

Low level of commuting was the characteristic of the villages having negligible connectivity and small population size resulting in less diversification of rural economy. These villages were situated in between the villages having high or medium level of commuting.

In sum, most of the villages in 1980s had high or moderate level of commuting. Only 6 villages were left with low level of commuting, which was result of their negligible connectivity and small size of population. Villages located close to the urban centres and along major transport routes (wide stretch) had high level of commuting; whereas villages having moderate level of commuting were spread even to the extremities of the district because of their better connectivity with metalled roads. Comparatively, intra-category variations were the least for moderate category areas and maximum for the low category areas.

III. SPATIAL PATTERNS OF URBAN-RURAL COMMUTING: 1991

In 1991, difference between the highest and the lowest index value of commuting, calculated at village level, was still very high. It varied from a high of 99.98 in Mangali Brahmnan village of Hisar-I block to a low of 1.59 in Kajal village of Hansi-I block of the district. It gave a range difference of 98.39 and ratio of 1:62.88. In other words, village at the top had a commuting index nearly 63 times higher than that of the village at the bottom i.e. there was a huge gap in their commuting levels. For a detailed analysis, the villages in the district have been categorized as High, Moderate and Low by identifying the critical breaks in distribution of index values at village level (Map 4.3).
District Hisar

Index of Commuting, 1991
(Data by Villages)

Highest Index Value: 99.98 (Mangali Brahman)
District Average: 63.88
Lowest Index Value: 1.59 (Kajal)

(a) Areas of High Level of Commuting

195 villages or a little less than three-fourth (72 per cent) of the total villages in the district were categorized as high on the index of commuting as compared to 140 in 1981 i.e. 55 more villages joined this category in 1991. Index values ranged from a high of 99.98 in Mangali Brahmnan village of Hisar-I block to a low of 60.04 in Mazadpur village of Hansi-I block in the district, giving a ratio of 1:1.7 between the highest and the lowest value and coefficient of variability of 10.47 per cent. This indicates that intra-category variations in case of areas of high level of commuting were not so prominent (Table 4.3).

Table 4.3

District Hisar: Levels of commuting and their average, standard deviation and coefficient of variability, 1991

<table>
<thead>
<tr>
<th>Level of commuting</th>
<th>Average value for category</th>
<th>Standard deviation</th>
<th>Coefficient of variability</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>67.48</td>
<td>7.07</td>
<td>10.47</td>
</tr>
<tr>
<td>Moderate</td>
<td>56.58</td>
<td>2.61</td>
<td>4.62</td>
</tr>
<tr>
<td>Low</td>
<td>10.15</td>
<td>7.42</td>
<td>73.04</td>
</tr>
</tbody>
</table>

In 1990s, high level of commuting became the characteristic of even far-off villages spreading upto 35 kilometers from Hisar city and in some cases even beyond that because of increased roads and transport facilities by that time. Rural economy even of the far off villages became diversified because of increased transportational links and urban influence. Spread of the villages in this category became wider around urban centres and along the major transport routes in 1991 as compared to 1981.

(b) Areas of Moderate Level of Commuting

74 villages or slightly more than one-fourth of the total villages in the district had moderate level of commuting. The index value varied from a high of 59.77 in Gorchhi village of Hisar-II block to a low of 50 in Isharheri and Ghuskani villages of Barwala and Hansi-II blocks respectively in the district. The range difference of 9.77 revealed that the index value of the village at the top was not even ten points higher than that of the village at the bottom. The coefficient of variability of 4.62 was also testimony to the very low intra-category variations, which was the lowest of all the three categories of areas in commuting.
Moderate level of commuting was mostly found in pockets of the villages which were located on the borders of the district except some villages scattered here and there. These villages had comparatively less diversified economic base because road connectivity was not a problem by that time.

(c) Areas of Low Level of Commuting

Only 3 villages were left with low level of commuting by this time. The index value varied from a high of 14.44 in Tharwa and Kheri Barkesh villages of Hansi-I block to a low of 1.59 in Kajal village of the same block in the district. The ratio between the highest and the lowest value was 1:9.08 which indicates that the village at the top had nine times more commuting than the village at the bottom. This shows wide inter-village variations in low level of commuting. This is also supported by the highest (73.04) value of coefficient of variability.

Thus, villages having low level of commuting were Kheri Barkesh, Tharwa and Kajal of Hansi-I block in the district, which were not connected with metalled roads by this time because of their small size of population and had less diversification of rural economy. Their physical isolation was the main culprit for low level of commuting.

In sum, majority of the villages had high commuting index by 1990s, a little less than one-fourth of the total villages had moderate level of commuting and only three villages were in the low level of commuting. All this indicates that most of the villages were connected with metalled roads and had good transport facility. Physical isolation was no longer a problem for them. Moreover, increased connectivity motivated the people for business opportunities and diversification of rural economy progressed rapidly. In comparison, intra-category variations were the least for the moderate category of areas and maximum for the low category areas.

IV SPATIAL PATTERNS OF URBAN-RURAL COMMUTING: 2001

In 2001, pattern improved up to a considerable extent in the context of values of index of commuting calculated at village level for the district. Gap between the maximum and minimum values reduced up to a marked extent. It ranged from a high of 100 in Satrod Khurd village of Hisar-I block to a low of 50 in Ghuskani village of Hansi-II block of the district, giving a range difference of 50 and ratio of 1:2. In other
words, the village at the top has a commuting index 2 times higher than that of the village at the bottom. For a detailed analysis, the villages in the district have been categorised as High, Moderate and Low by identifying the critical breaks in distribution of index values at village level (Map 4.4).

(a) Areas of High Level of Commuting

224 villages or more than four-fifth of the total villages in the district were categorized as high on the index of commuting. Index values ranged from a high of 100 in Satrod Khurd village of Hisar-I block to a low of 60.06 in Kajla village of Hisar-II block in the district, giving a ratio of 1:1.7 between the highest and the lowest value and coefficient of variability of 12.84 per cent. Thus, intra-category variations were not so prominent in the areas of high level of commuting. This was also the highest for all the categories, which indicates that inter-category variations had started diminishing by this time (Table 4.4).

<table>
<thead>
<tr>
<th>Level of commuting</th>
<th>Average value for category</th>
<th>Standard deviation</th>
<th>Coefficient of variability</th>
</tr>
</thead>
<tbody>
<tr>
<td>High</td>
<td>69.71</td>
<td>8.95</td>
<td>12.84</td>
</tr>
<tr>
<td>Moderate</td>
<td>56.22</td>
<td>2.17</td>
<td>3.87</td>
</tr>
<tr>
<td>Low</td>
<td>-</td>
<td>-</td>
<td>-</td>
</tr>
</tbody>
</table>

High level of commuting became characteristic of most of the villages spread in a wide stretch along the transport routes and around urban centres in such a way that almost whole district seems to be having high level of commuting except one major pocket in the eastern part of the district and some villages scattered here and there mostly in the periphery of the district in 2001. Around Hisar city, mostly villages within the radius of 40 kilometers fall in this category. The villages with high commuting index were well connected with roads and had high level of diversification of rural economy.

(b) Areas of Moderate Level of Commuting

48 villages or slightly less than one-fifth of the total villages in the district had moderate level of commuting. The index value varied from a high of 59.67 in Bhana...
District Hisar

Index of Commuting, 2001
(Data by Villages)

Highest Index Value: 100 (Satrod Khurd)
District Average: 67.33
Lowest Index Value: 50 (Ghuskani)

Source: District Census Handbook, Hisar (2001)
village of Agroha block to a low of 50 in Ghuskani village of Hansi-II block in the
district. The range difference of 9.67 revealed that there were not so prominent
differences in the index value of the villages at the top and bottom. The coefficient of
variability of 3.87 per cent also revealed the same i.e. very low intra-category
variations.

One major pocket in the eastern part and some villages scattered here and there
mostly on the periphery of the district had moderate level of commuting. These were
the villages with comparatively less diversification of rural economy.

(c) Areas of Low Level of Commuting

No village in 2001 fall in this category, i.e. every village had at least moderate
level of commuting by this time.

In sum, a dominant majority (82 per cent) of the villages by this time had high
level of commuting because by this time (2001), every village of the district was linked
with pucca road. Therefore, physical isolation was no longer a hurdle in commuting;
instead high or moderate level of commuting depended on the high or low level of
diversification of rural economy. Intra-category variations were not prominent in 2001
in any category. However, these were the least for moderate category of areas.

SECTION-II
CHANGE IN LEVELS OF URBAN-RURAL COMMUTING, 1971-2001

By 2001, hundred per cent of the villages in the district had been linked with all
weather roads instead of approximately 58 per cent (157 villages) in 1971 (Fig. 4.1).
This connectivity with metalled roads promoted commuting in a tremendous way.
Public Works Department of state government was responsible for construction and
maintenance of rural roads in the district.
Out of 272 inhabited villages in the district, 191 or 70 per cent (i.e. more than 2/3 villages) experienced an upward movement in their respective levels of commuting (Fig. 4.2 and Maps 4.5 and 4.6).

Of the 191 villages, which experienced an upward movement in their respective levels of commuting, only 33 villages moved from ‘low’ to ‘moderate’ category (Table 4.5). Most of these villages were located on the borders except one major pocket in the eastern part of the district. Here, proportion of non-agricultural
Map 4.5

District Hisar
Movement in Levels of Commuting
1971-2001
(Data by Villages)

- Low upward movement
- High upward movement


Note: (i) Low upward movement refers to change from low to moderate or moderate to high category, whereas, high upward movement refers to change from low to high category.

District Hisar
Change in Levels of Commuting
1971-2001
(Data by Villages)

Source: District Census Handbooks, Hisar (1971 & 2001)
workers has been less because of lack of awareness of modern occupations in people of these villages. Mostly villages in this category are more than 40 kms. away from Hisar city, where this city has been able to spread its effect at a slower pace.

<table>
<thead>
<tr>
<th>Level of commuting</th>
<th>Number of villages</th>
<th>Change / movement</th>
</tr>
</thead>
<tbody>
<tr>
<td>Low Low</td>
<td>0</td>
<td>No village</td>
</tr>
<tr>
<td>Moderate Moderate</td>
<td>15</td>
<td>No change/movement</td>
</tr>
<tr>
<td>Low High</td>
<td>82</td>
<td>Upward (High)</td>
</tr>
<tr>
<td>Moderate High</td>
<td>76</td>
<td>Upward (Low)</td>
</tr>
<tr>
<td>Low Moderate</td>
<td>33</td>
<td>Upward (Low)</td>
</tr>
</tbody>
</table>

Note: No village remained in low category in 2001 and none experienced negative change in their respective levels of commuting during 1971-2001.

Of the remaining 158 villages, 76 villages moved from ‘moderate’ to ‘high’ category. These 76 villages, which moved to ‘high’ from ‘moderate’ category, were located in the vicinity of the villages which were in high category of commuting even in the index of 1971 because of proximity of national highways. Moreover, the villages, which jumped directly from ‘low’ to ‘high’ category, were also their neighbours in some cases. Their shift from ‘moderate’ to ‘high’ category has been possible because of diversification of occupations due to increased connectivity with urban centres.

As many as 82 villages directly jumped to ‘high’ from ‘low’ category level of commuting during 1971-2001. These villages were located in the scattered pockets in between the national and state highways. In 1971, these villages were not connected with metalled roads. After 1971, these villages were connected with metalled roads and because of good connectivity people were attracted towards non-agricultural occupations leading to diversification of their economy, which resulted in high index of commuting in 2001(Fig. 4.3).
The remaining 81 villages (i.e. approximately 1/3rd) did not experience any movement in their respective levels. Out of these, 66 villages maintained their ‘high’ level of commuting. These were located along the national highways 10 and 65 radiating out from Hisar city to the towns of Hansi and Barwala respectively. Because of location of these villages on or near national highways, these were placed at the ‘high’ level of commuting index even in 1971. Rest 15 villages maintained their ‘moderate’ level of commuting from 1971 to 2001. This happened because there was no major shift in occupation of the people in these villages. These villages were poorly connected with the city because of their location on minor link roads where number of vehicles plying through the villages was very less. These villages were located near the villages, which uplifted themselves one step from their respective categories (i.e. from ‘low’ to ‘moderate’ and ‘moderate’ to ‘high’).

There was no village experiencing a downward movement in level of commuting from 1971 to 2001 as is evident from the above table. That has been possible because of connectivity of the villages with all weather roads in 1970s itself.

**Main Highlights**

1) Before formation of Haryana, commuting was limited only to a few people in the district because of less connectivity and subsistence nature of rural
economy. After formation of Haryana, infrastructural development took place at a rapid pace in this backward part of earlier Punjab. Firstly, construction of state highways and district major roads was started and afterwards in 1970, government started a crash programme to link every village with a metalled road. In the meantime, initiation of Green Revolution transformed the subsistence nature of agriculture into a commercial one. All this helped the villagers to diversify their economic base providing impetus/giving boost to urban-rural commuting.

2) Earlier, commuting was prevalent to the nearby urban centres on the basis of proximity and availability of facilities and services. Though the principle of proximity/nearness is working even in present scenario, yet Hisar being the centre of agricultural research and its emergence as an important hub in the fields of industry, commerce, education and administration (i.e. its multi-functionality) after formation of Haryana has worked as a pull factor for the commuters in the district even from far-off villages. Various animal husbandry farms are an additional charm to this city.

3) In 1971, due to lack of connectivity and less diversification of rural economy by that time, only one-fourth of the total villages located close to urban centres or on national and state highways in the district registered a ‘high’ level of commuting. Whereas more than two-fifth of the total villages in the district registered a ‘low’ level of commuting. Intra-category variations were the least for moderate category of villages and maximum for low category of villages.

4) In 1981, better connectivity and prosperity due to Green Revolution increased the aspirations of the people leading to increase in commuting. 74 more villages joined the ‘high’ level category of commuting as compared to 1971; whereas only 6 villages were left in the ‘low’ level category of commuting. Intra-category variations were in tune with 1971.

5) In 1991, 195 out of 272 villages recorded a ‘high’ level of commuting; thus, adding 55 villages in this category as compared to 1981. By this time, revolution in science and technology had resulted in the tremendous increase
of vehicles leading to increase in commuting. A wider zone of villages with high commuting level developed around urban centres and along major transportational routes. Around Hisar city, this zone was much wider extending up to the distance of even 35 kilometers. Penetration of this city increased in the hinterlands of other urban centres. Only 3 villages were left with ‘low’ level of commuting by this time. Intra-category variations were in tune with 1971 and 1981.

6) In 2001, more than four-fifth of the total villages were in the category of ‘high’ level of commuting leading to submergence of the high level category zones of villages around urban centres and along transportational routes with each other in most of the cases. Around Hisar city, this zone extended even up to 40 kilometers in the process of snatching the hinterland of other urban centres. There was no village left in the ‘low’ level category of commuting by this time. Gap between maximum and minimum value reduced to a considerable extent. Intra-category variations were not prominent in 2001.

7) In brief, from 1971 to 2001, 191 or 70 per cent of the total villages experienced an ‘upward’ movement in their respective levels of commuting, which was more a result of increasing diversification of rural economy due to Green Revolution and spreading effect of Hisar city because of increased connectivity. No village was left in ‘low’ level category of commuting by 2001.