

Standard Urban Areas (SUA's) have rural and urban components and it is observed that due to urban spread the occupational structure changes radically due to urban impact. In order to find out whether the urban spread and urban impact have influenced the occupational structure of entire standard urban area and its urban and rural components; an attempt has been made in which the functional classification of rural component, urban component and total standard urban area has been attempted.

Due to urban spread various residential and industrial areas of the main city encroach upon the rural areas. The distribution of several functions in the fringe zone of the city also affects the occupational characteristics of rural component of standard urban areas.

The analysis of urban functions is of great importance to urban geographers. Cities, urban agglomerations and SUA's are the areas where important and essential services and facilities are ever growing. In these areas industrial, commercial and other activities are also growing at a very high rate. Functions of such areas are responsible for their growth and morphology. Hence, functions provide a more effective and useful criterion for classifying such areas.

3.1 BASIC OCCUPATIONAL CLASSIFICATION :

In the logical study of occupational structure of cities, it is very essential to consider the working population, which is engaged in economic productive activity. In 1961 census authorities have classified the working population considering the Indian economy and it is more improved than previous census. Following were the occupational categories of workers according to 1961 census.

- i) Cultivation
- ii) Agriculture labours
- iii) Mining, hunting, plantation, orchards and allied activities
- iv) Household industry
- v) Manufacturing other than household industry
- vi) Construction
- vii) Trade and Commerce
- viii) Transport, storage and communication
- ix) Other services

In 1971 census authorities have added one more category, wherein they have separated mining and quarrying from livestock, forestry, fishing category of 1961.

The rational line of classification of workers by 1961 and 1971 census was entirely changed by census authorities in 1981 census. According to 1981 census the workers are classified into following categories.

- i) Cultivators
- ii) Agricultural labours
- iii) Household industry (Manufacturing, processing, services and repairs)
- iv) Other workers and
- v) Marginal workers.

In this classification, other workers includes the workers engaged in livestock, forestry, fishing, plantation, mining and quarrying. It also includes workers engaged in manufacturing activity other than household industry workers engaged in construction, trade and commerce, transport, storage and communication and other services.

The marginal workers includes those workers who were engaged in gainful work for more than six months during the census years. Since, the occupational classification of 1981 census has made drastic change in the classification system; it has become very difficult to make comparative analysis of occupational characteristics of cities.

However, fortunetaly we could procure the data of 1981 population of standard urban areas as per the 1971 census. This data was found for urban agglomeration in census of Maharashtra Part III - A and B (i), 1981. This data which classify's all working population in nine categories has been considered.

3.2 METHODOLOGY :

In the present study Doi's (1957) method of combinational analysis has been used. This method is modified from the original method of Weavers. It substitutes the standard deviation with the sum of squared differences ($\sum d^2$), the calculated values for the various items can be found out in a table prepared by Doi. This method was used by Doi to study the industrial structure of Japanese prefectures. This method has been used for functional classification of town by Deshmukh (1977). The results given by this method are more logical.

In order to study gains and losses of population in various occupational categories, the technique of shift and share analysis has been used. Gains and losses in each standard urban area have been calculated in comparison with all standard urban areas of the study region. For this Fuch's method (1962) has been used.

$$\begin{aligned} GP &= Y_p - H_p && \dots \quad I \\ HP &= X_p \frac{y}{x} && \dots \quad II \end{aligned}$$

Where,

- GP = gain or loss
- Xp = the population of SUA in the initial year
- Yp = the population of SUA in final year
- x = the population of all SUA's in study region in initial year
- y = the population of all SUA's in study region in final year

HP = An abstract value representing the value of growth of SUA that would exist if the region had growth at the rate of all SUA's in study region

The difference between actual value Y_p and H_p can be converted into percent gain or loss by the following way -

$$\frac{(Y_p - H_p)}{Y_p \text{ or } H_p} \times 100 \quad \dots \text{ III}$$

The larger of the two terms (Y_p or H_p) in the numerator is always used in denominator.

When Y_p is denominator then there is a gain and when H_p is denominator then there is loss.

3.3 OCCUPATIONAL CLASSIFICATION OF STANDARD URBAN AREAS :

Using Doi's method (1957), all standard urban areas have been classified for the year 1971 and 1981. In year 1971, there were only five SUA's in the study region. Therefore, the classification has been attempted for only those five areas for 1971 and 1981 census years. Doi's (1957) method brings out the association of important functional activities of each standard urban area in the region. The result have been depicted in Figs.3.1, 3.2 and 3.3 for 1971 and 1981 respectively.

In the present study the functional association of various

occupation has been calculated for the entire standard urban area and also for their rural and urban component. The details of occupational association has been given in Table 3.1.

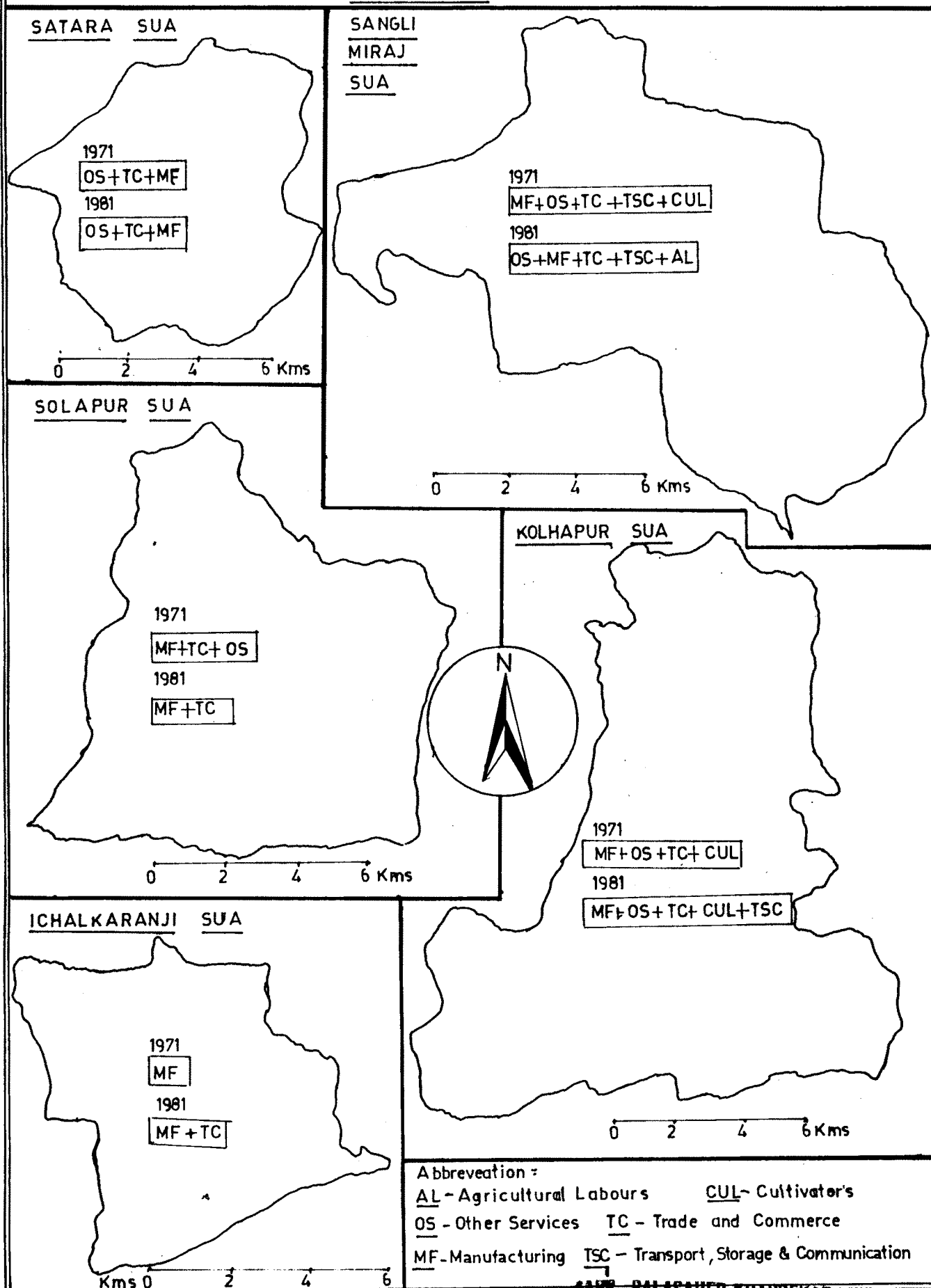
3.3.1 Changes in occupational association in total standard urban area (1971-81) :

Occupational association of total standard urban areas indicates that there is one SUA, Sangli-Miraj, where five occupations like manufacturing, other services, trade and commerce, transport - storage and communication and cultivators were dominant in 1971, but in 1981, in the same area the sequence of dominant has changed. Other services, manufacturing, trade and ^{commerce, transport, storage & communication} ~~communication~~ and agricultural labour have become the dominant occupation. It is observed that the place of cultivators has been taken by agriculture labours and in the ranking manufacturing which was first dominant occupation has been shifted to second rank and other services has been elevated to first rank. Fig.3.1 shows the changes in occupational ranking and combination of occupation in the total SUA.

The Kolhapur standard urban area shows the association of four occupations in 1971; they are manufacturing, other services, trade and commerce, cultivators. In 1981, there is no change in sequence of occupational association but transport-storage and communication has been added as fifth rank of occupation association.

OCCUPATIONAL ASSOCIATIONS OF TOTAL STANDARD URBAN AREAS

(1971 & 1981)



(FIG. 3-1)

In 1971, two SUA's namely Satara and Solapur have three occupation association but in 1981, Satara could continue the same occupation association group, while Solapur standard urban area indicate only two occupation association. The Satara SUA has other services, trade and commerce, and manufacturing has dominant activities for both periods. In Solapur SUA, manufacturing, trade and commerce and other services are dominant activities found in 1971 but in 1981, other services were not in occupation association.

The Ichalkaranji SUA has manufacturing only dominant activity in 1971 but trade and commerce activity added in the occupational association in 1981.

The observation of the changes indicate that more dominant changes are found in Sangli-Miraj and Kolhapur SUA's. The Solapur and Ichalkaranji SUA's has very little change in occupational association. There is no change in the Satara SUA's functional association in 1971 and 1981 respectively.

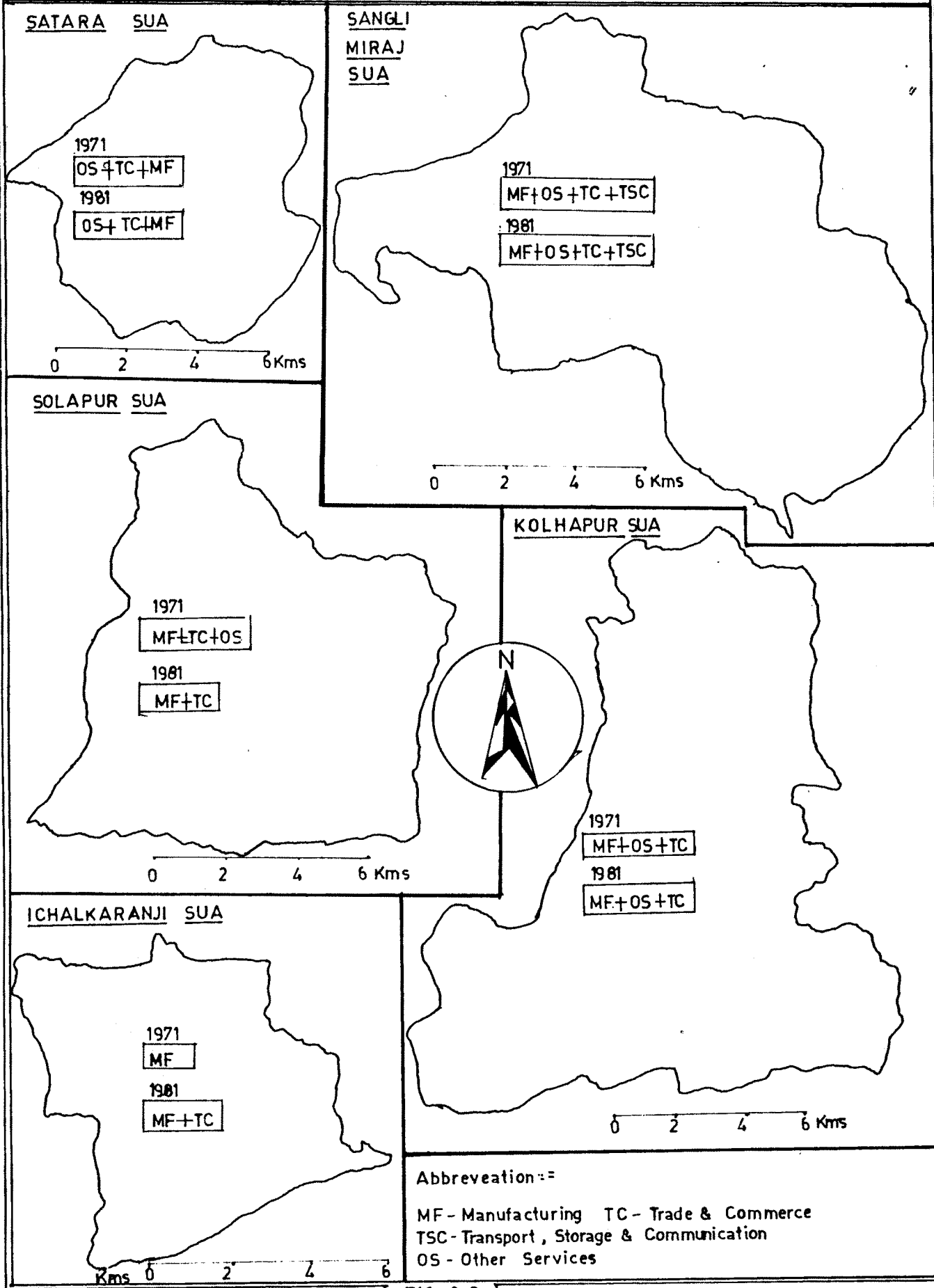
3.3.2 Changes in occupational association

in urban component of SUA's :

For the occupational classification of urban component of Satara, Sangli-Miraj, Solapur, Kolhapur and Ichalkaranji SUA's, Doi's method (1957) has been used for the year 1971 and 1981. Fig.3.2 shows the occupational association of urban component.

OCCUPATIONAL ASSOCIATIONS OF URBAN COMPONENTS (1971 & 1981)

α
α



(FIG. 3-2)

In 1971, only the urban component of Sangli-Miraj SUA has four association of occupation. The urban component of Satara, Solapur and Kolhapur SUA's has three association of occupation and Ichalkaranji SUA urban component has only one dominant occupation. On the other hand in 1981, the urban component of Solapur and Ichalkaranji SUA's has some changes. There is no change in urban component of Satara, Sangli-Miraj and Kolhapur SUA's. The urban component of Satara SUA has three association of occupation in 1971 and 1981. There is no change in the sequence of occupation association for both period in Satara urban component. Other services was dominant activity. Trade and commerce was second dominant activity and manufacturing was third dominant activity in the sequence of occupation association.

The urban component of Sangli-Miraj standard urban area has four association of occupation in 1971 and 1981. The association sequence was not changed for both period. The occupation sequence was like manufacturing, other services, trade and commerce and transport-storage-communication.

The urban component of Solapur SUA has three association of occupation in 1971 but in 1981, there were two association of occupation. In 1971, the sequence of occupation association was like manufacturing, trade and commerce and other services but in 1981, the activity of other services was not in association of occupation.

The urban component of Kolhapur standard urban area has three association of occupation in 1971 and 1981. There was also no change in the sequence. The sequence was like manufacturing, other services and trade and commerce.

The urban component of Ichalkaranji SUA has manufacturing was dominant activity in 1971 but in 1981, trade and commerce activity has added as second dominant activity in the occupation association.

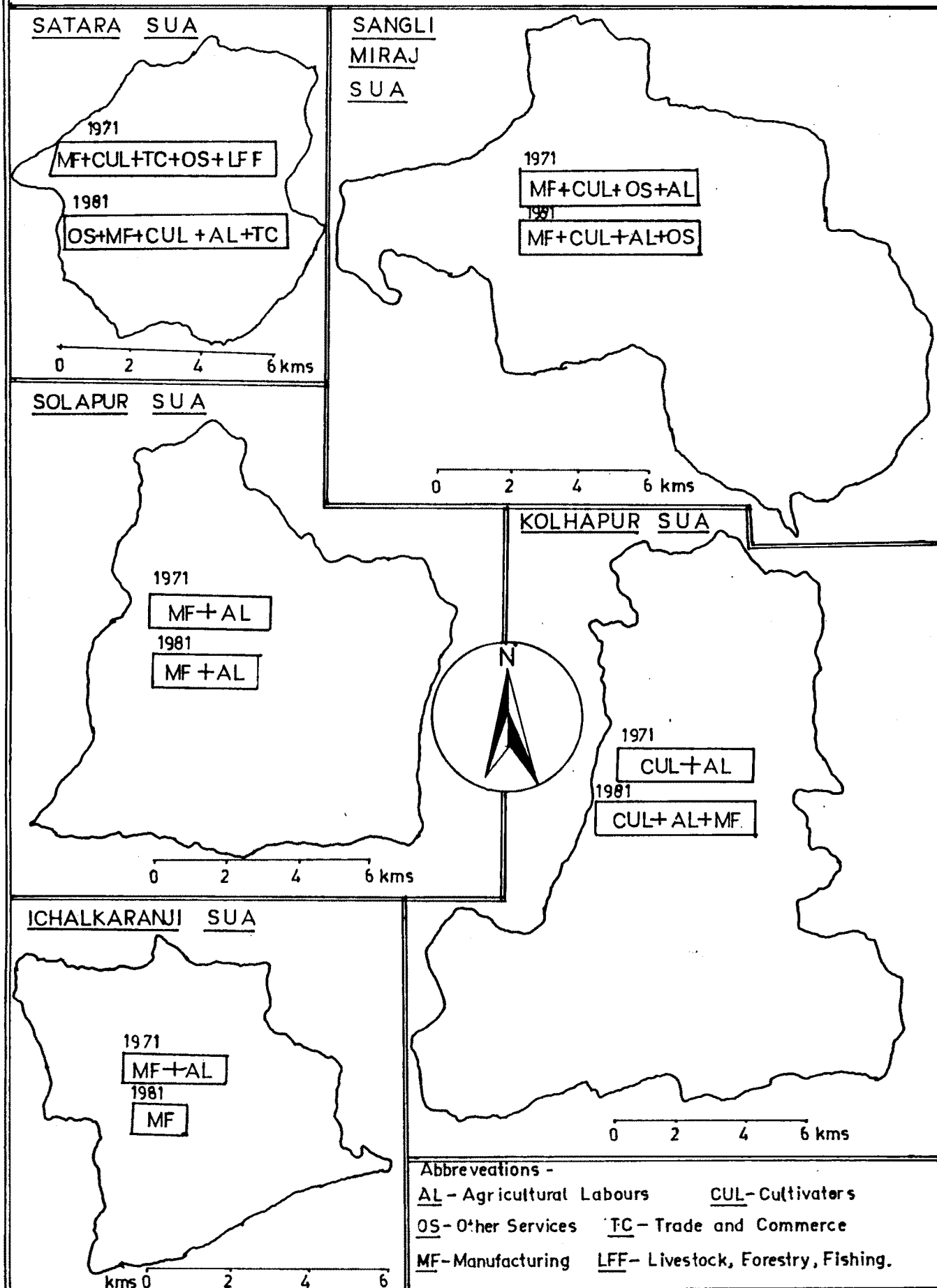
It is observed that in the year 1971 and 1981 the urban component of Sangli-Miraj, Solapur, Kolhapur and Ichalkaranji standard urban areas have manufacturing is the dominant occupation. On the other hand in Satara SUA's urban component has other services has dominant activity for both period.

3.3.3 Changes in occupational association in rural component of SUA's :

Occupational association of rural component of SUA's indicate that there is major change in occupation during 1971-81 (Fig.3.3).

The rural component of Satara SUA has five association of occupation in 1971, namely manufacturing, cultivators, trade and commerce, other services and fishing, forestry and livestock. In 1981, the rank of occupational association has changed. It became as other services, manufacturing, cultivators, agricultural labours and trade and commerce. This shows that manufacturing was

OCCUPATIONAL ASSOCIATIONS OF RURAL COMPONENTS (1971 & 1981)



(FIG. 3.3)

first dominant activity in 1971 but it has shifted as second activity in 1981. Cultivators which was second dominant activity in association for 1971, shifted as third dominant activity in association for 1981. Transport and communication activity also shifted from third to ^{fifth} fourth in association of occupation in 1981. Surprisingly, other services activity was ranked in fourth in 1971 but it became first dominant activity in 1981. Forestry, fishing and livestock activity which was ranked fifth in 1971, not included in association of occupation in 1981, but agricultural labour activity has been added as new activity for fourth rank.

The rural component of Sangli-Miraj SUA has manufacturing, cultivators, other services and agricultural labours, this association of occupation was found in 1971 but in 1981 the rank of occupation has changed. It became as manufacturing, cultivators, agricultural labours and other services. This shows that other services which was third in rank in 1971, shifted to fourth rank in 1981.

The rural component of Solapur SUA, has manufacturing and agriculture labours were dominant activities in 1971 and 1981. There is no change in the sequence of occupation association.

The rural component of Kolhapur standard urban area shows cultivators and agricultural labours are the dominant activities for 1971 but in 1981, manufacturing included as third activity in occupation association.

The rural component of Ichalkaranji SUA has manufacturing and agricultural labour were dominant activities in 1971 but in 1981, agricultural labour activity has not included in the occupational association.

It is observed that the rural component of Satara SUA has major change in occupational association during 1971-81. On the other hand remaining four standard urban areas rural component in study region have minor changes in occupational association for same period.

The analysis of changes in occupational character of standard urban areas indicates that Ichalkaranji SUA has less number of association for 1971 and 1981 period. In 1971, total SUA was dominant as manufacturing as a single dominant activity. The urban component has two occupational association where, manufacturing was associated with agricultural labours. Surprisingly in 1981, the total SUA has two occupational association, namely manufacturing and trade and commerce. The urban component also shows same combination but rural component became monofunctional. In Solapur SUA, in 1971, manufacturing, trade and commerce and other services were the important occupations of total and urban component. On the other hand rural component was dominated by manufacturing and agricultural labours. In 1981, total SUA, urban component and rural component all are dominated by two activities. In Satara SUA, other services, trade and commerce and manufacturing are the important activities

TABLE 3.1 : Occupational association of total, urban and rural components of standard urban areas (1971 and 1981).

Sr. No.	Name of SUA's	Occupational association (1971)	Occupational association (1981)
1	Satara SUA Total	OS + TC + MF	OS + TC + MF
	a) Urban component	OS + TC + MF	OS + TC + MF
	b) Rural component	MF + CUL + TC + OS + LFF	OS + MF + CUL + AL + TC
2	Sangli-Miraj SUA Total	MF + OS + TC + TSC + CUL	OS + MF + TC TSC + AL
	a) Urban component	MF + OS + TC + TSC	MF + OS + TC + TSC
	b) Rural component	MF + CUL + OS + AL	MF + CUL + AL + OS
3	Solapur SUA Total	MF + TC + OS	MF + TC
	a) Urban component	MF + TC + OS	MF + TC
	b) Rural component	MF + AL	MF + AL
4	Kolhapur SUA Total	MF + OS + TC + CUL	MF + OS + TC + CUL + TSC
	a) Urban component	MF + OS + TC	MF + OS + TC
	b) Rural component	CUL + AL	CUL + AL + MF
5	Ichalkaranji SUA Total	MF	MF + TC
	a) Urban component	MF	MF + TC
	b) Rural component	MF + AL	MF

Abbreviations :

CUL - Cultivators, AL - Agricultural labours, LFF - Livestock, Forestry, Fishing, MF - Manufacturing, TC - Trade and Commerce, TSC - Transport, Storage and Communication, OS - Other Services.

for total SUA during 1971 and 1981 period. No change has been observed in the occupational association. Similarly, in urban component also change has occurred but in rural component there are five occupational association and indicate major changes in the association group. In Kolhapur SUA, during 1971, total SUA has four occupational association. In 1981, one more occupation has been added, but during this period no change in urban component has been observed. In rural component there were only two occupations in 1971 but in 1981, manufacturing activity has been added. In Sangli-Miraj SUA, more number of occupations are associated in which manufacturing, other services, trade and commerce, transport-storage and communication and cultivators are important.

Considering the above observation one may conclude that due to the impact of urbanisation several urban occupations found dominating the rural landscape.

3.4 GAINS AND LOSSES OF POPULATION IN VARIOUS OCCUPATIONS OF SUA'S :

We have calculated loss or gains of people in various occupations of individual SUA's in study region, with comparing all standard urban areas in South Maharashtra. The result have given in Table 3.2.

In Satara standard urban area, total workers has loss by 1.12 percent as compared to all SUA's in South Maharashtra.

TABLE 3.2 : The gains and losses of population in various occupation (1971-81).

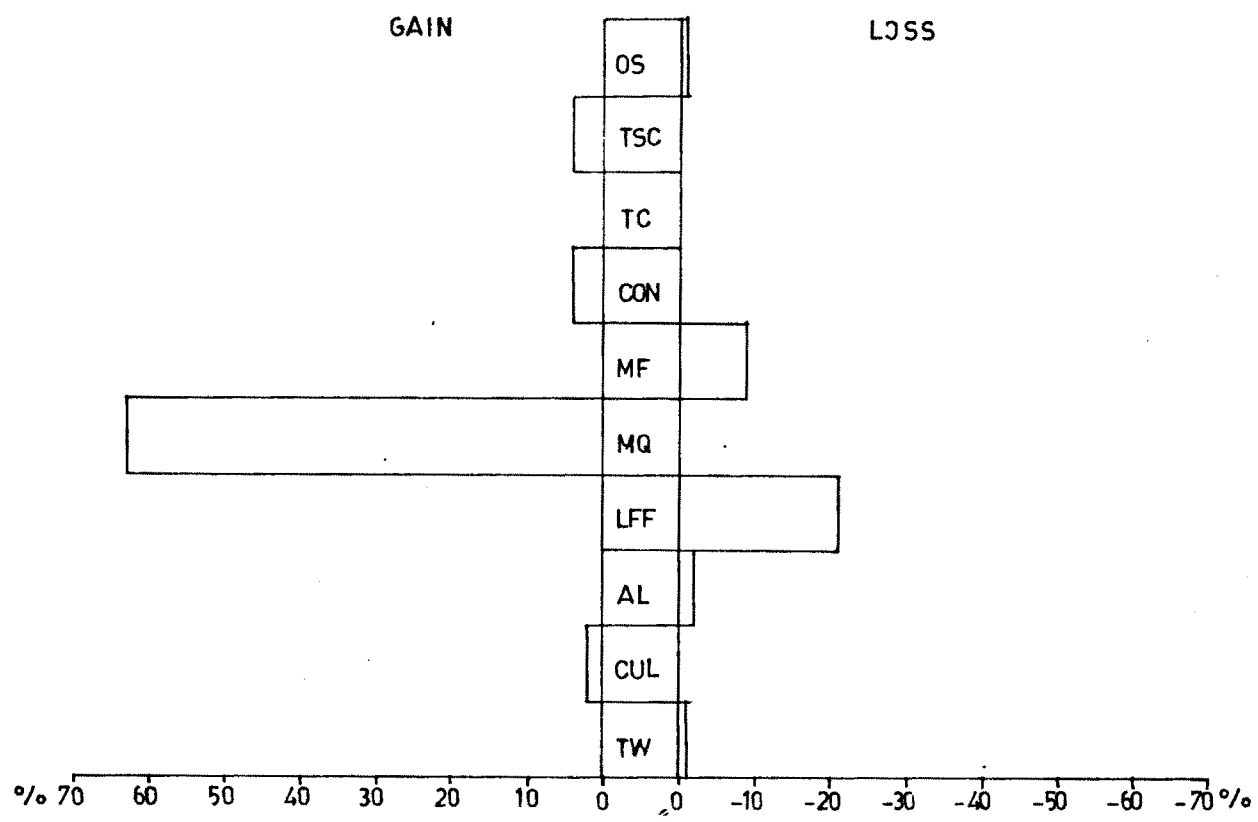
Sr. No.	Name of SUA	Total workers	Cultiva- tors	Agri. labours	Live- stock, fore- stry, mining	Mining and Quarry- ing	Manufa- facturi- ng	Constru- ction	Trade and Comm- erce	Trans- port, Stora- ge co- mmuni- cation	Other servi- ces
1	Satara SUA	- 1.12	1.91	- 1.93	- 21.26	62.83	- 8.80	4.20	0.09	3.54	- 0.65
2	Sangli-Miraj SUA	- 4.64	- 4.31	- 0.78	38.06	91.96	- 7.30	- 13.33	- 0.95	- 1.36	- 3.85
3	Solapur SUA	- 2.02	- 8.75	- 16.16	- 37.38	- 28.04	3.08	5.86	- 7.64	- 14.37	- 9.46
4	Kolhapur SUA	- 1.39	8.74	9.91	8.66	- 49.74	- 7.96	- 12.55	4.20	7.96	5.46
5	Ichalkaranji SUA	17.37	- 16.11	- 10.85	51.67	66.28	8.54	40.22	35.25	51.95	36.23

The gains of population has observed in various occupations like cultivators (1.91), mining and quarrying (62.83), construction (4.20), trade and commerce (0.09), transport-storage and communication (3.54) with comparing all SUA's of South Maharashtra. On the other hand the loss of population has observed in various activities like agricultural labour (1.93), livestock - fishing - forestry (21.26), manufacturing (8.80) and other services (0.65). The gains and loss of population of Satara SUA has been shown in Fig.3.4.

In the same way, the Sangli-Miraj standard urban area has shows the loss of total workers by 4.69 percent with comparing all SUA's of South Maharashtra. The loss of population also observed in activities like cultivators (4.31), agricultural labours (0.78), manufacturing (7.30), construction (13.33), trade and commerce (0.95), transport - storage and communication (1.36) and other services (3.85). On the other hand there is gains of people in occupations like livestock-forestry-fishing (38.06) and mining and quarrying (91.96). The gains and losses of people in Sangli-Miraj SUA has been shown in Fig.3.5.

In Solapur standard urban area, there is loss of total workers by 2.02 percent as compared to workers of all SUA's in South Maharashtra. The gain of workers also observed in various occupation like manufacturing by 3.08 percent and construction by 5.86 percent as compare to all SUA's of South Maharashtra.

GAINS AND LOSSES OF POPULATION IN VARIOUS OCCUPATIONS IN SATARA SUA

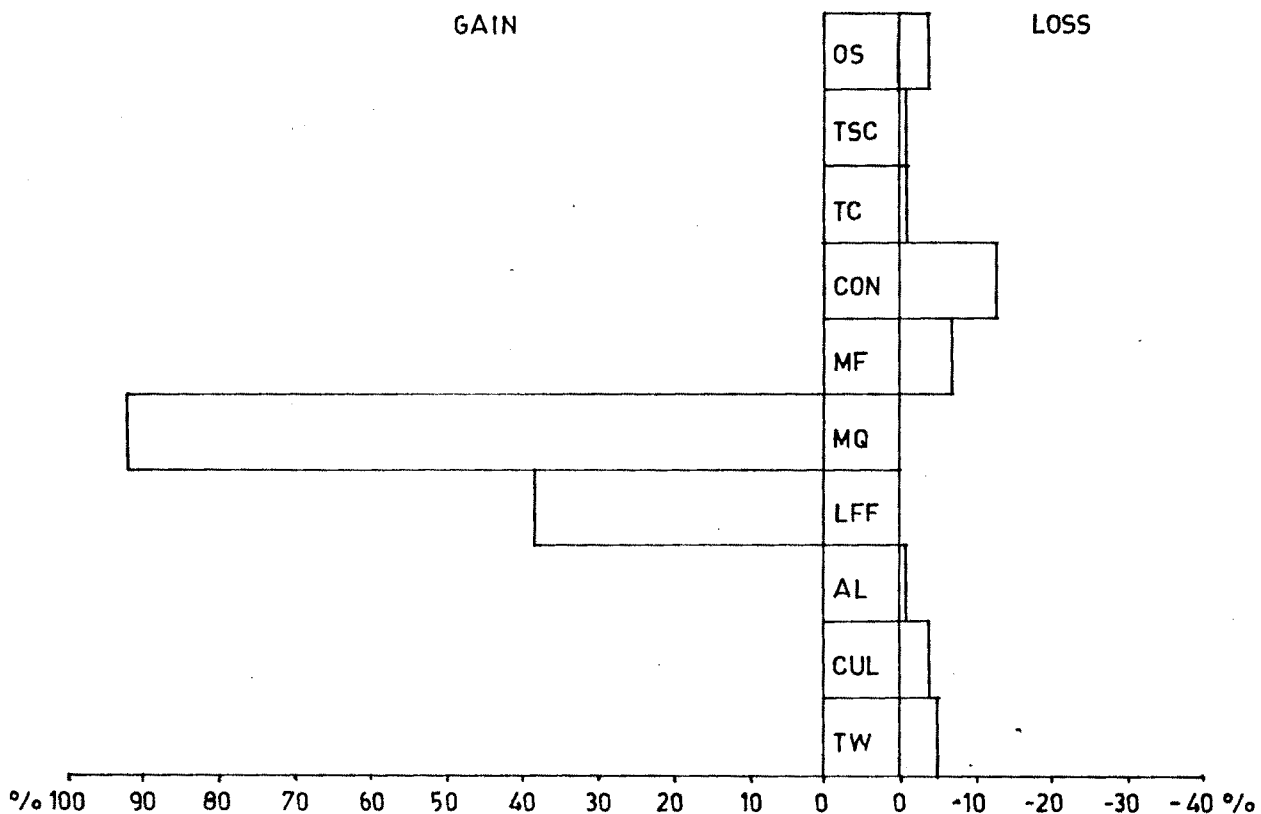


OS	OTHER SERVICES
TSC	TRANSPORTATION, STORAGE & COMMUNICATION
TC	TRADE & COMMERCE
CON	CONSTRUCTION
MF	MANUFACTURING
MQ	MINNING & QUAR ^{RY} ING
LFF	LIVESTOCK, FORESTRY & FISHING
AL	AGRICULTURE LABOURS
CUL	CULTIVATORS
TW	TOTAL WORKERS

(FIG. 3-4)

GAINS AND LOSSES OF POPULATION IN VARIOUS

OCCUPATIONS IN SANGLI - MIRAJ S U A



OS	OTHER SERVICES
TSC	TRANSPORTATION, STORAGE & COMMUNICATION
TC	TRADE AND COMMERCE
CON	CONSTRUCTION
MF	MANUFACTURING
MQ	MINING AND QUARRING
LFF	LIVESTOCK, FORESTRY & FISHING
AL	AGRICULTURE LABOURS
CUL	CULTIVATORS
TW	TOTAL WORKERS

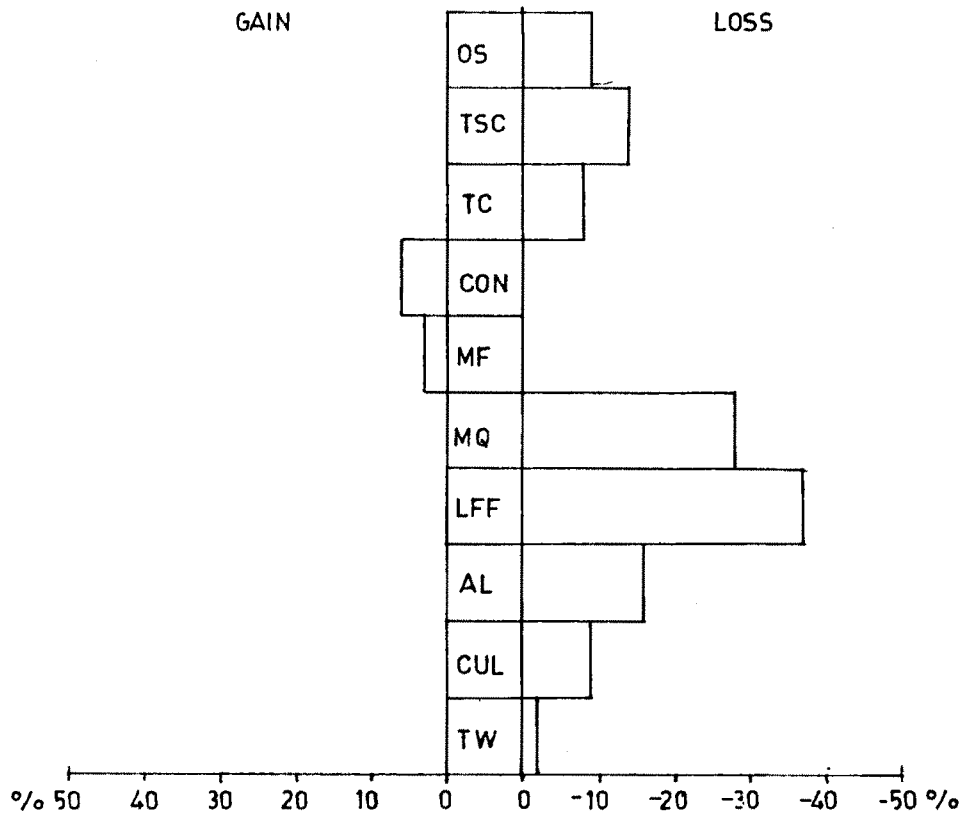
(FIG. 3-5)

The loss of workers happens in occupations like cultivator (8.75), agricultural labour (16.16), livestock-forestry, fishing (37.38), mining and quarrying (28.04), trade and commerce (7.64), transport-storage and communication (14.37) and other services (9.46). The gains and losses of people in various occupation of this SUA has been shown in Fig.3.6.

In Kolhapur standard urban area the loss has been observed in total workers by 1.39 percent with comparing all SUA's of South Maharashtra. The gain of people in various occupation observed in cultivators (8.74), agricultural labours (9.51), livestock-fishing-forestry (8.66), trade and commerce (4.20), transport-storage and communication (7.96) and other services (5.46), but the loss has been observed in mining and quarrying (49.74), manufacturing (7.96) and construction (12.55) with comparing to all SUA's of South Maharashtra. The Fig.3.7 shows the gains and losses of people in this SUA.

The Ichalkaranji SUA's is the only one SUA in study region which shows the gains of total workers by 17.37 percent as compare to all SUA's of South Maharashtra during 1971-81. This is only SUA where gain is found in various occupation. The gain of population is observed in livestock-fishing-forestry (51.67), mining and quarrying (66.28), manufacturing (8.54), construction (40.22), trade and commerce (35.95) and other services (36.26). The loss is found in occupations like agricultural labours (10.55) and cultivator (16.11). Fig.3.8 shows

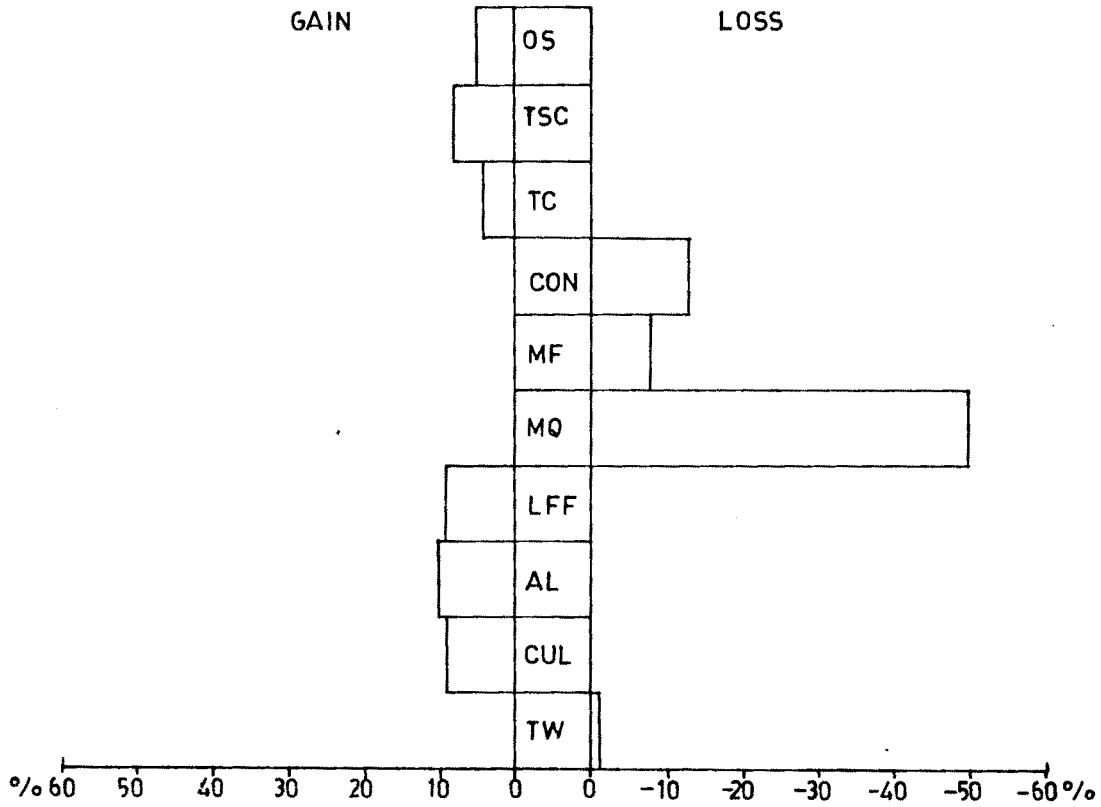
GAINS AND LOSSES OF POPULATION IN VARIOUS
OCCUPATIONS IN
SOLAPUR SUA



OS	OTHER SERVICES
TSC	TRANSPORTATION, STORAGE & COMMUNICATION
TC	TRADE AND COMMERCE
CON	CONSTRUCTION
MF	MANUFACTURING
MQ	MINING AND QUARR ^{RY} ING
LFF	LIVESTOCK, FORESTRY & FISHING
AL	AGRICULTURE LABOURS
CUL	CULTIVATORS
TW	TOTAL WORKERS

(FIG. 3.6)

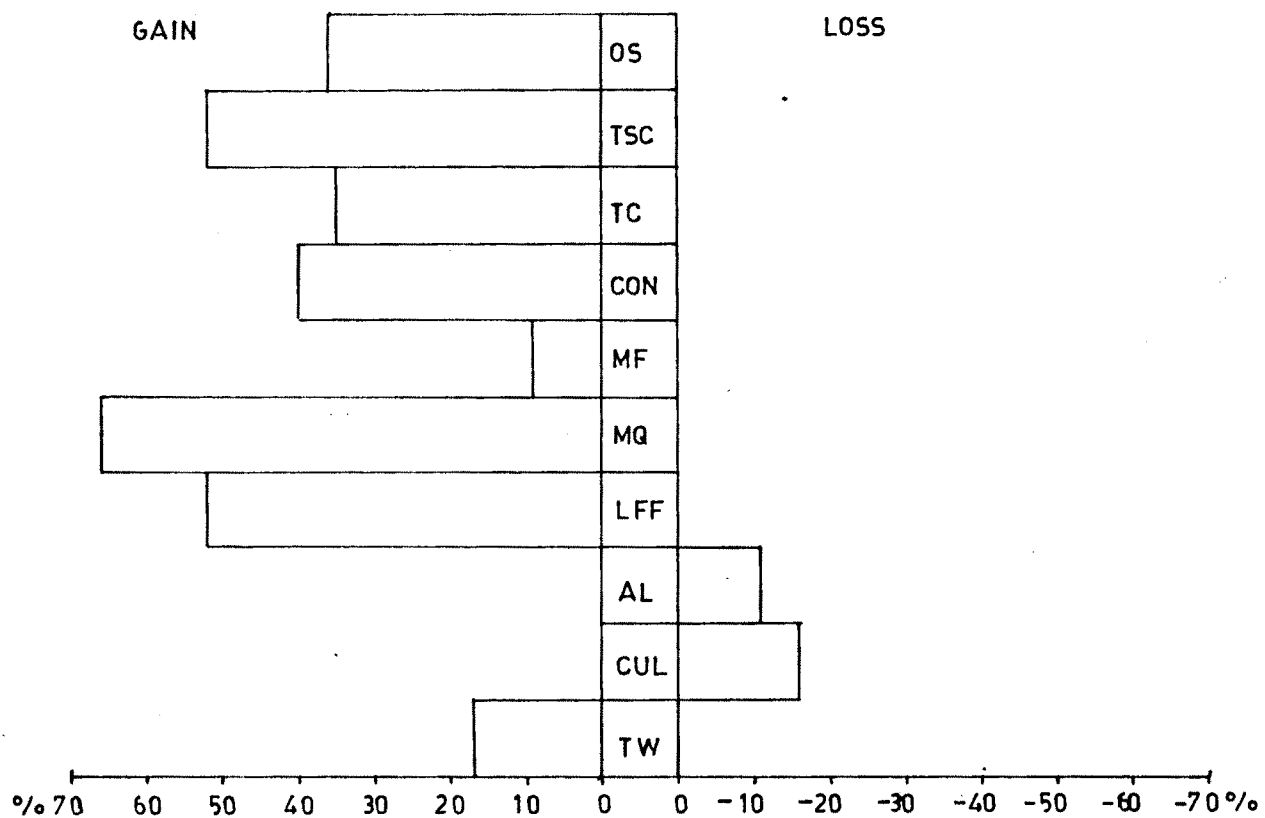
GAINS AND LOSSES OF POPULATION IN VARIOUS OCCUPATIONS IN KOLHAPUR SUA



OS	OTHER SERVICES
TSC	TRANSPORTATION, STORAGE & COMMUNICATION
TC	TRADE & COMMERCE
CON	CONSTRUCTION
MF	MANUFACTURING
MQ	MINING & QUARRYING
LFF	LIVESTOCK, FORESTRY & FISHING
AL	AGRICULTURE LABOURS
CUL	CULTIVATORS
TW	TOTAL WORKERS

(FIG. 3.7)

GAINS AND LOSSES OF POPULATION IN VARIOUS OCCUPATIONS IN ICHALKARANJI SUA



OS	OTHER SERVICES
TSC	TRANSPORTATION, STORAGE & COMMUNICATION
TC	TRADE & COMMERCE
CON	CONSTRUCTION
MF	MANUFACTURING
MQ	MINNING & QUARING
LFF	LIVESTOCK, FORESTRY & FISHING
AL	AGRICULTURE LABOURS
CUL	CULTIVATORS
TW	TOTAL WORKERS

(FIG. 3.8)

the gains and losses of people in various occupation in Ichalkaranji SUA.

The study of gains and losses of population in standard urban areas, one finds that excepting Solapur SUA, all other SUA's have gain of population in most of the urban activities. The highest gain is observed in Ichalkaranji SUA where the growth of urbanisation is rapid.

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