

Profile of Varanasi and Saharanpur District

2.1 Introduction

The two sample districts selected for the study viz. Varanasi and Saharanpur fall under the jurisdiction of the State of Uttar Pradesh which, incidentally, is the most populous State in demographic terms and second largest State in terms of geographical area in India. Though these two districts are strategically located poles apart, i.e. the district of Varanasi is the eastern most district of the State and is located at the southeastern part. It lies between the parallels of 24°43' and 25°35'N latitude and 82°11' and 83°34'E longitude whereas, Saharanpur district is situated on the north western part of the State and lies between the parallels of 29°34' and 30°24' N latitude and 77°7' and 78°12'E longitude, yet they share common features at many levels.

2.1.1 The Common Features

- (1) The first and foremost is their strategic locations. Both district are the border districts of the State. While the district of Saharanpur opens one of its boundaries towards the state of Haryana; Varanasi district opens its geographical frontiers towards the State of Bihar. In that sense, both the sample districts could be called the 'Gateway to the State of Uttar Pradesh' one from the eastern side and the other from the western side.
- (2) Both the districts derive their present names from their principal or headquarter cities.
- (3) Both the districts have undergone territorial realignment many a time during the reorganization of states after independence till as late as the mid-nineties. While the district of Sharanpur got truncated when the

district of Hardwar was formed in 1992. Varanasi, on the other hand, was divided into the district of Bhadoi and Chandauli 1992 and 1996 respectively.

- (4) Both the districts have also close affinity and proximity towards sacred river Ganga. While Varanasi district lies on the left bank of Ganga; Saharanpur district lies on the doab formed by river Ganga and Yamuna. On account of their vital strategic locations and also because of their historical legacy, they attract both the tourists and pilgrims in lakhs each year.
- (5) Both districts are, largely, rural in nature with relatively low level of urbanization. It could be seen that about thirty per cent of population in Varanasi and twenty five per cent in Saharanpur district resides in urban areas.
- (6) The economy of both the districts is, primarily, agricultural which absorbs bulk of the work force of the district.
- (7) In both the districts, there is a very high concentration of small and marginal land holdings, which points out towards the skewed pattern of land distribution.
- (8) The industrial sector of both the districts also holds an important place in the economy of their respective districts. Varanasi has been famous for handicrafts and artistic goods, carpet industries, handloom weaving fabrics and several important large and medium scale unit like diesel locomotives, glass work, chemical and fertilizers, industrial gases etc. Saharanpur on the other hand, also has a strong industrial base on account of the availability of forest and agro-based raw materials, traditional wood carving industry, survey and drawing instrument units, and handloom textile. On the large-scale category, the district

possesses paper mills, cigarette factory, textiles, tyres and tubes factory, heavy electrical etc. (District Census Hand book, 1981).

2.1.2 Other Characteristics

Besides the aforesaid common features, these districts have other comparable features. The comparative analysis of those features provides us with an opportunity to assess the potentialities of these districts. Some of them have been discussed below.

(a) Physical Features

The geographical area of Varanasi and Saharanpur districts, as per 1991 Census, was reported to be 4035 sq. kms and 3860 sq. km. respectively which places them at twenty second and forty fifth place in States' hierarchy respectively.

(b) Demographic Profile

The demographical profile of these district shows that the total population was 4860582 and 2309029, which was 3.5 percent and 1.7 percent of the State's population. The gender ratio of both the districts, by and large, was identical with males leading marginally. However, the proportion of Scheduled Castes was distinctly higher in Saharanpur district whereas the proportion of population below the age of six years was also identical in both the districts. Another interesting aspect of demographic profile was that though the population density of Varanasi district was more than two time than that of Saharanpur, yet its decadal growth was much lesser than that of Saharanpur district. The credit for which should partly go to the districts higher literacy rate at 49.8 per cent as compared to 42.2 per cent observed in Saharanpur district.

The gender-ratio of Varanasi was better than that of Saharanpur at 896 females per thousand of males. However, the average size of family was much higher in Varanasi district than that of Saharanpur district. Likewise, the classification of population, on the basis of religion, shows that both the districts were largely

dominated by Hindu population, which accounted for 86.4 per cent and 62.7 per cent of the population in the district respectively, followed by Muslims whose proportion was worked out to be 13 per cent and 37 per cent respectively. The Christians, Sikhs, Budhists groups etc. constituted a very minor group in both the districts.

(c) Administrative Profile

On the administrative side, the comparison of the two districts show that, though both districts have suffered on account of the process of reorganization of states, yet of late, Varanasi district appears to have suffered more than Saharanpur. And as of now the district has only 3 tehsils, 8 blocks, 108 Nyaya panchayats, 698 gram panchayats and 1334 revenue villages of which over 96 per cent villages were inhabited. Against this, the number of tehsils, blocks, nyaya-panchayats, etc. in Saharanpur District was 4,411 and 113 respectively. Similarly, the number of revenue villages was 1607 of which about 80 per cent were inhabited.

(d) Social Institutional Profile

The study of profile of social institution i.e. schools, hospitals, communications etc. also provides useful information. It could be seen that though the physical strength of junior basic schools, senior basic schools, higher secondary schools etc. was much higher in Varanasi district and places it at a very high pedestal. However, when the comparison was made, on the per capita basis, the situation changes altogether. The analysis shows that comparison of schools per lakh of rural population reveals that distribution of junior basic schools was more evenly spread out in Saharanpur district with an average of 60 schools per lakh population, whereas in case of the senior basic schools Varanasi district with a ratio of 14.3 schools was marginally better placed while in the higher secondary section both district were evenly matched. However, in the case of medical institutions, the position of Varanasi district was better than that of Saharanpur district except incase

of primary health centres, sub-centres etc., where Saharanpur scored over Varanasi district.

In the case of telecommunication sector, the distribution of telephone connections, both in rural and urban areas in Varanasi district was much higher than that in Saharanpur district, however, the coverage provided by public call office (PCOs) in rural areas was much higher in Saharanpur district. On the basis of aforesaid analysis, it appears that rural coverage by telecommunication net working was better in Saharanpur district (Table -2.1 & Table -2.2).

**Table – 2.1
District Profile**

Particulars	Statistics	
	Varanasi	Saharanpur
Total Geographical Area (Sq. Km.)	4,035	3,860
No. Occupied Res. Houses	6,13,863	3,67,287
No. of Households	6,54,642	3,68,865
Total Population	48,60,582	2309,029
(a) Male	25,63,848	1247,254
(b) Female	22,96,734	1061,775
% of SC Population	18.14	21.05
% of ST Population	0.01	0.01
% of 0-6 Year Population	21.67	20.27
(a) Male	21.23	19.76
(b) Female	22.16	20.86
% of Urban Population	31.30	25.50
Population Growth Rate (1981-91)	22.20	26.80
Population Density (Per Sq. Km.)	1,205	598
Sex Ratio (Per Thousand Males)	896	852
% of Literacy Rate	49.8	42.2
(a) Male	65.4	53.9
(b) Female	32.2	28.1
Average Size of Family	7.23	6.25
(a) Male	7.20	6.20
(b) Female	7.29	6.40
No. of Tehsils	3*	4
No. of Blocks	8*	11
No. of Nyay Panchayats	108*	113
No. of Gram Panchayats	698*	781
No. of Revenue Villages	1,334*	1,607
(a) Inhabited Villages	1,260*	1,278
(b) Uninhabited Villages	74*	329
No. of Municipal Corporation	2	5
No. of Police Stations	35	21
No. of Bus Station/Bus Stop	366	204
No. of Post Office	442	206
% of Electrified Villages	62.04	74.42
% of Inhabited Electrified Villages	70.11	93.58

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Particulars	Statistics	
	Varanasi	Saharanpur
Per Lakh Rural Population		
Junior Basic Schools	41.4	60.5
Senior Basic Schools	14.3	10.7
Higher Secondary Schools	4.7	4.6
Degree Collages	0.4	0.3
Industrial Training Institute	0.1	0.1
Allopathic Hospital	1.6	1.1
Aayurvedic Hospital	1.2	0.7
Homeopathic Hospital	0.6	0.3
Yunani Hospital	-	0.3
Primary Health Centre	2.4	3.2
FMW Centre	2.1	2.5
FMW Sub-Centre	17.8	17.4

Source: District Statistical Hand - Book of Varanasi (1997) and Saharanpur (1995).

Note: * After Formation of Chandauli District.

Table – 2.2

Classification of Population by Different Religion

Name of Religion	Varanasi (%)	Saharanpur (%)
Hindu	86.35	62.70
Muslim	13.29	36.12
Christian	0.14	0.07
Sikh	0.11	0.66
Buddhist	0.06	0.04
Jain	0.04	0.41
Others	0.01	-
Total	100.0	100.0

Source: District Statistical Hand - Book of Varanasi (1997) and Saharanpur (1995).

2.2 Occupational Distribution of Work force

The study of distribution of work force, among different sectors and different occupation, assumes a significant place in the process of planning as it enables the planners to understand the pattern of their utilization, on one hand, and the important role each sector plays within their respective regional economies.

The perusal of the distribution of work force in the two sample districts and their comparison with State provides some interesting and useful insight.

It could be seen that the proportion of main workers in the total work force in both the districts was, more or less, identical around 29 per cent which was marginally lesser than the states average of 29.7 per cent as stated earlier. Though the proportion of marginal holdings in both district was high, yet the comparative

figures show that the proportion of marginal farmers in Saharanpur district was distinctly lesser than that in Varanasi district, while the proportion of non workers was uniformly higher in both the districts which was similar to the one observed at the States level. The higher proportion of marginal workers in Varanasi district, perhaps, indicates towards skewed distribution of land holdings there as compared to Saharanpur district.

Further in the class of main workers, the comparison shows that agriculture sector constitutes the largest sector, in both the sample districts, by absorbing about 52 percent and 65 percent of labour force, in Varanasi and Saharanpur districts respectively, which was, lesser than the proportion observed at the States level, and indicates that the States economy was much more agrarian than that of the two sample districts. The further breakup of main workers into sub-components of primary sector shows that though the proportion of cultivators in both sample district was same, however the proportion of agricultural labourers was significantly higher in Saharanpur district than what it has been in Varanasi district, which points out towards the fact agricultural operations also invites additional work force from outside the region in the form of agricultural labourers. The analysis also shows that the animal husbandry sector was more developed in Saharanpur district than that in Varanasi district while mining and quarrying sector was least developed in both the districts mainly on account of the enforcement of law by Hon'ble Supreme Court and High Courts banning many mining and quarrying operations in the areas and regions for preserving the environment and the ecology.

In the secondary sector, both the districts were better placed as compared to the State, which absorbed about 9.1 per cent of the main workers. However, the comparison of both the districts shows that the secondary sector was, by far, more developed in Varanasi district and accounted for more than twice the proportion of labour force than what it had been in Saharanpur district. The subsequent breakup of this sector show that the proportion of workers absorbed in household industries in

Varanasi district was significantly higher than Saharanpur. Together, these household industries along with other than household industries were accounting for more than 92 percent of all workers engaged in this sector in Varanasi district, whereas the construction sector was still at its infancy in both the sample districts.

Similarly, in the case of tertiary sector, the analysis shows that it was also contributing to district's economy quite significantly in both the districts. The labour absorption in both the districts was more or less same and was distinctly higher than that of the State. The intra sectoral analysis of this sector shows that trade and commerce and other service sector in both districts was quite developed and accounted for more than 22 percent of total work force engaged (Table -2.3).

Table – 2.3

A Comparative Profile of Workers

Particulars	Varanasi		Saharanpur		Uttar Pradesh	
	Number	%	Number	%	Number	%
Main Workers	14,00,994	28.82	6,68,338	28.94	4,13,60,734	29.73
(a) Male	11,81,011	46.06	6,42,368	51.50	3,65,10,310	49.31
(b) Female	2,19,983	9.58	25,970	2.44	48,50,424	7.45
Cultivators	4,55,469	32.51	2,15,786	32.29	2,20,31,181	53.27
(a) Male	3,83,121	32.44	2,12,095	33.02	1,96,94,423	53.94
(b) Female	72,348	32.89	3,691	14.21	23,36,758	48.18
Agr. Labourers	2,59,654	18.53	2,08,865	31.25	78,33,258	18.94
(a) Male	1,63,689	13.86	1,98,424	30.89	60,95,941	16.70
(b) Female	95,965	43.62	10,441	40.20	17,37,317	35.82
Livestock and Allied Activities	10,000	0.71	8,556	1.28	2,95,684	0.71
(a) Male	9,496	0.80	7,554	1.17	2,71,070	0.74
(b) Female	504	0.23	1,002	3.86	24,614	0.51
Mining and Quarrying	1,322	0.09	77	0.01	34,598	0.08
(a) Male	1,296	0.11	76	0.01	31,596	0.09
(b) Female	26	0.01	1	0.00	3,002	0.06
Household Industry*	2,03,687	14.54	10,343	1.55	9,97,165	2.41
(a) Male	1,80,413	15.28	8,815	1.37	8,24,861	2.26
(b) Female	23,276	10.58	1,528	5.88	1,72,304	3.55
Other than Household Industry**	1,39,777	9.98	59,300	8.87	22,08,368	5.34
(a) Male	1,33,266	11.28	58,103	9.05	20,89,292	5.72
(b) Female	6,511	2.96	1,197	4.61	1,19,076	2.45
Constructions	25,089	1.79	14,634	2.19	5,10,520	1.23
(a) Male	24,243	2.05	14,006	2.18	4,95,686	1.63
(b) Female	846	0.38	628	2.42	14,834	0.31

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Particulars	Varanasi		Saharanpur		Uttar Pradesh	
	Number	%	Number	%	Number	%
Trade and Commerce	1,29,056	9.21	56,849	8.51	25,50,857	6.17
(a) Male	1,24,069	10.50	56,118	8.74	24,80,494	6.79
(b) Female	4,987	2.27	731	2.81	70,363	1.45
Transport and Communication	44,868	3.20	20,432	3.06	7,71,224	1.86
(a) Male	44,427	3.76	20,306	3.16	7,63,528	2.09
(b) Female	441	0.20	126	0.48	7,696	0.16
Other Services	1,32,072	9.43	73,496	11.00	41,27,879	9.98
(a) Male	1,16,992	9.90	66,871	10.41	37,63,419	10.31
(b) Female	15,081	6.85	6,625	25.50	364,460	7.51
Marginal Workers	1,35,520	2.79	15,833	0.68	34,38,546	2.47
(a) Male	9,706	0.38	1,356	0.11	2,69,660	0.36
(b) Female	1,25,814	5.48	14,477	1.36	31,68,886	4.87
Non Workers	33,24,068	68.39	16,24,858	70.37	9,43,13,007	67.80
(a) Male	13,73,131	53.56	6,03,530	48.39	3,72,56,987	50.32
(b) Female	19,50,937	84.94	10,21,328	96.19	5,70,56,020	87.68

Source: *Census of India 1991.*

Note: * *Manufacturing, Processing, Servicing and Repairs in Household Industry.*

** *Manufacturing, Processing, Servicing and Repairs Other than Household Industry.*

2.3 Distribution of Industrial Units and Their Management

The study of distribution of pattern of industrial units and their management in both sample districts provide contrasting pictures. Though, the industrial sector, as has been stated earlier, plays an important role in their respective districts economy, yet their management portfolio differ vastly.

The study of industrial units shows that over sixty one percent of the industrial units were being controlled by the industrial cooperatives in Varanasi district which accounted for more than 75 percent of total work force engaged in industrial sector followed by individual entrepreneurs who controlled about 28 percent of the industrial unit, absorbing around 23 percent of the industrial workers. Together, these two management's nearly accounted for 99 percent of industrial units and over 98 percent of labour force, thereby spelling complete dominance; whereas in Saharanpur district, the individual entrepreneurs were calling the shots by controlling over 92 percent of the industrial units and over 43 percent of labour force, while registered units were controlling about 6 percent of industrial units which accounted for 47 percent of labour force. The high proportion of labour force, here, has been

largely on account of khadi and village industries (KVI) and rural village industries, that have been recently brought under their purview and were highly labour intensive in nature (Table -2.4).

Table – 2.4

Classification of Working Industrial Units and by Different Religion

Management of Industrial Units	Varanasi (1996-97)		Saharanpur (1994-95)	
	Units	Workers	Units	Workers
Panchayat	-	-	1 (0.01)	8 (0.07)
Area Association	-	-	3 (0.04)	30 (0.26)
Industrial Cooperative Association	6,865 (61.34)	15,600 (75.34)	144 (1.68)	1090 (9.34)
Registered Institutions	73 (0.65)	332 (1.60)	495 (5.76)	5,484 (46.99)
Individual Industrialist	4,253 (38.01)	4,775 (23.06)	7,952 (92.52)	5,058 (43.34)
Total	11,191 (100.0)	20,707 (100.0)	8,595 (100.0)	11,670 (100.0)

Source: District Statistical Hand - Book of Varanasi (1997) and Saharanpur (1995).

2.4 Social Infrastructural Facilities

Infrastructure has been accepted as a social important variable in the process of development planning. The region development, to a great extent, depends upon the level to which its infrastructure has been developed because a well developed infrastructure facilitates and, at times, also acts as a catalyst in the implementation, promotion and execution of programmes smoothly and efficiently.

The distribution of social infrastructure has been classified on the basis of following criteria, viz. located within the village, less than one kilometer, one to three kilometer, three to five kilometer and above five kilometers. The primary aim of classifying, is to focus on the facilities that have been provided or are prevailing inside the villages, or are located within one kilometer of distance.

The study of distribution of some social infrastructural facilities in the two sample districts shows that in the distribution of fair price shops and sub centres in both the district even matched in providing facilities within the village or at a distance of less than one kilometer. Whereas, in the case of distribution pattern of post office

and bus station, Varanasi district definitely scores over Saharanpur district. However, the study also shows that villages were better covered by pucca road net work in Saharanpur district.

The main reason for a higher concentration of bus station in Varanasi district may be attributed to the fact that it has been serving as a main business, educational and tourist centre, from time immemorial, and caters to the needs of almost the whole of eastern part of the state of U.P. and also some parts of the State of Bihar; as a result of which it has a separate bus station practically, for every location viz. districts. This number has also proliferated over the years with the formation of new ones. Whereas in Saharanpur district, the better coverage provided by pucca roads have facilitated private bus owners to ply virtually, on every route, which more or less, compensates for lesser proportion of bus stations. Further, the affluent people here have their own conveyance and therefore, their dependence on public or private transport is bare minimum (Table -2.5).

Table – 2.5

Distance-wise Distribution of Infrastructure Facilities

Area-wise Classification	Varanasi					Saharanpur				
	Fair Price Shop	Sub Centre	Pacca Road	Post Office	Bus Station	Fair Price Shop	Sub Centre	Pacca Road	Post Office	Bus Station
In village	1,448 (55.3)	498 (19.0)	822 (31.4)	296 (11.3)	356 (13.6)	620 (48.6)	327 (26.6)	960 (75.2)	168 (13.2)	185 (14.5)
Below 1 km.	575 (21.9)	462 (17.7)	546 (20.8)	476 (18.2)	475 (18.0)	375 (29.4)	153 (12.0)	71 (5.6)	98 (7.7)	99 (7.8)
1 to 3 km.	389 (14.8)	995 (37.9)	748 (28.5)	1,164 (44.4)	830 (31.7)	202 (15.8)	497 (38.9)	178 (13.9)	451 (35.3)	368 (28.8)
3 to 5 km.	110 (4.2)	540 (20.6)	330 (12.6)	391 (14.9)	440 (16.8)	77 (6.0)	225 (17.6)	57 (4.5)	345 (27.0)	309 (24.2)
Above 5 km.	100 (3.8)	127 (4.8)	176 (6.7)	295 (11.2)	521 (19.9)	2 (0.2)	74 (5.9)	10 (0.8)	214 (16.8)	315 (24.7)
Total villages	2,622 (100.0)	2,622 (100.0)	2,622 (100.0)	2,622 (100.0)	2,622 (100.0)	1,276 (100.0)	1,276 (100.0)	1,276 (100.0)	1,276 (100.0)	1,276 (100.0)

Source: District Statistical Hand - Book of Varanasi (1997) and Saharanpur (1995).

2.5 Land Utilization pattern

The study of land utilization pattern in a region enables in planners to understand how well and efficiently the land is being put to productive use and

suggest possible areas of interventions if any. It also throws light on the levels of agricultural operations being practiced in the area.

The study of land utilization pattern in Varanasi and Saharanpur district reveals certain interesting trends. The comparison of the two districts shows that though Varanasi district is bigger than Saharanpur in physical size, yet they share remarkable similarities in terms of their area under forest, agricultural, waste land, other current fallow, area under orchards etc. Further, the study also reveals that though both have almost similar net area under irrigation, yet the area sown more than once in Saharanpur district was almost two times the area in Varanasi district which reflects the pattern of intensive cultivation being practiced in Saharanpur district supplemented with higher use of agricultural labour as has been seen earlier (Table -2.6).

Table – 2.6
Classification of Land Use Pattern

Particulars	Varanasi		Saharanpur	
	Number	Percent	Number	Percent
Forestry	77,328	19.10	66,859	16.90
Cultivable waste land	1,480	0.40	1,639	0.40
Current fallow	2,304	0.60	3,861	1.00
Other waste land and fallow	2,008	0.50	2,198	0.60
Land not available for cultivation	1,816	0.50	3,054	0.80
Land put non agriculture cultivation	34,840	8.60	41,553	10.50
Pastures	79	0.02	274	0.07
Area under orchard trees and groves	2,179	0.50	1,155	0.30
Net area sown	2,82,330	69.80	2,74,348	69.50
Area sown more than once	1,13,689	28.10	1,75,675	44.50
Total cropped area	3,96,019	140.2*	4,50,023	164.0*
Net area irrigated	2,19,458	54.30	2,02,609	51.30
Total reported area	4,04,364	100.00	3,94,941	100.00

Source: District Statistical Hand - Book of Varanasi (1997) and Saharanpur (1995).

Note: * Denote Cropping Intensity.

2.6 Land Holding Pattern

The success of agricultural development also depends, to a large extent, upon the pattern of land distribution in the region besides other factors like the use of improved seeds, fertilizers, irrigation facilities etc. If the distribution of land is highly skewed, scientific cultivation could not be implemented beyond a certain extent which

limits the scope of agricultural development. Therefore, analysis of distribution of land into various sizes of holdings assumes significance.

The study of land distribution pattern in both the sample districts shows that land distribution was more acute or skewed in Varanasi than in Saharanpur district. It could be seen that over 74 percent of the cultivators had less than 0.5 hectares of land holdings accounting for about 30 percent of the area under cultivation. Against this, the proportion of cultivators having less than 0.5 hectares of land in Saharanpur was about 41 percent which was around 7 percent of total area. Similarly, the proportion of cultivators in possession of land holding between 0.5 hectares to one hectares in Varanasi district was around 14 percent who accounted for about 23 percent of area under cultivation. This proportion, in Saharanpur district, was worked out to be around 20 percent accounting for 10 percent of area under cultivation. Together, these categories accounted for over 88 percent of cultivators in Varanasi and about 60 percent cultivators in Saharanpur district who were in possession of about 53 percent of area in Varanasi and 18 percent of area under cultivation in Saharanpur district respectively. Further, the study also shows that as the size of land holding increased, the proportion of cultivators declined in both the districts. However, this drop, was more conspicuous in Varanasi than in Saharanpur district and it could be seen that the proportion of cultivators who were in possession of land holding between 4 to 10 hectares, was only 0.75 percent in Varanasi district whereas its proportion was much higher at 6.21 percent in Saharanpur district. Like wise, for land holding of over 10 hectares the proportion of cultivators in Varanasi and Saharanpur district was worked out to be 0.07 percent and 0.43 percent respectively, who were in possession of about 2 percent and 4 percent of land under cultivation in their possession respectively.

The foregoing analysis clearly shows land distribution pattern in Saharanpur district was relatively better or more rational than in Varanasi district. Among the factors attributing to highly skewed land distribution pattern in Varanasi, some could

be identified as the districts high density, larger size of family, territorial realignment the district had to undergo and perhaps non-implementation of land reforms (Table - 2.7).

Table – 2.7
Categories-wise Distribution of Area and Land Holding Pattern

Size of Land Holding in Hectare	Varanasi		Saharanpur	
	Number	Area	Number	Area
Below 0.5	9,25,490 (74.43)	96,090 (29.90)	85,484 (40.67)	20,389 (7.34)
0.5 to 1	1,79,640 (14.44)	74,183 (23.10)	41,162 (19.58)	29,010 (10.44)
1 to 2	95,238 (7.66)	75,125 (23.40)	39,848 (18.96)	57,214 (20.59)
2 to 4	32,796 (2.64)	44,428 (13.80)	29,723 (14.14)	85,234 (30.68)
4 to 10	9,386 (0.75)	25,616 (8.0)	13,054 (6.21)	73,910 (26.60)
Above 10	840 (0.07)	5,871 (1.8)	897 (0.43)	12,081 (4.35)
Total	12,43,390 (100.0)	3,21,311 (100.0)	2,10,168 (100.0)	2,77,838 (100.0)

Source: District Statistical Hand - Book of Varanasi (1997) and Saharanpur (1995).

2.7 Use of Agricultural Tools & Fertilizers

The improvement in the performance of agriculture sector, over the last few decades, has only been possible on account of consistent changes, brought about from time to time, in various facets of agricultural operation. The regions, that have marched ahead, over the others, have largely been on account of the fact that they have, discarded traditional mode of cultivation and have shifted to modern and scientific methods, tool and inputs.

The study of use of agricultural tools in both the district shows that though agricultural operations were still dependent on the use of ploughs which included both the wooden as well as iron. The comparison of different nature of ploughs in both districts shows that the use of wooden ploughs was more conspicuous in Varanasi district, whereas, iron ploughs were more frequently being used in Saharanpur district. The comparison with the states average also shows that their per thousand hectare use was much less in both the sample districts. The study also

shows that use of plough was being taken over by use of tractor in both district. The per thousand hectare use of tractor in Saharanpur was much higher than that in Varanasi and State. Likewise, the use of pumpsets for irrigation was highest in Saharanpur while it was lesser than States average is Varanasi district. The aforesaid analysis clearly shows that the use of modern farm tools in Saharanpur has been much more than that in Varanasi district. However, the study also shows that use of chemical fertilizer in both districts has also picked up. The comparison of both the districts with the State shows that its use per thousand hectares was much higher in both sample districts against the state's average of 129.8 metric tons per thousand hectares of land. However, the use of chemical fertilizers in Saharanpur was significantly less than that of Varanasi district due to developed animal husbandry sector Saharanpur district uses compost manure more that Varanasi. The intensive use of land cultivation there also facilities and encourages them to go for the use of compost manure rather than the chemical one, which has been associated with terrible or harmful side effects, if used consistently and regularly beyond a point (Table -2.8).

Table – 2.8
Use of Agricultural Tools and Fertilizers

Agriculture Machinery	Machinery Available Per Thousand Hectare		
	Varanasi	Saharanpur	Uttar Pradesh
Plough	645.5	427.9	2204.9
(a) Wood	492.2	65.5	446.3
(b) Iron	153.3	362.4	1758.6
Tractors	14.6	44.8	13.3
Carts	2.3	315.1	123.7
Pump Set for Irrigation	88.1	253.6	78.0
(a) Oil Engine	41.8	195.8	77.1
(b) Electric Power	46.3	57.8	20.9
Sugar cane Crusher	132.2	10.4	26.6
(a) Worked by Power	18.8	6.8	3.5
(b) Worked by Bullock	133.4	3.6	23.1
Name of Fertilizers	Fertilizers in M. T. Per Thousand Hectare		
Nitrogen	166.4	139.4	97.8
Phosphate	44.4	31.7	26.3
Potash	21.5	5.2	5.7
Total	232.7	176.3	129.8

Source: *Statistical Abstract of Uttar Pradesh, 1992.*

2.8 Sources of Irrigation

Assured means of irrigation ensure better prospects for agricultural development. The study of sources of irrigation helps in evaluating and even predicting the future prospects for agricultural operations.

The study of distribution of irrigation sources in the two districts shows that agriculture is, largely, dependent on canals and tube-wells in both the districts, at varying levels.

It could also be seen that the percentage of net area irrigated in both the districts was significantly higher than the level attained at the States level viz. 61.6 percent. However, the proportionate area under irrigation was much higher in Saharanpur district than that in Varanasi district.

The perusal of the sources of irrigation reveal that the two main sources in both sample districts were canals and tube wells. Together, these two accounted for almost 99 percent of respective district's irrigation requirements, while tanks and lakes, and other sources played insignificant roles. Further, it could be seen that bulk of the irrigation in Varanasi district was being evenly shared by tube wells and canals while in Saharanpur, irrigation was being done largely, with the help of tube wells and wells which accounted for over 70 percent of irrigated area, while canals accounted for another 29 percent.

Another important aspect of the irrigation network was that the management of tube wells in Sharanapur district was, largely, in the hands of private entrepreneurs. In other words, private entrepreneurs were playing a significant role in agricultural operations in Saharanpur district (District Statistical Handbook, 1995).

Table – 2.9**Distribution of Net Area Irrigated by Different Sources (in hectare)**

Sources	Varanasi		Saharanpur		Uttar Pradesh	
	Number	Percent	Number	Percent	Number	Percent
Canal	1,13,781	45.8	66,581	28.9	31,92,858	29.9
Tube wells and wells	1,31,980	53.2	1,63,249	70.9	70,54,297	66.2
Tanks and Lakes	168	0.06	10	0.04	1,04,437	0.98
Other	2,291	0.92	257	0.11	3,09,119	29.9
Total	2,48,220	100.0	84.2	100.0	1,06,60,711	100.0

Source: *Statistical Abstract of Uttar Pradesh, 1992.*

2.9 Profile of Staple Crops

The study of land utilization pattern under different crops, in both sample districts of Varanasi and Saharanpur district, presents somewhat similar trend, with minor variations, here and there. The perusal of Table – 2.10 shows that Rice, Bajra and Maize were the main crops sown in Varanasi district in Kharif season with Rice accounting for over 52.72 percent of net sown area, distantly followed by Bajra whose share was worked to be 5.50 percent of the net sown area. In Saharanpur district, on the other hand, Rice was again the principal crop accounting for more than 24 percent of net sown area followed by Maize. It could be seen that while Varanasi dominated Rice Cultivation, in Saharanpur on the other hand, wheat cultivation was over whelming dominant. Further, the study also shows that the productivity of Rice was higher in both the sample districts when compared with the States average. However, between the two districts, the productivity of Rice in Saharanpur districts, which was observed to be 23.93 quintals per hectare, was marginally higher than that of the Varanasi's average of 21.28 quintals per hectares.

In the case of Rabi season, the main crops sown in Varanasi district were Wheat, Gram, Other Pulses; and Wheat and Pulses in Saharanpur district. Of them, Wheat and Pulses held premium place in both Varanasi and Saharanpur districts with their respective proportionate share in net sown area being 59.07 percent and 11.82 percent for Varanasi and 46.26 percent and 5.06 percent for Saharanpur district respectively. The comparative study of their productivity levels of all staple

crops shows that it was higher in Saharanpur district for Wheat, Gram and Groundnut cultivation while the productivity level in Varanasi was lower than the states average for Wheat and higher for Gram and Pulses. The higher level of productivity in Saharanpur may be attributed to their intensive cultivation practices, better and assured irrigation networking and scientific use of modern inputs etc. (Table - 2.10).

Table – 2.10

Distribution of Net Area Irrigated by Different Sources (in hectare)

Crops	Varanasi			Saharanpur			Uttar Pradesh		
	Area in Hectare	% of Area	Yield in Qtls./ Hectare	Area in Hectare	% of Area	Yield in Qtls./ Hectare	Area in Hectare	% of Area	Yield in Qtls./ Hectare
Rice	1,67,970	52.72	21.28	66,246	24.24	23.93	56,16,728	22.47	18.27
Jwar	5,206	1.63	10.84	-	-	-	5,26,536	3.04	9.36
Bajra	17,534	5.50	14.49	1,505	0.55	8.87	7,85,105	4.54	11.15
Maiz	8,256	2.59	4.88	12,606	4.61	9.62	10,95,488	6.33	13.19
Wheat	1,88,198	59.07	20.21	126,433	46.26	23.05	85,67,674	49.53	21.71
Gram	16,672	5.23	11.58	601	0.22	14.22	12,75,254	7.37	8.79
Other Pulses	37,674	11.82	9.49	13,831	5.06	5.03	17,64,732	10.20	9.35
Oil Seeds Ground Nut	34	0.01	7.42	5,270	1.93	13.26	1,51,876	0.88	7.42

Source: *Statistical Abstract of Uttar Pradesh, 1992, Economic & Planning Division, U.P., Lucknow.*