

**District Model Land Use Plan  
District – Varanasi  
Uttar Pradesh**

***Final Report***

By

Bimal Kumar

**Sponsored By**

**State Land Use Board, Uttar Pradesh  
Department of Planning, Government of U. P.  
Yojana Bhawan, Lucknow – 226 001**



**G. B. Pant Social Science Institute  
Jhusi, Allahabad – 211 019**

Phone: (0532) 667214, 667206, Fax: (0532) 667206, E-mail: bimal1950@rediffmail.com

# Study Team

*Project Director*

**Sri Bimal Kumar**

*Research Assistants*

**Mohd. Israil**

**Sri Gyan Nath Jha**

*Research Investigators*

**Sri Atul Mishra**

**Sri Sandeep Srivastava**

**Sri Ashok Kumar Dwivedi**

*Computer Assistant*

**Sri Sandip Kumar Jaiswal**

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## Preface

*Preparation of a separate land use plan for a district has its own importance because of growing population and limited land resource. The carrying capacity of land is under stress due to environmental pollution and land degradation.*

*We, therefore, focus not only on quantification of required land for each land use category but also on quality land use.*

*Secondly, we have tried to emphasize that there is need for block level and village level land use planning as well. Hence an attempt has been made to prepare land use plans for each block of the district and four selected villages of the district. We have also suggested for formation/revamping of institutions for this purpose.*

*The plans also include policy framework, besides general suggestions and specific tasks. These are based on informations collected from primary and secondary sources, discussions with villagers and observations made by members of the survey team.*

*We gratefully acknowledge our thanks to State Land Use Board for sponsoring the study. We are specially obliged to Mrs. Mridula Singh, Additional Director, State Land Use Board for constant interaction and help in course of this study. We are also thankful to DSTO in particular and other district level functionaries in general who supported us in collection of data and also provided important insights to the problem of land use.*

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*to Sri Sandip Kumar Jaiswal, who also worked as Computer Assistant, for his painstaking effort in typing and formatting of this report despite many odds.*

*– Bimal Kumar*

# Chapter - 1

## Introduction

Varanasi is one of the oldest living cities in the world and the ultimate pilgrimage for Hindus, who believe that to die in the city is to attain instant salvation. Situated on the banks of the Ganga, Varanasi is the tract of holy land lying between the rivers Varuna and Assi. Which flows into the Ganga. Varanasi is also known as Kashi, the city of light, since one of the twelve "Jyotirlinga" is installed here. Mark Twain, the American writer who visited the city, wrote "Benaras is older than history, older than tradition, even older than legend and looks twice as old as all of them put together" Varanasi has been a great cultural centre, especially in the field of music, learning and the craft of silk weaving. Some of the most renowned exponents of music have drawn their inspiration from Varanasi.

It presents changing patterns and movements in course of history. It has a rich and original variety of painting and sculptor styles and equally rich treasures of folk art. During the ages Varanasi has produced master craftsmen and Varanasi has earned name and fame for its Sarees, handicrafts, textiles, Toys, ornaments, metal work, clay and wood work, leaf and fibre crafts. With ancient crafts, Banaras has not lagged behind in Modern Industries.

Varanasi is the fast developing city of heavy, light and cottage industries, local handicrafts and other small scale industrial units. (DLW, BHEL, Electric, Cycle, paper, Glass, Fertilizer etc.).

With growing population and limited land resources the relevance of land use planning is obvious. Land has limited carrying capacity beyond which there will be degradation and loss in productivity due to excessive use. In order to meet various demands of the growing population the land degrading trend needs to be checked.

We should also attach due importance to the problem of rural communities, specially those below poverty line in whose hands this resource has to be efficiently utilized and whose minimum needs the efficient use of such resources is meant to serve.

The revenue department classifies land uses in following categories: (i) Land put to non-agricultural uses, (ii) Barren and uncultivable land, (iii) Pastures and grazing land, (iv) Land under trees and groves, (v) culturable waste land, (vi) current fallow, (vii) Fallow other than current fallow, (viii) Net Sown area, (ix) Forest.



The study also focusses on waste lands. Wastelands are such degraded lands which can be brought under vegetative cover, with reasonable effort, and which are currently under-utilized, and lands which are deteriorating due to lack of appropriate water and soil management or on account of natural causes.

A model land use plan for a district has been sought to be prepared on the basis of its land capability and feasibility to change present land use pattern, development and urbanisation have their own pressure on land use pattern. There are some major areas of concern as well. Forest area is being reduced by pushing the frontier of agriculture. On the other side good agricultural land is being usurped by urban sprawls, industrial establishments and expansion of human settlements and infra-structural facilities.

We have also investigated into the reasons of land degradation and the reasons for conversion of agricultural land to non-agricultural uses. And also how area under fallow land, culturable waste and barren/uncultivable land could be reduced.

A new strategy is needed to protect grazing land, land under trees, bushes etc. as well as protection of land for chak road and drainage system is also necessary. common resource property should be brought under communal ownership which should become non transferable and any activity that leads to their destruction should become unlawful.

The role of common resource property and its allocation systems becomes crucial in management of these natural resources. It must be emphasised that management of such resources be vested with the local communities who will take a longer view. Outside commercial interest will come and go with narrow economic interest only.

Effective communal property rights and resource management systems could be developed by empowering panchayats to develop modes of their use in their respective panchayats and by providing them technical and managerial skill as well as needed capital resources.

## **1.1 Relevance of Study**

With growing population and limited land resources the relevance of land use planning is obvious. Land has limited carrying capacity beyond which there will be degradation and loss in productivity due to excessive use. In order to meet various demands of the growing population the land degrading trend needs to be checked.

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## **1.2 Objectives**

The major objectives of preparing Model Land Use Plan for District are as follows:

- (i) To review the existing land use patterns and preparation of data base.
- (ii) Projection of desirable and attainable optimal land use Plan.
- (iii) Suggestion of Action Plan including institutional changes and resource management policies to achieve optimal land use Plan.
- (iv) Identify areas under different types of wasteland and make suggestions for their reclamation.

### **1.3 Methodology**

The present report is based on a three tier study of the districts.

- (i) District level
- (ii) Block level
- (iii) Village level

In order to select villages two blocks namely Kashi Vidya Peeth and Pindara were selected from the district. The two villages were selected randomly from each of the selected blocks. Thus the villages selected are:

- (i) Gopalpur (Block – Kashi Vidya Peeth)
- (ii) Tarapur (Block – Kashi Vidya Peeth)
- (iii) Aswalpur (Block – Pindara)
- (iv) Boonchi (Block – Pindara)

### **1.4 Data Source**

The data for preparing district and block level plans was collected from secondary sources, while village level plans are based on primary data. Three types of schedules were canvassed to elicit required information. These are (i) Village Schedule and (ii) Household Schedule, and (iii) Listing Schedule.

The information for village schedule was gathered from Gram Pradhan, Ex-gram Pradhan, Lekhpal, Village level functionary and also from well informed citizens of the village.

The household schedule was canvassed among 20 farmers of the village. The care was taken that these farmers represent all categories and communities of the village.

The listing schedule was canvassed to collect critical information about all households of the village such as demography, land use pattern, land ownership, occupational structure, literacy, livestock, housing condition etc. It also found the sample frame from which sample was drawn for detailed study of households.

Besides generating the primary data, information was also gathered from secondary sources. These included both published data and unpublished data (generated by various line departments). Different line departments were also approached to provide information which has a bearing on land use pattern of the district.

**Some of the main features of Varanasi district is as follows:**

Geographical Location	Longitude	83.00
	Latitude	25.20
Geographical Area (Sq. km.)		1550
Average Height from Sea Level		258146 ft
Average Rainfall (1997)		1019 m.m.
Temperature	Maximum	46.8
	Minimum	3.2
Population (1991) Total		2508.11 Lakh
Urban		1057.97 Lakh
Rural		1450.14 Lakh
Density (sq.Km.)		1618
Literacy Percentage(1991)		52.4
Total		
Male		67.3
Female		35.3
Number of Tehsils		Two
Number of Development Blocks		Eight
Number of Nayapanchayat		108
Number of Panchayat		698
Total Number of Village		1336
Number of Habited Village		1336
Number of Inhabited Village		1262
Number of Electrified Village		1060
Number of Town & Town Area		10
Number of Nagar Mahapalika		1
Number of Nagarpalika		1
Number of Cantt. Area		1
Number of Town Area		1
Number of Notified Area		2
Census Town		4
Number of Police Stations		23
Urban		16
Rural		7
Number of Post Offices		280
Main Post office		2
Urban		135
Rural		145
Nationalised Bank		136
Others		30
Gramin Banks		30
Co-operative bank		14
Industries (1990-91)		594
Small scale Industries		6072
University (B.H.U., S.S.U. & K.V.P.)		Three
Medical Collage (I.M.S., B.H.U.)		One
Engineering Collage (I.I.T., B.H.U.)		One
Polytechnic (Govt. Girls polytechnic),		One
Industrial Training Institute (ITI, Chauka ghat Girls,boys & Karaundi)		Three
Degree Collage		13
Higher Secondary School		145
Number of Senior Basic School		390
Number of Junior Basic school		995
Number of Allopathic Hospital		61
Number of Aryurvedic Hospital		28
Number of Unani Hospital		1
Number of Homeopathic		13
Number of Primary Health Centre		31
Number of Family welfare Centre		35
Number of Family welfare sub-centre		234
Number of Special Hospital:-	T.B. Centre	2
	Leprosy	1
Number of Theaters		26
Number of T.V. Centre		1
Number of T.V. Cable		1
Main Reveres (Ganga & Varuna)		Two

# Chapter - 2

## Population and Land Resources

### 2.1 Demographic Profile

#### 2.1.1 Settlement

The total area of Varanasi district reduced from 5092.00 sq. km. In 1991 to 1550.30 sq. km. in 2001 due to carving out of new districts.

There had also been obvious changes in the number of residential houses and number of households during the last 40 years.

The number of residential houses increased from 307730 in 1961 to 365756 in 1971 which shows an increase of 18.86 per cent during the decade. The trend in the increase of residential houses remained similar during decades 1971-81 and 1981-91 which recorded an increase of 33.75 per cent during 1971-81 and 25.49 per cent during 1981-91 respectively.

Thus the number of residential houses have been increasing at the rate of around 25 per cent or more per decade. Though this is an obvious off shoot of increase in population, it will have serious implication for land use planning during the coming decades. These implications would have two aspects. One, more and more land would be brought under the category 'land put to non-agricultural purposes'. Secondly, planning for housing in both urban and rural areas will have to be given serious thought such as:

- (i) how land saving devices could be adopted;
- (ii) how civic amenities could be provided;
- (iii) what kind of infra-structural facilities will be needed to be developed; and
- (iv) what kind of common use facilities will be required to be developed.

**Table – 2.1.1**  
**Settlement Profile of the District Varanasi**

Particular	Area	1991	1991	1981	1971	1961
		(After division)	(Undivided)			
Area in Sq.Km.	Rural	1454.2	4935.85	4933.3	4961.8	5159.2
	Urban	96.1	156.15	157.7	129.2	116.6
	Total	1550.3	5092.00	5091.0	5091.0	5275.8
Number of Residential Houses	Rural	180617	448837	344890	287798	245313
	Urban	132303	165026	144293	77958	62417
	Total	312930	613863	489183	365756	307730
Number of Households	Rural	192705	476612	401578	344339	NA
	Urban	143453	178030	154999	132632	NA
	Total	336158	654642	556577	476971	NA

### 2.1.2 Urbanisation

Another feature of settlement and area is related to urbanisation. In urban area the number of residential houses have been increasing and the share of urban population has also been increasing because of migration. But even more importantly, the area under urban limits have also been increasing. Though Varanasi had been divided twice, the area under urban limits increased from 116.6 sq.km. in 1961 to 157.7 sq.km. in 1981. i.e. an increase of 35.25 per cent during two decades.

### 2.2 Population

The population of the district had been steadily increasing during the last one hundred years. At the same time decennial growth rate of the population of the district as per the census has also been increasing (**See table 2.2.1 & 2.2.2**). The decennial growth rate had been very high during the last three decades. This has resulted in the pressure of population on land.

The density of population of the district was as high as 1617 persons per square kilometer in 1991. It was very high even for rural areas which was reported to be 997 persons per sq. km.

The literacy rate increased from 27.3 per cent in 1971 to 52.4 per cent in 1991.

**Table – 2.2.1  
Growth Rate of Population in District Varanasi**

Year	Decadal Variation		
	Rural	Urban	Total
1901-1911	1.40	-3.60	0.50
1911-1921	1.30	3.20	1.60
1921-1931	6.30	10.80	7.10
1931-1941	18.40	19.80	18.60
1941-1951	13.90	39.80	18.50
1951-1961	15.70	33.10	19.45
1961-1971	18.06	29.58	20.76
1971-1981	26.71	38.79	29.75
1981-1991	30.75	32.91	31.33
1991-2001	29.57	19.95	25.51

**Table – 2.2.2**  
**Demographic Profile of the District Varanasi**

	Area	2001			1991 (After division)			1991 (Undivided)		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Total Pop.	Rural	NA	NA	1879000	NA	NA	1450138	1853248	1685086	3538334
	Urban	NA	NA	1269000	NA	NA	1057972	710600	611648	1322248
	Total	NA	NA	3148000	1326761	1181349	2508110	2563848	2296734	4860582
SC Pop.	Rural	NA	NA	NA	135183	122702	257885	398415	358175	756560
	Urban	NA	NA	NA	47993	41010	89009	67413	57910	125323
	Total	NA	NA	NA	183176	163718	346894	465828	416085	881913
ST Pop.	Rural	NA	NA	NA	-	-	-	71	14	85
	Urban	NA	NA	NA	40	30	70	40	30	70
	Total	NA	NA	NA	40	30	70	111	44	155
Literate Person	Rural	NA	NA	NA	367401	122576	489977	877812	272779	1150591
	Urban	NA	NA	NA	641276	202928	544204	922005	243305	665310
	Total	NA	NA	NA	708677	325504	1034181	1299817	516084	1815901
Den. Per sq.km.	Rural	NA	NA	NA	NA	NA	997	NA	NA	153
	Urban	NA	NA	NA	NA	NA	11009	NA	NA	8467
	Total	NA	NA	NA	NA	NA	1617	NA	NA	173
Total Pop.		1981			1971			1961		
	Rural	1404357	1301826	2706183	1100990	1034695	2135685	905879	903154	1809033
	Urban	539117	455706	994823	393248	323526	716774	305709	247437	553146
SC Pop.	Rural	299670	277621	577291	225342	210822	436161	NA	NA	NA
	Urban	50314	42850	93164	33729	27802	61531	NA	NA	NA
	Total	349984	320471	670455	250071	238624	497695	NA	NA	NA
ST Pop.	Rural	89	72	161	71	59	130	NA	NA	NA
	Urban	13	-	13	80	66	146	NA	NA	NA
	Total	102	72	174	151	125	276	NA	NA	NA
Literate Person	Rural	586867	130892	717759	383254	78335	461589	NA	NA	NA
	Urban	306236	154747	460983	214248	101984	316232	NA	NA	NA
	Total	893103	285639	1178742	597502	180319	777821	NA	NA	NA
Den. per sq.km.	Rural	NA	NA	549	NA	NA	NA	NA	NA	NA
	Urban	NA	NA	6308	NA	NA	NA	NA	NA	NA
	Total	NA	NA	727	NA	NA	NA	NA	NA	NA

### 2.3 Occupational Structure

The pressure on land in Varanasi has mitigated because a sizable work-force was found to be engaged in secondary and tertiary sector.

As per the 1991 census only 25.19 per cent workers were cultivators and 9.04 per cent workers were engaged as agricultural labourers. The low proportion of agricultural labourers shows that even wage-workers could get employment in secondary and tertiary sector. This is evident from the fact that number of workers engaged in households industry was 16.78 per cent while those engaged in other than households industry was 10.76 per cent. The number of workers engaged in trade and commerce and other services was 12.39 per cent and 11.72 per cent.

There were only two blocks in the district namely Pindara and Cholapur where the proportion of workers depending on agriculture was above 60 per cent. And these are the two blocks where workers engaged in secondary sector was less than 15 per cent.

**Table – 2.3**  
**Classification of Workers in the District Varanasi (In percent)**

Sl. No.	Particulars		1991			1981			1971			1961		
			Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
1	Main Workers	Rural	72.85	86.81	75.04	73.16	86.74	74.49	74.16	88.31	76.00	75.60	91.82	79.73
		Urban	27.15	13.19	24.96	26.84	13.26	25.51	25.84	11.69	24.00	24.40	8.18	20.27
		Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00	100.00
2	Cultivators	Rural	43.65	37.35	42.51	48.54	30.58	46.48	47.09	19.97	42.99	53.47	47.87	51.83
		Urban	2.36	3.50	2.46	2.96	1.77	2.90	2.49	2.20	2.47	1.80	4.56	2.08
		Total	32.44	32.90	32.51	36.31	26.76	35.36	35.56	17.89	33.26	40.86	44.33	41.74
3	Agricultural Labour	Rural	18.38	49.67	24.06	17.71	54.34	21.91	26.16	67.19	32.37	16.92	33.55	21.79
		Urban	1.74	3.84	1.92	2.02	5.03	2.17	2.02	5.45	2.24	0.05	1.06	0.15
		Total	13.86	43.62	18.53	13.50	47.80	16.88	19.92	59.98	25.14	12.85	30.89	17.44
4	Livestock, Forestry, Fishing, Hunting, Plantation, Orchards & Allied Activities	Rural	0.67	0.16	0.58	-	-	-	0.79	0.87	0.80	-	-	0.86
		Urban	1.15	0.66	1.11	-	-	-	0.67	0.66	0.67	-	-	0.67
		Total	0.80	0.23	0.71	-	-	-	0.76	0.85	0.77	-	-	0.82
5	Mining and Quarrying	Rural	0.13	0.01	0.11	-	-	-	0.06	0.01	0.05	-	-	-
		Urban	0.06	0.04	0.06	-	-	-	0.04	0.02	0.04	-	-	-
		Total	0.11	0.01	0.09	-	-	-	0.05	0.01	0.05	-	-	-
6	Manufacturing, Processing, Servicing, Repairs in Households Industry	Rural	13.07	6.93	11.96	12.82	7.67	12.23	9.40	7.65	9.13	10.64	8.68	10.07
		Urban	21.19	34.59	22.30	21.32	26.63	21.60	21.53	28.34	21.96	24.97	40.83	26.60
		Total	15.28	10.58	14.54	15.10	10.18	14.62	12.53	10.07	12.21	14.14	11.31	13.42
7	Manufacturing, Processing, Servicing, Repairs in other than Households Industry	Rural	8.58	1.70	7.33	-	-	-	3.86	0.89	3.41	3.51	0.95	2.76
		Urban	18.54	11.24	17.94	-	-	-	15.54	6.42	14.96	12.74	5.08	11.96
		Total	11.28	2.96	9.98	-	-	-	6.88	1.53	6.18	5.76	1.29	4.62
8	Construction	Rural	1.94	0.37	1.66	-	-	-	0.69	0.04	0.59	0.89	0.02	0.64
		Urban	2.35	0.51	2.20	-	-	-	1.60	0.22	1.52	2.66	0.43	2.43
		Total	2.05	0.38	1.79	-	-	-	0.92	0.06	0.81	1.33	0.05	1.00
9	Trade and Commerce	Rural	4.35	1.09	3.76	-	-	-	2.31	0.63	2.05	3.43	1.57	2.89
		Urban	27.03	10.00	25.62	-	-	-	21.77	8.62	20.94	20.45	11.22	19.51
		Total	2.04	2.27	9.21	-	-	-	7.34	1.56	6.58	7.58	2.36	6.25
10	Transport, Storage Commerce	Rural	2.14	0.05	1.76	-	-	-	1.51	0.08	1.29	2.36	0.08	1.69
		Urban	8.12	1.18	7.55	-	-	-	11.57	2.33	10.98	11.00	0.74	9.95
		Total	3.76	0.20	3.20	-	-	-	4.11	0.34	3.62	4.47	0.13	3.37
11	Other Services	Rural	7.10	2.66	6.29	-	-	-	8.14	2.67	7.31	7.88	6.51	7.47
		Urban	17.45	34.43	18.86	-	-	-	22.77	45.74	24.23	25.51	35.14	26.50



		Total	9.91	6.86	9.43	-	-	-	11.92	7.70	11.37	12.18	8.85	11.33
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### 2.3.1 Block-wise Analysis of Occupational Structure

In **Baragaon** block proportion of cultivators increased from 44.1 per cent in 1971 to 50.39 per cent in 1981 but further declined to 43.57 per cent in 1991, while the proportion of agricultural labourers declined continuously from 24.9 per cent in 1971 to 13.87 per cent in 1981 and further to 11.49 per cent in 1991. On the other hand the percentage of *number of workers in household industry changed very little* from 11.52 per cent in 1981 to 11.56 per cent in 1991. Another important feature of the block was that *it has large proportion of marginal workers* (14.67 per cent) in 1991.

In **Pindara** block the percentage of cultivators increased from 24.12 per cent in 1971 to 60.12 per cent in 1981, but thereafter declined to 53.3 per cent in 1991. Similarly the proportion of agricultural labourers increased from 13.65 per cent in 1971 to 14.52 per cent in 1981, but then declined to 13.52 per cent in 1991. Another feature of occupational structure of Pindara block was that proportion of workers in household industry declined from 7.71 per cent in 1981 to 4.5 per cent in 1991. This shows that *rate of absorption of workers in non-agricultural sector was slower in this block*.

In **Cholapur** block, number of cultivators increased from 25.13 per cent in 1971 to 51.47 per cent in 1981, but thereafter declined to 43.86 per cent in 1991. Similarly the proportion of agricultural labourers increased from 14.22 per cent in 1971 to 20.36 per cent in 1981 and slightly declined to 20.07 per cent in 1991. The proportion of workers in the household industry in this block indeed increased from 6.33 per cent in 1981 to 10.63 per cent in 1991, showing that *rate of absorption of workers outside agriculture was faster in this block*.

In **Chiraigaon** block, the proportion of cultivators increased from 25.12 per cent in 1971 to 42.57 per cent in 1981, but thereafter declined to 37.31 per cent in 1991. The proportion of agricultural labourers on the other hand increased only slightly from 14.24 per cent in 1971 to 15.64 in 1981 and then slightly declined to 14.61 per cent in 1991. Showing that *proportion of agricultural labourers has remained almost same* during the last 30 years. Chiraigaon also shows relatively *high percentage of workers engaged in household industry*. The proportion of workers in household industry was 12.62 per cent in 1981 and 11.98 per cent in 1991 respectively. The *proportion of workers even in non-household industry was quite sizable* (9.77 per cent in 1991) in this block.

In **Harahua** block also proportion of cultivators increased form 19.10 per cent in 1971 to 46.01 per cent in 1981, but thereafter declined to 36.75 per cent in 1991. But *the proportion of agricultural labourers showed the trend of steady increase* from 10.81 per cent in 1971 to 11.86 per cent in 1981 and further to 12.73 per cent in 1991. The *proportion of workers in the household industry declined a little* from 8.46 per cent in 1981 to 6.97 in 1991. *The proportion of workers in non-household industry was however quite sizable* (9.08 in 1991) in this block. The proportion of workers in construction (5.12 per cent in 1991) and other services (7.09 per cent in 1991) was also higher in this block as compared to many other blocks.

In **Sevapuri** block, the number of cultivators as percentage of total workers increased from 22.24 per cent in 1971 to 50.05 per cent in 1981 but declined to 39.28 per cent in 1991. *But the proportion of agricultural labourers increased steadily* from 12.59 per cent in 1971 to 12.86 per cent

in 1981 and further to 16.5 per cent in 1991. But the most distinctive feature of Sevapuri block is that *it has significant proportion of workers in household industry*. The proportion of workers in household industry increased from 10.51 per cent to 16.7 per cent.

In block **Araziline** also the proportion of cultivators increased from 21.1 per cent in 1971 to 43.08 per cent in 1981 but then declined to 34.84 per cent in 1991. But the proportion of agricultural labourers has remained in the range of 11.94 per cent to 12.29 per cent during this phase showing *little change in the proportion of agricultural labourers during the past thirty years*. In Araziline the *proportion of workers in household industry had been relatively very high* and increased from 16.29 per cent in 1981 to 18.09 per cent in 1991.

In the block **Kashi Vidya Peeth** also the proportion of cultivators increased from 24.35 per cent in 1971 to 35.52 per cent in 1981, but thereafter declined to 26.24 per cent in 1991. But in case of agricultural labourers the trend was different. The proportion of agricultural labourers decreased from 13.78 per cent in 1971 to 9.40 per cent in 1981, but again increased to 10.78 per cent in 1991. Another distinctive feature of Kashi Vidyapeeth was that *it has high proportion of workers both in household industry and non-household industry*. The number of workers as proportion of total workers in household industry increased from 13.79 in 1981 to 16.6 per cent in 1991. The proportion of workers in non-household industry in the block was 12.19 per cent in 1991.

**Table 2.3.1**  
**Block-wise Distribution of Workers by Economic Category in Varanasi District,**  
**(In percent)**

Blocks	Years	Cultivators	Agriculture Labour	Live-stock, Forestry Plantation etc.	Mining & Quarrying	Household Industry	Other than Household Industry	Construction	Trade & Commerce	Transport, Storage & Communication	Other Services	Total Main Worker	Marginal Worker	Total Worker
Baragan	1971	44.10	24.96	NA	NA	NA	NA	NA	NA	NA	NA	100.00	NA	NA
	1981	50.39	13.87	NA	NA	11.52	NA	NA	NA	NA	18.09	93.87	6.13	100.00
	1991	43.57	11.49	0.33	0.02	11.56	6.93	0.75	4.13	1.47	5.08	85.33	14.67	100.00
Pindara	1971	24.12	13.65	NA	NA	NA	NA	NA	NA	NA	NA	100.00	NA	NA
	1981	60.12	14.52	NA	NA	7.71	NA	NA	NA	NA	17.81	98.42	1.58	100.00
	1991	53.30	13.52	0.43	0.05	4.50	5.95	0.96	4.16	1.92	6.41	91.20	8.80	100.00
Cholapur	1971	25.13	14.22	NA	NA	NA	NA	NA	NA	NA	NA	100.00	NA	NA
	1981	51.47	20.36	NA	NA	6.33	NA	NA	NA	NA	16.53	96.55	3.45	100.00
	1991	43.86	20.07	0.29	0.03	10.63	4.01	0.91	3.25	1.44	5.13	89.62	10.38	100.00
Chiragan	1971	25.15	14.24	NA	NA	NA	NA	NA	NA	NA	NA	100.00	NA	NA
	1981	42.57	15.64	NA	NA	12.62	NA	NA	NA	NA	27.60	98.44	1.56	100.00
	1991	37.31	14.61	0.76	0.05	11.98	9.77	2.01	4.82	1.86	7.58	90.74	9.26	100.00
Haraha	1971	19.10	10.81	NA	NA	NA	NA	NA	NA	NA	NA	100.00	NA	NA
	1981	46.01	11.86	NA	NA	8.46	NA	NA	NA	NA	31.07	97.41	2.59	100.00
	1991	36.75	12.73	0.52	0.02	6.97	9.08	5.12	4.28	2.27	7.09	84.83	15.17	100.00
Sevapuri	1971	22.24	12.59	NA	NA	NA	NA	NA	NA	NA	NA	100.00	NA	NA
	1981	50.05	12.86	NA	NA	10.51	NA	NA	NA	NA	23.61	97.03	2.97	100.00
	1991	39.28	16.50	0.59	0.04	16.70	6.30	1.28	4.05	1.23	5.56	91.54	8.46	100.00
Araziline	1971	21.10	11.94	NA	NA	NA	NA	NA	NA	NA	NA	100.00	NA	NA
	1981	43.08	12.29	NA	NA	16.29	NA	NA	NA	NA	24.19	95.85	4.15	100.00
	1991	34.84	12.17	0.65	0.06	18.09	7.66	1.75	3.87	1.33	6.13	86.53	13.47	100.00
Kashi Vidyapeeth	1971	24.35	13.78	NA	NA	NA	NA	NA	NA	NA	NA	100.00	NA	NA
	1981	35.52	9.40	NA	NA	13.79	NA	NA	NA	NA	38.30	97.01	2.99	100.00
	1991	26.24	10.78	1.01	0.11	16.60	12.19	4.61	5.50	2.38	11.41	90.83	9.17	100.00
Rural	1971	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	100.00	NA	NA
	1981	44.30	20.88	NA	NA	11.65	NA	NA	NA	NA	18.47	95.31	4.69	100.00
	1991	39.17	13.78	0.58	0.05	12.28	7.80	2.22	4.25	1.74	6.82	88.68	11.32	100.00
Urban	1971	1.70	1.54	NA	NA	NA	NA	NA	NA	NA	NA	100.00	NA	NA
	1981	2.88	2.16	NA	NA	21.51	NA	NA	NA	NA	73.03	99.59	0.41	100.00
	1991	1.58	1.02	1.19	0.03	24.38	15.77	2.31	26.13	5.88	20.00	98.31	1.69	100.00
Total District	1971	35.52	26.84	NA	NA	NA	NA	NA	NA	NA	NA	100.00	NA	NA
	1981	34.08	16.26	NA	NA	14.08	NA	NA	NA	NA	31.94	96.37	3.63	100.00
	1991	25.19	9.04	0.81	0.04	16.78	10.76	2.25	12.39	3.28	11.72	92.26	7.74	100.00

**Source:** District Statistical Handbook (of various years).

## 2.4 Distribution of Landholdings

The average size of landholding was 0.56 hectare as per the 1995-96 agricultural census, 95.1 per cent holdings belonged to the small and marginal farmers, while they accounted for only 69.4 per cent of total area under all landholdings.

The average size of landholding has not changed much because the additional workforce seems to be getting absorbed in non-agricultural occupations (See table 2.4.1 & 2.4.2).

**Table 2.4.1**  
**Distribution of Landholding (Size & Area) in Varanasi District, 1995-96**

Number	Bellow 0.5 Hect.		0.5 to 1.0 Hect.		1.0 to 2.0 Hect.		2.0 to 4.0 Hect.		4.0 to 10.0 Hect.		Above 10.0 Hect.		Total	
	Area	Number	Area	Number	Area	Number	Area	Number	Area	Number	Area	Number	Area	
282306 (63.21)	52376 (21.0)	97646 (21.86)	59328 (23.78)	44865 (10.05)	61428 (24.63)	16636 (3.73)	46099 (18.48)	4853 (1.09)	26136 (10.78)	287 (0.06)	4078 (1.63)	446593 (100.0)	249445 (100.0)	

Source: District Statistical Handbook 2002.

**Table 2.4.2**  
**Block-wise Distribution of Landholding (Size & Area) in Varanasi District, 1982**  
**(In percent)**

Blocks	Bellow 1.0 Hect		1.0 to 2.0 Hect.		2.0 to 3.0 Hect.	
	Number	Area	Number	Area	Number	Area
Baragaon	90.47	46.19	5.33	15.88	2.27	10.07
Pindara	88.55	37.63	6.73	16.76	1.94	9.58
Cholapur	89.41	51.81	6.85	16.45	2.22	9.25
Chiraigaon	90.15	54.07	5.37	15.60	2.34	11.76
Harahua	87.59	43.89	8.11	24.04	2.23	12.10
Sevapuri	87.53	41.64	18.64	21.30	2.59	11.78
Araziline	91.50	59.00	4.95	14.60	2.11	8.95
Kashi Vidyapeeth	89.15	49.18	6.37	17.04	2.78	12.55
Rural	86.82	50.99	7.71	19.67	2.73	9.60
Urban	47.82	28.44	46.14	54.94	4.36	9.78
Total District	86.36	42.37	8.16	20.40	2.75	12.05
Blocks	3.0 to 5.0 Hect.		Above 5.0 Hect.		Total	
Baragaon	1.35	9.52	0.59	18.34	100.00	100.00
Pindara	1.89	12.29	0.90	23.74	100.00	100.00
Cholapur	1.27	8.11	0.41	14.38	100.00	100.00
Chiraigaon	1.60	12.66	0.55	5.91	100.00	100.00
Harahua	1.62	13.71	0.45	6.25	100.00	100.00
Sevapuri	1.52	10.64	0.79	14.64	100.00	100.00
Araziline	1.08	7.08	0.37	10.38	100.00	100.00
Kashi Vidyapeeth	1.31	9.85	0.39	11.39	100.00	100.00
Rural	1.85	3.39	0.89	12.81	100.00	100.00
Urban	1.54	5.85	0.13	1.00	100.00	100.00
Total District	1.84	12.62	0.88	12.57	100.00	100.00

Source: District Statistical Handbook 1986.

# Chapter – 3

## PART – A

### Land Use Related to Agriculture

#### 3.1 Net Sown Area

When we discuss about land use, agriculture finds the dominant place in various categories of land use. This is true of Varanasi district as well. The proportion of net sown area in the district varied around 62 per cent to 65 per cent during 1960-61 to 1994-95. But after latest division of the district, the net sown area as percentage of total reporting area increased to around 75 per cent (**See table 3.1**). This is so, because the blocks which have remained with Varanasi district had higher proportion of net sown area.

But the analysis of block-wise net sown area shows that in most of the blocks the proportion of net sown area had almost remained same and fluctuated within the range of two to three per cent during the last twenty years, i.e. Since 1980-81, barring the year 1995-96, which seems to be an exceptional year (**See table 3.1.1**). In Baragaon block, the proportion of net sown area fluctuated between 73 per cent to 75 per cent during 1980-81 to 2000-01. In Pindara block, it fluctuated between 77 per cent to 80 per cent during this period. In Cholahpur block, it fluctuated between 76 per cent to 80 per cent during this period. In Chiraigaon block, there had been wider fluctuations in the proportion of net sown area. It fluctuated between 72 per cent to 76 per cent, because of 1990-91 as an abnormal period, otherwise even in Chiraigaon proportion of net sown area fluctuated between 75.33 per cent to 76.32 per cent. Similarly in Harahua block, the fluctuations in proportion of net sown area had been quite wide, it fluctuated between 72 per cent to 83 per cent during 1980-81 to 2000-01. In Sevapuri block again, the fluctuations in the proportion of net sown area had been significant i.e. between 74 per cent to 82 per cent during this period. In Araziline block, the proportion of net sown area had fluctuated between 79 per cent to 83 per cent during the last 30 years. In Kashi Vidya Peeth block, this proportion varied between 64 per cent to 71 per cent during 1980-81 to 2000-01.

#### 3.2 Cropping Intensity

In agriculture, the land use has another characteristic also. The same land could be cultivated more than once in a year. The cropping intensity thus shows the proportion of gross sown area as percentage of net sown area. The cropping intensity of the Varanasi district had almost consistently increased since 1960-61, with mild fluctuations during certain periods. Thus it has increased from 133.62 in 1960-61 to 150.40 in 2000-01. It could also be seen from table 3.1 that cropping intensity has hovered around 150 during the period 1985-86 to 2000-01.

Block-wise analysis of cropping intensity during 2000-01 shows that cropping intensity was on the lower side in following blocks – Pindara (132.5), Cholakpur (137.2), Chiragaon (138.3) and Araziline (122.9) during 2000-01, and on the higher side in Harahua (189.6) Sevapuri (160.8) and Kashi Vidya Peeth 209.7.

The blocks of Varanasi district witnessed wide fluctuations in cropping intensity over period of last twenty years those block where cropping intensity was found to be on the lower side had also moderate cropping intensity i.e. around 150 to 160 at some period of time in the past, and they may achieve. Those levels of cropping intensity in future also without making much effort. But cropping intensity in these blocks could be increased to high levels i.e. around 180 and above only if some efforts are made in this context.

The most important factor which has affected cropping intensity is irrigation.

### **3.3 Irrigation**

The Varanasi district had long back shifted from rain-fed farming to irrigation farming. The irrigation intensity i.e. net irrigated area as percentage of net sown area has increased from 51.91 per cent in 1975-76 to 78 per cent in 2000-01. This trend was discernible in all the blocks of the district as well. The irrigation intensity was reported to be very high in two blocks namely Harahua (90.8 per cent) and Kashi Vidya Peeth (98.3 per cent) during 2000-01, but even in these blocks irrigation intensity was close to average and similar to other blocks during other periods in the past. **(See table 3.1 and 3.1.3).**

### **3.4 Gross Irrigated Area as Percentage of Net Irrigated Area**

Furthermore, gross irrigated area as percentage of net irrigated area has also increased during the last twenty five years from around 125 in 1975-76 to around 150 in 2000-01 with fluctuating trends during intervening periods **(See table 3.1 and 3.1.4).**

Block-wise analysis of gross irrigated area as percentage of net irrigated area shows that in Baragaon block, it hovered around 130 per cent during 1975-76 to 1995-96 except during 1980-81 when it was very low. But then it increased to 161.02 per cent in 2000-01. In Pindara block gross irrigated area as percentage of net irrigated area was around or below 110 per cent till around 1980-81, but it has fluctuated around 140 per cent since 1985-86. In Chiragaon block also this ratio fluctuated from around 130 per cent to 135 per cent since 1980-81. In Harahua block their has been an increasing trend in this respect. The ratio consistently increased from 103.2 per cent in 1975-76 to 154.8 per cent in 2000-01. On the other hand in Sevapuri block this ratio shows a changing trend after each five year duration, but the long term trend shows as increasing tendency. In Araziline block, the gross irrigated area was found to be highest during 1985-86 (141.3 per cent), and thereafter consistently declined and was recorded as 126.9 per cent during 2000-01. In Kashi Vidya Peeth, the gross irrigated area consistently increased from 123.2 per cent in 1975-76 to 2000-01.

Thus we find three types of blocks. One, those where gross irrigated area as percentage of net irrigated area almost remained same since 1985-86. Secondly, there were some blocks where this ratio shows a declining trend, and thirdly, there were some blocks which showed an increasing trend in respect of this ratio.

**Table 3.1**

### Year-wise Irrigation and Cropping Intensity of Varanasi District

Year	Irrigation Intensity	Gross Irrigated Areas as % of Net Irrigated Area	Net sown Area as % of Total Reporting Area	Cropping Intensity
1960-61	48.13	103.36	63.18	133.62
1965-66	49.54	102.89	64.58	137.95
1970-71	50.09	109.13	64.77	132.80
1975-76	51.91	124.58	64.29	136.84
1980-81	63.22	133.69	62.91	143.96
1985-86	71.18	134.93	63.26	150.43
1990-91	77.90	133.03	62.56	157.11
1994-95	66.60	152.00	61.98	151.99
1998-99	75.89	154.24	75.04	149.40
2000-01	78.40	149.90	75.29	150.40

Source: Agricultural Statistics of U.P. of Various Years and District Statistical Diary of 2000-01.

**Table 3.1.1**  
**Block-wise Net Sown Area in Varanasi District**

Blocks	1975-76	1980-81	1985-86	1990-91	1995-96	1999-2K	2000-01
Baragaon	79.22	74.22	73.54	73.4	86.42	74.81	74.81
Pindara	80.55	77.68	77.78	74.77	85.4	79.86	79.86
Cholapur	81.32	79.4	78.37	76.05	89.33	80.04	80.04
Chiraigaon	75.98	75.94	75.33	72.41	89.38	76.32	76.32
Harahua	62.97	82.89	78.11	72.13	78.86	81.13	81.13
Sevapuri	82.18	79.83	78.99	74.45	81.34	78.19	78.16
Araziline	78.88	80.79	79.32	80.27	91.31	82.63	82.63
Kashi Vidyapeeth	68.58	70.63	68.34	64.48	87.65	67.32	69.98

Source: District Statistical Handbook (of various years).

**Table 3.1.2**  
**Block-wise Cropping Intensity in Varanasi District**

Blocks	1975-76	1980-81	1985-86	1990-91	1995-96	2000-01
Baragaon	154.3	125.2	152.3	154.0	140.6	152.6
Pindara	131.5	139.5	150.8	155.5	136.1	132.5
Cholapur	145.0	127.1	140.8	159.5	139.8	137.2
Chiraigaon	164.3	158.5	142.3	138.6	135.8	138.3
Harahua	134.2	136.8	159.6	159.8	161.1	189.6
Sevapuri	174.4	141.7	144.0	127.0	127.4	160.8
Araziline	103.3	144.4	149.3	137.0	126.7	122.9
Kashi Vidyapeeth	196.2	148.0	143.8	129.4	139.2	209.7

Source: District Statistical Handbook (of various years).

**Table 3.1.3**  
**Block-wise Irrigation Intensity in Varanasi District**

Blocks	1975-76	1980-81	1985-86	1990-91	1995-96	2000-01
Baragaon	56.7	56.8	66.0	71.3	81.2	70.2
Pindara	54.6	65.4	69.5	70.4	79.5	79.2
Cholapur	58.0	51.0	64.3	71.1	79.1	75.0
Chiraigaon	50.1	51.3	61.1	62.2	82.3	69.5
Harahua	60.9	60.1	75.3	78.7	70.3	90.8



Sevapuri	62.2	66.3	56.3	67.1	71.7	76.2
Araziline	54.3	62.7	64.4	67.6	79.7	75.3
Kashi Vidyapeeth	47.5	62.4	71.1	67.7	71.2	98.3

**Source:** District Statistical Handbook (of various years).

**Table 3.1.4**  
**Block-wise Gross Irrigated Area as % of Net Irrigated Area**

<b>Blocks</b>	<b>1975-76</b>	<b>1980-81</b>	<b>1985-86</b>	<b>1990-91</b>	<b>1995-96</b>	<b>2000-01</b>
Baragaon	130.5	104.9	137.3	129.4	130.6	161.02
Pindara	110.9	104.9	145.1	142.6	134.2	139.9
Cholapur	110.4	117.2	128.9	118.6	132.6	144.9
Chirigaon	125.2	135.1	127.2	130.0	118.6	134.8
Harahua	103.2	110.8	135.7	131.1	152.5	154.8
Sevapuri	140.2	104.5	154.5	129.9	134.7	169.1
Araziline	100.0	111.6	141.3	133.7	124.6	126.9
Kashi Vidyapeeth	123.2	114.5	126.6	141.8	134.2	148.0

**Source:** District Statistical Handbook (of various years).

### **3.5 Source of Irrigation**

If we analyse the sources of irrigation in Varanasi district, we can witness three distinct phases during the period of year 1960-61 to year 2000-01.

The first phase covers the period 1960-61 to 1969-70. This is the phase when traditional sources of irrigation continued to be significant, though canals and tubewells together covered around 55 per cent to 60 per cent of net irrigated area. But the fact that other wells accounted for irrigation of more than 40 per cent of net irrigated area during this phase showed continuing importance of traditional sources of irrigation as well.

The next phase covers a long period of 1970-71 to around 1995-96. In this phase, area irrigated through traditional sources declined very fast, specially after 1975-76. The area irrigated through canals remained almost constant around 43 per cent to 45 per cent, and the area irrigated through tubewells increased from 26.05 per cent in 1969-70 to around 53 per cent in 1982-83 and hovered around this ratio till 1992-93. The contribution of tubewells declined during the next three years i.e. till 1995-96.

The third phase could be said to have started since 1997-98. In this phase, the contribution of even canals has declined significantly. Tubewell is now the dominant source of irrigation in Varanasi district, and accounts for more than 80 per cent of net irrigated area (**See table 3.2**).

Block-wise analysis of sources of irrigation shows that there were only three blocks where canal still accounted for more than 20 per cent of net irrigated area in 2000-01 (**See table 3.2.1**). These are Pindara, Cholapur and Kashi Vidya Peeth where area irrigated through canal was 33.76 per cent, 36.8 per cent and 27.69 per cent respectively of the net irrigated area in these blocks.

There is another aspect of analysis of sources of irrigation. Though tubewells have become dominant source of irrigation, the role of public sources continues to be very important. Because canals and government tubewells together account for more than 50 per cent of net irrigated area in most of the blocks. That means, public investment in irrigation will continue to play an important role in increasing gross irrigated area, which in turn would help in increasing the cropping intensity in these blocks.

**Table – 3.2**  
**Year-wise Irrigated Area by Different Sources in Varanasi District, (in Percent)**

Years	Net irrigated area	Canal	Tube wells (Govt.+Pvt.)	Other wells	Tanks, Lakes, Ponds	Other sources
1960-61	48.13	35.38	13.14	48.31	1.64	1.52
1961-62	46.41	34.73	13.11	48.60	1.62	1.93
1962-63	48.27	36.37	15.69	44.57	1.85	1.51
1963-64	48.04	37.37	15.16	44.04	2.05	1.38
1964-65	50.65	39.81	17.29	40.37	1.65	0.87
1965-66	49.55	36.34	20.98	40.84	1.37	0.46
1966-67	49.51	33.31	22.91	42.57	0.76	0.46
1967-68	49.51	33.31	22.91	42.57	0.76	0.46
1968-69	50.09	34.09	23.46	40.87	0.82	0.77
1969-70	44.08	25.91	26.05	43.27	0.73	4.04
1970-71	50.10	38.38	37.80	22.89	0.83	0.10
1971-72	50.49	38.38	37.80	22.89	0.83	0.10
1972-73	51.56	40.10	33.52	24.69	0.66	1.50
1973-74	52.90	41.75	28.50	26.42	0.49	2.84
1974-75	53.17	41.75	28.50	26.42	0.49	2.84
1975-76	51.91	40.61	27.44	28.96	0.43	2.56
1976-77	53.46	42.64	51.98	5.04	0.27	0.06
1977-78	53.39	43.80	51.01	4.84	0.31	0.04
1978-79	58.83	47.46	40.19	11.92	0.35	0.08
1979-80	60.47	42.54	51.85	3.61	0.18	1.82
1980-81	63.22	43.59	50.45	4.35	0.25	1.37
1981-82	66.59	43.90	46.62	7.26	0.36	1.86
1982-83	69.44	43.02	52.38	2.83	0.44	1.33
1983-84	70.59	42.15	54.24	2.13	0.25	1.23
1984-85	69.67	42.37	54.66	0.99	0.36	1.62
1985-86	71.19	43.46	53.25	1.72	0.38	1.18
1986-87	71.54	42.52	54.35	1.34	0.36	1.44
1987-88	66.72	43.43	54.68	1.13	0.34	0.42
1988-89	69.17	43.66	54.45	1.09	0.24	0.55
1989-90	NA	NA	NA	NA	NA	NA
1990-91	77.91	45.84	52.59	0.58	0.07	0.92
1991-92	77.20	48.00	49.94	1.15	0.08	0.82
1992-93	82.84	44.54	53.88	0.52	0.15	0.91
1993-94	78.97	46.79	51.71	0.73	0.04	0.72
1994-95	66.63	74.64	24.29	0.59	0.02	0.45
1995-96	58.61	81.34	16.79	0.99	0.03	0.85
1996-97	85.02	47.29	51.63	0.41	0.06	0.61
1997-98	77.51	19.04	80.35	0.50	0.00	0.12
1998-99	75.89	13.95	85.27	0.60	0.05	0.12
1999-2K	78.41	17.29	81.96	0.64	0.05	0.07
2000-01	79.13	18.17	80.98	0.82	0.03	0.00

**Table 3.2.1**  
**Block-wise Irrigated Area by Different Sources in Varanasi District (in Percent)**

<b>Blocks</b>	<b>Years</b>	<b>Net irrigated area</b>	<b>Canal</b>	<b>Govt. tube wells</b>	<b>Pvt. tube wells</b>	<b>Other wells</b>	<b>Tanks, Lakes, Ponds</b>	<b>Other sources</b>
Baraogaon	1980-81	56.87	-	90.43		9.57	-	-
	1985-86	66.05	0.24	99.38		0.37	-	-
	1990-91	71.31	3.33	30.60	64.64	0.23	1.11	0.10
	1995-96	81.19	70.92	10.91	17.74	0.42	-	-
	1999-2K	70.22	17.00	39.55	43.67	0.16	0.03	-
	2000-01	70.22	16.36	40.00	43.92	0.16	0.03	-
Pindra	1980-81	65.37	5.00	86.84		7.89	-	0.16
	1985-86	69.49	6.86	91.37		0.86	-	-
	1990-91	70.38	10.61	31.01	56.37	0.62	0.60	0.80
	1995-96	79.53	72.65	11.88	14.27	1.19	-	-
	1999-2K	79.24	34.00	27.53	38.39	0.32	0.01	-
	2000-01	79.24	33.76	28.00	38.38	0.32	0.01	-
Cholapur	1980-81	51.02	30.00	65.01		4.19	-	1.30
	1985-86	63.46	22.62	75.81		1.39	-	-
	1990-91	71.12	26.12	16.42	56.21	0.86	0.31	0.08
	1995-96	79.09	78.59	9.37	11.31	0.64	-	0.10
	1999-2K	75.04	41.00	27.85	30.67	0.09	0.01	-
	2000-01	75.04	36.8	32.00	30.67	0.11	0.02	-
Chiragaon	1980-81	51.35	-	93.21		5.51	0.15	1.13
	1985-86	61.14	0.38	99.55		0.06	-	-
	1990-91	62.27	1.44	33.75	63.62	0.70	0.27	0.22
	1995-96	82.32	77.29	6.28	15.48	0.30	-	0.66
	1999-2K	69.53	6.00	38.37	55.20	0.67	0.05	-
	2000-01	72.05	6.67	40.00	51.54	1.54	0.01	-
Harhua	1980-81	60.11	-	89.62		10.23	-	0.15
	1985-86	75.30	-	99.69		0.09	-	-
	1990-91	78.68	1.37	23.07	73.62	0.70	0.83	0.30
	1995-96	70.36	73.97	10.99	13.27	1.77	-	-
	1999-2K	90.78	10.00	47.63	41.37	0.53	0.09	-
	2000-01	90.21	11.18	44.00	43.85	0.50	0.06	-
Sevapuri	1980-81	63.26	-	90.10		8.49	-	1.41
	1985-86	56.31	-	93.94		6.01	-	-
	1990-91	67.06	2.12	33.99	61.94	0.69	0.33	0.93
	1995-96	71.72	59.50	17.24	18.51	4.14	0.61	-
	1999-2K	76.17	-	42.37	55.39	1.93	0.15	0.17
	2000-01	71.57	9.73	44.00	45.20	1.18	0.05	-
Araziline	1980-81	62.40	-	91.32		8.04	-	0.65
	1985-86	64.46	-	99.92		0.08	-	-
	1990-91	67.63	0.29	30.81	68.10	0.17	0.08	0.55
	1995-96	79.67	75.67	12.54	11.33	0.46	-	-
	1999-2K	75.33	-	52.01	47.17	0.60	0.03	0.20
	2000-01	80.13	2.54	48	48.79	0.83	0.04	-
Kashi Vidya Peeth	1980-81	62.70	7.00	82.55		8.96	-	1.25
	1985-86	71.11	2.96	96.53		0.26	-	-
	1990-91	67.77	6.58	28.66	60.93	1.47	0.35	1.10
	1995-96	71.17	65.48	9.01	24.33	0.86	-	0.32
	1999-2K	98.27	29.00	30.52	39.36	0.99	0.08	0.14
	2000-01	100.00	27.69	30.00	40.72	1.99	0.04	-

**Source:** District Statistical Handbook (of various years).

### 3.6 Cropping Pattern

The cropping pattern in the district has vastly changed during the last 30 years (**See table 3.3**). The only crop which continues to be important during all these years is paddy. Area under paddy cultivation increased from around 42 per cent of net sown area to around 50 per cent during 1990-91 and 1994-75 period. However, it slightly declined to 43.53 per cent in 1998-99, which could be a temporary decline. Area under wheat cultivation increased from 10.39 per cent in 1960-61 to 59.87 per cent in 1998-99 of net sown area. But area under different coarse grains declined during this period, for example area under barley declined from 17.14 per cent to 0.03 per cent, gram cultivation declined from 11.15 per cent to 2.43 per cent, and peas cultivation declined from 7.16 per cent to 1.73 per cent during 1960-61 to 1998-99. The only coarse grain which witnessed increase in area under cultivation is maize. Area under maize increased from 2.63 per cent of net sown area in 1960-61 to 5.16 per cent in 1998-99.

Besides wheat and maize, other crops whose area under cultivation increased are potato and sugarcane. The area under potato increased from around 1.0 per cent in 1960-61 to 4.11 per cent in 1998-99, and area under sugarcane increased from 5.79 per cent to 7.53 per cent during the same period. It seems that these crops are grown more for self-consumption and not as cash crop.

The main crops viz. paddy, wheat, potato and sugarcane have witnessed very large increases in their productivity also during the period 1960-61 to 1998-99 (**See table 3.3.1**). If we analyse other factor namely productivity, we find that area under cultivation has increased in case of only those crops, whose productivity has also increased significantly. The productivity of paddy increased from 8.29 qt./ha in 1960-61 to 24.33 qt./ha in 1998-99. The productivity of wheat increased from 8.08 qt./ha in 1960-61 to 22.56 qt./ha. As regards cash crops, the productivity of potato increased from 74.95 qt./ha in 1960-61 to 228 qt./ha in 1998-99 and that of sugarcane increased from 310.69 qt./ha in 1960-61 to 444.36 qt./ha in 1998-99.

And these are the very crops, which are almost cent percent irrigated.

Thus farmers have shifted to crops, which are highly irrigated, fertilizer use is higher on them and whose productivity is also comparatively very high.

We need to make efforts to increase production of more pluses, oilseeds and spices. Cropping rotation also needs to be changed. Following steps are imperative to achieve it.

- (a) More thrust be given for developing high yielding varieties for these crops.
- (b) Rain fed areas should be encouraged to cultivate these crops.
- (c) Orchards, fallow land and land under social forestry could be used for growing such crops.
- (d) Processing industries of oilseeds and spices be promoted at local level with support for technology up gradation, packaging and market access facilities.

Block wise analysis confirms this trend.

In **Baragaon** block, the area of following crops as percentage of net sown area increased. Paddy from 25.08 per cent in 1960-61 to 39.29 per cent in 2000-01 and wheat from 35.89 per cent

in 1960-61 to 59.09 per cent in 2000-01. The area under pulses slightly declined from 20.74 per cent to 18.17 per cent, while area under sugarcane and potato increased only marginally during this period. Paddy, wheat, potato and sugarcane are almost cent per cent irrigated crops.

In **Pindara** block, while the area of crops (as percentage of net sown area) like paddy increased from 34.26 per cent in 1960-61 to 51.63 per cent in 2000-01, area under cultivation in case of other crops remained almost at the same level such as wheat at around 50 per cent, sugarcane at round 8 per cent. The irrigated area of all these crops has however increased except pulses. The area under pulses cultivation declined from 14.14 per cent in 1960-61 to 9.64 per cent in 2000-01 and that of potato from 4.72 per cent to 2.23 per cent in 2000-01. However, decline of cultivated area in case of potato was recorded only for year 2000-01, it may not become trend.

In **Cholapur** block proportion of cultivated area under paddy increased form 15.95 per cent in 1980-81 to 37.26 per cent in 2000-01, while that of wheat increased from 37.02 per cent to 61.65 per cent during the same period. Area under pulses cultivation decrease from 23.47 per cent in 1980-81 to 9.80 per cent in 2000-01, while that barley from 12.85 per cent to 0.03 per cent and sugarcane from 6.34 per cent to 4.76 per cent during the same period. Area under crops more or less at the same level and very small.

In **Chiraigaon** block the proportion of area under paddy increased from 17.13 per cent in 1980-81 to 28.62 per cent in 2000-01 and that of wheat from 46.17 per cent to 57.49 per cent during the same period. The area under pulses declined form 25.22 per cent to 13.16 per cent, of barley form 9.53 to 1.50 per cent, of sugarcane from 5.84 per cent to 4.84 per cent and that of potato from 4.06 per cent to 3.5 per cent respectively during the period 1980-81 to 2000-01.

In **Harahua** block the area under paddy cultivation increased from 25.1 per cent of net sown area to 54.84 per cent of net sown area, while that of wheat from 43.07 per cent to 68.19 per cent during the period 1980-81 to 2000-01. The area under pulses declined from 18.75 per cent to 14.75 percent while that of barley from 3.92 per cent to 0.04 during the period 1980-81 to 2000-01. Area under other crops remained almost at the same level.

In **Sevapuri** block, area of cultivation as percentage of net sown area in increased in case of paddy and wheat from 33.29 per cent to 47.17 per cent 44.69 per cent to 54.11 per cent respectively during the period 1980-81 to 2000-01. The area under pluses and barley declined from 19.36 per cent to 13.80 per cent and from 3.15 per cent to 0.14 per cent respectively during the same period. Area under other crops was small and almost remained at the same level.

In **Araziline** block, area under paddy and wheat cultivation increased only marginally from 31.75 per cent in 1980-81 to 33.91 per cent in 2000-01. In case of wheat it remained stable around 50 per cent. The cropping pattern in Araziline block almost remained same during the last 20 years. Only the area under pulses declined from 16.75 per cent in 1980-81 to 11.55 per cent in 2000-01.

In **Kashi Vidya Peeth** block, area under paddy and wheat increased significantly during the period 1980-81 to 2000-01. The area under paddy increased from 30.24 per cent to 68.75 per cent and that of wheat from 51.24 per cent to 80.52 per cent during this period. The area under pulses declined from 17.87 per cent to 12.14 per cent and that of barley from 3.23 per cent to 0.22 per cent

during 1980-81 to 2000-01. Area under other crops was small and almost remained at the same level.

**Table – 3.3**

**Area Under Major Crops and Productivity (as percentage of net sown area) (Qt./Hectare) in Varanasi District**

Crops	Area/ Productivity	1960-61	1965-66	1970-71	1975-76	1980-81	1985-86	1990-91	1994-95	1998-99
Paddy	Area	42.32	44.51	42.54	42.24	46.65	47.56	52.72	50.23	43.53
	Productivity	8.29	7.11	7.99	8.78	14.16	16.46	21.28	26.04	24.33
Maize	Area	2.63	3.24	4.52	4.32	3.96	3.74	2.59	5.49	5.16
	Productivity	5.21	9.84	12.38	15.05	8.77	11.70	4.87	11.63	5.73
Wheat	Area	10.39	12.33	17.77	25.85	44.89	51.91	59.06	59.90	59.87
	Productivity	8.08	7.95	11.09	12.83	13.69	17.02	20.21	23.44	22.56
Barley	Area	17.14	14.33	15.16	12.35	4.39	2.41	1.04		0.03
	Productivity	10.58	9.60	8.43	14.12	12.57	12.50	14.21		12.49
Gram	Area	11.15	9.84	8.98	7.53	6.92	8.90	5.23	4.40	2.43
	Productivity	6.18	5.32	6.64	6.57	10.20	9.98	11.58	10.81	8.43
Peas	Area	7.16	6.30	5.92	4.79	2.28	2.27	2.20		1.73
	Productivity	9.95	6.60	7.13	9.79	8.37	8.05	14.91		10.47
Arhar	Area	5.93	6.46	5.99	5.78	5.37	5.41	4.83		5.01
	Productivity	12.85	8.34	8.18	15.05	9.86	12.88	11.89		11.79
Potato	Area	0.99	1.37	1.38	1.46	1.99	2.43	2.01		4.11
	Productivity	74.95	93.38	93.91	134.18	213.88	124.13	170.60		228.15
Sugar cane	Area	5.79	6.17	5.69	5.44	4.00	3.79	3.60		7.53
	Productivity	310.69	362.88	355.35	384.92	421.75	453.00	450.92		444.36

**Table 3.3.1  
Block-wise Cropping Pattern in Varanasi District, (in Percent)**

Blocks	Year	Paddy		Wheat		Barley		Pulse	
		Total	Irrigated	Total	Irrigated	Total	Irrigated	Total	Irrigated
1	2	3	4	5	6	7	8	9	10
Baragaon	1980-81	25.08	7.70	35.89	99.58	4.80	96.20	20.74	25.64
	1985-86	29.16	72.50	52.67	90.27	1.15	33.33	21.41	16.91
	1990-91	35.55	49.63	59.28	99.96	0.39	56.00	21.21	21.41
	1995-96	32.06	69.01	51.67	99.97	0.14	66.67	19.24	19.32
	2000-01	39.29	93.72	59.07	100.00	0.04	60.00	18.17	9.33
Pindara	1980-81	34.26	1.67	48.02	99.62	2.11	96.69	14.14	25.86
	1985-86	39.28	68.63	55.54	99.03	0.32	35.71	13.80	20.81
	1990-91	46.63	44.33	64.03	99.97	0.27	80.85	13.66	24.38
	1995-96	39.20	88.73	55.38	99.93	0.15	89.66	11.78	24.86
	2000-01	51.63	93.33	50.00	100.00	0.02	75.00	9.64	14.56
Cholapur	1980-81	15.95	4.93	37.02	98.75	12.85	47.25	23.47	30.09
	1985-86	24.52	65.55	62.74	92.69	5.42	44.33	18.58	22.00
	1990-91	28.96	80.62	68.39	99.89	3.74	52.79	21.12	23.85
	1995-96	25.53	98.68	49.90	98.98	3.21	17.97	14.76	17.21
	2000-01	37.26	94.21	61.65	99.99	0.03	75.00	9.80	22.51
Chirai- gaon	1980-81	17.13	13.67	46.17	93.36	9.53	42.20	25.22	22.11
	1985-86	20.46	67.82	45.98	98.69	4.91	31.34	19.97	17.49
	1990-91	22.06	61.19	53.92	99.18	3.32	19.27	17.53	22.90
	1995-96	21.98	86.70	47.83	98.47	2.93	9.25	11.64	27.29
	2000-01	28.62	74.27	57.49	99.54	1.50	13.06	13.16	23.97

Contd...

1	2	3	4	5	6	7	8	9	10
Harhua	1980-81	25.10	0.87	43.07	99.51	3.92	92.17	18.78	36.52
	1985-86	30.09	80.66	60.52	99.08	0.78	29.76	18.22	26.54
	1990-91	35.75	41.82	67.67	99.97	0.67	90.28	19.20	25.92
	1995-96	40.76	67.55	61.30	100.00	0.25	58.62	18.92	1.74
	2000-01	54.84	93.00	68.19	100.00	0.04	75.00	14.75	12.86
	1980-81	33.29	1.57	44.69	99.58	3.15	95.91	19.36	30.36

Sevapuri	1980-81	33.29	1.57	44.69	99.58	3.15	95.91	19.36	30.36
	<del>1985-86</del>	<del>38.67</del>	<del>30.03</del>	<del>48.07</del>	<del>99.98</del>	<del>0.60</del>	<del>38.02</del>	<del>26.68</del>	<del>22.69</del>
	1995-96	38.67	91.07	42.63	99.93	0.28	60.00	16.91	38.17
	2000-01	47.17	96.79	54.11	100.00	0.14	94.44	13.80	20.44
Araziline	1980-81	31.75	1.99	50.62	98.57	2.40	87.53	16.75	30.43
	1985-86	31.26	69.39	48.67	97.72	2.05	47.14	16.29	24.62
	1990-91	32.81	25.53	57.06	99.96	0.51	82.95	16.90	32.79
	1995-96	38.25	91.46	49.47	99.24	0.37	83.33	15.84	30.01
	2000-01	33.91	88.33	50.85	100.00	0.10	58.82	11.55	19.93
Kashi Vidya Peeth	1980-81	30.24	9.53	51.24	99.25	3.23	53.76	17.87	24.37
	1985-86	79.83	33.73	55.17	97.87	1.73	37.22	17.61	23.91
	1990-91	25.15	47.39	56.71	98.48	0.65	52.38	14.67	24.48
	1995-96	20.23	80.42	38.91	99.83	0.35	68.09	10.91	25.80
	2000-01	68.95	94.49	80.52	100.00	0.22	66.67	12.14	23.85

**Table 3.3.1 (Continued)**  
**Block-wise Cropping Pattern in Varanasi District, (in Percent)**

Blocks	Year	Oil Seed		Sugarcane		Potato	
		Total	Irrigated	Total	Irrigated	Total	Irrigated
		11	12	13	14	15	16
Baragaon	1980-81	0.11	71.43	7.70	100.00	3.51	100.00
	1985-86	0.57	20.27	7.66	100.00	4.70	100.00
	1990-91	0.56	45.83	7.73	100.00	5.28	100.00
	1995-96	1.01	55.56	8.31	100.00	4.11	100.00
	2000-01	0.58	96.05	7.95	100.00	4.87	100.00
Pindara	1980-81	0.22	65.79	7.82	100.00	4.72	100.00
	1985-86	0.24	23.81	6.67	100.00	5.40	100.00
	1990-91	0.45	58.97	8.09	100.00	4.89	100.00
	1995-96	0.61	49.59	6.92	99.78	4.51	100.00
	2000-01	0.43	97.40	7.75	100.00	2.23	100.00
Cholapur	1980-81	0.01	50.00	6.34	100.00	2.41	100.00
	1985-86	0.60	17.44	3.84	100.00	1.97	100.00
	1990-91	0.17	58.33	5.70	100.00	2.42	100.00
	1995-96	0.54	29.55	5.86	100.00	2.36	100.00
	2000-01	0.64	96.77	4.76	100.00	2.54	100.00
Chiraiga on	1980-81	0.61	12.94	5.84	99.76	4.06	100.00
	1985-86	0.19	53.57	4.11	97.84	3.46	100.00
	1990-91	0.28	50.00	4.15	99.66	3.33	100.00
	1995-96	0.28	62.50	5.15	100.00	2.85	100.00
	2000-01	0.58	52.33	4.84	100.00	3.50	100.00
Harhua	1980-81	0.10	63.64	6.82	100.00	3.81	100.00
	1985-86	0.43	26.09	7.12	98.70	3.89	100.00
	1990-91	0.39	52.38	6.75	100.00	4.33	100.00
	1995-96	0.49	42.11	7.98	100.00	3.72	100.00
	2000-01	1.04	89.66	6.78	100.00	3.80	100.00
Sevapuri	1980-81	0.39	71.15	8.63	99.91	4.04	100.00
	1985-86	0.23	56.67	8.64	100.00	2.87	100.00
	1990-91	0.76	45.00	6.64	100.00	2.47	100.00
	1995-96	0.96	28.99	6.13	100.00	3.98	100.00
	2000-01	0.70	68.82	8.16	100.00	3.19	100.00
Araziline	1980-81	0.22	47.37	8.95	98.91	3.22	100.00
	1985-86	0.25	46.51	8.06	99.85	2.39	100.00
	1990-91	0.41	39.44	7.07	100.00	2.71	100.00
	1995-96	0.50	46.39	6.50	99.76	2.25	100.00
	2000-01	0.53	78.72	8.15	100.00	3.23	100.00
	1980-81	0.16	29.41	4.66	99.40	2.31	100.00
	1985-86	0.33	20.59	4.79	100.00	1.93	100.00
	1990-91	0.61	54.24	4.06	100.00	2.43	100.00
	1995-96	0.78	59.62	3.21	100.00	2.11	100.00
	2000-01	0.76	84.52	14.23	100.00	5.19	100.00

Source: District Statistical Handbook (of various years).

### 3.7 Fertilizer Use



Use of fertilizer had been increasing in all the blocks. But their balanced and proportionate application has not been reported (**See table 3.4**).

There is need to adopt following strategy to combat this menace:

- (a) Lay guidelines for each gram-panchayat-on the basis of soil-testing – the proportion of fertilizer which is required to be applied.
- (b) Farmers meeting be organised at village level before every cropping season to make them aware about such guidelines.
- (c) Farmers be also informed about hazardous impact of non-proportionate application of urea.
- (d) Government functionaries, specially at the gram-panchayat level be sensitized regarding these aspects.

**Table 3.4**

## Block-wise Use of Fertiliser in Varanasi District (in MT)

Blocks	Years	Nitrogen	Phosphate	Potash	Total Fertilizer
Baragaon	1980-81	518	114	74	708
	1985-86	2098	497	194	2749
	2000-01	3592	1445	341	5378
Pindara	1980-81	2675	301	279	3256
	1985-86	1890	385	188	2463
	2000-01	4050	1561	460	6071
Cholapur	1980-81	1374	213	181	1769
	1985-86	1939	241	182	2362
	2000-01	3742	1471	347	5560
Chiraigaon	1980-81	1996	285	236	2518
	1985-86	2826	408	250	3484
	2000-01	3547	1420	317	5284
Harahua	1980-81	1393	305	203	1902
	1985-86	1963	384	202	2549
	2000-01	3631	1422	351	5404
Sevapuri	1980-81	598	110	55	763
	1985-86	2403	352	211	2966
	2000-01	3687	1444	359	5490
Araziline	1980-81	517	187	172	877
	1985-86	2000	295	185	2480
	2000-01	4140	1653	404	6197
Kashi Vidya Peeth	1980-81	1040	204	218	1463
	1985-86	1900	442	332	2574
	2000-01	3441	1472	340	5253

**Source:** District Statistical Handbook (of various years).

### 3.8 Extent of Mechanization

The extent of mechanization has increased in the district. The number of tractors, plough machine, sprayers, threshing machine etc. have increased, while the number of Wood Plough have decreased during the last 20 years. The number of wood plough decreased from around 15 lacs in 1978 to 51000 during 1997 in the district while the number of iron plough increased from 9718 to 22389 during the same period. The number of thresher increased by around 200 per cent, sprayer by 286 per cent, sowing machine by around 700 per cent and tractor by 89 per cent during 1978 to 1997. The trend of increasing mechanization despite the fact that average size of landholdings has been decreasing indicates a new type of resource sharing in rural area. Those who cannot afford to purchase the machine, hire its services. Be it irrigation water, tractor, thresher or any other machine, their services are being hired by those who cannot afford to purchase or maintain them. Very poor farmers do not keep draught animals and hire services of new machines because they cannot afford to feed draught animals throughout the year.

Block wise analysis shows that, while mechanization has increased at a significant pace in all the blocks, the number of even wood plough had increased during 1978-1982 in many blocks. These are Baragaon, Cholapur, Chiraigaon, Harahua, Sevapuri, Araziline and Kashi Vidya Peeth. But the number of wood plough decreased in these blocks excepting Baragaon and Araziline during the period 1982 to 1997 (**See table 3.5**).

Tenancy and share cropping was found in our survey in selected villages of the district. Thus sharing of land resource as well as services of machines indicates emergence of a new type of land-labour-capital relations.

**Table – 3.5**  
**Block-wise Technology Available in Varanasi District**

Blocks	Years	Wood Plough	Iron Plough	Harrow & Cultivator	Threshing Machine	Sprayer	Sowing Machine	Tractor
Baragaon	1978	5017	-	-	125	52	-	72
	1982	7121	991	171	547	99	94	92
	1997	9641	3887	36	5593	534	236	411
Pindara	1978	6139	173	123	121	69	10	110
	1982	6687	1521	653	398	187	98	127
	1997	2563	1353	64	1044	551	-	221
Cholapur	1978	7291	261	83	439	87	10	43
	1982	8620	1804	518	541	150	79	63
	1997	8282	2346	111	2749	194	485	351
Chiraigaon	1978	5271	211	129	428	128	8	63
	1982	8008	2200	672	675	211	105	75
	1997	2649	3190	25	5604	930	75	554
Harahua	1978	7241	189	130	128	171	3	56
	1982	7491	2098	679	418	237	101	79
	1997	4459	4368	14	3209	1633	54	442
Sevapuri	1978	4749	91	12	120	41	11	104
	1982	7037	1267	339	623	93	93	955
	1997	6902	2034	277	3870	644	405	715
Araziline	1978	4622	279	79	713	146	12	130
	1982	8556	1950	537	933	245	109	137
	1997	12548	3914	151	6609	2189	157	1020
Kashi Vidya Peeth	1978	2115	292	81	1214	270	13	56
	1982	8212	2112	562	1073	280	81	76
	1997	3974	1237	8	1206	512	34	429

**Source:** District Statistical Handbook (of various years).

### 3.9 Livestock

Livestock plays two types of roles in rural economy. One it provides draught animals or for pulling carts. Secondly it generates income through animal products, which has serious implications for diversification of rural economy.

But the size of livestock has also a serious bearing on land use. The increase in livestock would mean that more land under pasture will be required, as well as more fodder will be required. Block wise analysis of livestock during 1981-1997 shows interesting trends.

There was a general trend of decrease in the number of livestock during the period 1981 to 1985. But it increased during 1985 to 1997, barring some blocks. For example the number of cattles (i.e. cows, oxen) and as well as buffaloes declined in Pindara block during this period. But in Chiraigaon block and Harahua block only the number of cattles declined during this phase. In Harahua block the number of buffaloes has remained almost the same.

Another fall-out of growing urbanization and increase in extent of mechanization has been drastic decline in the number of livestock in Varanasi district. It is evident from **table 3.6** that number of all animals in the district have declined excepting those of pig and poultry.

**Table 3.6**  
**Block-wise Details of Livestock in Varanasi District**

Blocks	Years	Total Cattles (Cows & Oxen etc.)	Total Buffaloes	Sheep	Goats	Pig	Horse and Tattoos	Other Livestock	Total Livestock	Total Poultry
Baragaon	1981	27853	9985	-	14595	917	40	298	53480	13641
	1985	24875	8323	4712	9848	1092	56	317	49223	12873
	1997	34572	16539	7767	14324	4072	20	508	77802	49077
Pindara	1981	28961	10317	-	15757	709	37	257	56246	13979
	1985	25318	8714	5020	9217	929	49	219	49466	10489
	1997	4474	5019	3040	5743	577	-	286	19139	9534
Cholapur	1981	28342	11007	-	16122	716	43	258	56478	13735
	1985	26210	9055	5182	10139	1304	48	279	52217	11488
	1997	51984	28616	3648	18273	3484	5	427	106437	36517
Chiraigaon	1981	29378	10311	-	15895	767	39	237	56627	13693
	1985	27773	10018	5142	9216	945	43	345	53482	10782
	1997	15348	14365	2123	7288	7344	99	284	46884	22593
Harahua	1981	28978	10450	-	15911	751	36	231	56357	13349
	1985	25763	9929	5352	9845	913	39	383	52224	10315
	1997	15942	9965	4148	7911	1522	114	369	39971	40825
Sevapuri	1981	29110	9931	-	15655	742	35	229	55702	13600
	1985	25599	8067	4715	8887	1074	67	366	48775	11151
	1997	36782	15660	4676	14385	3192	26	485	75206	26480
Araziline	1981	28494	10696	-	15546	656	38	243	55721	13671
	1985	29465	10721	4930	9111	1753	52	291	56323	13082
	1997	53384	27852	5986	23072	5938	-	630	116862	61076
Kashi Vidya Peeth	1981	27839	9995	-	15844	704	41	241	54616	13690
	1985	29518	10871	5345	8972	1255	57	363	56401	11707
	1997	34630	17086	4697	12484	5507	-	429	74833	45119

**Source:** District Statistical Handbook (of various years).

## **PART – B**

### **Land Use Plan Related to Agricultural Land**

In Varanasi district the average size of landholding was 0.56 hectare as per the 1995-96 agricultural census, 95.1 per cent holdings belonged to the small and marginal farmers, while they accounted for only 69.4 per cent of total area under all landholdings.

After latest division of the district, the net sown area as percentage of total reporting area increased to around 75 per cent. This is so, because the blocks which have remained with Varanasi district had higher proportion of net sown area.

The analysis of block-wise net sown area shows that in most of the blocks the proportion of net sown area had remained almost same and fluctuated within the range of two to three per cent during the last twenty years, i.e. Since 1980-81, barring the year 1995-96, which seems to be an exceptional year.

The cropping intensity of the Varanasi district had almost consistently increased since 1960-61, and has hovered around 150 during the period 1985-86 to 2000-01.

The most important factor which has effected cropping intensity is irrigation.

The irrigation intensity i.e. net irrigated area as percentage of net sown area has increased from 51.91 per cent in 1975-76 to 78 per cent in 2000-01. This trend was discernible in all the blocks of the district as well.

Furthermore, gross irrigated area as percentage of net irrigated area has also increased during the last twenty five years from around 125 in 1975-76 to around 150 in 2000-01 with fluctuating trends during intervening periods.

Tubewell is now the dominant source of irrigation in Varanasi district, and accounts for more than 80 per cent of net irrigated area.

There is another aspect of analysis of sources of irrigation. Though tubewells have become dominant source of irrigation, the role of public sources continues to be very important. Because canals and government tubewells together account for more than 50 per cent of net irrigated area in most of the blocks. That means, public investment in irrigation will continue to play an important role in increasing gross irrigated area, which in turn would help in increasing the cropping intensity in these blocks.

The cropping pattern in the district has vastly changed during the last 30 years.

The main crops viz. paddy, wheat, potato and sugarcane have witnessed very large increases in their productivity also during the period 1960-61 to 1998-99.

Thus farmers have shifted to crops, which are highly irrigated, fertilizer use is higher on them and whose productivity is also comparatively very high.

We need to make efforts to increase production of more pulses, oilseeds and spices. Cropping rotation also needs to be changed. Following steps are imperative to achieve it.

- (a) More thrust be given for developing high yielding varieties for these crops.
- (b) Rain fed areas should be encouraged to cultivate these crops.
- (c) Orchards, fallow land and land under social forestry could be used for growing such crops.
- (d) Processing industries of oilseeds and spices be promoted at local level with support for technology up gradation, packaging and market access facilities.

Use of fertilizer had been increasing in all the blocks. But their balanced and proportionate application has not been reported.

There is need to adopt following strategy to combat this menace:

- (a) Lay guidelines for each gram-panchayat-on the basis of soil-testing – the proportion of fertilizer which is required to be applied.
- (b) Farmers meeting be organised at village level before every cropping season to make them aware about such guidelines.
- (c) Farmers be also informed about hazardous impact of non-proportionate application of urea.
- (d) Government functionaries, specially at the gram-panchayat level be sensitised regarding these aspects.

The extent of mechanisation has increased in the district. The number of tractors, plough machine, sprayers, Threshing machine etc. have increased, while the number of Wood Plough have decreased during the last 20 years.

The trend of increasing mechanisation despite the fact that average size of landholdings has been decreasing indicates a new type of resource sharing in rural area. Those who cannot afford to purchase the machine, hire its services. Be it irrigation water, tractor, thresher or any other machine, their services are being hired by those who cannot afford to purchase or maintain them. Very poor farmers do not keep draught animals and hire services of new machines because they cannot afford to feed draught animals throughout the year.

Tenancy and share cropping was found in our survey in selected villages of the district. Thus sharing of land resource as well as services of machines indicates emergence of a new type of land-labour-capital relations.

Livestock plays two types of roles in rural economy. One it provides draught animals or for pulling carts. Secondly it generates income through animals products, which has serious implications for diversification of rural economy.

But the size of livestock has also a serious bearing on land use. The increase in livestock would mean that more land under pasture will be required, as well as more fodder will be required.

Another fall-out of growing urbanisation and increase in extent of mechanisation has been drastic decline in the number of livestock in Varanasi district. The number of all animals in the district have declined excepting those of pig and poultry.

### **3.10 Agricultural Production System and Framework for Land Use Plan**

It was found that the majority of land owners who leased out their land belonged to medium, small or marginal farmers. The fact that even small and marginal farmers were leasing out their land, revealed two trends - one, in case of uneconomic holdings farmers want to search other

opportunities and will be content to get the market rent for their land yet they would prefer to retain the land instead of selling it out right. Moreover, the new generation, if educated seeks jobs in cities, and prefers to lease out the land. The other aspect was in regard to changing relationship. The exploitative relationship between tenant/share cropper and the land lord is fast changing. It is now purely an economic arrangement of mutual interests. Small and marginal farmers also lease-out land to other small and marginal farmers. Thus enterprising farmers are continuing agricultural activities by pooling resources from fellow farmers, while some other farmers are trying to make efforts in non-agricultural activities also.

Thus the new form of economic arrangement under tenancy was giving way to emergence of new enterprising farmers who were seeking ways to pool resources for higher productivity and application of new technology.

Dependency relationship based tenancy was declining because not many cultivators wanted to be tied up for the whole of year with some small parcel of land which they did not own, and further depend on the landlord for resources and credit. Landless or near landless people also now want to keep options open for seeking job elsewhere as well. So they preferred to work as casual agricultural labour during peak periods rather than working as an attached labour or as a tenant.

On the other hand leasing-out by small farmers was on the increase because many small farmers wanted to get job outside agriculture and at the same time wanted some income from their land also. This was possible only by leasing-out land to fellow farmers at mutually agreed terms. This kind of tenancy was free from both the dependency and exploitative relationship.

Sharing of machines and equipments was also found to be widely prevalent among farmers of this district. It was found that almost all farmers owning agricultural machines and equipments hired out or shared their services with other farmers. many agricultural tools were also found to be shared among farmers on the exchange basis.

### **3.11 Factors Inhibiting Growth**

The immediate factors which inhibited growth among small and marginal farmers were: lack of resources, capital deficiency and lack of facility to sell at remunerative prices. The other factors included the problems of water logging, floods, drying of canals during summer, etc.

### **3.12 Framework for Agricultural Growth**

Among small and marginal farmers, agricultural productivity is hampered by poor logistical support and weak infrastructure. If food production is to be increased in a sustainable way, these deficiencies must be corrected and favourable economic framework for agriculture should be evolved. Such actions need to be backed up by practices aimed at maintaining or enhancing fertility and productivity.

The first step is to protect the best land for agriculture. In view of the scarcity of high quality arable land and the rising demand for food and other agricultural products, the land that is most suitable for crops should be reserved for agriculture. Government should map and monitor the more productive areas of farm land and adopt planning and zoning policies to prevent the loss of prime land to urban settlements. Village Land Management Committee and local authorities should be entrusted with responsibility to ensure that these policies are implemented in their areas.

We have found that the number of small and marginal farmers in the district is predominant. It was also found that the immediate factors which inhibited growth among small and marginal farmers were lack of resources, capital deficiency and lack of facility to sell at remunerative prices. The most important factor which could become basis for future restructuring of agricultural production system related to tenancy. It was found the majority of land owners who leased out their land (without entering into any written or formal contract) belonged to the category of medium, small or marginal farmers. This was for two reasons – one in case of uneconomic holdings, farmers wanted to search other opportunities and would be content to get the market rent for their land. Yet they would prefer to retain the land instead of selling it outright. The other aspect was in regard to non-exploitative nature of relationship between the lessor and the lessee. It is now purely an economic arrangement in which small and marginal farmers are also leasing out land to other small and marginal farmers. Thus enterprising farmers are continuing agricultural activities by pooling resources from fellow farmers, while some other farmers are seeking opportunities in non-agricultural activities also. Thus the new form of economic arrangement was giving way to pooling of resources by enterprising farmers, while other farmers who were leasing out their land were treating their land as a share capital for which they will receive the rent as well as the share in profit. The process of pooling of resources was further strengthened by a simultaneous process of sharing of machines and equipments. It was found that almost all farmers owning agricultural machines and equipments hired out or shared their services with other farmers.

It seems to us that a limited restructuring of the production process in agriculture can be such that it serves the interests of small and marginal farmers and at the same time protects wider interests of the farming community.

One major step in this direction would be to allow formation of Collective Farming Society and Confederation of Farming Societies. In the collective farming society framework, tenancy to such farming societies could be permitted under specified conditions. In particular such societies may be formed of small and marginal farmers for a complete package of inputs, and it may then be permissible for any member of such a society to lease out land to the society or to any other member of the society.

At the next level, a confederation of such Collective Farming Societies could be formed which will work as service societies. These confederations would provide high cost machinery and equipments to Collective Farming Societies on rent. The idea essentially is that it should be possible to increase number of viable farms by permitting some of the non-viable farmers to go out of agricultural business and seek other jobs and economic opportunities. This should on the one hand, improve productivity of labour on the expanded farms and on the other aid in much needed shift of labour away from agriculture.

### **3.13 Collective Farming Society**

1. Collective farming units be allowed to be registered under a separate Collective Farming Society Registration Act.
2. Only small and marginal farmers be allowed to become members of such a society.
3. The number of members of a society should not be above twenty and below five.

4. Those who become members of such a collective farming society will be allowed to lease out their land to the society for a minimum of ten years on a fixed annual rent.
5. A collective farming society will not bring under its purview more than ten hectares of irrigated land.
6. A collective farming society will be allowed to pool its resources on hire or through raising capital from its members.
7. The produce will be shared among members in proportion to the share amount of each member.
8. The share amount of each member will be the weighted sum of (a) money invested under capital raising scheme plus, (b) the amount fixed as annual rent for the land leased out to the society, (c) operational holdings of actual cultivators.

### **3.14 Confederation of Collective Farming Societies**

For storage facilities, providing transportation facilities and to work as marketing syndicates of farming societies, a confederation of ten to twenty corporate farming societies be allowed to be formed.

These confederations will work in the following areas:

1. Marketing of agricultural goods at national and international level.
2. Provide transportation and storage facilities to Collective Farming Societies against such stored goods.
3. Function as cushions against speculative prices.
4. The confederation will also act as counselling centre for farmers projecting the production and demands of each agricultural commodity for the next two years.
5. Provide high costing tools and machines to Collective Farming Societies for land levelling, soil testing, land reclamation and other activities related to land and water management on rental basis.
6. Help in technological innovations and in increasing productive efficiency.



## Chapter – 4

### Land Use Plan (Other than Agricultural Land)

The land use pattern in the district has been changing slowly but steadily. The discussion on land use pattern is divided into two parts. One deals with the land use related to agriculture and the other part deals with all categories of land use other than agriculture. We have already discussed land use related to agriculture in **Chapter – 3**.

The categories related to land use other than agriculture have witnessed change due to factors like population increase, urbanization, land degradation floods etc.

Following categories of land use may be combined under the heading other than agricultural categories:

- (i) Forest
- (ii) Land put to non-agricultural uses
- (iii) Barren and unculturable land
- (iv) Culturable waste
- (v) Permanent pastures and other grazing land
- (vi) Land under miscellaneous trees, crops and groves not included in net area sown.

Our focus in preparing land use plan has been four fold –

- (i) *Agricultural land should not be transferred for use to other purposes.*
- (ii) *Maximum area be brought under vegetative cover i.e.*
  - (a) *Increase forest*
  - (b) *Increase area under miscellaneous trees and groves.*
  - (c) *Increase area under pasture and grazing land.*
- (iii) *Use culturable waste and other fallow land for such purposes. Therefore, efforts should be made to convert land under these categories into forest, orchards or grazing land.*
- (iv) *Barren and unculturable land be used for constructing buildings or infra-structural facilities.*

Land use pattern has shown no discernible change during the last four years i.e. 1997-2001 in the district.

## **PART – A**

### **4.1 District Level Analysis of Land Use Pattern and Land Use Plan**

#### **4.1.1 Forest**

The forest land increased from around 14.5 per cent of total reporting area in 1960-61 to around 14.78 per cent by 1970-71. Thereafter in the next decade i.e. during 1971-1980, it registered a further increase to around 15 per cent. The area under forest further increased to around 15.2 per cent by the end of eighties. This trend continued till around 1996. **(See table 4.1).**

The area under forest dropped to nill after that and is presently only 0.47 per cent of total reporting area. The area under forest could be brought to around 2 per cent of total reporting area, if some part of the land under other fallow and some part of land under culturable waste is brought under forest. This could be done by forming Joint Forest Management Committees consisting of plant growers from poor peasantry class and representatives of forest department and land use committee. A cell should be formed to provide them the financial support and infra-structural support so that they could get suitable plants, methods to protect them and finally marketing of forest produce.

Secondly, development of such forests should be linked with watershed management in the area. For this purpose an area of 500 hectares to 1000 hectares should be chosen as unit for micro-watershed management.

This would include (i) construction of water retention structures (ii) clearing and desilting of natural courses of drainage systems and (iii) restoration/reconstruction of ponds/ tanks in totally barren lands or low lying lands.

Thirdly programmes like Pradhan Mantri Rojgar Yojana etc. should be now utilised for construction of bundhis, management of wild resources including fisheries, drainage maintenance and enhancement etc.

Fourthly, more emphasis will have to be laid on energy plantation which would provide fuel wood besides growing of fruit trees rather than timber linked growth of forests.

#### **Private Micro Forests**

Private micro forest is different from orchards, as orchards generally comprise fruit bearing plants. The concept of private micro forest envisages that private individuals could also grow various varieties of plants. We have in the past found that eucalyptus had been grown in private land because it was expected to fetch good amount. The private waste land could also be used for growing timber. energy plants, etc. This could also be linked with purification of surroundings. For this purpose plants related to different planets (Navgrah) and different Nakshatra which are 27 in numbers could be planted as per specified arrangement.

Even plants with medicinal value could be grown in such land if people could be informed about their medicinal and commercial value.

#### **4.1.2 Land Put to Non-agricultural Uses**

Area under land put to non-agricultural uses has been continuously increasing over the past 40 years. It was around 8 per cent during 1960-61 and has risen to around 13.25 per cent by the end of year 2000 (**See table 4.1**).

The proportion of land put to non-agricultural uses is already very high in present Varanasi district. During the last two decades, it had increased by 2 per cent of reporting area per decade. With the forest area having virtually become nil, increase of land put to non-agricultural uses needs to be restricted severely. Failing which, it would not be possible to convert land available under other uses to bring under plantation.

### **Regulation of Land Use at Urban Fringes**

There is need to regulate land use at urban fringes. This could be done by setting up a Varanasi Urban Fringe Development Authority. The UFDA could decide on the following:

- (i) Conservation of green areas such as orchards, agriculture, social forestry and allied activities.
- (ii) Development of water management and drainage system. Ponds and other water retention structures be revived. Any encroachment on such land should be identified and legal proceedings against encroachers be initiated.
- (iii) The provisions made under Zamindari Abolition and Land Reforms Acts (specially section 143 and 154) and Consolidation of Holdings Act be used effectively to check diversion of agricultural land for non-agricultural purposes.
- (iv) Heavy fine should be imposed (say ten times the cost of the land) in case of such diversion on the owner of the land.
- (v) In addition to it, if the agricultural land had been sold then capital gain tax should be imposed on purchaser of the land. Because huge capital gain accrues to the builders who develop colonies in such land.
- (vi) The first priority be given to development of social services in the fringe area which will include hospitals, educational centres, training centres for farmers and agro-based industries.
- (vii) Barren and uncultivable land should be identified for development of micro-industrial estates and then for developing multistoried residential complexes which are land saving as well.

Besides urban fringes, there is need to restrict the rate of increase of area under land put to non-agricultural uses, in rural areas in general.

This could be made possible by adopting following steps.

- (a) Discourage migration of people of nearby villages. This could be done by increasing transport facility and by improving road networks.
- (b) Strengthen household industries of rural areas by providing them institutional support and market facilities.
- (c) Develop green belt around city and any construction in the green belt area be strictly prohibited.
- (d) Encourage multi-storey buildings and economic flats to weaker sections.

One important aspect of land put to non-agricultural uses is increasing number of residential houses. However, since population growth rate is faster, per person living area is decreasing. Even more disturbing factor is that per person open area in house premises is also declining. This is the trend in even rural areas. Hence space for community uses and common recreation places must be developed even in rural areas. In city planning we leave space for parks, playgrounds and recreation spots. Such planning should also be done for rural areas. Watershed management could then be linked with development of parks and recreation places. Some area could also be reserved for floriculture and horticulture.

### **Regulation of Land Use along Road Side**

There has been a tendency to change land use along road side – specially national highways and state highways. Houses and shops are constructed or such land is put to even other non-agricultural uses. As a result of this contiguous effect leads to further expansion of settlements near highways and such places become accident prone. Therefore, there is need to regulate land use along roadside. Following measures could be adopted in this respect:

- (i) A green strip be developed on both sides of road. Such green strip on each side should not be less than 10 meter wide.
- (ii) Wherever, highways are connected with other roads, construction along side even such connecting roads be prohibited for a length of at least one kilometer.
- (iii) Those who construct houses or buildings on agricultural lands along side road should be fined heavily (say ten times the cost of the land).

The rate of increase of area under the category of land put to non-agricultural uses could then be restricted to around 14.5 per cent of total reporting area by the year 2010.

### **4.1.3 Barren and Unculturable Land**

Barren and unculturable land be used for further expansion of residential places, playgrounds and construction of building for common uses such as school or panchayat bhawan. It could also be used as Khalihan if it is nearby fields. And it could be used for cremation ground or graveyard if it is far away from habitation.

Thus, barren and unculturable land could be shifted for use as land put to non-agricultural purposes. Some part of it could also be used for developing as pasture and grazing land.

We hope that through these measures, area under barren and unculturable land could be reduced from 2.11 per cent to 1.0 per cent of reporting area in district Varanasi.

### **4.1.4 Culturable Waste**

This is a category showing non-enterprise. To our mind, there should be no such category. If cultivation is not possible then it could be converted into area for social forestry or developed as pasture and other grazing land.

Currently area under culturable waste is 1.65 per cent of total reporting area (**See table 4.1**). A part of it (say around 0.65 per cent) could be converted into social forestry and the rest i.e. around 1.0 per cent could be developed as pasture and other grazing land. At some places, such land could also be used for fodder cultivation – specially those areas, which are owned by private individuals.

Support should be provided for developing pasture land and growing fodder.

### **Culturable Waste along River Side**

Varanasi had two major rivers and many tributaries flowing through it. The patches of land along side these rivers are undulating and at some places with high mounds. These areas could be developed as reserved forest strips with one to two kilometers' width. Plant varieties which suit the local soils could be grown in these reserved forest strips.

Development of these reserved forest strips should also be linked with river water pollution control systems. It means that water which goes through drainage courses and which meets these rivers should be treated before it reaches the river. The management of reserved strip forest should be entrusted with the responsibility to operate the treatment plants.

Besides reserved forest strips, parks and picnic spots could be developed at various points along the river route. Such parks/picnic spots could become centres of sight seeing and attraction for tourists as well.

#### **4.1.5 Land under Miscellaneous Trees, Crops, and Groves not included in Net Sown Area**

Land use under this category had been the first victim of population growth and conversion for other uses.

Land under this category could be increased by 1.0 per cent of total reporting area by converting 1.0 per cent of total reporting area under other fallow for growing miscellaneous trees and groves.

Reduction of such area increases run off of rain water. Such areas are best suited for agro-forestry. The main types of agro-forestry system are:

- (a) alley cropping – where annual crops are grown between lines of trees that produce valuable mulching material.
- (b) orchard systems – where the trees provide edible fruits, medicines and fuel wood, while the ground layer is cropped or grazed.
- (c) growth of scattered trees with pasture at the ground or grazing land.

**Conserve Genetic Resources:** Land under the above category should also be used to conserve genetic resources. This could be done by focussing on following programmes.

- ◆ Support grassroots associations of farmers and gardeners for the maintenance of traditional and local cultivars and breeds. Involve women's groups, Record farmers knowledge of traditional and local cultivars and breeds,
- ◆ Develop a common information service for exchange in information and germplasm among grassroots, state and national agencies.

**Table 4.1**  
**Total Reporting Area (TRA) and Land Use Pattern in Varanasi District, (in percent)**

Years	Total Reporting Area (in hect.)	Forest	Barren & Unculturable Land	Land Put to non-agricultural Uses	Culturable Waste	Permanent Pastures & Other grazing Land	Land under Misc. Trees crops & groves	Current Fallow	Other Fallow Land	Net sown area
1960-61	527581	14.51	3.00	7.96	2.96	0.02	3.78	0.08	4.32	63.18
1961-62	527571	14.51	2.92	8.14	2.84	0.02	3.57	0.07	4.01	63.90
1962-63	527577	14.51	2.91	8.25	2.68	0.03	3.55	0.06	4.00	64.01
1963-64	526891	14.53	2.94	8.31	2.45	0.02	3.73	0.06	3.83	64.13
1964-65	524246	14.09	2.93	8.39	2.33	0.03	3.77	2.26	1.71	64.49
1965-66	522150	14.15	2.95	8.44	2.33	0.01	3.45	2.40	1.70	64.59
1966-67	523709	14.68	2.79	8.56	2.18	0.00	3.28	8.64	1.95	64.42
1967-68	523709	14.68	2.79	8.56	2.18	0.00	3.28	2.34	1.76	64.42
1968-69	523562	14.68	2.69	8.55	2.13	0.00	3.29	2.26	1.73	64.67
1969-70	523411	14.68	2.89	8.55	2.01	0.01	3.37	2.24	1.85	64.39
1970-71	521129	14.78	2.88	8.59	2.03	0.01	2.94	2.14	1.86	64.78
1971-72	516005	14.93	2.84	8.61	2.05	0.01	2.21	2.40	2.04	64.92
1972-73	516006	14.93	2.83	8.61	2.01	0.01	2.21	2.40	2.10	64.91
1973-74	515840	14.94	2.66	8.66	2.08	0.02	2.40	2.63	2.01	64.60
1974-75	515673	14.94	2.50	8.71	1.95	0.04	2.60	2.86	1.91	64.29
1975-76	515673	14.94	2.52	8.72	2.13	0.04	2.60	3.00	1.81	64.25
1976-77	515457	14.90	2.52	8.72	2.11	0.04	2.60	2.80	1.75	64.55
1977-78	515818	14.96	2.52	8.72	2.06	0.04	2.60	3.52	1.81	63.77
1978-79	515818	14.96	2.49	9.09	2.03	0.04	2.55	2.91	2.02	63.51
1979-80	515170	15.02	2.55	9.40	1.38	0.04	2.45	3.79	2.10	63.12
1980-81	515170	15.02	2.57	9.57	1.29	0.04	2.35	4.07	2.18	62.91
1981-82	515998	15.00	2.56	9.90	1.29	0.05	2.37	3.56	2.06	63.22
1982-83	514860	15.03	2.53	10.14	1.56	0.05	2.26	3.69	2.07	62.65
1983-84	509600	15.19	2.48	10.45	1.35	0.05	2.28	3.99	2.08	62.73
1984-85	513762	15.07	2.37	10.30	1.34	0.06	1.66	3.80	2.03	63.40
1985-86	509125	15.20	2.36	10.61	1.19	0.06	1.50	3.89	1.92	63.46
1986-87	509125	15.20	2.31	10.62	1.13	0.06	1.55	3.48	2.11	63.54
1987-88	509125	15.20	2.11	10.79	1.13	0.05	1.42	3.63	2.44	63.22
1988-89	509125	15.20	2.27	10.89	1.09	0.06	1.42	3.41	2.43	63.22
1989-90	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1990-91	509293	15.20	2.26	11.29	1.04	0.06	1.23	3.84	2.52	62.56
1991-92	509293	15.20	2.08	11.57	1.14	0.06	1.44	3.39	2.51	62.73
1992-93	508249	15.23	2.04	11.64	1.01	0.06	1.41	3.85	3.36	61.41
1993-94	508130	15.23	2.06	11.58	1.03	0.06	1.38	3.37	2.96	62.32
1994-95	508186	15.23	1.99	11.67	1.01	0.05	1.27	3.04	3.75	61.98
1995-96	511328	15.14	0.46	8.91	0.40	0.07	0.54	0.58	0.51	73.39
1996-97	509198	15.42	1.94	11.70	0.95	0.06	1.13	3.28	2.58	62.94
1997-98	152663	0.00	2.18	13.38	1.67	0.03	2.59	1.76	3.42	74.98
1998-99	152663	0.00	2.17	13.77	1.66	0.03	2.20	1.70	3.42	75.04
1999-2K	152656	0.47	2.18	13.38	1.67	0.03	2.11	1.75	3.40	75.01
2000-01	152662	0.47	2.11	13.31	1.65	0.03	2.07	1.70	3.37	75.29
2010-11 Proposed		2.00	1.00	14.50	-	1.14	-	1.7	1.37	75.00

## **4.2 Some General Suggestions**

### **4.2.1 District Level**

- (i) District Land Use Committee should be strengthened. The Committee must meet at least once in a year and take stock of changes which have occurred during past one year. It should also be informed about up-dating of records and changes which have taken place during the year.
- (ii) As regards its constitution, it should also include District Panchayat Adyaksha, BDOs and some more representatives of farmers.
- (iii) Each line department and BDO should be asked to furnish informations in a pre-structured proforma.
- (iv) The annual proceedings be documented and action plans drawn in the meeting be circulated to all concerned departments and functionaries.

### **4.2.2 Block Level**

#### **(i) Need for Block Level Land Use Committee (BLUC)**

There is Land Use Committee at district level. There are Land Management Committees at the village level. But there are no land use committees at the block level.

Land records were maintained with a view to fix land revenue by the revenue department. There had been no systematic effort to maintain land records to identify land use categories on the basis of their potential development and quality.

The development perspective requires that unit for land use planning be made at block level. Because at district level it remains too generalised, while at village level, it would create operational problems in coordinating various line departments who have bearing on the land use. Therefore, there is need to create a planning cum implementing agency at the block level.

The Block level Land Use Committee may be formed with following as their members:

Block Pramukh	-	President
B.D.O.	-	Convenor
A.D.O. (Stat.)	-	Secretary

Other Members will include representatives from concerned line departments and some specialists, and

Three B.D.C. Members (to be selected by Kshetra Panchayat Members)

Block level Land Use Committee may take up the following issues for planning and implementation in the block:

#### **(ii) Salinity and Alkalinity**

The problem of alkalinity arises when infiltration rate of water in soil is low. This results in higher run off of surface water and creates problems of water logging in adjoining areas. As the water gets muddy, it also creates pollution of water streams. Reclamation of such land will have multiple effect. Such as increase in the infiltration rate, increase in recharge of ground water, reduction in water logging and control on water pollution.

Following steps should be encouraged for reclamation of such land:

- (a) Construction of field bunds – through boundary mounds,
- (b) Levelling of fields,
- (c) Use of gypsum/pyrites, depending upon the degree of alkalinity,
- (d) Rotation of crops.

Group of farmers be formed for their collective action. Then such groups could be provided financial, technical and infra-structural support for reclamation of alkaline land.

### **(iii) Water Management**

Reforms are needed to facilitate water management systems for various reasons:

- (a) rain and surface water needs to be preserved instead of being allowed to go waste via drain courses;
- (b) natural drain courses should not be allowed to be obstructed otherwise it leads to avoidable water-logging

Increase in the number of private tubewells results in the lowering of level of ground water, therefore water management should include recharging by using rain/surface water.

By reducing run off we can check removal of top fertile soil on the one hand and maintain infiltration on the other. the catchment area of each water route should be mapped out and the programme to manage rain water should start from the highest land and end at the drainage basin.

Water harvesting will involve shaping farm land and sometimes also the catchment area of water course to slow the flow of water and thereby increase infiltration into soil. There are several cheap ways to make contours, if this is taken up collectively.

The sloppy areas and those along the drainage or field boundary which otherwise are not suitable for agriculture needs conservation efforts with optimum plant productivity. The strip plantations of multipurpose trees or shelter belts for crop lands will provide wood/leaf fodder and also ameliorate environment.

Water reservoir tanks/ponds/bundhis be constructed at places where main drain routes meet. Such land should be mapped and brought under community/panchayat ownership. No other construction be allowed to take place on such land through suitable modification in laws.

Drain network-allowing disposal of waste household water as well as community water using posts should be linked with natural drainage (by gravity flow) courses. Thus there should be micro drains (for disposal of household waste water), which will have to be connected to a community drain and finally the entire waste water has to be drained to other reservoir sites after proper treatment.

Area along the drainage route should be allowed for fodder cultivation and if possible for farm forestry. Fodder cultivation and farm forestry needs to be developed in chronically water-logged areas. To facilitate this, land along drain routes and water-logged land be kept outside the purview of tenancy provisions. Secondly, land owners of such land be permitted



to form fodder or farm forest production units and lease out their land to such collective production units.

#### (iv) Protection of Communal Land

Common resource property has been one of the most important source of sustenance of livelihood of less privileged communities in many backward and remote areas.

A support system for maintenance and quality improvement in land use is needed to protect grazing land, land under trees, bushes etc. as well as protection of land for chak road and drainage system is also necessary. Through detailed mapping of each village, community management and these (water recharging, drainage, trees) etc. should be brought under communal ownership which should become non transferable and any activity that leads to their destruction should become unlawful.

The role of common resource property and its allocation systems becomes crucial in management of these natural resources. It must be emphasized that management of such resources be vested with the local communities who will take a longer view. Outside commercial interest will come and go with narrow economic interest only.

Effective communal property rights and resource management systems could be developed by empowering panchayats to develop modes of their use in their respective panchayats and by providing them technical and managerial skill as well as the needed capital resources.

#### (v) Culturable Waste Lands and Fallow Land

Culturable waste land could be brought under vegetative cover by providing necessary institutional and infra-structural support.

We suggest following measures to facilitate their proper use.

- (a) **Identification of Records:** Presently such lands are identified and delineated through revenue records. Block Level Land Use Committee (BLUC) be entrusted with the responsibility to identify and delineate such land in each block. Land Management Committees of each Gram Panchayat should be involved in the process.
- (b) **Preparation of Land Use Maps:** Land use maps for all the villages be prepared by the proposed BLUC.
- (c) **Put Such Land outside the Purview of Tenancy Clause:** These types of land require huge investment and long waitings for their reclamation. If they remain within the purview of Tenancy Clause, it would be difficult for farmers to pool such land and invest on them, because farmers generally prefer to invest on prime land rather than on degraded land.
- (d) **Lease Out Such Land to Landless Peasants' Societies:** Most of such land is under *State* or *Gram Samaj* ownership. Distribution of small parcel of such land to individual small farmers or land less peasants will not work. Because individual peasants in these categories have neither the sufficient capital to invest nor they could wait for longer

periods to reap the profits of their investments. Landless Peasants' Societies could be expected to make long term heavy investments provided such land are leased out to them for sufficiently a longer duration, and they are provided cheaper loans for this purpose.

**(vi) A New Model for Culturable Waste and Degraded Land**

For taking up regeneration activities of culturable waste and degraded land we will have to keep the following factors in mind:

- (a) Size of such land in contiguity;
- (b) Nature of regeneration programme;
- (c) Raising of capital and acquisition of technical support
- (d) Incentive for participation of interested landless peasants and capacity building;
- (e) Changes in the tenural rights over such land; and
- (f) Distribution of benefits.

Keeping these in view we suggest another model in which local people could be involved, and its economic viability could be ensured.

We suggest that a joint venture of state sector with local organisation be formed for this purpose.

As a first step a Collective Land Development Society (or Self Help Group for Land Development) be formed at local level. This Collective Land Development Society or SHG should enter into a contract with any state department, which has been approved for the purpose by the government.

**(vii) Land Development Society/SHG for Land Development**

- (a) A Land Development Society or SHG shall be formed for a land chunk of 10 to 25 acres.
- (b) The chunk of land be divided into 10-20 equal size sub-chunks.
- (c) Lease out around 1 acre of such sub-chunk land piece to one landless family each.
- (d) The tenure holder, in turn, will have to become member of the Land Development Society or SHG.

**(viii) Joint Venture**

A Public Corporate Organisation (approved by the government for the purpose) will then enter into an agreement with Land Development Society or SHG for a minimum of ten years for jointly developing the land and for its utilization.

- (a) Members of Land Development Society or SHG would provide land and labour;
- (b) Public Corporate Organisation will provide capital, technology and technical know-how;
- (c) A joint management system will be evolved;
- (d) One-third of the profit shall be ploughed back for further raising the capital stock of the joint venture.

- (e) The rest of the profit shall be shared on 50:50 basis between the state unit and Land Development Society.

#### 4.2.3 Village Level

- (i) The land use plan is almost finalized after consolidation of holdings is implemented in a village. It provides land for various purposes in the village besides consolidating holdings. These include -
  - (a) provision of roads and public irrigation channels,
  - (b) provision of land for house sites for scheduled castes and other weaker sections,
  - (c) provision of sector roads, inter village roads and link roads,
  - (d) provision of land for community purposes namely – schools, playgrounds, panchayat ghar, hospital, cremation ground, graveyards, threshing floor, manure pits, pasture land, plantation trees, flaying sites etc.
  - (e) solving of common disputes in the village regarding roads/naalis for irrigation for each field through chak roads and chak naalis.

The problem is that powerful persons in the village influence functionaries of the consolidation work and get some of government and community land located near their farms. And once consolidation work is over, they easily encroach upon such community land.

Therefore effort should be made that **Bachat** and Gram Sabha land is not left scattered at many places. The consolidation process should also consolidate government and gram sabha land in one or two large consolidated chaks.

The land which had been carved out as orchard, grazing land or pond/tank in the past, should not be allowed to be transferred for other purposes by new rounds of consolidation – neither through chak carving nor through readjustment of gram sabha land.

- (ii) Whenever chakbandi is declared, illegal felling of trees takes place, land under orchards or pasture or such other uses is sought to be shown as land under cultivation. This happens on a large scale specially on Gaon Sabha and government land. In order to check such changes in land use on the eve of consolidation, revenue officials and consolidation officials should jointly prepare reports and send report to concerned courts for quick action. The power to decide such cases should be assigned to concerned SDM.

Similarly provisions of Consolidation of Holdings Act and Manual regarding provision of inter-village link road, bachat land, Gaon Sabha and Government land and other common property resources should be widely made known to people so that its strict implementation is done with peoples participation.

- (iii) After consolidation is over land use for each plot of the villages is well defined. It should be the responsibility of LMC to see that land use is not altered. There should be training of LMC members to make them aware of their roles and responsibilities.
- (iv) Land Management Committee should be treated as Chakbandi Committee during the period of consolidation. Formation of separate committee does not prove helpful as it is at the

mercy of consolidation department and Pradhan only and ceases to exist after consolidation work is over.

- (v) All members of Chakbandi Committee should sign the final land use map prepared after consolidation work is over.
- (vi) The map of the village should be made available to all the members of Land Management Committee, free of cost.
- (vii) Encroachers of government and/or gram sabha land should be severely penalised and eviction proceedings against them should be made more stringent.
- (viii) Land capability maps be prepared for each village. The land use of each type of land could then be planned for effective, efficient, sustainable and profitable use.

The land capability map will indicate about the texture and quality of soil. It will also give information about limitations of the land such as erosion, water logging, degree of alkalinity or salinity etc.

Thus land capability maps would provide necessary inputs for land use planning i.e. suitability of land for agriculture, horticulture, forestry etc. It will also indicate as to what measures would be needed for improving land for its optimum utilisation.

- (ix) The Land Management Committee at the village level be revamped. And there should be fair representation of weaker sections, beneficiaries of land allottees, self help groups and all the hamlets/communities of the village.

The committee should meet once every six months, develop plans for water conservation, drainage channels, regeneration of degraded land, effective use of lands in the category of (a) barren and uncultivable land, (b) pastures, (c) orchards groves and land under trees and (d) fallow land.

- (x) There are already legal provisions under consolidation of Holdings Act and Supreme Court Judgements in regard to protection of land uses. These should be widely circulated among members of Land Management Committee. Proceedings for eviction of encroachers should be launched in right earnest. The provision should be made in law for eviction of unauthorised occupation of Gram Sabha land by summary proceedings.
- (xi) The gaon sabha land or pond or forest land should be given on lease to self help groups or tree growers society or such other collective groups rather than to individuals.

## **PART – B**

### **4.3 Block-wise Analysis of Land Use Pattern and Land Use Plans**

#### **4.3.1 Block – Baragaon**

In Baragaon block the area under forest had been very small, but the trend shows that it remained stagnant around 0.2 per cent to 0.01 per cent from 1975-76 to 1995-96, but thereafter it increased from 0.01 per cent in 1995-96 to 0.11 per cent in 2000-01. It could be increased to around 2 per cent if some part of other fallow land and some part of culturable waste land could be used for social or energy forestry. We propose that around 150 hectares of other fallow land and 180 hectares of culturable waste land could be identified for development of forest in the block. Thus total area under forest could be increased to around 350 hectares by the year 2010. Concept of private micro forest and joint forest will have to be developed to increase area under forest.

There has been some disjuncture in the area under barren and unculturable land. The land in this category showed a trend of increase from 1.29 per cent in 1975-76 to 1.96 per cent in 1990-91. Then it declined to 0.6 per cent in 1995-96. And thereafter again it increased to 2.11 per cent in 2000-01. Barren and uncultivable land could be reduced and a part of it could be utilized to meet increasing need of land for non-agricultural purposes. We propose that around 175 hectares of such land could be utilized for this purpose. This would mean that around 1 per cent of total reporting area which is in the category of uncultivable land will have to be utilized for non-agricultural purposes. This will be possible if we are able to restrict increase of area under land put to non-agricultural uses only by 1 per cent. That is from present 11.13 percent, area under this category does not rise beyond 12.15 per cent by 2010.

The area under culturable waste shows a declining trend during the period 1975-76 to 1995-96. The proportion of culturable waste declined from 5.5 per cent in 1975-76 to 0.43 per cent in 1995-96. Then it again started increasing and rose to 2.46 per cent in 2000-01. We have already discussed that a part of culturable waste could be converted into forest. We furthermore propose that another part of culturable waste could then be converted into pasture land. We fail to understand as to why there should be any culturable waste land. The area which cannot be converted into forest should be converted into pasture and grazing land in the long run. However, for a plan targeting year 2010, we propose that around 200 hectares of such land be utilized for pasture and grazing land. That means the area under pasture land could be increased from present 0.1 per cent to around 1.25 per cent by the year 2010.

The area of land under miscellaneous trees and groves has slightly increased from 2.74 per cent, in 1975-76 to 3.17 per cent in 2000-01 with 1995-96 as an exception period. It could be increased from present 3.17 to 4 per cent by using some part of other fallow land for this purpose. Thus we propose that other fallow land would reduce from its present level of 5.01 per cent to 3.35 per cent by 2010, out of which 1 per cent would be used for developing orchards and groves. We propose to convert other fallow land for purposes other than agriculture as we feel it would be difficult to bring it back for agricultural purposes.

**Table 4.3.1**

**Total Reporting Area (TRA) and Land Use Pattern in Baragaon Block (in percent)**

Years	TRA in Hectare	Forest	Barren & Unculturable land	Land put to non-agr. Uses	Culturable Waste	Pasture land	Current fallow	Other Fallow	Land Under misc. trees & groves	Net Sown Area
1975-76	17,890	0.02	1.29	5.98	5.5	0.01	-	5.24	2.74	79.22
1980-81	17,710	-	1.4	6.37	4.27	0.01	7.68	3.6	2.46	74.22
1985-86	17,723	0.01	1.75	8.06	3.26	0.05	6.21	4.25	2.88	73.54
1990-91	17,458	0.06	1.96	10.29	2.55	0.07	6.07	4.15	3.13	73.4
1995-96	17,458	0.01	0.6	10.88	0.43	0.13	0.72	0.6	0.49	86.42
1999-2K	17,504	0.07	2.11	11.13	2.46	0.1	0.99	5.11	3.2	74.81
2000-01	17,504	0.11	2.11	11.13	2.46	0.1	1.09	5.01	3.17	74.81

The proposed land use plan of the block for year 2010 will have land use pattern as follows:

**Box – 4.3.1  
Proposal of Land Use Plan for Baragaon Block**

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	0.11	2.00	Around 0.86 per cent from other fallow land and around 1.03 per cent from culturable waste
Barren and Unculturable land	2.11	1.10	Shift 1 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	11.13	12.13	Around 1.0 per cent from barren and unculturable land
Culturable waste	2.46	0.28	Around 1.03 per cent to forest and around 1.15 per cent for pasture grazing land
Pasture and grazing land	0.1	1.25	Around 1.15 per cent from culturable waste
Current Fallow	1.09	1.00	-
Other Fallow	5.01	3.32	0.86 per cent to forest and 0.83 for orchard & groves
Land Under Miscellaneous trees and groves	3.17	4.00	0.83 per cent from other fallow
Net Sown Area	74.81	74.90	-
Total reporting area (in Hectares)	17,504.00	17,504.00	-

**4.3.2 Block – Pindara**

In Pindara block the area under forest had been very small, but the trend shows that it remained stagnant around 0.5 per cent to 0.02 per cent from 1975-76 to 1995-96, but thereafter it increased from 0.02 per cent in 1995-96 to 0.12 per cent in 2000-01. It could be increased to around 2 per cent if some part of other fallow land and some part of culturable waste land could be used for social or energy forestry. We propose that around 202 hectares of other fallow land and 225 hectares of culturable waste land could be identified for development of forest in the block. Thus total area under forest could be increased to around 427 hectares by the year 2010. Concept of private micro forest and joint forest will have to be developed to increase area under forest.

In Pindara block, proportion of area under barren and uncultivable land was 1.85 per cent during 1980-81, but thereafter it hovered around 1.36 per cent to 1.42 per cent, except for the year 1995-96. Barren and uncultivable land could be reduced and a part of it could be utilized to meet increasing need of land for non-agricultural purposes. We propose that around 225 hectares of such land could be utilized for this purpose. This would mean that around 1 per cent of total reporting area which is in the category of barren and uncultivable land will have to be utilized for non-agricultural purposes. This will be possible if we are able to restrict increase of area under land put to non-agricultural uses only by 1 per cent. That is from present 11.13 percent, area under this category does not rise beyond 12.15 per cent by 2010.

The proportion of area under culturable waste shows a declining trend. It declined steadily from 4.83 per cent in 1975-76 to 1.27 per cent in 2000-01. In Pindara block, with the year 1995-96 as an exception period. We have already discussed that a part of culturable waste could be converted into forest. We fail to understand as to why there should be any culturable waste land.

The area of land under miscellaneous trees and groves in the block declined from 2.03 per cent in 1975-96 to 0.34 per cent in 1995-96. But thereafter it increased to 2.45 per cent in 2000-01. It could be increased from present 2.45 to 3.75 per cent by using some part of other fallow land for this purpose. Thus we propose that other fallow land would reduce from its present level of 3.7 per cent to 1.5 per cent by 2010, out of which 1.3 per cent would be used for developing orchards and groves. We propose to convert other fallow land for purposes other than agriculture as we feel it would be difficult to bring it back for agricultural purposes.

**Table 4.3.2**  
**Total Reporting Area (TRA) and Land Use Pattern in Pindara Block (in percent)**

Years	TRA in Hectare	Forest	Barren & Unculturable land	Land put to non-agr. Uses	Culturable Waste	Pasture land	Current fallow	Other Fallow	Land Under misc. trees & groves	Net Sown Area
1975-76	22,751	0.05	1.61	6.33	4.83	0.02	-	4.58	2.03	80.55
1980-81	22,077	-	1.85	7.28	3.5	0.02	5.12	2.5	2.01	77.68
1985-86	22,255	0.03	1.36	9.48	2.23	0.05	4.26	3.39	1.43	77.78
1990-91	23,256	0.03	1.36	8.88	1.54	0.02	4.36	3.1	1.18	74.77
1995-96	23,106	0.02	0.47	8.34	0.35	0.03	0.56	0.48	0.34	85.4
1999-2K	22,482	0.1	1.42	10.28	1.27	0.04	0.76	3.79	2.48	79.86
2000-01	22,482	0.12	1.42	10.28	1.27	0.04	0.85	3.7	2.45	79.86

The proposed land use plan of the block for year 2010 will have land use pattern as follows:

**Box – 4.3.2**  
**Proposal of Land Use Plan for Pindara Block**

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	0.12	2.02	Around 0.9 per cent from other fallow land and around 1.0 per cent from culturable waste
Barren and Unculturable land	1.42	0.42	Shift 1.0 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	10.28	11.28	Around 1.0 per cent from barren and unculturable land
Culturable waste	1.27	0.27	Around 1.0 per cent to forest
Pasture and grazing land	0.04	0.04	-
Current Fallow	0.85	0.85	-
Other Fallow	3.7	1.50	0.9 per cent to forest and 1.3 for orchard & groves
Land Under Miscellaneous trees and groves	2.45	3.75	1.3 per cent from other fallow
Net Sown Area	79.86	79.86	-
Total reporting area (in Hectares)	22,482.00	22,482.00	-



### 4.3.3 Block – Cholapur

In Cholapur block the area under forest had been very small, almost nil till 1995-96, but thereafter it increased from to 0.6 per cent in 2000-01. It could be increased to around 2 per cent if some part of other fallow land and some part of culturable waste land could be used for social or energy forestry. We propose that around 75 hectares of other fallow land and 225 hectares of culturable waste land could be identified for development of forest in the block. Thus total area under forest could be increased to around 364 hectares by the year 2010. Concept of private micro forest and joint forest will have to be developed to increase area under forest.

The proportion of area under barren and uncultivable land in Cholapur block shows a trend of continuous increase from 0.7 per cent in 1975-76 to 1.89 per cent in 2000-01, with 1995-96 as an exception period. Barren and uncultivable land could be reduced and a part of it could be utilized to meet increasing need of land for non-agricultural purposes. We propose that around 180 hectares of such land could be utilized for this purpose. This would mean that around 1 per cent of total reporting area which is in the category of barren and uncultivable land will have to be utilized for non-agricultural purposes. This will be possible if we are able to restrict increase of area under land put to non-agricultural uses only by 1 per cent. That is from present 10.22 per cent, area under this category does not rise beyond 11.22 per cent by 2010.

We have already discussed that a part of culturable waste could be converted into forest. We fail to understand as to why there should be any culturable waste land.

The area of land under miscellaneous trees and groves increased from present 1.07 per cent to 2.32 per cent by using some part of other fallow land for this purpose. Thus we propose that other fallow land would reduce from its present level of 3.78 per cent to 2.12 per cent by 2010, out of which 1.25 per cent would be used for developing orchards and groves. We propose to convert other fallow land for purposes other than agriculture as we feel it would be difficult to bring it back for agricultural purposes.

**Table 4.3.3  
Total Reporting Area (TRA) and Land Use Pattern in Cholapur Block (in percent)**

Years	TRA in Hectare	Forest	Barren & Unculturable land	Land put to non-agr. Uses	Culturable Waste	Pasture land	Current fallow	Other Fallow	Land Under misc. trees & groves	Net Sown Area
1975-76	19,310	0.09	0.7	6.57	3.64	0.02	-	4.52	3.15	81.32
1980-81	19,047	-	0.97	7.94	2.58	-	2.39	4.05	2.66	79.4
1985-86	18,261	-	1.14	9.73	2.02	0.02	4.1	2.34	2.27	78.37
1990-91	18,252	0.01	1.72	6.49	1.62	0.03	4.65	3.56	1.68	76.05
1995-96	18,252	-	0.6	7.49	0.37	0.03	0.7	0.59	0.53	89.33
1999-2K	18,187	0.57	1.89	10.22	1.34	0.02	0.94	3.88	1.1	80.04
2000-01	18,187	0.6	1.89	10.22	1.34	0.02	1.04	3.78	1.07	80.04

The proposed land use plan of the block for year 2010 will have land use pattern as follows:

**Box – 4.3.3**  
**Proposal of Land Use Plan for Cholapur Block**

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	0.60	2.00	Around 0.41 per cent from other fallow land and around 1.0 per cent from culturable waste
Barren and Unculturable land	1.89	0.89	Shift 1.0 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	10.22	11.22	Around 1.0 per cent from barren and unculturable land
Culturable waste	1.34	0.34	Around 1.0 per cent to forest
Pasture and grazing land	0.02	0.02	-
Current Fallow	1.04	1.00	-
Other Fallow	3.78	2.12	0.41 per cent to forest and 1.25 for orchard & groves
Land Under Miscellaneous trees and groves	1.07	2.32	1.25 per cent from other fallow
Net Sown Area	80.04	80.08	-
Total reporting area (in Hectares)	18,187.00	18,187.00	-

#### **4.3.4 Block – Chiraigaon**

In Chiraigaon block the area under forest had been very small, but the trend shows that it remained stagnant around 0.2 per cent to 0.03 per cent from 1975-76 to 1995-96, but thereafter it increased from 0.03 per cent in 1995-96 to 0.38 per cent in 2000-01. It could be increased to around 2 per cent if some part of barren and uncultivable land and some part of culturable waste land could be used for social or energy forestry. We propose that around 290 hectares of barren and uncultivable land and hectares of culturable waste land could be identified for development of forest in the block. Thus total area under forest could be increased to around hectares by the year 2010. Concept of private micro forest and joint forest will have to be developed to increase area under forest.

The proportion of area under barren and uncultivable land in Chiraigaon block shows a trend of steady increase from 3.32 per cent in 1995-96 exception period. Barren and uncultivable land could be reduced and a part of it could be converted into forest and some other part could be utilized to meet increasing need of land for non-agricultural purposes. We propose that around hectares of such land could be utilized for this purpose. This would mean that 1.5 per cent could be converted into forest and around 1 per cent of total reporting area which is in the category of uncultivable land will have to be utilized for non-agricultural purposes. This will be possible if we are able to restrict increase of area under land put to non-agricultural uses only by 1 per cent. That is from present 13.22 percent, area under this category does not rise beyond 14.22 per cent by 2010.

We have already discussed that a part of culturable waste could be converted into forest. We furthermore propose that another part of culturable waste could then be converted into pasture land. We fail to understand as to why there should be any culturable waste land. The area which cannot be converted into forest should be converted in pasture and grazing land in the long run. However, for a plan targeting year 2010, we propose that around 95 hectares of such land be utilized for pasture and grazing land. That means the area under pasture land could be increased from present 0.01 per cent to around 1.51 per cent by the year 2010.

The area of land under miscellaneous trees and groves has slightly increased from present 1.17 to 2.0 per cent by using some part of barren and uncultivable land for this purpose. We propose to convert other fallow land for purposes other than agriculture as we feel it would be difficult to bring it back for agricultural purposes.

**Table 4.3.4**  
**Total Reporting Area (TRA) and Land Use Pattern in Chiraigaon Block (in percent)**

Years	TRA in Hectare	Forest	Barren & Unculturable land	Land put to non-agr. Uses	Culturable Waste	Pasture land	Current fallow	Other Fallow	Land Under misc. trees & groves	Net Sown Area
1975-76	18,384	0.02	3.32	5.35	3.35	-	-	3.33	3.22	75.98
1980-81	18,442	-	3.92	11.65	2.74	0.01	0.42	2.8	2.52	75.94
1985-86	19,419	-	5.18	12.65	0.84	0.01	3.12	1.24	1.63	75.33
1990-91	19,405	0.03	5.14	10.29	0.73	0.01	2.94	1.92	1.16	72.41
1995-96	19,405	0.03	0.41	7.71	0.37	0.01	0.71	0.57	0.59	89.38
1999-2K	19,362	0.35	5.37	13.22	0.79	0.01	1.6	1.15	1.2	76.32
2000-01	19,362	0.38	5.37	13.22	0.79	0.01	1.69	1.06	1.17	76.32

The proposed land use plan of the block for year 2010 will have land use pattern as follows:

**Box – 4.3.4**  
**Proposal of Land Use Plan for Chiraigaon Block**

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	0.38	2.00	Around 1.5 per cent from barren and uncultivable land and around 0.12 per cent from culturable waste
Barren and Unculturable land	5.37	2.04	Shift 1.5 per cent for forest and 1.0 per cent such land for non-agricultural purposes and 0.83 per cent for trees and groves
Land put to non-agricultural uses	13.22	14.22	Around 1.0 per cent from barren and unculturable land
Culturable waste	0.79	0.17	Around 0.12 per cent to forest and around 0.5 per cent for pasture grazing land
Pasture and grazing land	0.01	1.69	-
Current Fallow	1.69	1.06	-
Other Fallow	1.06	1.00	-
Land Under Miscellaneous trees and groves	1.17	2.00	0.83 per cent from barren and uncultivable land
Net Sown Area	76.32	76.32	-
Total reporting area (in Hectares)	19,362.00	19,362.00	-

#### **4.3.5 Block – Harahua**

In Harhua block the area under forest had been very small, but the trend shows that it remained almost nil from 1980-81 to 1990-91, but thereafter it increased from 0.39 per cent in 1995-96 to 0.58 per cent in 2000-01. It could be increased to around 2 per cent if some part of other fallow land and some part of culturable waste land could be used for social or energy forestry. We propose that around 58 hectares of other fallow land and 137 hectares of culturable waste land could be identified for development of forest in the block. Thus total area under forest could be increased to around 275 hectares by the year 2010. Concept of private micro forest and joint forest will have to be developed to increase area under forest.

The area under barren and uncultivable land as percentage of total reporting area first increased from 0.64 per cent in 1975-76 to 2.15 in 1985-86. But thereafter it showed a declining trend till 1995-96. After 1995-96, it has hovered around 0.75 per cent. Barren and uncultivable land could be reduced and only a very small part of it could be utilized to meet increasing need of land for non-agricultural purposes. We propose that around 75 hectares of such land could be utilized for this purpose. This would mean that around 0.55 per cent of total reporting area which is in the category of uncultivable land will have to be utilized for non-agricultural purposes. This will be possible if we are able to restrict increase of area under land put to non-agricultural uses only by 0.55 per cent. That is from present 11.45 percent, area under this category does not rise beyond 12.00 per cent by 2010.

The proportion of area under culturable waste shows a mixed trend in Harahua block. It decreased from 2.1 per cent to 1.47 per cent in 1980-81, then it increased to 1.72 per cent in 1985-86. But thereafter it shows a trend of decrease and has come down to 1.17 per cent in 2000-01. It was exceptionally low during 1995-96. We have already discussed that a part of culturable waste could be converted into forest. We have suggested to bring down area under this category at the minimum. We fail to understand as to why there should be any culturable waste land.

The area of land under miscellaneous trees and groves in the block declined from 2.67 per cent in 1975-76 to 0.42 per cent in 1995-96. But then it increased to 1.56 per cent in 2000-01. It could be increased from present level of 1.56 to 1.96 per cent by using some part of other fallow land for this purpose. Thus we propose that other fallow land would reduce from its present level of 1.81 per cent to 1.0 per cent by 2010, out of which 4 per cent would be used for developing orchards and groves. We propose to convert other fallow land for purposes other than agriculture as we feel it would be difficult to bring it back for agricultural purposes.

**Table 4.3.5**  
**Total Reporting Area (TRA) and Land Use Pattern in Harahua Block (in percent)**

Years	TRA in Hectare	Forest	Barren & Unculturable land	Land put to non-agr. Uses	Culturable Waste	Pasture land	Current fallow	Other Fallow	Land Under misc. trees & groves	Net Sown Area
1975-76	17,703	0.05	0.64	5.46	2.1	0.01	-	3.51	2.67	62.97
1980-81	13,772	-	1.13	5.9	1.47	0.01	3.77	2.45	2.38	82.89
1985-86	13,792	-	2.15	8.86	1.72	0.01	4.34	3.15	1.67	78.11
1990-91	14,792	-	1.4	10.61	1.27	-	3.73	2.1	1.31	72.13
1995-96	14,642	0.39	0.56	11.45	0.42	0.01	0.86	0.7	0.42	78.86
1999-2K	13,716	0.54	0.75	11.45	1.17	0.01	1.39	1.95	1.6	81.13
2000-01	13,716	0.58	0.75	11.45	1.17	0.01	1.52	1.81	1.56	81.13

The proposed land use plan of the block for year 2010 will have land use pattern as follows:

**Box – 4.3.5**  
**Proposal of Land Use Plan for Harahua Block**

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	0.58	2.00	Around 0.42 per cent from other fallow land and around 1.0 per cent from culturable waste
Barren and Unculturable land	0.75	0.20	Shift 0.55 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	11.45	12.00	Around 0.55 per cent from barren and unculturable land
Culturable waste	1.17	0.17	Around 1.0 per cent to forest
Pasture and grazing land	0.01	0.01	-
Current Fallow	1.52	1.52	-
Other Fallow	1.81	1.00	0.42 per cent to forest and 0.40 for orchard & groves
Land Under Miscellaneous trees and groves	1.56	1.96	0.40 per cent from other fallow
Net Sown Area	81.13	81.13	-
Total reporting area (in Hectares)	13,716.00	13,716.00	-

#### **4.3.6 Block – Sevapuri**

In Sevapuri block the area under forest had been very small during 1975-76, but the trend shows that while it fluctuated between nil and 0.29 per cent from 1975-76 to 1995-96, but thereafter it increased from 0.29 per cent in 1995-96 to 0.77 per cent in 2000-01. It could be increased to around 2.5 per cent if some part of other fallow land and some part of culturable waste land could be used for social or energy forestry. We propose that 0.7 per cent of reporting area under other fallow land and 1.03 per cent of reporting area under culturable waste land could be identified for development of forest in the block. Thus total area under forest could be increased to around 425 hectares by the year 2010. Concept of private micro forest and joint forest will have to be developed to increase area under forest.

The proportion of area under barren and uncultivable land shows an increasing trend. It increased from 0.41 per cent in 1975-76 to 1.68 per cent in 2000-01, with 1995-96 as an exception period. Barren and uncultivable land could be reduced and only a very small part of it could be utilized to meet increasing need of land for non-agricultural purposes. We propose that around 170 hectares of such land could be utilized for this purpose. This would mean that around 1.0 per cent of total reporting area which is in the category of barren and uncultivable land will have to be utilized for non-agricultural purposes. This will be possible if we are able to restrict increase of area under land put to non-agricultural uses only by 1.0 per cent. That is from present 8.84 percent, area under this category does not rise beyond 9.84 per cent by 2010.

The proportion of area under culturable waste shows a mixed trend in Sevapuri block. It increased from 1.36 per cent in 1975-76 to 2.77 per cent in 1985-86. But then it declined to 2.18 per cent in 1990-91. If we ignore figures for 1995-96, which seems to be exceptional period, then we find that proportion of culturable waste became stagnant at 2.2 per cent. We have already discussed that a part of culturable waste could be converted into forest. We have suggested to bring down area under this category to the minimum possible level. We fail to understand as to why there should be any culturable waste land. The area which cannot be converted into forest should be converted into pasture and grazing land in the long run.

The area of land under miscellaneous trees and groves in the block had a fluctuating trend during 1975-76 to 1985-86. In this period proportion of area under trees and groves increased from 3.59 per cent to 4.37 per cent but again declined to 4.06 per cent in 1985-86. But thereafter it remained stagnant around 3.1 per cent barring the period 1995-96, which was an exceptional year. It could be increased from present 3.11 to 4.0 per cent by using some part of other fallow land for this purpose. Thus we propose that other fallow land would reduce from its present level of 3.24 per cent to 1.64 per cent by 2010, out of which 0.90 per cent would be used for developing orchards and groves. We propose to convert other fallow land for purposes other than agriculture as we feel it would be difficult to bring it back for agricultural purposes.

**Table 4.3.6**  
**Total Reporting Area (TRA) and Land Use Pattern in Sevapuri Block (in percent)**

Years	TRA in Hectare	Forest	Barren & Unculturable land	Land put to non-agr. Uses	Culturable Waste	Pasture land	Current fallow	Other Fallow	Land Under misc. trees & groves	Net Sown Area
1975-76	17,359	0.12	0.41	7.11	1.36	0.09	-	5.14	3.59	82.18
1980-81	16,539	-	1.22	6.72	2.13	0.09	2.8	2.84	4.37	79.83
1985-86	16,698	0.23	1.25	6.92	2.77	0.09	3.3	2.4	4.06	78.99
1990-91	17,698	-	1.38	8.37	2.18	0.02	3.59	2.1	3.1	74.45
1995-96	17,598	0.29	0.51	10.35	0.44	0.04	0.6	0.63	0.52	81.34
1999-2K	16,962	0.73	1.68	8.84	2.2	0.04	2.43	2.77	3.11	78.19
2000-01	16,968	0.77	1.68	8.84	2.2	0.04	1.96	3.24	3.11	78.16

The proposed land use plan of the block for year 2010 will have land use pattern as follows:

**Box – 4.3.6**  
**Proposal of Land Use Plan for Sevapuri Block**

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	0.77	2.50	Around 0.7 per cent from other fallow land and around 1.03 per cent from culturable waste
Barren and Unculturable land	1.68	0.68	Shift 1.0 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	8.84	9.84	Around 1.0 per cent from barren and unculturable land
Culturable waste	2.20	0.37	Around 1.03 per cent to forest and around 0.8 per cent for pasture grazing land
Pasture and grazing land	0.04	0.84	Around 0.8 per cent from culturable waste
Current Fallow	1.96	1.96	-
Other Fallow	3.24	1.64	0.7 per cent to forest and 0.9 per cent for orchard & groves
Land Under Miscellaneous trees and groves	3.11	4.00	0.9 per cent from other fallow
Net Sown Area	78.16	78.16	-
Total reporting area (in Hectares)	16,968.00	16,968.00	-

**4.3.7 Block – Araziline**



In Araziline block the area under forest had been very small, but the trend shows that it remained stagnant around 0.01 per cent to 0.07 per cent from 1975-76 to 1985-86, and was nil during 1990-91 and 1995-96 it rose to 0.29 per cent in 2000-01. It could be increased to around 2 per cent if some part of other fallow land and some part of culturable waste land could be used for social or energy forestry. We propose that around 150 hectares of other fallow land and 180 hectares of culturable waste land could be identified for development of forest in the block. Thus total area under forest could be increased to around 350 hectares by the year 2010. Concept of private micro forest and joint forest will have to be developed to increase area under forest.

The proportion of area under barren and uncultivable land shows a fluctuating trend between 1975-76 to 1995-96, but it became stable around 1.07 per cent by the year 2000-01. Barren and uncultivable land could be reduced and only a very small part of it could be utilized to meet increasing need of land for non-agricultural purposes. We propose that around hectares of such land could be utilized for this purpose. This would mean that around 1 per cent of total reporting area which is in the category of uncultivable land will have to be utilized for non-agricultural purposes. This will be possible if we are able to restrict increase of area under land put to non-agricultural uses only by 1 per cent. That is from present 11.13 percent, area under this category does not rise beyond 12.15 per cent by 2010.

The proportion of area under culturable waste has gradually declined from 2.6 per cent in 1975-76 to 1.3 per cent in 2000-01 with mild fluctuations. The year 1995-96, shows an exceptional phase. We have already discussed that a part of culturable waste could be converted into forest. We have suggested to bring down area under this category to the minimum possible level. We fail to understand as to why there should be any culturable waste land. The area which cannot be converted into forest should be converted into pasture and grazing land in the long run.

The area of land under miscellaneous trees and groves in the block has steadily declined from 3.85 per cent in 1975-76 to 1.89 per cent in 2000-01 berring the period 1995-96, which was an exceptional period. There is need to arrest this trend. It seems that orchards and groves in the block have been converted into agricultural land. That is why net sown area shows a trend of consistent increase during the last 25 years. This needs to be discouraged. This could be done by encouraging orchard development in some agricultural land. We propose to convert other fallow land for purposes other than agriculture as we feel it would be difficult to bring it back for agricultural purposes.

**Table 4.3.7**  
**Total Reporting Area (TRA) and Land Use Pattern in Araziline Block (in percent)**

Years	TRA in Hectare	Forest	Barren & Unculturable land	Land put to non-agr. Uses	Culturable Waste	Pasture land	Current fallow	Other Fallow	Land Under misc. trees & groves	Net Sown Area
1975-76	21,449	0.01	0.89	6.27	2.6	-	-	7.51	3.85	78.88
1980-81	21,520	-	0.58	6.35	2.11	-	5.82	1.42	2.93	80.79
1985-86	21,502	0.07	0.79	7.32	2.21	-	5.65	1.99	2.66	79.32
1990-91	21,402	-	1.24	9.52	1.27	-	5.22	2.72	2.35	80.27
1995-96	21,402	-	0.41	7.13	0.41	0.01	0.52	0.54	0.39	91.31
1999-2K	21,555	0.26	1.07	9.32	1.3	0	2.08	1.41	1.93	82.63
2000-01	21,555	0.29	1.07	9.32	1.3	0	1.71	1.79	1.89	82.63

The proposed land use plan of the block for year 2010 will have land use pattern as follows:

**Box – 4.3.7**  
**Proposal of Land Use Plan for Araziline Block**

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	0.29	2.00	Around 0.71 per cent from other fallow land and around 1.0 per cent from culturable waste
Barren and Unculturable land	1.07	0.39	Shift 0.68 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	9.32	10.0	Around 0.68 per cent from barren and unculturable land
Culturable waste	1.30	0.30	Around 1.0 per cent to forest
Pasture and grazing land	-	-	-
Current Fallow	1.71	1.71	-
Other Fallow	1.79	1.00	0.71 per cent to forest
Land Under Miscellaneous trees and groves	1.89	1.89	-
Net Sown Area	82.63	82.63	-
Total reporting area (in Hectares)	21,555.00	21,555.00	-

#### **4.3.8 Block – Kashi Vidya Peeth**

Kashi Vidya Peeth is a highly urbanized block. The area under forest had been nil till 1995-96. But the efforts of social forestry has yielded some result and it was reported as 1.3 per cent in 2000-01. It could still be increased to around 2 per cent if some part of culturable waste land could be used for social or energy forestry. We propose that around 110 hectares of culturable waste land could be identified for development of forest in the block. Thus total area under forest could be increased to around 320 hectares by the year 2010. Concept of private micro forest and joint forest will have to be developed to increase area under forest.

Barren and uncultivable land could be reduced and a part of it could be utilized to meet increasing need of land for non-agricultural purposes. We propose that around 160 hectares of such land could be utilized for this purpose. This would mean that around 1 per cent of total reporting area which is in the category of uncultivable land will have to be utilized for non-agricultural purposes. This will be possible if we are able to restrict increase of area under land put to non-agricultural uses only by 1 per cent. That is from present 17.42 percent, area under this category does not rise beyond 18.42 per cent by 2010.

The proportion of area under culturable waste has shown a trend of continuous decline after 1985-86. It declined from 2.83 per cent in 1985-86 to 1.93 per cent in 2000-01, with 1995-96 as an exception period. We have already discussed that a part of culturable waste could be converted into forest. We furthermore propose that another part of culturable waste could then be converted into pasture land. We fail to understand as to why there should be any culturable waste land. The area which cannot be converted into forest should be converted into pasture and grazing land in the long run. However, for a plan targeting year 2010, we propose that around 160 hectares of such land be utilized for pasture and grazing land. That means the area under pasture land could be increased from present 0.01 per cent to around 1.01 per cent by the year 2010.

The area of land under miscellaneous trees and groves has slightly increased from present 1.53 around 3 per cent by using some part of other fallow land for this purpose. Thus we propose that other fallow land would reduce from its present level of 3.66 per cent to 3.35 per cent by 2010, out of which 1 per cent would be used for developing orchards and groves. We propose to convert other fallow land for purposes other than agriculture as we feel it would be difficult to bring it back for agricultural purposes.

**Table 4.3.8**  
**Total Reporting Area (TRA) and Land Use Pattern in Kashi Vidya Peeth Block**  
**(in percent)**

Years	TRA in Hectare	Forest	Barren & Unculturable land	Land put to non-agr. Uses	Culturable Waste	Pasture land	Current fallow	Other Fallow	Land Under misc. trees & groves	Net Sown Area
1975-76	15,085	0.21	2.54	13.11	1.79	-	-	6.72	4.67	68.58
1980-81	15,177	-	2.42	15.31	2.35	-	4.43	2.37	2.51	70.63
1985-86	15,222	-	3.57	15.16	2.83	-	6.06	1.73	2.31	68.34
1990-91	15,122	-	5.88	16.79	2.13	-	5.11	4.87	2.86	64.48
1995-96	15,122	-	0.52	10.63	0.48	0.01	0.72	0.68	1.36	87.65
1999-2K	15,896	1.53	3.36	18.14	2.09	0.01	1.45	4.41	1.69	67.32
2000-01	15,896	1.3	2.72	17.42	1.93	0.01	1.46	3.66	1.53	69.98

The proposed land use plan of the block for year 2010 will have land use pattern as follows:

**Box – 4.3.8**  
**Proposal of Land Use Plan for Kashi Vidya Peeth Block**

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	1.30	2.00	Around 0.7 per cent from culturable waste
Barren and Unculturable land	2.72	1.72	Shift 1 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	17.42	18.42	Around 1.0 per cent from barren and unculturable land
Culturable waste	1.93	0.23	Around 0.7 per cent to forest and around 1.0 per cent for pasture grazing land
Pasture and grazing land	0.01	1.01	Around 1.0 per cent from culturable waste land
Current Fallow	1.46	1.46	-
Other Fallow	3.66	2.99	1.46 for orchard and groves
Land Under Miscellaneous trees and groves	1.53	2.50	1.46 per cent from other fallow
Net Sown Area	69.98	69.98	-
Total reporting area (in Hectares)	15,896.00	15,896.00	-

## **Chapter - 5**

### **Village Level Plans**

**(Based on Village Level Survey)**

**Village Study I – Gopalpur (Block – Kashi Vidya Peeth)**

**Village Study II – Tarapur (Block – Kashi Vidya Peeth)**

**Village Study III – Aswalpur (Block – Pindara)**

**Village Study IV – Boonchi (Block – Pindara)**

# Village Study – I

## Village – Gopalpur (Block – Kashi Vidya Peeth)

### (A) Village Profile

Village Gopalpur is located in the Kashi Vidyapeeth block of district Varanasi. It is situated at a distance of 13 kilometers from district headquarter and 10 kilometers from block headquarter. Most of the villages of this block are at the urban fringe. In fact 45 gram sabhas out of a total of 85 gram sabhas are slated to be urbanized. They have been included in the master plan of Varanasi town. The value of land of other villages of the block have increased manifold. Even though transfer of agricultural land for non-agricultural purposes is prohibited, a process of constructing houses and selling land for shop/house construction on both sides of road is going on unabated.

The village Gopalpur is a typical village with very small land holdings and most of the landowners were found to be engaged in two occupations. One is vegetable growing and the other is sari-industry. Farmers, most of whom belong to Maurya caste, prefer vegetable growing instead of cereals, because it is much more remunerative and they had a good market for it in Varanasi city. Saree weaving was the other major vocation. Some people were also engaged in carpet weaving work.

#### 5.1.1 Land Use Pattern

Village Gopalpur is relatively a small village with only 83.77 hectares of total reporting area. In village Gopalpur land use pattern shows that it continues to be predominantly agricultural as 81 per cent of total reporting area was under cultivation. Another important feature was that the share of culturable waste was as high as 6.27 per cent (**See table 5.1.1**).

**Table – 5.1.1**

*Land Use Pattern in the Gopalpur Village of the Varanasi District*

Land Use Categories	In hectare	In percent
Total reporting area	83.77	100.0
Water bodies	2.092	2.49
Habitation	5.99	7.15
Other uses	2.435	2.90
Barren	-	-
Banjar	-	-
Culturable waste	5.26	6.27
Orchards	-	-
Other trees and plantations	-	-
Current fallow	-	-
Fallow other than current fallow	-	-
Net sown area	67.99	81.16
(a) Irrigated	47.35	69.64
(b) Un-irrigated	20.64	30.36
Area sown more than once	45.333	
(a) Irrigated	41.809	
(b) Un-irrigated	3.524	

**Source:** Revenue department.

### 5.1.2 Demographic Profile

The average family size was 6.4 in the village. The population in the working age group i.e. in the age group (14-60) years comprised less than 50 per cent of total population. That is more than 50 per cent persons constituted dependents in the family. The village also shows adverse sex ratio. This is evident from the fact that the number of female population per thousand male population was around only 871.79. It would be interesting to note that sex ratio in the age group below five year was 1023.81 while the sex ratio in the age group 5 to 14 was 847.06. We could infer from it that mortality of female child was higher than the male child in the age group 5 to 14 years (See table 5.1.2.1).

The literacy rate was 74.41 per cent. It could also be seen from table 5.1.2.2 that number of illiterates was much higher among females than among males. On the other hand in each category of education group above high school the number of males was much higher than females.

**Table – 5.1.2.1  
Caste and Gender-wise Distribution of Population in the Village Gopalpur**

Particulars	Gender	Kumhar	Maurya	Brahmin	Total
Total population	Male	7	239	27	273
	Female	5	214	19	238
	Total	12	453	46	511
Below 5 year population	Male	-	38	4	42
	Female	-	41	2	43
	Total	-	79	6	85
5 to 14 year population	Male	3	60	9	72
	Female	1	55	7	63
	Total	4	115	16	135
14 to 60 year population	Male	4	129	10	143
	Female	4	115	7	126
	Total	8	244	17	269
Above 60 year population	Male	-	7	3	10
	Female	-	7	3	10
	Total	-	14	6	20
Family size		12.0	6.4	6.6	6.4

**Table – 5.1.2.2  
Caste and Gender-wise Distribution of Education in the Village Gopalpur**

Particulars	Gender	Kumhar	Maurya	Brahmin	Total	Percentage
Graduation and above	Male	1	8	-	9	4.39
	Female	1	3	-	4	2.30
	Total	2	11	-	13	3.43
Intermediate and high school	Male	2	23	4	29	14.15
	Female	-	11	3	14	8.05
	Total	2	34	7	43	11.35
Below high school	Male	1	131	4	136	66.34
	Female	-	86	4	90	51.72
	Total	1	217	8	226	59.63
Illiterate	Male	-	26	5	31	15.12
	Female	-	64	2	66	37.93
	Total	-	90	7	97	25.59

### 5.1.3 Land Ownership

In Gopalpur, the average size of landholding per family was 0.93 acres and per adult person only 0.25 acres (**See table 5.1.3.1**). It is obvious that the variation in the size of holdings per family was larger than the variations in the size of landholdings per adult persons. The low size of land holdings per adult person also indicates that the land available for cultivation was not enough to engage all the adults in agriculture for full time work. The pressure of land has therefore forced many others to search for jobs outside agriculture. The fact that per adult person land was around 0.5 acres in even the landholding group (5-10) acres, shows that in future, population pressure on land would be tremendous in all size groups. The village is thus moving towards a situation in which it will be dominated by landless and near landless households who already constitute around 50 per cent of total households in the village. Village Gopalpur is a typical village from the point of view of distribution of caste in the village population. Mauryas (an OBC category caste) was the predominant caste in the village as 71 out of 79 i.e. around 90 per cent households belonged to this caste (**See table 5.1.3.2**). And therefore the caste wise land distribution in the village was similar as land distribution among the Maurya caste.

**Table – 5.1.3.1  
Distribution of Per Family/Per Adult Size of Landholdings in Different Size Groups in the Village Gopalpur**

Landholding size	Total households	Total adult pop. (>14 year)	Total land	Average landholding (Per adult person)	Average landholding (Per family)
Land-less	17	54	-	-	-
Below 0.63 Acre	22	76	6	0.07	0.27
0.63 to 1.0 Acre	11	38	7.3	0.19	0.66
1.0 to 2.5 Acre	19	60	28	0.46	1.47
2.5 to 5.0 Acre	9	51	27.6	0.54	3.06
5.0 to 10.0 Acre	1	10	5.3	0.53	5.3
Total	79	289	74.2	0.25	0.93

**Table – 5.1.3.2  
Caste-wise Distribution of Landholdings in Different Size Groups in the Village Gopalpur**

Landholding size	Kumhar	Maurya	Brahmin	Total HHs.	Percentage
Land-less	1	16	-	17	21.52
Below 0.63 Acre	-	17	5	22	27.85
0.63 to 1.0 Acre	-	11	-	11	13.92
1.0 to 2.5 Acre	-	19	-	19	24.60
2.5 to 5.0 Acre	-	7	2	9	11.39
5.0 to 10.0 Acre	-	1	-	1	1.27
Total	1	71	7	79	100.0



### 5.1.4

### Occupational Structure

The occupation-wise distribution of households showed that the main occupation of 24 out of 79 households was cultivation, while that of 40 households i.e. around 50 per cent households it was other work (which mainly constituted Saree and Carpet weaving).

The occupation of many households have also changed as a result of increasing pressure on land and non-availability of work in the village. The change in main occupation has taken place mainly among cultivators. Out of 44 households whose main occupation was cultivation in the past, now only 24 i.e. 55 per cent are continuing with it 2 (i.e. 4.5 per cent) have turned into wage worker, 6 (i.e. 14 per cent) are engaged in service and 12 (i.e. 27 per cent) are engaged in other work. Interestingly among those 20 households who have shifted to other occupations, 18 still continue to be engaged in cultivation as their supplementary occupation. Similarly other work was supplementary occupation of many cultivators (See table 5.1.4.1).

There were 222 workers in the village out of which 125 were males and 97 were females. If we take (14-60) years age group as working age group, then we find that participation rate among males and females was 87.41 per cent and 76.98 per cent respectively. The participation rate in the village was 82.53 per cent. Occupation wise distribution of workers in the village showed that out of 222 workers 77 i.e. 34.7 per cent were cultivators 14 i.e. 6.3 per cent were wage workers, 12 i.e. 5.4 per cent were in service and 119 i.e. 53.6 per cent were engaged in other work. Gender wise distribution of occupation of workers showed that proportion of female workers was higher than male workers among cultivators and wage workers. But the proportion of males and females was almost similar in wage work and other work category. Males predominated in the category of service class (See table 5.1.4.2).

Table – 5.1.4.1

*Present and Past Occupations of Households in the Village Gopalpur*

Past occupation		Present main occupation				Supplementary occupation		
Occupation	Total HHS.	Cultiva tor	Wage	Servic e	Other works	Cultivator	Shop	Other work
Cultivator	44	24	2	6	12	18	4	12
Wage	4	-	4	-	-	-	-	4
Mining labour	3	-	-	3	-	3	-	-
Other work	28	-	-	-	28	16	5	-
Total	79	24	6	9	40	37	9	16

Table – 5.1.4.2

**Caste and Gender-wise Distribution of Occupation of Workers in the Village Gopalpur**

Particulars	Gender	Kumhar	Maurya	Brahmin	Total	%age
Cultivator	Male	-	36	1	37	29.60
	Female	-	40	-	40	41.24
	Total	-	76	1	77	34.68
Wage	Male	-	8	-	8	6.40

	Female	-	6	-	6	6.19
	Total	-	14	-	14	6.31
Service	Male	3	6	2	11	8.80
	Female	1	-	-	1	1.03
	Total	4	6	2	12	5.41
Others	Male	-	64	5	69	55.20
	Female	-	50	-	50	51.55
	Total	-	114	5	119	53.60

### 5.1.5 Livestock

The animal population was not very large in the village (**See table 5.1.5**). This was so because landless and near landless households owned less animals than those who owned more than 1 acre of land. It could be seen from the table that cows and buffaloes were the main animals in the village. If we work out the average number of cattles (that is cows and buffaloes taken together) in different landholding groups then we find that it was as follows: landless - 0.18 per households, below 0.63 acre – 0.5 per households, 0.63-1.0 acre 1 per households, 1 – 2.5 acre 0.74 per households, 2.5 – 5 acre 0.44 per households and 5 – 10 acres 1 per households. Average cattle owned was thus found to be 0.56 per households in the village.

**Table – 5.1.5**  
**Distribution of Animal in Different Categories of Landholding Size Groups Households in the Village Gopalpur**

Landholding size	Total HHs.	Cow	Buffalo	Calf	Other	Total
Land-less	17	3	-	2	3	8
Below 0.63 Acre	22	7	4	14	6	31
0.63 to 1.0 Acre	11	3	8	15	5	31
1.0 to 2.5 Acre	19	4	10	16	12	42
2.5 to 5.0 Acre	9	2	2	7	2	13
5.0 to 10.0 Acre	1	-	1	2	4	7
Total	79	19	25	56	32	132

### 5.1.6 Housing Condition

There were 103 built houses owned by 79 households i.e. about 24 households owned more than one house. These are generally those households who own a pucca house along with a kutcha /semi pucca house. There is a tendency to shift to a pucca house whenever possible and then kutcha or semi pucca house is put to other uses or as storage. Out of 103 houses in the village 32 i.e. 31 per cent were kutcha houses, 66 i.e. 64 per cent were pucca houses, and 5 i.e. 5 per cent were semi pucca houses (**See table 5.1.6**).

**Table – 5.1.6**  
**Caste-wise Distribution of Housing Condition in the Village Gopalpur**

Housing condition	Kumhar	Maurya	Brahmin	Total
Kutcha	1	26	5	32
Pucca	1	63	2	66
Semi Pucca	-	3	2	5
Total Number of Houses	2	92	9	103
Total Number of Households	1	71	7	79

## (B) Responses of Selected Households in Village Gopalpur

Twenty households in the village Gopalpur were selected to elicit information about land use behaviour at household level.

### 5.1.7 Change in Size of Land Holding

Among the selected households 14 (i.e. 70.0 per cent) belonged to Maurya caste. The distribution of households on the basis of landholdings showed that 9 (i.e. 45 per cent) owned less than 1 acre of land, 5 (i.e. 25 per cent) owned between 1 to 2.5 acres of land. Thus 70 per cent farmers were marginal farmer and 25 per cent farmers were small farmers (See table 5.2.7.1).

In Gopalpur, out of 20 households 14 reported that the size of landholdings changed during the last 20 years.

The reason of changes in the total land owned during the last 20 years in selected households showed that in 8 households (i.e. 40 per cent), division of family was the major cause, while in case of 4 (i.e. 20 per cent) households changes took place due to consolidation of holdings. Three households (i.e. 15 per cent) sold land while only 1 (i.e. 5 per cent) reportedly purchased land (See table 5.1.7.2).

**Table – 5.1.7.1  
Caste and Landholding wise Distribution of Selected Households in Villages Gopalpur**

Caste	Below 0.63 Acre	0.63 to 1.0 Acre	1.0 to 2.5 Acre	2.5 to 5.0 Acre	5.0 to 10.0 Acre	Above 10 Acre	Total
Patel	-	-	-	1	1	-	2
Kushwaha/Maurya	2	5	4	3	-	-	14
Brahmin	-	2	1	1	-	-	4
Total	2	7	5	5	1	-	20
Percentage	10.0	3.5	25.0	25.0	5.0	-	100.0

*Table – 5.1.7.2*

**Reason of Changes in Total Land Owned During the Last 20 years in Selected Households**

Reason	Number	Percent
Division of family	8	40.0
Acquisition by govt. department	1	5.0
Purchased	1	5.0
Due to consolidation of holdings	4	20.0
Sold	3	15.0
Not applicable	6	30.0
Total Respondents	20	100.0

In Gopalpur village, 3 (i.e. 15 per cent) households reported that their landholding increased during the last 20 years. The average change per reporting household was found to be 0.42 acres. That shows the purchase of land was at a very small scale (**See table 5.1.7.3**).

The number of households who reported decrease in their landholdings was 11 (i.e. 55 per cent) of total sampled households, and the average change per reporting households was 3.26 acres (**See table 5.1.7.4**).

In Gopalpur land of only one of the selected households was acquired. The land was acquired by PWD for construction of road. It was agricultural land, and the size of land acquired was 0.03 acres. The farmer had received no compensation for land till the time of survey (**See table 5.1.7.5**).

*Table – 5.1.7.3*

*Number of Households Whose Landholding Increased*

Number of HHs.	Land owned at present (in acre)	Land owned 20 years ago (in acre)	Change during 20 years (in acre)	Average change per reporting HHs. (in acre)
3	8.19	6.93	1.26	0.42

**Table – 5.1.7.4  
Number of Households Whose Landholding Decrease**

Number of HHs.	Land owned at present (in acre)	Land owned 20 years ago (in acre)	Change during 20 years (in acre)	Average change per reporting HHs. (in acre)
11	14.31	50.16	35.85	3.26

*Table – 5.1.7.5*

**Number of Households Whose Land was Acquired**

Number of HHs.	Land owned at present (in acre)	Land acquired (in acre)	Types of land	Acquired by the Dept.	Purpose	Compensation
1	2.19	0.03	Ag. Land	PWD	Road	-

### 5.1.8 Conversion of Agricultural Land for Non-Agricultural Purposes

In Gopalpur 8 out of 20 respondents (i.e. 40 per cent) reported that they had converted some of their agricultural land for non-agricultural purposes. Six of them reported that it was due to division in family and consequent need of more land for non-agricultural purposes. Only three households suggested that the conversion of agricultural land for non-agricultural purposes was done to establish industry and one household suggested that conversion of agricultural land for non-agricultural purposes took place due to development of village **(See table 5.1.8.1)**.

It was also reported by respondents that reasons of conversion of agricultural land for non-agricultural purposes in the village was –

- (i) Division of family and consequent need of land for construction of houses;
- (ii) Acquisition of land for road **(See table 5.1.8.2)**.

The respondents were also asked whether they had discontinued cultivation of any part of agricultural land owned by them. In village Gopalpur, only one respondent replied in affirmative, and the reason for it was that, he was engaged in other occupations **(See table 5.1.8.3)**.

**Table 5.1.8.1**  
**Reason of Conversion of Agricultural land for Non-agricultural Uses of Owned Land by Selected Households**

Reason	Number	Percent
Division of family for construction of houses	6	30.0
Development of Village	1	5.0
Increase in Industrial activity	3	15.0
Not applicable	12	60.0
Total Respondents	20	100.0

**Table – 5.1.8.2**  
**Reasons of Conversion of Agricultural Land for Non-agricultural Purposes in the Village (As Suggested by Respondents)**

Reason	Number	Percent
Division of family for construction of houses	6	30.0
Acquisition for Road/ Railway/Canal	10	50.0
Increase in industry	4	20.0
No response	4	20.0
Total Respondents	20	100.0

**Table 5.1.8.3**  
**Distribution of Respondents on the Basis of Responses to Query "Reasons for not cultivating the agriculture land"**

Reasons	Number	Percent
Engaged in other occupations	1	5.0
Total Respondents	20	100.0

## 5.1.9 Land Reclamation

All villages have some land which is barren and uncultivable. We wanted to know villagers perception about the possible uses of barren land. Only 4 out of 20 respondents replied to our query that barren land could be put to which uses. The suggestions were: Barren land could be used for (i) construction of houses; (ii) construction of new ponds and tanks for fisheries (iii) to develop small industries/commercial place and (iv) for plantation (**See table 5.1.9.1**).

Only 7 out of 20 respondents were aware about the government programmes to reclaim usar land (**See table 5.1.9.2**).

Only two farmers could say as to which department undertook the work of reclamation of usar land (**See table 5.1.9.3**).

And only one farmer has benefited from any such scheme (**See table 5.1.9.4**).

Only three farmers could give reasons for not availing the facilities of schemes for land reclamation, as shown in the table (**See table 5.1.9.5**).

**Table – 5.1.9.1**

*Distribution of Responses to the query "Barren land could be put to which uses"*

Reason	Number
Construction of House	1
Construction of New Ponds/ Fisheries	1
Develop Small Industry/ Commercial Place	1
Plantation	1
Total Respondents	20

**Table – 5.1.9.2**  
**Distribution of Responses to the question**  
**"Are you aware of the Government**  
**Programmes to recalM Usar Land"**

Responses	Number
Yes	7
No	7
Don't know	6
Total Respondents	20

**Table – 5.1.9.3**  
**Distribution of Responses to Query "Which**  
**Department Undertook the work of**  
**Reclamation of Usar Land"**

Agency	Number
Bhumi Sudhar Nigam	1
Farmers	1
Reporting respondents	2
Total Respondents	20

**Table – 5.1.9.4**  
**Distribution of Responses to the Query**  
**"In what way you benefited from the**  
**schemes"**

Responses	Number
Bunding	1
Reporting respondents	1
Total Respondents	20

**Table – 5.1.9.5**  
**Distribution of Responses to the Query "Reasons**  
**for Not-availing the Facilities of Schemes for**  
**Land Reclamation"**

Responses	Number
Could not contact	1
Not selected	1
Scheme not implemented in the village	1
Don't need	7
No response	10
Total Respondents	20

## 5.1.10 Water Harvesting

Water harvesting is a serious challenge at the village level. It has two aspects one is water logging and the other is water conservation. The problem of water logging either due to floods or other reasons was reported from village Gopalpur. When asked, what measures could be adopted to avoid water logging due to rain water, 8 out of 20 (i.e. 40 per cent) respondents suggested that there was need to construct new nullah (**See table 5.1.10.1**).

As regards water conservation, when farmers were asked, what could be done to conserve rain water in the village, 5 (i.e. 25 per cent) suggested that old ponds be renovated, while 6 others (i.e. 30 per cent) suggested that new ponds should be constructed. Thus ponds are considered by most of the farmers as most suitable way to conserve rain water (**See table 5.1.10.2**).

Farmers were also asked as to what would be the potential use of water. If more water could be conserved in the village. Farmers suggested that it could be used for irrigation, for animals and for bathing/washing clothes etc. (**See table 5.1.10.3**).

**Table – 5.1.10.1**  
**Distribution of Responses to the Query "What measures could be adopted to avoid water logging due to rain water"**

Reasons	Number
Nullah be linked to pond	1
Cleaning of nullah	1
Construction of new nullah	8
No problem	4
Not applicable	6
<b>Total Respondents</b>	<b>20</b>

**Table – 5.1.10.2**  
**Distribution of Responses to the Query "What could be done to Conserve rain water in the village"**

Reason	Number
Renovation of old Ponds	5
Construct new Ponds	6
Evict Encroachers	1
Drainage system be linked to pond	1
No remedy	2
Not Needed	5
<b>Total Respondents</b>	<b>20</b>

**Table – 5.1.10.3**  
**Distribution of Responses to Query "If more water could be conserved in the village then, it could be put to what uses?"**

Responses	Number
Irrigation	9
For animal	8
Bathing/Washing	2
Fire extinction	1
No response	5

Total Respondents	20
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We also enquired about the present status/use of those ponds, which have totally or partially disappeared. It was reported by respondents that such land had been encroached upon, and/or is being used for cultivation and houses have also been constructed on such land (**See table 5.1.10.4**).

When asked what efforts should be made to renovate/revive those ponds, farmers said that desiltation and removal of encroachments were necessary for renovation of ponds (**See table 5.1.10.5**).

We also enquired from farmers as to what benefits would accrue if ponds could be revived. Villagers expected various benefits if disappeared ponds could be renovated/revived. The water thus available then could be used for irrigation, for cattle and also for domestic use (**See table 5.1.10.6**).

The present use of ponds showed an encouraging sign. As it was used for cattle, domestic purposes and for fisheries (**See table 5.1.10.7**).

**Table – 5.1.10.4**  
**Distribution of Responses to the Query "What is the present use of land of those ponds, which have totally or partially disappeared"**

Reason	Number
Encroachment	4
Cultivation	7
House constructed	5
No response	4
Total Respondents	20

**Table – 5.1.10.5**  
**Distribution of Responses to the Query "What efforts could be made for revival of ponds"**

Reason	Number
Desiltation	13
Remove encroachments	6
No response	4
Total Respondents	20

**Table – 5.1.10.6**  
**Distribution of Responses to query "In what way the revival of Ponds will help villagers"**

Reason	Number
Irrigation	6
For Cattle use	9
Domestic use	8
Total Respondents	20

**Table 5.1.10.7**  
**Distribution of Responses to query "What is the Present Use of Existing Ponds"**

Reason	Number
For cattle use	4
Domestic use	6
Fisheries	2
Un usable	9
Total Respondents	20



## 5.1.11 Orchards

Farmers were also asked whether the area under orchards has increased or decreased. Sixteen (i.e. 80 per cent) farmers suggested that it has decreased, while only 20 per cent reported increase in area under orchards (**See table 5.1.11.1**).

The main reason for decrease of orchards according to farmers were increase in felling of trees and need for agricultural land (**See table 5.1.11.2**).

The reason for increase in the area under orchards, and/or coming up of new orchards was mentioned by two farmers only. One suggested that non-fruit trees are being planted, while the other suggested that plantation was being done by forest department (**See table 5.1.11.3**).

When asked that why the potential of growth of orchards was low in the village, 15 (i.e. 75 per cent) farmers suggested that it was so because more land was needed for agriculture (**See table 5.1.11.4**).

**Table – 5.1.11.1**  
**Distribution of Responses to query "Whether the area under orchards has increased/decreased"**

Response	Number	Percent
Increased	4	20.0
Decreased	16	80.0
Total Respondents	20	100.0

**Table – 5.1.11.2**  
**Distribution of Perception of Respondent about Reason of Decrease of Orchard**

Reasons	Number	Percent
Tree felling increased	7	35.0
New orchards not coming	2	10.0
Salinity	2	10.0
Need for Agricultural Land	10	50.0
No response	5	25.0
Total Respondents	20	100.0

**Table – 5.1.11.3**  
**Perception of Respondent about Reason of Increase of Orchard**

Reason	Number
Non-fruit tree are being planted	1
Plantation by forest department	1
No response	2
Total Respondents	20

**Table – 5.1.11.4**  
**Distribution of Responses to query "Why the potential of growth of orchards is low"**

Reason	Number
More land needed for agriculture	15
No response	5
Total Respondents	20

The scope for developing new orchards in the village seemed to be very limited as farmers felt that new orchards could be developed on agricultural land (**See table 5.1.11.5**).

When asked, what kind of facilities would be required to increase area under orchard, 20 per cent farmers suggested that gram sabha land be made available for the purpose, while 15 per cent suggested that high yielding variety plants be given for the purpose (**See table 5.1.11.6**).

**Table – 5.1.11.5**  
**Distribution of Responses to query "On which type of land area under orchards could be increased"**

Type of Land	Number	Percent
Agricultural land	9	45.0
Usar Land	1	5.0
No response	10	50.0
Total Respondents	20	100.0

**Table – 5.1.11.6**  
**Distribution of Responses to query "What kind of facilities would be required to increase area under orchard"**

Reason	Number	Percent
G.S. land be made available for the purpose	4	20.0
H.Y.V. plants be given	3	15.0
Protection of plants	1	5.0
Awareness campaign	1	5.0
No response	11	55.0
Total Respondents	20	100.0

## 5.1.12 Livestock

In Gopalpur, 17 out of 20 selected respondents reported that size of their livestock has decreased, while 3 reported increase in the livestock.

The main reasons suggested for decrease in livestock by respondents were scarcity of fodder and grazing, there was no one in the family to look after livestock and also because of increasing use of tractors (**See table 5.1.12.1**).

Out of the three (i.e. 15 per cent) respondents who reported increase in number of cattles, one said that it was so because of their attachment with the cattle, while two others attributed the increase in number of cattles to family need (**See table 5.1.12.2**).

When asked that number of which type of livestock has decreased; the respondents reported that number of only two types namely bovine and bullocks had decreased (**See table 5.1.12.3**).

The overwhelming majority of respondents suggested that their economic condition would improve if they increase bovine cattle (**See table 5.1.12.4**).

The main constraints in increasing livestock were: scarcity of fodder/grazing land, lack of manpower and economic constraint (**See table 5.1.12.5**).

**Table – 5.1.12.1  
Distribution of Responses to query "Reasons for decrease in livestock"**

Reason	Number
Low income	1
Scarcity of fodder/ Grazing land	6
No one to look after them	4
Sold	1
Now use tractors	5
Paucity of space	1
Not applicable	3
<b>Total Respondents</b>	<b>20</b>

**Table – 5.1.12.2  
Distribution of Responses to query "Reasons for increase in livestock"**

Reason	Number
Attachment with cattle	1
Family need	2
Not applicable	17
<b>Total Respondents</b>	<b>20</b>

**Table – 5.1.12.3  
Distribution of Responses to query "Number of which type of livestock has decreased"**

Type of Cattles	Number
Bovine	10
Bullock	9
All types	1
<b>Total Respondents</b>	<b>20</b>

**Table – 5.1.12.4  
Distribution of Responses to query "What type of livestock will improve your economic condition"**

Types of Cattle	Number
Bovine	19
No response	1
<b>Total Respondents</b>	<b>20</b>

**Table – 5.1.12.5  
Distribution of Responses to query "What are the main constraints in increasing livestock"**

Reason	Number
Economic constraint	5
Lack of manpower	5
Scarcity of fodder/grazing land	10
Scarcity of space	1
No problem	2
<b>Total Respondents</b>	<b>20</b>

### 5.1.13 Agriculture

The main crops grown in the village Gopalpur were wheat and paddy. The average production of wheat and paddy was 12.5 Qt./acre and 13.68 Qt./acre respectively (**See table 5.13.1**).

Out of the 20 selected farmers, 12 reported that productivity in their farms was lower than other farms. The main reasons for lower productivity were scarcity of manpower and inability to look after farming and secondly lower use of fertilizer, pesticide, compost etc. (**See table 5.1.13.2**).

Farmers were also asked about the main constraints in better utilization of agricultural land. The constraints suggested included economic constraint, low productivity of land, low irrigation, erratic power supply and scarcity of manpower (**See table 5.1.13.3**).

**Table – 5.1.13.1**  
**Cropping Pattern of Selected Household, Average Production and Use of Fertilizer**

Crops	Net sown area (in acre)	Production (in Qt./Acre)	Compost (per acre)	DAP (in kg./acre)	Urea (in kg./acre)	Potas (in kg./acre)	Pesticide (Rs./Acre)
Wheat	19.51	12.5	1.8 Trolley	48.9	62.0	29.4	-
Paddy	19.4	13.68	-	31.1	75.5	-	300.00
Potato	1.26	73.0	2 Trolley	198.4	79.3	79.3	360.00
Matar	1.11	6.3	-	56.0	64.0	-	-
Sugarcane	0.63	317.4	-	79.3	79.3	79.3	-
Arhar	0.63	4.7	-	-	-	-	-

**Table – 5.1.13.2**  
**Distribution of Responses to query "Reason for lower productivity of respondents farm from other farms"**

Reason	Number
Low use of fertilizer/pesticide/compost etc.	5
Low irrigation	1
Economic constraint	3
Scarcity of manpower and inability to look after farming	9
Not applicable	8
Total Respondents	20

**Table – 5.1.13.3**  
**Distribution of Responses to query "What are the main constraints in better utilisation of agricultural land"**

Constraints	Number
Scarcity of manpower to manage	1
Low irrigation	2
Economic constraint	5
Natural calamities	1
Low productivity of land	3
Erratic power supply	2
NA	6
Total Respondents	20

The various suggestions made by farmers to remove these constraints included HYV seeds be made available, power supply be increased economic assistance should be provided, soil testing should be done and irrigation facility be increased (**See table 5.1.13.4**).

**Tenancy:** None of the selected farmers leased out land (**See table 5.1.13.5**). Only one selected farmer reported that he leased in land. The reason was that he owned very small piece of land (**See table 5.1.13.6**).

**Table – 5.1.13.4**

**Distribution of Responses to query "How above mentioned constraints could be removed"**

<b>Measures</b>	<b>Number</b>
Increase irrigation facility	1
Economic/Credit assistance	2
Soil testing	2
Increase power supply	4
HY Varieties be made available	9
NA	6
Total Respondents	20

**Table – 5.1.13.5**

**Distribution of Responses to query "Reasons for leasing out the land"**

<b>Reason</b>	<b>Number</b>
Not applicable	20
Total Respondents	20

**Table – 5.1.13.6**

**Distribution of Responses to query "Reasons for leasing in by tenants"**

<b>Reason</b>	<b>Number</b>
Owned land is small	1
Not applicable	19
Total Respondents	20

## **(C) Land Use Plan for Gopalpur Village**

The changing pattern of land use in Gopalpur shows a distinct trend of shift towards urban type development which is found in urban fringes. Construction of houses takes place on both sides of road. This kind of change was taking place at Gopalpur. Houses have been constructed in about 32 acres of land on both sides of road. This has happened despite the fact that consolidation work in the village has been over.

There is also a brick kiln in the village which is spread over in an area of 9.5 acres of land.

There are two ponds in the village, one is in the gram sabha land and the other is owned by a farmer of the village. The gram sabha pond was given to a person of mallah caste on ten years lease. He gradually constructed a house on around 0.63 acres of land of pond.

Old water channels have closed due to siltation. There is only one drainage course known as *Sikkahawa Nala* in the village. Drain channels were constructed on both sides of *Kharanja* road which passes through the house settlements.

The problems of water logging in the village has aggravated after the construction of the road. But it has also helped in reclaiming *Usar* land on both sides of road. Fodder crops are sown in these land, which had helped in improving soil quality.

The village level land management committee was reported to be dysfunctional.

Following steps could be taken to regulate land use in the village:

- (i) Land Management Committee be reconstituted with representations of all sections and entrusted with specific responsibilities related to land use in the village.
- (ii) After consolidation, conversion of agricultural land for non-agricultural purposes is prohibited. Those who have violated this norm should be penalized. A fine based on current value of land and house be imposed.
- (iii) Building tax should be collected every year from those farmers who have constructed any house/building on farm land.
- (iv) Stringent action should be taken against those who have encroached upon pond of the village. They should be debarred from getting benefit of any government scheme and also debarred from contesting any elections.
- (v) Desiltation of drainage course should be done regularly.

## Village Study – II

### Village – Tarapur (Block – Kashi Vidya Peeth)

#### (A) Village Profile

Village Tarapur is located on BHU – Tikri road at a distance of 8 kilometers from BHU, 14 kms. from block headquarter and 20 kms. from district headquarter. The village is situated on the banks of Ganges and therefore the soil of the village is mostly sandy.

Since the village is an alluvial land, collection and transportation of sand is an important economic activity of the village. Agriculture is second important activity. Since agriculture is less profitable, many land owners had given their land to other peasants on fixed rent. The productivity of agriculture is low in the village.

The problem of wild animal (specially a specie of large antelope known as *Neel Gai*), and damaged guls (water carrying lanes of canals) have affected agriculture adversely in the village.

There were some orchards of guava in the past which have been almost destroyed. In the name of orchards and social forestry plants of eucalyptus and a variety of babool have been planted.

#### 5.2.1 Land Use Pattern

In village Tarapur land use pattern was changing over the years. The present land use pattern showed that only 46.73 per cent of the total reporting area was net sown area. The land put to other uses was as high as 24.51 per cent and 15.71 per cent was under water bodies (**See table 5.2.1**). The other uses in fact refers to storage of sand which was done in agricultural land. Most of the big landowners were engaged in sand business and therefore sand storage and sand transportation was an important economic activity among those landowning groups. Tarapur is an agriculturally less developed village as only around 28 per cent of net sown area is irrigated area.

The area sown more than once was only 21.5 per cent of net sown area that is cropping intensity was very low in the village.

**Table – 5.2.1**

*Land Use Pattern in the Tarapur Village of the Varanasi District*

Land Use Categories	In hectare	In percent
Total reporting area	216.580	100.0
Water bodies	34.019	15.71
Habitation	6.577	27.55
Other uses	53.093	24.51
Orchards	0.869	0.40
Other trees and plantations	0.923	0.43
Current fallow	9.649	4.46
Fallow other than current fallow	10.253	4.73
Net sown area	101.205	46.73
(a) Irrigated	28.306	27.97
(b) Un-irrigated	72.899	72.03
Area sown more than once	21.762	
(a) Irrigated	1.065	
(b) Un-irrigated	20.697	

**Source:** Revenue department.

## 5.2.2 Demographic Profile

The average family size was 7.1 in the village. (See table 5.2.2.1). The population in the working age group i.e. in the age group (14-60) years comprised 50 per cent of total population. That is the rest of 50 per cent persons constituted dependents in the family. The sex ratio (i.e. number of females per thousand males) was 912.83.

The literacy rate was 74 per cent in the village. It could also be from table 5.2.2.2 that number of illiterates was much higher among females than among males. On the other hand in each category of education group above high school, the number of males was much higher than females.

**Table – 5.2.2.1**  
**Caste and Gender-wise Distribution of Population in the Village Tarapur**

Caste	Total population			Below 5 year population			5 to 14 year population			14 to 60 year population			Above 60 year population			Family size
	M			M			M			M			M			
		F	T		F	T		F	T		F	T				
Chamar	93	74	167	17	12	29	25	16	41	46	40	86	5	6	11	5.7
Gaur	55	70	125	14	22	36	13	25	38	27	26	53	2	1	3	10.0
Nai	15	11	26	2	-	2	4	4	8	9	7	16	-	-	-	6.5
Rajbhar	63	61	124	11	6	17	12	16	28	36	28	64	-	3	3	7.7
Mallah	107	102	209	18	19	37	32	36	68	48	37	85	9	10	19	7.7
Vishwakarma	4	5	9	-	-	-	3	4	7	1	1	2	-	-	-	9.0
Gupta	7	5	12	1	-	1	1	2	3	5	3	8	-	-	-	6.0
Prajapati	34	33	67	5	7	12	13	8	21	14	14	28	2	4	6	6.1
Patel	41	29	70	5	3	8	12	13	25	22	17	39	2	-	2	6.3
Yadav	14	7	21	1	-	1	-	-	-	12	7	19	1	-	1	7.0
Jaiswal	3	3	6	1	1	2	-	-	-	1	1	2	1	1	2	6.0
Thakur	6	8	14	1	1	2	-	2	2	4	3	7	1	2	3	7.0
Bhumihar	131	121	252	19	19	38	26	31	57	77	62	139	9	9	18	7.6
Brahmin	35	26	61	10	5	15	6	6	12	19	15	34	-	-	-	3.5
Total	608	555	1163	105	95	200	147	163	310	321	261	582	32	36	68	7.1

**Table – 5.2.2.2**  
**Caste and Gender-wise Distribution of Education in the Village Tarapur**

Caste	Graduation and above			Intermediate and high school			Below high school			Illiterate		
	M			M			M			M		
		F	T		F	T		F	T		F	T
Chamar	5	-	5	21	7	28	37	23	60	10	33	43
Gaur	3	1	4	18	2	20	17	25	42	10	19	29
Nai	1	-	1	4	-	4	8	8	16	-	3	3
Rajbhar	4	-	4	12	2	14	28	216	49	9	29	38
Mallah	1	-	1	8	3	11	50	40	90	25	36	61
Vishwakarma	-	-	-	-	-	-	4	3	7	-	2	2
Gupta	1	-	1	3	-	3	5	101	6	-	1	1
Prajapati	3	-	3	3	2	5	14	8	22	2	10	12
Patel	4	-	4	10	1	11	20	10	30	1	15	16
Yadav	2	1	3	7	1	8	2	2	4	2	3	5
Jaiswal	-	-	-	-	-	-	2	1	3	-	1	1
Thakur	1	-	1	-	1	1	5	4	9	-	2	2
Bhumihar	26	11	37	48	27	75	8	20	28	2	14	16



Brahmin	5	1	6	11	4	15	11	19	30	-	-	-
Total	56	14	70	145	50	195	211	185	396	61	168	229
Percentage	11.84	3.36	7.87	30.66	11.99	21.91	44.61	44.36	44.49	12.90	40.29	25.73

### 5.2.3 Land Ownership

In Tarapur, the average size of landholding per family was 1.4 acres and per person only 0.35 acres (See table 5.2.3.1). It is obvious that the variation in the size of holdings per family was larger than the variations in the size of landholdings per adult person. The low size of land holdings per adult person also indicates that the land available for cultivation was not enough to engage all the adults in agriculture for full time work. The pressure of land has therefore forced many others to search for jobs outside agriculture. The fact that per person land was around 1.46 acres in even the landholding group (5-10) acres, and that around 94 per cent households owned less than 5 acres of land, shows that in future, population pressure on land would be tremendous in all size groups. The village is thus moving towards a situation in which it will be dominated by landless and near landless households who already constitute 66 per cent of total households in the village. The village has mixed population with three major castes namely Bhumihars, Chamars and Mallah, with sizable population of Gaur, Rajbhars, Prajapati and Brahmins as well.

The overwhelming majority of Charmars, Gaur, Rajbhars, Mallah, and Patel households were landless, on the other hand landowners owning more than 2.5 acres of land belonged to Thakur, Bhumihar and Brahmin caste only (See table 5.2.3.2).

**Table – 5.2.3.1  
Landholding Size : Per Family/Per Adult in the Village Tarapur**

Landholding size	Total households	Total adult pop. (>14 year)	Average landholding		
			Total land	(Per adult person)	(Per family)
Land-less	100	384	-	-	-
Below 0.63 Acre	9	40	1.4	0.03	0.15
0.63 to 1.0 Acre	7	928	4	0.14	0.57
1.0 to 2.5 Acre	18	54	26.7	0.49	1.48
2.5 to 5.0 Acre	20	90	68.7	0.76	3.43
5.0 to 10.0 Acre	5	25	36.7	1.46	7.3
Above 10.0 Acre	5	29	94.7	3.26	18.94
Total	164	650	232.2	0.35	1.4

**Table – 5.2.3.2  
Caste-wise Distribution of Landholdings Size in the Village Tarapur**

Caste	Land-less	Below 0.63 Acre	0.63 to 1.0 Acre	1.0 to 2.5 Acre	2.5 to 5.0 Acre	5.0 to 10.0 Acre	Above 10 Acre	Total HH.
Chamar	29	-	-	-	-	-	-	29
Gaur	12	1	-	-	-	-	-	13
Nai	2	-	-	2	-	-	-	4
Rajbhar	7	5	3	1	-	-	-	16
Mallah	22	-	1	4	-	-	-	27
Vishwakarma	-	1	-	-	-	-	-	1
Gupta	1	-	-	-	-	-	-	2
Prajapati	7	-	3	1	-	-	-	11
Patel	11	-	-	-	-	-	-	11
Yadav	2	1	-	-	-	-	-	3
Jaiswal	1	-	-	-	-	-	-	1
Thakur	-	-	-	-	-	-	2	2
Bhumihar	6	1	-	6	15	2	3	33
Brahmin	-	-	-	4	4	3	-	11
Total	100	9	7	18	20	5	5	164
Percentage	60.98	5.49	4.27	10.98	12.20	3.05	3.05	100.0

## 5.2.4

### Occupational Structure

The occupation-wise distribution of households showed that the main occupation of 72 out of 164 households was cultivation, while that of 36 households it was wage work and 42 were engaged in service.

The occupation of many households have also changed as a result of increasing pressure on land and non-availability of work in the village. The change in main occupation has taken place mainly among cultivators. Out of 106 households whose main occupation was cultivation in the past, now only 68 i.e. 64 per cent are continuing with it, 8 (i.e. 7.5 per cent) have turned into wage worker, 23 (i.e. 22 per cent) are engaged in service and 7 (i.e. 6.6 per cent) are engaged in other work. Interestingly among those 38 households who have shifted to other occupations, 30 still continue to be engaged in as cultivation as their supplementary occupation. Similarly those households who continue cultivation as their main occupation are also engaged in supplementary occupations. Other work was supplementary occupation of many cultivators (**See table 5.2.4.1**).

There were 389 workers in the village out of which 259 were males and 130 were females. If we take (14-60) years age group as working age group, then we find that participation rate among males and females was 80.69 per cent and 49.81 per cent respectively. The participation rate in the village was 66.84 per cent. It could also be seen from the **table 5.2.4.2** that out of 389 workers 20.6 per cent were cultivators, 30 per cent were agricultural labourers, 19.8 per cent were non-agricultural labour, 14.4 per cent were in service and 15.2 per cent were engaged in other work.

**Table – 5.2.4.1**

Occupation	Total HHs.	Present main occupation				Supplementary occupation			
		Cultivator	Wage	Service	Other works	Cultivator	Wage	Shop	Other works
Cultivator	106	68	8	23	7	30	12	7	6
Wage	38	4	28	5	1	-	-	10	3
Service	8	-	-	8	-	8	-	-	-
Others	12	-	-	6	6	6	-	1	6
Total	164	72	36	42	14	44	12	18	15

*Present and Past Occupation of Households in the Village Tarapur*

**Table – 5.2.4.2**

**Caste and Gender-wise Distribution of Occupation of Workers in the Village Tarapur**

Caste	Cultivator			Agricultural Labour			Other Labour			Services			Other Workers		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
	Chamar	-	-	-	18	22	40	18	18	36	6	-	6	3	-
Gaur	-	-	-	-	-	-	-	-	-	10	-	10	4	-	4
Nai	1	-	1	1	-	1	-	-	-	1	-	1	1	-	1
Rajbhar	-	-	-	8	26	34	-	-	-	5	-	5	2	-	2
Mallah	8	3	11	-	-	-	14	23	37	2	-	2	24	11	35
Vishwakarma	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
Gupta	-	-	-	-	-	-	-	-	-	-	-	-	2	-	2
Prajapati	2	2	4	4	6	10	-	-	-	3	1	4	2	-	2
Patel	-	-	-	16	16	32	2	2	4	1	-	1	1	-	1

Yadav	2	-	2	-	-	-	-	-	-	2	-	2	1	-	1
Jaiswal	-	-	-	-	-	-	-	-	-	-	-	-	1	-	1
Thakur	2	-	2	-	-	-	-	-	-	2	-	2	-	-	-
Bhumihar	45	-	45	-	-	-	-	-	-	22	-	22	4	-	4
Brahmin	15	-	15	-	-	-	-	-	-	1	-	1	2	-	2
Total	75	5	80	47	70	117	34	43	77	55	1	56	48	11	59
Percentage	28.96	3.85	20.57	18.15	53.85	30.08	13.13	33.08	19.79	21.24	0.77	14.40	18.53	8.46	15.17

### 5.2.5 Livestock

Even the animal population was not very large in the village (See table 5.2.5). This was so because landless and near landless households owned less animals than those who owned more than 1 acre of land. It could be seen from the table that cows and buffaloes were the main animals in the village. If we work out the average number of cattles (that is cows and buffaloes taken together) in different landholding groups then we find that it was as follows: landless – 0.65 per households, below 0.63 acre – 0.89 per households, (0.63 - 1.0) acre – 0.73 per households, (1 - 2.5) acre – 1.83 per households, (2.5 - 5 acre) – 1.4 per households and (5 - 10) acres – 0.2 per households and above 10 acres – 2.0 per households. Average cattle owned was thus found to be 0.91 per households in the village. The landless households, however, owned other animals.

**Table – 5.2.5**  
**Distribution of Animal in Different Categories of Landholding Households in the Village Tarapur**

Landholding size	Total HHs.	Cow	Buffalo	Calf	Other	Total
Land-less	100	41	24	77	46	188
Below 0.63 Acre	9	5	3	6	-	14
0.63 to 1.0 Acre	7	4	1	3	2	10
1.0 to 2.5 Acre	18	25	8	31	2	66
2.5 to 5.0 Acre	20	15	13	22	6	56
5.0 to 10.0 Acre	5	1	-	2	-	3
Above 10.0 Acre	5	3	7	12	-	22
Total	164	94	56	153	56	359

### 5.2.6 Housing Condition

There were 205 built houses owned by 164 households i.e. 41 households owned more than one house. These are generally those households who own a pucca house along with a kutcha /semi pucca houses. There is a tendency to shift to a pucca house whenever possible and then kutcha or semi pucca house are put to other uses or as storage. Out of 205 houses in the village 85 i.e. 41.46 per cent were kutcha houses, 105 i.e. 51.2 per cent were pucca houses, and 15 i.e. 7.3 per cent were semi pucca houses (See table 5.4.6).

**Table – 5.2.6**

#### Caste-wise Distribution of Housing Condition in the Village Tarapur

Caste	Housing Conditions			Total no. of houses	Total Households
	Katchha	Pakka	SemiPakka		
Chamar	24	7	-	31	29
Gaur	7	8	-	15	13

Nai	4	1	-	5	4
Rajbhar	6	12	-	18	16
Mallah	10	20	-	30	27
Vishwakarma	-	1	-	1	1
Gupta	2	2	-	4	2
Prajapati	6	5	2	13	11
Patel	5	9	1	15	11
Yadav	3	3	-	6	3
Jaiswal	-	-	1	1	1
Thakur	2	2	2	6	2
Bhumihar	10	24	6	40	33
Brahmin	6	11	3	20	11
Total	85	105	15	205	164

## (B) Responses of Selected Households in Tarapur Village

Twenty households in the village Tarapur were selected to elicit information about land use behaviour at household level.

### 5.2.7 Change in Size of Land Holding

Among the selected households 15 (i.e. 75.0 per cent) belonged to Bhumihar caste. The distribution of households on the basis of landholdings showed that 2 (i.e. 10 per cent) owned less than 1 acre of land and 12 (i.e. 60 per cent) owned between 2.5 to 5 acres of land. Thus 10 per cent farmers were marginal farmer, 60 per cent farmers were small farmers and 30 per cent belonged to medium size group (See table 5.2.7.1).

In Tarapur, out of 20 households 14 reported that the size of landholdings changed during the last 20 years.

The reason of changes in the total land owned during the last 20 years in selected households showed that in 9 households (i.e. 45 per cent), division of family was the major cause, while in case of 8 (i.e. 40 per cent) households changes took place due to consolidation of holdings. Three households (i.e. 15 per cent) purchased land while changes in 4 households took place due to acquisition by government department (See table 5.2.7.2).

**Table – 5.2.7.1**  
**Caste and Landholding wise Distribution of Selected Households in Villages Tarapur**

Caste	Below 0.63 Acre	0.63 to 1.0 Acre	1.0 to 2.5 Acre	2.5 to 5.0 Acre	5.0 to 10.0 Acre	Above 10 Acre	Total
Patel	-	-	-	1	-	-	1
Nishad	-	1	-	-	-	-	1
Brahmin	-	1	-	2	-	-	3
Bhumihar	-	-	-	9	2	4	15
Total	-	2	-	12	2	4	20
Percentage	-	10.0	-	60.0	10.0	20.0	100.0

**Table – 5.2.7.2**  
**Reason of Changes in Total Land Owned During the Last 20 years in Selected Households**

Reason	Number	Percent
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Division of family	9	45.0
Acquisition by govt. department	4	20.0
Purchased	3	15.0
Due to consolidation of holdings	8	40.0
Not applicable	3	15.0
Total Respondents	20	100.0

In Tarapur village, 3 (i.e. 15 per cent) households reported that their landholding increased during the last 20 years. The average change per reporting household was found to be 1.29 acres. That shows the purchase of land was not of a very small scale (**See table 5.2.7.3**).

The number of households who reported decrease in their landholdings was 13 (i.e. 65 per cent) of total sampled households, and the average change per reporting households was 10.93 acres (**See table 5.2.7.4**).

In Tarapur land of four selected households was acquired. The land was acquired by irrigation department for construction of canals. It was agricultural land, and the size of land acquired was 0.72 acres. Farmers had received compensation for land (**See table 5.2.7.5**).

*Table – 5.2.7.3*

**Number of Households Whose Landholding Increased**

Number of HHs.	Land owned at present (in acre)	Land owned 20 years ago (in acre)	Change during 20 years (in acre)	Average change per reporting HHs. (in acre)
3	15.27	11.4	3.87	1.29

**Table – 5.2.7.4**

**Number of Households Whose Landholding Decrease**

Number of HHs.	Land owned at present (in acre)	Land owned 20 years ago (in acre)	Change during 20 years (in acre)	Average change per reporting HHs. (in acre)
13	71.52	213.66	142.14	10.93

*Table – 5.2.7.5*

**Number of Households Whose Land was Acquired**

Number of HHs.	Land owned at present (in acre)	Land acquired (in acre)	Types of land	Acquired by the Dept.	Purpose	Compensation
4	19.92	0.72	Ag. Land	Irrigation	Canal	Received

## 5.2.8 Conversion of Agricultural Land for Non-Agricultural Purposes

In Tarapur 10 out of 20 respondents (i.e. 50 per cent) reported that they had converted some part of their agricultural land for non-agricultural purposes. All the ten of them reported that it was due to division in family and consequent need of more land for non-agricultural purposes. And four households reported that the conversion of agricultural land for non-agricultural purposes was done because it was acquired for canal (**See table 5.2.8.1**).

It was also reported by respondents that reasons of conversion of agricultural land for non-agricultural purposes in the village were –

- (i) Division of family and consequent need of land for construction of houses;
- (ii) Acquisition of land for canal;
- (iii) For sand storage.

We have already discussed earlier that collection and transportation of sand is an important economic activity of big landowners. That is why some of them have been using their agricultural land for storage of sand (**See table 5.2.8.2**).

The respondents were also asked whether they had discontinued cultivation of any part of agricultural land owned by them. In village Tarapur, 9 respondents replied in affirmative, and the reasons for it was stated as follows: litigation, low productivity, unirrigated and engaged in other occupations (**See table 5.2.8.3**).

**Table 5.2.8.1**  
**Reason of Conversion of Agricultural land for Non-agricultural Uses of Owned Land by Selected Households**

Reason	Number	Percent
Division of family for construction of houses	10	50.0
Acquisition for canal	4	20.0
Not applicable	10	50.0
<b>Total Respondents</b>	<b>20</b>	<b>100.0</b>

**Table – 5.2.8.2**  
**Other Reasons of Conversion of Agricultural Land for Non-agricultural Purpose in the Village (As Suggested by Respondents)**

Reason	Number	Percent
Division of family for construction of houses	18	90.0
Acquisition for Canal	6	30.0
Business (for Sand Storage)	7	35.0
No response	2	10.0
<b>Total Respondents</b>	<b>20</b>	<b>100.0</b>

**Table 5.2.8.3**  
**Distribution of Respondents on the Basis of Responses to Query "Reasons for not cultivating the agriculture land"**

Reasons	Number	Percent
Litigation	1	5.0
Low productivity	2	10.0



Un-irrigated	2	10.0
Engaged in other occupations	4	20.0
Total Respondents	20	100.0

## 5.2.9 Land Reclamation

All villages have some land which is barren and uncultivable. We wanted to know villagers' perception about the possible uses of barren land. Only 8 out of 20 respondents replied to our query that barren land could be put to which uses. The suggestions were: Barren land could be used for (i) construction of houses; (ii) construction of new ponds and tanks for fisheries (iii) to develop small industries/commercial place and (iv) for plantation (See table 5.2.9.1).

Only 15 out of 20 respondents were aware about the government programmes to reclaim usar land (See table 5.2.9.2).

Only two farmers could say as to which department undertook the work of reclamation of usar land (See table 5.2.9.3).

Most of the farmers in our sample said that they did not need land reclamation while 4 others gave no response to the query, as shown in the table (See table 5.2.9.4).

**Table – 5.2.9.1**

*Distribution of Responses to the query "Barren land could be put to which uses"*

Reason	Number	Percent
Construction of House	4	20.0
Construction of New Ponds/ Fisheries	1	5.0
Develop Small Industry/ Commercial Place	1	5.0
Plantation	1	5.0
No uses	1	5.0
Total Respondents	20	100.0

**Table – 5.2.9.2**

**Distribution of Responses to the question "Are you aware of the Government Programmes to reclaim Usar Land"**

Responses	Number
Yes	15
No	2
Don't know	3
Total Respondents	20

**Table – 5.2.9.3**

**Distribution of Responses to Query "Which Department Undertook the work of Reclamation of Usar Land"**

Agency	Number
Bhumi Sudhar Nigam	1
Reporting respondents	1
Total Respondents	20

*Table – 5.2.9.4*

**Distribution of Responses to the Query "Reasons for Not-availing the Facilities of Schemes for Land Reclamation"**

Responses	Number	Percent
Don't need	16	80.0
No response	4	20.0
Total Respondents	20	100.0



## 5.2.10 Water Harvesting

Water harvesting is a serious challenge at the village level. It has two aspects one is water logging and the other is water conservation. The problem of water logging either due to floods or other reasons was reported from village Tarapur. When asked, what measures could be adopted to avoid water logging due to rain water only one respondent suggested that there was need to construct new nullah (**See table 5.2.10.1**).

Water harvesting is a serious challenge at the village level. As regards water conservation, when farmers were asked, what could be done to conserve rain water in the village, 15 (i.e. 75 per cent) suggested that old ponds be renovated, while 5 others (i.e. 25 per cent) suggested that new ponds should be constructed. Thus ponds are considered by most of the farmers as most suitable way to conserve rain water (**See table 5.2.10.2**).

Farmers were also questioned about the potential use if more water could be conserved in the village. Farmer suggested that if more water could be conserved in the village, then it could be used for irrigation and for animals etc. (**See table 5.2.10.3**) as per the perception of farmers.

**Table – 5.2.10.1**  
**Distribution of Responses to the Query "What measures could be adopted to avoid water logging due to rain water"**

Reasons	Number	Percent
Construction of new nullah	1	5.0
No solution	1	5.0
Not applicable	18	90.0
Total Respondents	20	100.0

**Table – 5.2.10.2**  
**Distribution of Responses to the Query "What could be done to Conserve rain water in the village"**

Reason	Number	Percent
Renovation of old Ponds	15	75.0
Construct new Ponds	5	25.0
Not Needed	2	10.0
Total Respondents	20	100.0

**Table – 5.2.10.3**  
**Distribution of Responses to Query "If more water could be conserved in the village then, it could be put to what uses?"**

Responses	Number	Percent
Irrigation	16	80.0
For animal	10	50.0
Fisheries	4	20.0
No response	1	5.0
Total Respondents	20	100.0

We also enquired about the present status/use of those ponds, which have totally or partially disappeared. It was reported by respondents that such land had been encroached upon and/or, is being used for cultivation (See table 5.2.10.4).

When asked what efforts should be made to renovate/revive those ponds, farmers said that desiltation and removal of encroachments were necessary for renovation of ponds (See table 5.2.10.5).

Villagers expected various benefits if disappeared ponds could be renovated/revived. The water thus available then could be used for irrigation, for cattle for fisheries and also for domestic use (See table 5.2.10.6).

The present use of ponds showed an encouraging sign. As it was used for irrigation, for cattle, and for fisheries (See table 5.2.10.7).

**Table – 5.2.10.4**  
**Distribution of Responses to the Query "What is the present use of land of those ponds, which have totally or partially disappeared"**

Reason	Number	Percent
Encroachment	15	75.0
Cultivation	1	5.0
Water grass	1	5.0
No response	4	20.0
Total Respondents	20	100.0

**Table – 5.2.10.5**  
**Distribution of Responses to the Query "What efforts could be made for revival of ponds"**

Reason	Number	Percent
Desiltation	15	75.0
Raise bunding	2	10.0
Remove encroachments	4	20.0
No response	2	10.0
Total Respondents	20	100.0

**Table 5.2.10.6**  
**Distribution of Responses to query "In what way the revival of Ponds will help villagers"**

Reason	Number	Percent
Irrigation	10	50.0
For Cattle use	6	30.0
Fisheries	8	40.0
Domestic use	1	5.0
Total Respondents	20	100.0

**Table – 5.2.10.7**  
**Distribution of Responses to query "What is the Present Use of Existing Ponds"**

Reason	Number	Percent
Irrigation	5	25.0
For cattle use	5	25.0
Fisheries	8	40.0
Un usable	4	20.0
Total Respondents	20	100.0

## 5.2.11 Orchards

Farmers were also asked whether the area under orchards had increased or decreased. Sixteen (i.e. 80 per cent) farmers suggested that it has decreased, while only 20 per cent reported increase in area under orchards (**See table 5.2.11.1**).

The main reason for decrease of orchards according to farmers were increase in felling of trees and need for agricultural land (**See table 5.2.11.2**).

The reason for increase in the area under orchards, and/or coming up of new orchards was mentioned by two farmers only. Both suggested that plantation was being done by forest department (**See table 5.2.11.3**).

**Table – 5.2.11.1**  
**Distribution of Responses to query "Whether the area under orchards has increased/decreased"**

Response	Number	Percent
Increased	4	20.0
Decreased	16	80.0
Total Respondents	20	100.0

**Table – 5.2.11.2**  
**Distribution of Perception of Respondent about Reason of Decrease of Orchard**

Reasons	Number
Tree felling increased	5
New orchards not coming	3
Salinity	1
Long gestation	3
Need for Agricultural Land	8
Too much vigilance is required	2
No response	3
Total Respondents	20

**Table – 5.2.11.3**  
**Perception of Respondent about Reason of Increase of Orchard**

Reason	Number
Plantation by forest department	2
No response	2
Total Respondents	20

When asked as to why the potential of growth of orchards was low in the village, 10 (i.e. 50 per cent) farmers suggested that it was so because more land was needed for agriculture while two suggested that it was difficult to protect from animals (**See table 5.2.11.4**).

The scope for developing new orchards in the village seemed to be very limited as most farmers felt that new orchards could be developed on agricultural land (**See table 5.2.11.5**).

When asked, what kind of facilities would be required to increase area under orchard, various suggestions were made, which included increase in irrigation facility, gram sabha land be made available for the purpose, high yielding variety plants be given for the purpose etc. (**See table 5.2.11.6**).

**Table – 5.2.11.4**  
**Distribution of Responses to query "Why the potential of growth of orchards is low"**

Reason	Number	Percent
More land needed for agriculture	10	50.0
Tendency declined	1	5.0
Long gestation period	1	5.0
Difficulty to protect from animals	2	10.0
No response	6	30.0
Total Respondents	20	100.0

**Table – 5.2.11.5**  
**Distribution of Responses to query "On which type of land area under orchards could be increased"**

Type of Land	Number	Percent
Agricultural land	11	55.0
Road side and around hamlet	1	5.0
On up land	1	5.0
No response	7	35.0
Total Respondents	20	100.0

**Table – 5.2.11.6**  
**Distribution of Responses to query "What kind of facilities would be required to increase area under orchard"**

Reason	Number	Percent
Irrigation	1	5.0
G.S. land be made available for the purpose	1	5.0
H.Y.V. plants be given	2	10.0
New techniques	1	5.0
Awareness campaign	2	10.0
No response	13	65.0
Total Respondents	20	100.0

## 5.2.12 Livestock

In Tarapur, 16 out of 20 selected respondents reported that size of their livestock has decreased, while only 1 reported increase in the livestock.

The main reasons suggested for decrease in livestock by respondents were scarcity of fodder and grazing land, there was no one in the family to look after livestock and also because of increasing use of tractors (**See table 5.2.12.1**).

Only one respondent reported increase in number of cattles. The number of cattle was increased to increase family income (**See table 5.2.12.2**).

When asked that number of which type of livestock has decreased; the respondents reported that number of only two types namely bovine and bullocks had decreased (**See table 5.2.12.3**).

The overwhelming majority of respondents suggested that their economic condition would improve if they increase bovine cattle (**See table 5.2.12.4**).

The main constraints in increasing livestock were: scarcity of fodder/grazing land, lack of manpower to manage and economic constraint (**See table 5.2.12.5**).

**Table – 5.2.12.1  
Distribution of Responses to query "Reasons for decrease in livestock"**

Reason	Number
Low income	1
Scarcity of fodder/Grazing land	4
No one to look after them	6
Sold	1
Now use tractors	5
Not applicable	4
<b>Total Respondents</b>	<b>20</b>

**Table – 5.2.12.2  
Distribution of Responses to query "Reasons for increase in livestock"**

Reason	Number
Increase income	1
Not applicable	19
<b>Total Respondents</b>	<b>20</b>

**Table – 5.2.12.3  
Distribution of Responses to query "Number of which type of livestock has decreased"**

Type of Cattles	Number
Bovine	13
Bullock	5
<b>Total Respondents</b>	<b>20</b>

**Table – 5.2.12.4  
Distribution of Responses to query "What type of livestock will improve your economic condition"**

Types of Cattle	Number
Bovine	19
No response	1
<b>Total Respondents</b>	<b>20</b>

**Table – 5.2.12.5  
Distribution of Responses to query "What are the main constraints in increasing livestock"**

Reason	Number
Economic constraint	6
Lack of manpower to manage	11
Scarcity of fodder/grazing land	3
Scarcity of space	1
<b>Total Respondents</b>	<b>20</b>

### 5.2.13 Agriculture

The main crops grown in the village Tarapur were wheat and paddy. The average productivity of wheat and paddy was 10.7 Qt./acre and 15.4 Qt./acre respectively (**See table 5.2.13.1**). It could also be seen from the table that fertilizer was used only in production of wheat, paddy, potato and sugarcane.

Out of the 20 selected farmers, 15 reported that productivity in their farms was lower than other farms. The main reasons for lower productivity was cited as scarcity of manpower to manage, and secondly lower use of fertilizer, pesticide, compost etc. (**See table 5.2.13.2**).

Farmers were also asked about the main constraints in better utilization of agricultural land. The constraints suggested included economic constraint, low productivity of land, low irrigation, erratic power supply and scarcity of manpower (**See table 5.2.13.3**).

**Table – 5.2.13.1**

*Cropping Pattern of Selected Household, Average Production and Use of Fertilizer*

Crops	Net sown area (in acre)	Production (in Qt./Acre)	Compost (per acre)	DAP (in kg./acre)	Urea (in kg./acre)	Potas (in kg./acre)	Pesticide (Rs./Acre)
Wheat	80.26	10.7	1 Trolley	50.4	46.2	30.0	-
Paddy	71.4	15.4	-	43.5	52.3	28.0	270.00
Potato	20.5	69	2 Trolley	68.7	63.7	50.0	300.00
Sugarcane	12.0	200	2 Trolley	112.5	100.0	-	-
Matar	4.63	6	-	33.0	-	-	-
Arhar	4.5	6	-	-	-	-	-
Bajara	3.0	10	-	-	-	-	-
Gram	1.63	5.0	-	-	-	-	-

**Table – 5.2.13.2**

**Distribution of Responses to query "Reason for lower productivity of respondents farm from other farms"**

Reason	Number
Low use of fertilizer/pesticide/compost etc.	4
Low irrigation	1
Scarcity of resources	1
Economic constraint	1
Scarcity of manpower to manage	8
Low productivity of soil	3
Not applicable	5
Total Respondents	20

*Table – 5.2.13.3*

**Distribution of Responses to query "What are the main constraints in better utilisation of agricultural land"**

Constraints	Number
Scarcity of manpower to manage	2
Low irrigation	7
Economic constraint	2
Natural calamities	1
Low productivity of land	3



Scarcity of resources	1
No protection from stray/wild animals	9
Not applicable	5
Total Respondents	20

The various suggestions made by farmers to remove these constraints included HYV be made available, power supply be increased, economic assistance should be provided, soil testing should be done, protection from wild animals and irrigation facility be increased (**See table 5.2.13.4**).

**Tenancy:** Four out of twenty farmers leased out land. The main reason for leasing out land was non-availability of workers (**See table 5.2.13.5**). Only one selected farmer reported that he leased in land. The reason was that he wanted to augment his income (**See table 5.2.13.6**).

**Table – 5.2.13.4**  
**Distribution of Responses to query "How above mentioned constraints could be removed"**

Measures	Number
Increase irrigation facility	5
Economic/Credit assistance	3
Soil testing	1
Land reclamation	1
Protection from stray/wild animals	5
HY Varieties be made available	2
Not applicable	5
Total Respondents	20

**Table – 5.2.13.5**  
**Distribution of Responses to query "Reasons for leasing out the land"**

Reason	Number
Non-availability of workers	3
Scarcity of resources	1
Not applicable	16
Total Respondents	20

**Table 5.2.13.6**  
**Distribution of Responses to query "Reasons for leasing in by tenants"**

Reason	Number
Augment income	1
Not applicable	19
Total Respondents	20

## **(C) Land Use Plan for Tarapur Village**

Village Tarapur is located on the banks of Ganga-river. A large tract of village land is uncultivable because it is sandy. Some part of such barren land is owned by farmers, while some part is owned by the gram samaj. However, revenue records show only that area under barren and uncultivable land, which is gram samaj land. About 50 acres of gram samaj land and 84 acres of private land could be put in this category. According to villagers this land can not be put to any use as it was totally sandy and got submerged during rainy season.

Not only this 100 acres of land in the village was found to be culturable waste due to water logging.

Similarly fallow land in the village was found to be higher than the area under such land in the revenue records. About 50 acres of current fallow was under private ownership, while 50 acres of other fallow was gram samaj land.

Reasons for not cultivating privately owned fallow land were reported as floods and absence of irrigation facility. It was suggested that privately owned fallow land could be brought under cultivation by (a) provision of irrigation facilities; (b) *em+ clnt* (making of boundary mound) and (c) land levelling.

The fallow land under gram samaj could be put to use if it is given on lease. A new experiment in this respect could be done. One or two self help groups with members belonging to dalit communities could be given such land on lease for five year period at a time. Assistance could then easily be provided to them through banks. Secondly, DRDA could be persuaded to undertake such activities under employment generation activities which would help in regenerating uncultivable land.

The area under grazing land in the village declined over the years and presently only 20 acres of land was found to be under such use. The main reason for decline of grazing land was that much of the area has been brought under double crops. Even some of the exclusive pasture land had been brought under cultivation.

Area under trees, bushes and groves have also declined in the village. At present 20 acres were under private ownership. The area under such land has declined after consolidation of holdings. Farmers got such land valuated as farming land and got consolidated plots allotted against such land.

It should become mandatory on consolidation officers to ensure that land under other uses are not valuated as farm land.

Besides above suggestions following steps could be taken to regulate land use in the village:

- (i) Land Management Committee be reconstituted with representations of all sections and entrusted with specific responsibilities related to land use in the village.
- (ii) After consolidation, conversion of agricultural land for non-agricultural purposes is prohibited. Those who have violated this norm should be penalized. A fine based on current value of land and house be imposed.

- (iii) Building tax should be collected every year from those farmers who have constructed any house/building on farm land.
- (iv) Stringent action should be taken against those who have encroached upon pond of the village. They should be debarred from getting benefit of any government scheme and also debarred from contesting any elections.
- (v) Desiltation of drainage course should be done regularly.

## Village Study – III

### Village – Aswalpur (Block – Pindara)

#### (A) Village Profile

Aswalpur village is located at a distance of 14 kms. from the block headquarter. The village is situated at a lower level than other neighbouring villages. Therefore the main problem of the village is water logging. During rainy season farm land and roads and many other places remain submerged in water. Water from other villages also flows to this village. And since there is no proper drainage or relief system it takes months in water getting out of fields. Uplands are used for growing vegetables while paddy is grown in low lands. In fact main activities of villagers are (a) growing vegetables and (b) carpet weaving.

In the past, there were some ponds in the village, but they have been put to other uses during the last few years. As far as private ponds are concerned people have constructed houses or using them for cultivation. Public ponds have been encroached upon by influential persons of the village. This has added to the problem of water logging in the village.

#### 5.3.1 Land Use Pattern

Village Aswalpur is relatively a small village with only 67.34 hectares total reporting area. In village Aswalpur land use pattern shows that it continues to be predominantly agricultural as 88.5 per cent of total reporting area was under cultivation and about 97 per cent of it was irrigated. Besides net sown area, some area was reported, under water bodies and some fallow land was also reported, which could become an important aspect of land use planning of the village (See table 5.3.1).

**Table – 5.3.1**

*Land Use Pattern in the Aswalpur Village of the Varanasi District*

Land Use Categories	In hectare	In percent
Total reporting area	67.340	100.0
Water bodies	2.120	3.15
Habitation	3.122	4.64
Other uses	0.230	0.34
Barren	-	-
Banjar	-	-
Culturable waste	-	-
Orchards	0.680	1.01
Other trees and plantations	-	-
Current fallow	1.210	1.80
Fallow other than current fallow	0.482	0.72
Net sown area	59.596	88.50
(a) Irrigated	57.783	96.96
(b) Un-irrigated	1.813	3.04

**Source:** Revenue department.

### 5.3.2 Demographic Profile

The average family size was 9.6 in the village. The population in the working age group i.e. in the age group (14-60) years comprised about 53 per cent of total population. That is less than 50 per cent persons constituted dependents in the family. The village also shows adverse sex ratio. This is evident from the fact that the number of female population per thousand male population was around only 886.12 (See table 5.3.2.1).

The literacy rate was 76.53 per cent. It could also be seen from table 5.3.2.2 that number of illiterates was much higher among females than among males. On the other hand in each category of education group above high school the number of males was much higher than females.

**Table – 5.3.2.1**  
**Caste and Gender-wise Distribution of Population in the Village Aswalpur**

Caste	Total Population			Below 5 year population			5 to 14 year population			14 to 60 year population			Above 60 year population			Family size
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T	
	Chamar	30	24	54	2	2	4	9	2	11	18	17	35	1	3	
Dhobi	5	7	12	-	1	1	-	1	1	4	4	8	1	1	2	6.0
Kahar	25	20	45	4	5	9	8	4	12	12	11	23	1	-	1	11.2
Gaud	11	11	22	1	2	3	4	4	8	5	6	11	-	-	-	7.3
Rajbhar	135	100	235	29	17	46	33	20	53	67	58	125	6	5	11	8.7
Prajapati	58	57	115	13	13	26	18	18	36	25	23	48	2	3	5	9.6
Teli	62	45	107	16	6	22	14	13	27	30	24	54	2	2	4	7.1
Pal	15	16	31	1	1	2	6	5	11	6	7	13	2	3	5	10.3
Maurya	38	43	81	4	6	10	11	14	25	19	21	40	4	2	6	9.0
Patel	691	614	1305	97	75	172	200	186	386	374	340	714	20	13	33	10.0
Thakur	19	21	40	1	4	5	6	5	11	11	11	22	1	1	2	10.0
Brahmin	58	49	107	7	4	11	13	20	33	34	24	58	4	1	5	13.8
Muslim	42	40	82	5	3	8	14	12	26	23	25	48	-	-	-	7.4
Kumhar	93	89	182	14	19	33	26	21	47	45	42	87	8	7	15	12.1
Total	1282	1136	2418	194	158	352	362	325	687	673	613	1286	52	41	93	9.6

**Table – 5.3.2.2**  
**Caste and Gender-wise Distribution of Education in the Village Aswalpur**

Caste	Graduation and above			Intermediate and high school			Below high school			Illiterate		
	M	F	T	M	F	T	M	F	T	M	F	T
Chamar	-	-	-	3	-	3	18	12	30	5	12	17
Dhobi	-	-	-	1	-	1	3	4	7	1	2	3
Kahar	-	-	-	6	-	6	14	9	23	-	6	6
Gaud	-	-	-	-	-	-	9	5	14	1	4	5
Rajbhar	-	-	-	5	1	6	63	28	91	35	53	88
Prajapati	-	-	-	3	-	3	24	19	43	18	23	41
Teli	-	-	-	3	-	3	36	22	58	7	17	24
Pal	-	-	-	-	-	-	6	10	16	3	5	8
Maurya	2	-	2	6	1	7	19	28	47	8	8	16
Patel	29	3	32	136	51	187	332	327	659	75	149	224
Thakur	5	1	6	2	4	6	10	11	21	2	2	4
Brahmin	12	3	15	20	13	33	21	28	49	-	1	1

Muslim	-	-	-	6	2	8	31	25	56	3	10	13
Kumhar	-	-	-	3	-	3	63	54	117	10	16	26
Total	48	7	55	194	72	266	649	582	1231	168	308	476
Percentage	4.54	0.72	2.71	18.34	7.43	13.12	61.34	60.06	60.70	15.88	31.79	23.47

### 5.3.3 Land Ownership

In Aswalpur, the average size of landholding per family was 1.63 acres and per adult person only 0.3 acres (See table 5.3.3.1). It is obvious that the variation in the size of holdings per family was larger than the variations in the size of landholdings per adult persons. The low size of land holdings per adult person also indicates that the land available for cultivation was not enough to engage all the adults in agriculture for full time work. The pressure of land has therefore forced many others to search for jobs outside agriculture. The fact that per adult person land was around 1.13 acres in the landholding group (5-10) acres and 0.86 acres in the landholding group 10 acres and above, shows that in future population pressure on land would be tremendous in all size groups. The village is thus moving towards a situation in which it will be dominated by landless and near landless households and marginal farmers who already constitute around 84 per cent of total households in the village. Village Aswalpur had a mixed population from the point of view of distribution of castes in the village population. Patels (an OBC category caste) was the predominant caste in the village as 130 out of 252 i.e. around 52 per cent households belonged to this caste (See table 5.3.3.2). Other castes with some sizable households included Rajbhar, Teli, Kumhar and Prajapati.

**Table – 5.3.3.1**  
**Distribution of Per Family/Per Adult Size of Landholdings in Different Size Groups in the Village Aswalpur**

Landholding size	Total households	Total adult pop. (>14 year)	Total land	Average landholding (Per adult person)	Average landholding (Per family)
Land-less	43	186	-	-	-
Below 0.63 Acre	23	105	7.4	0.07	0.32
0.63 to 1.0 Acre	38	171	26.5	0.15	0.7
1.0 to 2.5 Acre	107	688	190	0.27	1.77
2.5 to 5.0 Acre	27	128	86.7	0.67	3.21
5.0 to 10.0 Acre	11	54	61.3	1.13	5.57
Above 10.0 Acre	3	47	40.7	0.86	13.56
Total	252	1379	412.6	0.3	1.63

**Table – 5.3.3.2**

**Caste-wise Distribution of Landholdings in Different Size Groups in the Village Aswalpur**

Caste	Land-less	Below 0.63 Acre	0.63 to 1.0 Acre	1.0 to 2.5 Acre	2.5 to 5.0 Acre	5.0 to 10.0 Acre	Above 10 Acre	Total HH.
Chamar	2	-	3	4	-	-	-	9
Dhobi	-	2	-	-	-	-	-	2
Kahar	1	-	2	1	-	-	-	4
Gaud	1	2	-	-	-	-	-	3
Rajbhar	16	5	2	4	-	-	-	27
Prajapati	11	-	-	1	-	-	-	12
Teli	3	2	5	5	-	-	-	15
Pal	-	-	1	1	1	-	-	3
Maurya	3	-	-	-	5	1	-	9

Patel	3	6	23	74	17	6	1	130
Thakur	1	-	-	-	-	3	-	4
Brahmin	-	-	-	2	3	1	2	8
Muslim	2	1	2	6	-	-	-	11
Kumhar	-	5	-	9	1	-	-	15
Total	43	23	38	107	27	11	3	252
Percentage	17.06	9.13	15.08	42.46	10.71	4.37	1.19	100.0

### 5.3.4 Occupational Structure

The occupation-wise distribution of households showed that the main occupation of 171 out of 252 households i.e. 68 per cent was cultivation, while that of 42 households i.e. around 17 per cent households it was other work (which mainly constituted Carpet weaving).

The occupation of many households have also changed as a result of increasing pressure on land and non-availability of work in the village. The change in main occupation has taken place mainly among cultivators and wage labour. Out of 192 households whose main occupation was cultivation in the past, now 171 i.e. 89 per cent are continuing with it 12 (i.e. 6.25 per cent) are engaged in service and 9 (i.e. 4.7 per cent) are engaged in other work. Interestingly all the 21 households who have shifted to other occupations, continue to be engaged in cultivation as their supplementary occupation. Wage labourers have declined sharply from 50 in the past to 16 at present in the village (See table 5.3.4.1).

Occupation wise distribution of workers in the village showed that out of 744 workers 50 per cent were cultivators 8.5 per cent were agricultural labour, 6.85 per cent were in service and 20.43 per cent were engaged in other work. Gender wise distribution of occupation of workers showed that proportion of male and female workers among cultivators was 54 per cent and 43 per cent respectively. The proportion of males was higher in the category of cultivators and service class. But proportion of females was higher among labourers categories which included agricultural labourers, other labourers and other workers (See table 5.3.4.2).

**Table – 5.3.4.1  
Present and Past Occupations of Households in the Village Aswalpur**

Past occupation	Present main occupation					Supplementary occupation		
	Occupation	Total HHs	Cultiva tor	Wage	Servi- ce	Other works	Cultivator	Wage
Cultivator	192	171	-	12	9	21	15	12
Wage labour	50	-	16	8	26	-	26	5
Service	3	-	-	3	-	3	-	-
Other Works	7	-	-	-	7	7	-	-
Total	252	171	16	23	42	31	41	17

**Table – 5.3.4.2**

### Caste and Gender-wise Distribution of Occupation of Workers in the Village Aswalpur

Caste	Cultivator			Agricultural Labour			Other Labour			Services			Other Workers		
	M	F	T	M	F	T	M	F	T	M	F	T	M	F	T
	Chamar	11	9	20	-	-	-	8	8	16	1	-	1	-	-
Dhobi	2	2	4	-	-	-	-	-	-	2	-	2	-	-	-
Kahar	8	11	19	-	-	-	-	-	-	-	-	-	4	4	8
Gaud	-	-	-	-	-	-	6	5	11	-	-	-	-	-	2
Rajbhar	10	8	18	7	4	11	37	34	71	-	-	-	8	10	18

Prajapati	1	1	2	14	14	28	6	-	6	-	-	-	2	2	4
Teli	11	-	11	-	-	-	-	-	-	-	-	-	10	10	20
Pal	3	1	4	1	1	2	-	-	-	1	-	1	-	-	-
Maurya	9	2	11	6	5	11	1	-	1	3	-	3	1	1	2
Patel	158	62	220	6	3	9	-	-	-	19	-	19	43	43	86
Thakur	3	-	3	-	-	-	-	-	-	3	-	3	-	-	-
Brahmin	14	-	14	-	-	-	-	-	-	3	-	3	1	1	2
Muslim	11	6	17	2	-	2	-	-	-	1	-	1	3	3	6
Kumhar	18	12	30	-	-	-	-	-	-	16	2	18	3	3	6
Total	259	114	373	36	27	63	58	47	105	49	2	51	75	77	152
Percentage	54.30	42.70	50.13	7.55	10.11	8.47	12.16	17.60	14.11	10.27	0.75	6.85	15.72	28.84	20.43

### 5.3.5 Livestock

The animal population was not very large in the village (**See table 5.3.5**). This was so because landless and near landless households owned less animals than those who owned more than 1 acre of land. It could be seen from the table that cows and buffaloes were the main animals in the village. If we work out the average number of cattles (that is cows and buffaloes taken together) in different landholding groups then we find that it was as follows: landless - 0.18 per households, below 0.63 acre – 0.74 per households, (0.63-1.0) acre – 0.37 per households, (1– 2.5) acres – 1.10 per households, (2.5–5) acres 0.74 per households, (5–10) acres – 1.18 per households and in the above 10 acres - 1 per household. Average cattle owned was thus found to be 0.81 per households in the village.

**Table – 5.3.5**

**Distribution of Animal in Different Categories of Landholding Size Groups Households in the Village Aswalpur**

Landholding size	Total HHs.	Cow	Buffalo	Calf	Other	Total
Land-less	43	7	12	16	24	59
Below 0.63 Acre	23	7	10	15	20	52
0.63 to 1.0 Acre	38	6	8	10	16	40
1.0 to 2.5 Acre	107	56	62	131	29	298
2.5 to 5.0 Acre	27	8	12	24	10	54
5.0 to 10.0 Acre	11	8	5	15	2	30
Above 10.0 Acre	3	3	-	5	-	8
Total	252	95	109	216	101	521

### 5.3.6 Housing Condition

There were 434 built houses owned by 252 households i.e. about 182 households owned more than one house. These are generally those households who own a pucca house along with a kutcha /semi pucca houses. There is a tendency to shift to a pucca house whenever possible and then kutcha or semi pucca house is put to other uses or as storage. Out of 434 houses in the village 166 i.e. 38 per cent were kutcha houses, 197 i.e. 45 per cent were pucca houses, and 71 i.e. 16 per cent were semi pucca houses (**See table 5.3.6**).

**Table – 5.3.6**

**Caste-wise Distribution of Housing Condition in the Village Aswalpur**



Caste	Housing Conditions			Total no. of Houses	Total Households
	Katchha	Pakka	Semi Pakka		
Chamar	9	7	-	16	9
Dhobi	-	2	-	2	2
Kahar	1	3	-	4	4
Gaud	3	3	1	7	3
Rajbhar	20	11	8	39	27
Prajapati	9	6	1	16	12
Teli	12	7	9	28	15
Pal	3	3	2	8	3
Maurya	6	8	3	17	9
Patel	80	111	35	226	130
Thakur	3	4	1	8	4
Brahmin	8	8	5	21	8
Muslim	10	11	6	27	11
Kumhar	2	13	-	15	15
Total	166	197	71	434	252

## (B) Responses of Selected Households in Village Aswalpur

Twenty households in the village Aswalpur were selected to elicit information about land use behaviour at household level.

### 5.3.7 Change in Size of Land Holding

Among the selected households 7 (i.e. 35.0 per cent) belonged to Patel caste. The distribution of households on the basis of landholdings showed that 4 (i.e. 20 per cent) owned less than 1 acre of land, 7 (i.e. 35 per cent) owned between 1 to 2.5 acres of land and 8 owned between 2.5 to 5 acres of land. Thus 55 per cent farmers were marginal farmer and 40 per cent farmers were small farmers (See table 5.2.7.1).

In Aswalpur, out of 20 households 6 reported that the size of landholdings changed during the last 20 years.

The reason of changes in the total land owned during the last 20 years in selected households showed that in 3 households (i.e. 15 per cent), division of family was the major cause, while in case of other 3 households changes took place due to purchase of land (See table 5.3.7.2).

**Table – 5.3.7.1**  
**Caste and Landholding wise Distribution of Selected Households in Villages Aswalpur**

Caste	Below 0.63 Acre	0.63 to 1.0 Acre	1.0 to 2.5 Acre	2.5 to 5.0 Acre	5.0 to 10.0 Acre	Above 10 Acre	Total
Chamar	-	1	-	-	-	-	1
Patel	-	1	3	3	-	-	7
Pal	-	-	-	1	-	-	1
Kumhar	1	-	2	-	-	-	3
Kushwaha	-	-	-	2	-	-	2

Prajapati	-	1	2	-	-	-	3
Brahmin	-	-	-	1	-	-	1
Thakur	-	-	-	1	1	-	2
Total	1	3	7	8	1	-	20
Percentage	5.0	15.0	35.0	40.0	5.0	-	100.00

Table – 5.3.7.2

**Reason of Changes in Total Land Owned During the Last 20 years in Selected Households**

<b>Reason</b>	<i>Number</i>	<b>Percent</b>
Division of family	3	15.0
Purchased	3	15.0
Not applicable	14	70.0
Total Respondents	20	100.0

In Aswalpur village, 3 (i.e. 15 per cent) households reported that their landholding increased during the last 20 years. The average change per reporting household was found to be 1.3 acres. The land owned by them increased from 3.24 acres to 7.14 acres. That shows the purchase of land was quite significant as they themselves belonged to category of marginal farmers (**See table 5.3.7.3**).

The number of households who reported decrease in their landholdings was 13 (i.e. 15 per cent) of total sampled households, and the average change per reporting households was 0.89 acres (**See table 5.3.7.4**).

*Table – 5.3.7.3*

*Number of Households Whose Landholding Increased*

Number of HHs.	Land owned at present (in acre)	Land owned 20 years ago (in acre)	Change during 20 years (in acre)	Average change per reporting HHs. (in acre)
3	7.14	3.24	3.9	1.3

**Table – 5.3.7.4**  
**Number of Households Whose Landholding Decrease**

Number of HHs.	Land owned at present (in acre)	Land owned 20 years ago (in acre)	Change during 20 years (in acre)	Average change per reporting HHs. (in acre)
3	2.67	5.34	2.67	0.89

### 5.3.8 Conversion of Agricultural Land for Non-Agricultural Purposes

In Aswalpur 18 out of 20 respondents (i.e. 90 per cent) reported that they had converted some of their agricultural land for non-agricultural purposes. All the 18 of them reported that it was due to division in family and consequent need of more land for non-agricultural purposes. Only three households suggested that the conversion of agricultural land for non-agricultural purposes was done to establish industry and three other households suggested that conversion of agricultural land for non-agricultural purposes took place due to development of village (See table 5.3.8.1).

It was also reported by respondents that reasons of conversion of agricultural land for non-agricultural purposes in the village was –

- (i) Division of family and consequent need of land for construction of houses;
- (ii) Increase in industrial activity (See table 5.3.8.2).

The respondents were also asked whether they had discontinued cultivation of any part of agricultural land owned by them. In village Aswalpur, five respondents replied in affirmative, and the reason for it was that, there was water logging/seepage in agricultural land (See table 5.3.8.3).

**Table 5.3.8.1**  
**Reason of Conversion of Agricultural land for Non-agricultural Uses of Owned Land by Selected Households**

Reason	Number	Percent
Division of family for construction of houses	18	90.0
Development of Village	3	15.0
Increase in Industry	3	15.0
Not applicable	2	10.0
Total Respondents	20	100.0

**Table – 5.3.8.2**  
**Reasons of Conversion of Agricultural Land for Non-agricultural Purposes in the Village (As Suggested by Respondents)**

Reason	Number	Percent
Division of family for construction of houses	20	100.0
Increase in industry	5	25.0
Total Respondents	20	100.0

**Table 5.3.8.3**  
**Distribution of Respondents on the Basis of Responses to Query "Reasons for not cultivating the agriculture land"**

Reasons	Number	Percent
Water logging/seepage	5	25.0
Not applicable	15	75.0
Total Respondents	20	100.0

### 5.3.9 Land Reclamation

All villages have some land which is barren and uncultivable. We wanted to know villagers perception about the possible uses of barren land. Only 2 out of 20 respondents replied to our query

that barren land could be put to which uses. The suggestions were: Barren land could be used for (a) construction of new ponds and tanks for fisheries and (b) for plantation (**See table 5.3.9.1**).

Sixteen out of 20 respondents were aware about the government programmes to reclaim usar land (**See table 5.3.9.2**).

Fourteen farmers could say as to which department undertook the work of reclamation of usar land. Most of them mentioned the name of Bhumi Sudhar Nigam while two each mentioned the names of Usar Sudhar Nigam and block office respectively (**See table 5.3.9.3**).

And thirteen farmers had benefited from any such scheme (**See table 5.3.9.4**).

Only two farmers could give reasons for not availing the facilities of schemes for land reclamation, as shown in the table (**See table 5.3.9.5**).

**Table – 5.3.9.1**

*Distribution of Responses to the query "Barren land could be put to which uses"*

Reason	Number	Percent
Construction of New Ponds/ Fisheries	1	5.0
Plantation	1	5.0
Total Respondents	20	100.0

**Table – 5.3.9.2**  
Distribution of Responses to the question "Are you aware of the Government Programmes to recal m Usar Land"

Responses	Number	Percent
Yes	16	80.0
No	4	20.0
Total Respondents	20	100.0

**Table – 5.3.9.3**  
Distribution of Responses to Query "Which Department Undertook the work of Reclamation of Usar Land"

Agency	Number
Usar Sudhar Nigam	2
Bhumi Sudhar Nigam	9
Block office	2
Farmers	1
Reporting respondents	14
Total Respondents	20

**Table – 5.3.9.4**  
Distribution of Responses to the Query "In what way you benefited from the schemes"

Responses	Number
Received gypsum pyride free of cost	13
Information given	1
Reporting respondents	14
Total Respondents	20

**Table – 5.3.9.5**  
Distribution of Responses to the Query "Reasons for Not-availing the Facilities of Schemes for Land Reclamation"

Responses	Number
Only information was given	1
Scheme not implemented in hamlets	1
Don't need	5
Not applicable	13
Total Respondents	20

### 5.3.10 Water Harvesting

Water harvesting is a serious challenge at the village level. It has two aspects – one is water logging and the other is water conservation. The problem of water logging either due to floods or other reasons was reported by 14 farmers of village Aswalpur. When asked, what measures could be adopted to avoid water logging due to rain water, 11 out of 20 (i.e. 55 per cent) respondents suggested that there was need to construct new nullah while two others suggested for cleaning up of old nullah (**See table 5.3.10.1**).

As regards water conservation, when farmers were asked, what could be done to conserve rain water in the village, 5 (i.e. 25 per cent) suggested that old ponds be renovated, while 1 farmer (i.e. 30 per cent) suggested that new ponds should be constructed. Thus ponds are considered by most of the farmers as most suitable way to conserve rain water (**See table 5.3.10.2**).

Farmers were also asked as to what would be the potential use of water. If more water could be conserved in the village. Farmers suggested that it could be used for irrigation, for animals and for bathing/washing clothes etc. (**See table 5.3.10.3**).

**Table – 5.3.10.1**  
**Distribution of Responses to the Query "What measures could be adopted to avoid water logging due to rain water"**

Reasons	Number	Percent
Link with drainage	1	5.0
Cleaning of nullah	2	10.0
Construction of new nullah	11	55.0
No problem	2	10.0
Not applicable	4	20.0
Total Respondents	20	100.0

**Table – 5.3.10.2**  
**Distribution of Responses to the Query "What could be done to Conserve rain water in the village"**

Reason	Number	Percent
Renovation of old Ponds	5	25.0
Construct new Ponds	1	5.0
Not Needed	14	70.0
Total Respondents	20	100.0

**Table – 5.3.10.3**  
**Distribution of Responses to Query "If more water could be conserved in the village then, it could be put to what uses?"**

Responses	Number	Percent
Irrigation	3	15.0
For animal	2	10.0
Fisheries	1	5.0
Bathing/Washing	2	10.0
No response	4	20.0
Total Respondents	20	100.0

We also enquired about the present status/use of those ponds, which have totally or partially disappeared. It was reported by respondents that such land had been encroached upon,

and/or is being used for cultivation and/or houses have also been constructed on such land (**See table 5.3.10.4**).

When asked what efforts should be made to renovate/revive those ponds, farmers said that desiltation and removal of encroachments were necessary for renovation of ponds (**See table 5.3.10.5**).

We also enquired from farmers as to what benefits would accrue if ponds could be revived. Villagers expected various benefits if disappeared ponds could be renovated/revived. The water thus available then could be used for irrigation, for cattle and also for domestic use (**See table 5.3.10.6**).

The present use of ponds showed an encouraging sign. As it was used for irrigation for cattle, and for fisheries (**See table 5.3.10.7**).

**Table – 5.3.10.4**  
**Distribution of Responses to the Query "What is the present use of land of those ponds, which have totally or partially disappeared"**

Reason	Number	Percent
Grazing land	2	10.0
Encroachment	4	20.0
Cultivation	2	10.0
House constructed	1	5.0
No use	6	30.0
No response	3	15.0
Total Respondents	20	100.0

*Table – 5.3.10.5*

**Distribution of Responses to the Query "What efforts could be made for revival of ponds"**

Reason	Number	Percent
Desiltation	12	60.0
Raise bunding	1	5.0
No response	6	30.0
Not applicable	3	15.0
Total Respondents	20	100.0

**Table – 5.3.10.6**  
**Distribution of Responses to query "In what way the revival of Ponds will help villagers"**

Reason	Number	Percent
Irrigation	10	50.0
For Cattle use	5	25.0
Fisheries	3	15.0
Manage water logging	2	10.0
Domestic use	1	5.0
No response	2	10.0
Total respondents	20	100.0

**Table 5.3.10.7**  
**Distribution of Responses to query "What is the Present Use of Existing Ponds"**

Reason	Number	Percent
Irrigation	1	5.0
For cattle use	1	5.0
Fisheries	2	10
Un usable	15	75.0
Total Respondents	20	100.0

### 5.3.11 Orchards

Farmers were also asked whether the area under orchards has increased or decreased. Eighteen (i.e. 90 per cent) farmers suggested that it has decreased, while only 10 per cent reported increase in area under orchards (**See table 5.3.11.1**).

The main reason for decrease of orchards according to farmers were water logging, increase in felling of trees and need for agricultural land (**See table 5.3.11.2**).

The reason for increase in the area under orchards, and/or coming up of new orchards was mentioned by two farmers only. One suggested that non-fruit trees are being planted, while the other attributed it to tendency for commercial groves. He also suggested other that this was done by converting agricultural land for this purpose. (**See table 5.3.11.3**).

**Table – 5.3.11.1**  
**Distribution of Responses to query "Whether the area under orchards has increased/decreased"**

Response	Number	Percent
Increased	2	10.0
Decreased	18	90.0
Total Respondents	20	100.0

**Table – 5.3.11.2**  
**Distribution of Perception of Respondent about Reason of Decrease of Orchard**

Reasons	Number
Tree felling increased	4
New orchards not coming	2
Salinity	1
Water logging	15
Need for agri. Land	3
No response	4
Not applicable	2
Total Respondents	20

**Table – 5.3.11.3**  
**Perception of Respondent about Reason of Increase of Orchard**

Reason	Number
Non-fruit tree are being planted	1
Conversion of agricultural land	1
Tendency for commercial groves	1
Not applicable	18
Total Respondents	20



When asked that why the potential of growth of orchards was low in the village, 12 (i.e. 60 per cent) farmers suggested that it was so due to problem of water logging while 6 said that more land was needed for agricultural purposes (**See table 5.3.11.4**).

The scope for developing new orchards in the village seemed to be very limited as most of reporting farmers felt that new orchards could be developed on agricultural land (**See table 5.3.11.5**).

When asked, what kind of facilities would be required to increase area under orchard, 25 per cent farmers suggested that system of water drainage be improved, while 10 per cent suggested that high yielding variety plants be given for the purpose (**See table 5.3.11.6**).

**Table – 5.3.11.4**  
**Distribution of Responses to query "Why the potential of growth of orchards is low"**

Reason	Number	Percent
More land needed for agriculture	6	30.0
Tendency declined	1	5.0
Seepage/water logging	12	60.0
No response	1	5.0
Total Respondents	20	100.0

**Table – 5.3.11.5**  
**Distribution of Responses to query "On which type of land area under orchards could be increased"**

Type of Land	Number	Percent
Agricultural land	6	30.0
Usar land	1	5.0
Road side and around hamlet	1	5.0
On up land	2	10.0
No response	10	50.0
Total Respondents	20	100.0

**Table – 5.3.11.6**  
**Distribution of Responses to query "What kind of facilities would be required to increase area under orchard"**

Reason	Number	Percent
H.Y.V. plants be given	2	10.0
System of water drainage	5	25.0
Economic assistance	1	5.0
No response	12	60.0
Total Respondents	20	100.0

### 5.3.12 Livestock

In Aswalpur, 15 out of 20 selected respondents reported that size of their livestock has decreased, while 3 reported increase in the livestock.

The main reasons suggested for decrease in livestock by respondents were scarcity of fodder and grazing, there was no one in the family to look after livestock and the majority of them said that is was so because of increasing use of tractors (**See table 5.3.12.1**).

Out of the three respondents who reported increase in number of cattles, two said that it was so because of their attachment with the cattle, while one attributed the increase in number of cattles to increase income (**See table 5.3.12.2**).

When asked that number of which type of livestock has decreased; the respondents reported that number of mainly two types namely bovine and bullocks had decreased (**See table 5.3.12.3**).

The overwhelming majority of respondents suggested that their economic condition would improve if they increase bovine cattle (**See table 5.3.12.4**).

The main constraints in increasing livestock were: scarcity of fodder/grazing land, lack of manpower and economic constraint (**See table 5.3.12.5**).

**Table – 5.3.12.1  
Distribution of Responses to query "Reasons for decrease in livestock"**

Reason	Number
Low income	1
Scarcity of fodder/Grazing land	3
No one to look after them	2
Now use tractors	9
No response	4
Not applicable	2
Total Respondents	20

**Table – 5.3.12.2  
Distribution of Responses to query "Reasons for increase in livestock"**

Reason	Number
Attachment with cattle	2
Increase income	1
Not applicable	18
Total respondents	20

**Table – 5.3.12.3  
Distribution of Responses to query "Number of which type of livestock has decreased"**

Type of Cattles	Number
Bovine	9
Goat	1
Bullock	7
No response	3
Total Respondents	20

**Table – 5.3.12.4  
Distribution of Responses to query "What type of livestock will improve your economic condition"**

Types of Cattle	Number
Bovine	19
No response	1
Total Respondents	20

**Table – 5.3.12.5  
Distribution of Responses to query "What are the main constraints in increasing livestock"**

Reason	Number
Economic constraint	8
Lack of manpower	4
Scarcity of fodder/grazing land	8
Absence of veterinary services	1
No problem	1
Total Respondents	20

### 5.3.13 Agriculture

The main crops grown in the village Aswalpur were wheat and paddy. The average production of wheat and paddy was 12 Qt./acre and 15 Qt./acre respectively (See table 5.13.1).

Out of the 20 selected farmers, 19 reported that productivity in their farms was lower than other farms. The main reasons for lower productivity were economic constraint, scarcity of manpower and inability to look after farming and lower use of fertilizer, pesticide, compost etc. (See table 5.3.13.2).

Farmers were also asked about the main constraints in better utilization of agricultural land. The constraints suggested included economic constraint, low productivity of land, water logging, low irrigation, erratic power supply and scarcity of manpower (See table 5.3.13.3).

**Table – 5.3.13.1**  
**Cropping Pattern of Selected Household, Average Production and Use of Fertilizer**

Crops	Net sown area (in acre)	Production (in Qt./Acre)	Compost (per acre)	DAP (in kg./acre)	Urea (in kg./acre)	Potas (in kg./acre)	Pesticide (Rs./Acre)
Wheat	35.1	12	2 Trolley	45.5	41.0	-	-
Paddy	34.0	15	-	35.0	58.0	-	300.00
Potato	4.0	60	-	225.0	100.0	80.0	80.0
Matar	1.0	5	-	-	-	-	-

**Table – 5.3.13.2**  
**Distribution of Responses to query "Reason for lower productivity of respondents farm from other farms"**

Reason	Number
Low use of fertilizer/pesticide/compost etc.	3
Low irrigation	2
Scarcity of resources	1
Economic constraint	9
Scarcity of manpower and inability to look after farming	6
Low productivity of soil	4
Not applicable	1
Total Respondents	20

**Table – 5.3.13.3**  
**Distribution of Responses to query "What are the main constraints in better utilisation of agricultural land"**

Constraints	Number
Scarcity of manpower	2
Low irrigation	1
Economic constraint	2
Low productivity of land	4
Scarcity of resources	1
Water logging/Seepage	2
Erratic power supply	1
Total Respondents	20

The various suggestions made by farmers to remove these constraints included HYV seeds be made available, power supply be increased, economic assistance should be provided, soil testing should be done and irrigation facility be increased (**See table 5.3.13.4**).

**Tenancy:** Two of the selected farmers leased out land. The reasons for leasing out land were scarcity of resources and non-availability of workers (**See table 5.3.13.5**). And five selected farmers reported that they leased in land. The reason suggested by two of them was that they owned very small piece of land while three others leased in land to augment their income (**See table 5.3.13.6**). Thus, the present day tenancy is the outcome of two fold processes. On the one hand either very small farmer is leasing out land who faces scarcity of resources or those farmers are leasing out land who are now engaged in other activities and are therefore facing problems in managing farming activities. On the other hand those who lease in land, do so for two reasons – one their landholdings are very small and leasing would make their operational holdings viable. The other reason is obvious reason i.e. to increase income.

**Table – 5.3.13.4**  
**Distribution of Responses to query "How above mentioned constraints could be removed"**

<b>Measures</b>	<b>Number</b>
Increase irrigation facility	2
Economic/Credit assistance	6
Soil testing	1
Land reclamation	5
Cleaning of drainage	4
Increase power supply	2
Disease resistant	1
Total Respondents	20

**Table – 5.3.13.5**  
**Distribution of Responses to query "Reasons for leasing out the land"**

<b>Reason</b>	<b>Number</b>
Non-availability of workers	1
Scarcity of resources	1
Not applicable	18
Total Respondents	20

**Table – 5.3.13.6**  
**Distribution of Responses to query "Reasons for leasing in by tenants"**

<b>Reason</b>	<b>Number</b>
Augment income	3
Owned land is small	2
Not applicable	15
Total Respondents	20

## **(C) Land Use Plan for Aswalpur Village**

The gram sabha land, which was earmarked as pasture land had been distributed to landless households and therefore no pasture land was left in the village. The non-existence of pasture land has adversely affected animal husbandry in the village.

Similarly except some trees which were in front of some houses, all the land under trees, bushes and groves have disappeared.

The area under water logging has increased in the village. It has increased from around 30 acres 20 years ago to around 65 acres at present. The main reason of water logging is canal water. It is therefore imperative that canal water be released in phases.

Main sources of drinking water are hand pumps in the village. Irrigation water is available through canals, government tubewell, and private handpumps.

The main sources of conservation of surface water in the village are ponds (in 5 acres), *Bundhi* – (in 2.5 acres) and canal (in 2.5 acres). Canal water overflows because water-grass has grown in canal channels.

Pond of the village should be renovated to make it more usable.

Land management committee had been formed in the village only recently. And opinion about its functioning could be formed only after a few years of its functioning.

The large part of gram sabha land, which has been given on lease is being used for agriculture and a part of it has been used for construction of houses under Indira Awas Yojana.

Besides above suggestions following steps could be taken to regulate land use in the village:

- (i) Land Management Committee be reconstituted with representations of all sections and entrusted with specific responsibilities related to land use in the village.
- (ii) After consolidation, conversion of agricultural land for non-agricultural purposes is prohibited. Those who have violated this norm should be penalized. A fine based on current value of land and house be imposed.
- (iii) Building tax should be collected every year from those farmers who have constructed any house/building on farm land.
- (iv) Stringent action should be taken against those who have encroached upon pond of the village. They should be debarred from getting benefit of any government scheme and also debarred from contesting any elections.
- (v) Desiltation of drainage course should be done regularly.

## Village Study – IV

### Village – Boonchi (Block – Pindara)

#### (A) Village Profile

Village Boonchi is located in the Pindara block of district Varanasi. It is situated at a distance of 24 kilometers from district headquarter and 6 kilometers from block headquarter. Boonchi is an agriculturally developed village and potato is the main crop grown in the village. The pond of the village have been encroached upon. An interesting feature of encroachment is that, a school has been constructed on such land which was used as pond in the past.

The village Boonchi is relatively a developed village. Brahmins constituted the largest community in the village and a large number of them were engaged in service. The income from service also helped them to invest more in agriculture.

#### 5.4.1 Land Use Pattern

Village Boonchi is relatively a small village with only 61.918 hectares total reporting area. In village Boonchi land use pattern shows that it continues to be predominantly agricultural as 76 per cent of total reporting area was under cultivation. Another important feature was that the land under orchards was 4.6 per cent which the land under the fallow was 5.17 per cent (**See table 5.4.1**).

**Table – 5.4.1**

*Land Use Pattern in the Boonchi Village of the Varanasi District*

Land Use Categories	In hectare	In percent
Total reporting area	61.918	100.0
Water bodies	1.855	3.0
Habitation	5.232	8.45
Other uses	1.921	3.1
Barren	-	-
Banjar	-	-
Culturable waste	-	-
Orchards	2.849	4.6
Other trees and plantations	-	-
Current fallow	-	-
Fallow other than current fallow	3.203	5.17
Net sown area	47.097	76.06
(a) Irrigated	39.80	84.50
(b) Un-irrigated	7.301	15.50
Area sown more than once	21.445	
(a) Irrigated	15.025	
(b) Un-irrigated	6.420	

**Source:** Revenue department.

## 5.4.2 Demographic Profile

The average family size was 7.1 in the village. The population in the working age group i.e. in the age group (14-60) years comprised around 52 per cent of total population. That is more than 47 per cent persons constituted dependents in the family. The village also shows adverse sex ratio. This is evident from the fact that the number of female population per thousand male population was around only 841.61 (See table 5.4.2.1).

The literacy rate was 71.6 per cent. It could also be seen from table 5.4.2.2 that number of illiterates was much higher among females (38 per cent) than among males (20 per cent). On the other hand in each category of education group above high school the number of males was much higher than females. It could also be seen from the table that higher education was reported only from two castes namely Bhumihar and Brahmin.

**Table – 5.4.2.1**  
**Caste and Gender-wise Distribution of Population in the Village Boonchi**

Particulars	Gender	Chamar	Dhobi	Rajbhar	Bhumihar	Thakur	Brahmin	Total	
Total population	Male	56	18	10	18	9	211	322	
	Female	53	18	9	8	13	170	271	
	Total	109	36	19	26	22	381	593	
Below 5 year population	Male	15	4	2	3	1	35	60	
	Female	14	2	1	-	4	20	41	
	Total	29	6	3	3	5	55	101	
5 to 14 year population	Male	12	6	4	4	3	42	71	
	Female	10	8	2	-	4	33	57	
	Total	22	14	6	4	7	75	128	
14 to 60 year population	Male	27	8	3	9	4	114	165	
	Female	26	8	3	6	4	99	146	
	Total	53	16	6	15	8	213	311	
Above 60 year population	Male	2	-	1	2	1	20	26	
	Female	3	-	3	2	1	18	27	
	Total	5	-	4	4	2	38	53	
Family size		6.4	7.2	4.7	6.5	5.5	7.9	7.1	

**Table – 5.4.2.2**

### *Caste and Gender-wise Distribution of Education in the Village Boonchi*

Particulars	Gender	Chamar	Dhobi	Rajbhar	Bhumihar	Thakur	Brahmin	Total	
								Total	%age
Graduation and above	Male	-	-	-	4	-	57	61	22.76
	Female	-	-	-	2	-	13	15	6.28
	Total	-	-	-	6	-	70	76	14.99
Intermediate and high school	Male	-	-	-	3	1	41	45	16.79
	Female	-	-	-	-	-	29	29	12.13

school	Total	-	-	-	3	1	70	74	14.60
Below high school	Male	16	10	3	6	4	70	109	40.67
	Female	13	9	2	1	7	72	104	43.51
	Total	29	19	5	7	11	142	213	42.01
Illiterate	Male	25	7	5	1	1	14	53	19.79
	Female	28	7	6	5	2	43	91	38.08
	Total	53	14	11	6	3	57	144	28.40

### 5.4.3 Land Ownership

In Boonchi, the average size of landholding per family was 2.27 acres and per adult person only 0.51 acres (**See table 5.4.3.1**). Many landowners in the village also owned land in the neighbouring village also. It is obvious that the variation in the size of holdings per family was larger than the variations in the size of landholdings per adult persons. The low size of land holdings per adult person also indicates that the land available for cultivation was not enough to engage all the adults in agriculture for full time work. The pressure of land has therefore forced many others to search for jobs outside agriculture. The fact that per adult person land was around 0.7 acres in even the landholding group (5-10) acres, shows that in future population pressure on land would be tremendous in all size groups. The village is thus moving towards a situation in which it will be dominated by landless, near landless and marginal farmer households. Village Boonchi is a typical village from the point of view of distribution of caste in the village population. Only upper caste and scheduled caste households were reported in the village and other backward castes were not found in the village. Most of the scheduled caste households belonged to landless or near landless categories while upper caste households owned more than 1 acre of land and a majority of them owned more than 2.5 acres of land (**See table 5.4.3.2**).

**Table – 5.4.3.1**  
**Distribution of Per Family/Per Adult Size of Landholdings in Different Size Groups in the Village Boonchi**

Landholding size	Total households	Total adult pop. (>14 year)	Total land	Average landholding (Per adult person)	Average landholding (Per family)
Land-less	11	340	-	-	-
Below 0.63 Acre	10	25	4.1	0.16	0.41
0.63 to 1.0 Acre	5	18	3.3	0.18	0.66
1.0 to 2.5 Acre	27	118	45	0.38	1.66
2.5 to 5.0 Acre	20	89	68.7	0.85	3.43
5.0 to 10.0 Acre	10	80	68	0.7	6.8
Total	83	364	189.1	0.51	2.27

**Table – 5.4.3.2**  
**Caste-wise Distribution of Landholdings in Different Size Groups in the Village Boonchi**

Landholding size	Chamar	Dhobi	Rajbhar	Bhumihar	Thakur	Brahmin	Total HHs.	%age
Land-less	9	-	2	-	-	-	11	13.25
Below 0.63 Acre	7	1	-	-	-	2	10	12.05
0.63 to 1.0 Acre	1	3	1	-	-	-	5	6.02
1.0 to 2.5 Acre	-	1	1	4	-	21	27	32.53
2.5 to 5.0 Acre	-	-	-	-	4	16	20	24.10



5.0 to 10.0 Acre	-	-	-	-	-	10	10	12.05
Total	17	5	4	4	4	49	83	100.0

#### 5.4.4

#### Occupational Structure

The occupation-wise distribution of households showed that the main occupation of 29 out of 83 households was cultivation, while that of 31 households i.e. around 37.35 per cent households it was service. The occupation of many households have also changed as a result of increasing pressure on land and non-availability of work in the village. The change in occupation has taken place due to spread of education. The change in main occupation has taken place mainly among cultivators. Out of 55 households whose main occupation was cultivation in the past, now only 27 i.e. 49 per cent are continuing with it, while 23 (i.e. 42 per cent) are engaged in service and 15 (i.e. 10 per cent) are engaged in other work. Interestingly all the 28 households who have shifted to other occupations, still continue to maintain farming as their supplementary occupation. Similarly those households who continue cultivation as their main occupation are also engaged in supplementary occupations. Other work was supplementary occupation of many cultivators (**See table 5.4.4.1**).

Occupation wise distribution of workers in the village showed that out of 178 workers 158 were males and only 20 were females. Female participation rate was very low in the village. It could also be seen from the table that out of 178 workers 70 i.e. 39 per cent were cultivators 55 i.e. 31 per cent were agricultural labourers, 36 i.e. 20 per cent were in service and 15 i.e. 8.4 per cent were engaged in other work. Gender wise distribution of occupation of workers showed that female workers were reported from only scheduled caste category households and 19 out of 20 females workers were agricultural labourers (**See table 5.4.4.2**).

**Table – 5.4.4.1  
Present and Past Occupations of Households in the Village Boonchi**

Past occupation		Present main occupation				Supplementary occupation			
Occupation	Total HHs.	Cultiva tor	Wage	Servi- ce	Other works	Cultiva tor	Wage	Shop	Other work
Cultivator	55	27	-	23	5	28	-	7	6
Wage	18	-	18	-	-	-	-	2	1
Service	9	1	-	8	-	8	-	1	-
Others work	1	1	-	-	-	-	-	-	1
Total	83	29	18	31	5	36	-	10	8

**Table – 5.4.4.2  
Caste and Gender-wise Distribution of Occupation of Workers in the Village Boonchi**

Particulars		Chamar	Dhobi	Rajbhar	Bhumihar	Thakur	Brahmin	Total	%age
Cultivator	Male	-	-	2	5	4	59	70	44.30
	Female	-	-	-	-	-	-	-	-
	Total	-	-	2	5	4	59	70	39.33

Agricultural Labour	Male	34	2	2	-	-	-	36	22.78
	Female	18	1	1	-	-	-	19	95.00
	Total	52	3	3	-	-	-	55	30.90
Other Labour	Male	-	-	2	-	-	-	2	1.27
	Female	-	-	-	-	-	-	-	-
	Total	-	-	2	-	-	-	2	1.12
Service	Male	-	-	-	3	2	31	36	22.78
	Female	-	-	-	-	-	-	-	-
	Total	-	-	-	3	2	31	36	20.22
Others Work	Male	-	5	-	-	-	9	14	8.86
	Female	-	1	-	-	-	-	1	5.00
	Total	-	6	-	-	-	9	15	8.43

### 5.4.5 Livestock

Even the animal population was not very large in the village (**See table 5.4.5**). This was so because landless and near landless households owned less animals than those who owned more than 1 acre of land. It could be seen from the table that cows and buffaloes were the main animals in the village. If we work out the average number of cattles (that is cows and buffaloes taken together) in different landholding groups then we find that it was as follows: landless - 0.18 per households, below 0.63 acre – 0.5 per households, (0.63 - 1.0) acre – 0.6 per households, (1 - 2.5) acre – 1.63 per households, (2.5 - 5 acre) – 1.6 per households and (5 - 10) acres – 2 per households. Average cattle owned was thus found to be 1.28 per households in the village. The landless and near landless however owned other animals.

**Table – 5.4.5**  
**Distribution of Animal in Different Categories of Landholding Size Groups Households in the Village Boonchi**

Landholding size	Total HHs.	Cow	Buffalo	Calf	Other	Total
Land-less	11	-	2	3	21	26
Below 0.63 Acre	10	2	3	4	17	26
0.63 to 1.0 Acre	5	-	3	5	8	16
1.0 to 2.5 Acre	27	18	26	52	2	98
2.5 to 5.0 Acre	20	9	23	30	5	67
5.0 to 10.0 Acre	10	7	13	8	4	42
Total	83	36	70	112	57	275

### 5.4.6 Housing Condition

There were 113 built houses owned by 83 households i.e. 30 households owned more than one house. These are generally those households who own a pucca house along with a kutcha /semi pucca houses. There is a tendency to shift to a pucca house whenever possible and then kutcha or semi pucca house are put to other uses or as storage. Out of 113 houses in the village 41 i.e. 36.28 per cent were kutcha houses, 52 i.e. 46 per cent were pucca houses, and 23 i.e. 20 per cent were semi pucca houses (**See table 5.4.6**).

**Table – 5.4.6**  
**Caste-wise Distribution of Housing Condition in the Village Boonchi**

Housing condition	Chamar	Dhobi	Rajbhar	Bhumihar	Thakur	Brahmin	Total
Katcha	17	-	4	3	1	16	41
Pakka	-	2	-	4	4	42	52
Semi Pakka	-	5	-	2	1	15	23
Total no. of houses	17	7	4	9	6	73	113
Total households	17	5	4	4	4	48	83

## (B) Responses of Selected Households in Village Boonchi

Twenty households in the village Boonchi were selected to elicit information about land use behaviour at household level.

### 5.4.7 Change in Size of Land Holding

Among the selected households 15 (i.e. 75.0 per cent) belonged to Brahmin caste. The distribution of households on the basis of landholdings showed that 9 (i.e. 45 per cent) were marginal farmers, 5 were small farmers and 6 belonged to the category of semi medium farmers (See table 5.2.7.1).

In Boonchi, out of 20 households 14 reported that the size of landholdings changed during the last 20 years.

The reason of changes in the total land owned during the last 20 years in selected households showed that in 7 households (i.e. 35 per cent), division of family was the major cause, while in case of 1 (i.e. 5 per cent) household change took place due to consolidation of holdings. Four households (i.e. 20 per cent) purchased land while only 2 (i.e. 10 per cent) reportedly sold land (See table 5.4.7.2).

**Table – 5.4.7.1**  
**Caste and Landholding wise Distribution of Selected Households in Villages Boonchi**

Caste	Below 0.63 Acre	0.63 to 1.0 Acre	1.0 to 2.5 Acre	2.5 to 5.0 Acre	5.0 to 10.0 Acre	Above 10 Acre	Total
Dhobi	-	-	2	-	-	-	2
Pal	-	-	1	-	-	-	1
Brahmin	-	-	5	5	5	-	15
Bhumihar	-	-	1	-	1	-	2
Total	-	-	9	5	6	-	20
Percentage	-	-	45.0	25.0	30.0	-	100.0

*Table – 5.4.7.2*

**Reason of Changes in Total Land Owned During the Last 20 years in Selected Households**

Reason	Number	Percent
Division of family	7	35.0
Purchased	4	20.0
Due to consolidation of holdings	1	5.0
Sold	2	10.0
Not applicable	7	35.0
Total Respondents	20	100.0

In Boonchi village, 4 (i.e. 20 per cent) households reported that their landholding increased during the last 20 years. The average change per reporting household was found to be 1.89 acres. That the purchase of land was not at a very small scale is evident from the fact that they were earlier owners of small land holdings only (**See table 5.4.7.3**).

The number of households who reported decrease in their landholdings was 9 (i.e. 45 per cent) of total sampled households, and the average change per reporting household was 8.34 acres (**See table 5.4.7.4**).

*Table – 5.4.7.3*

*Number of Households Whose Landholding Increased*

Number of HHs.	Land owned at present (in acre)	Land owned 20 years ago (in acre)	Change during 20 years (in acre)	Average change per reporting HHs. (in acre)
4	20.79	13.23	7.56	1.89

**Table – 5.4.7.4**  
**Number of Households Whose Landholding Decrease**

Number of HHs.	Land owned at present (in acre)	Land owned 20 years ago (in acre)	Change during 20 years (in acre)	Average change per reporting HHs. (in acre)
9	25.2	100.29	75.09	8.34

## 5.4.8 Conversion of Agricultural Land for Non-Agricultural Purposes

In Boonchi 16 out of 20 respondents (i.e. 80 per cent) reported that some part of their agricultural land had been converted for non-agricultural purposes. Fourteen of them reported that it was due to division in family and consequent need of more land for non-agricultural purposes. Only two households suggested that the conversion of agricultural land for non-agricultural purposes was due to development of village **(See table 5.4.8.1)**.

It was also reported by respondents that reasons of conversion of agricultural land for non-agricultural purposes in the village was – division of family and consequent need of land for construction of houses **(See table 5.4.8.2)**.

The respondents were also asked whether they had discontinued cultivation of any part of agricultural land owned by them. In village Boonchi, only four respondents replied in affirmative. Three had discontinued cultivation due to litigation while one had done so because the land was unirrigated **(See table 5.4.8.3)**.

**Table – 5.4.8.1**  
**Reason of Conversion of Agricultural land for Non-agricultural Uses of Owned Land by Selected Households**

Reason	Number	Percent
Division of family for construction of houses	14	70.0
Development of Village	2	10.0
Not applicable	6	30.0
Total Respondents	20	100.0

**Table – 5.4.8.2**  
**Reasons of Conversion of Agricultural Land for Non-agricultural Purposes in the Village (As Suggested by Respondents)**

Reason	Number	Percent
Division of family for construction of houses	20	100.0
Total Respondents	20	100.0

**Table 5.4.8.3**  
**Distribution of Respondents on the Basis of Responses to Query "Reasons for not cultivating the agriculture land"**

Reasons	Number	Percent
Litigation	3	15.0
Unirrigated	1	5.0
Total Respondents	20	100.0

## 5.4.9 Land Reclamation

All villages have some land which is barren and uncultivable. We wanted to know villagers perception about the possible uses of barren land. Only 4 out of 20 respondents replied to our query that barren land could be put to which uses. The suggestions were: Barren land could be used for ((i) construction of houses; (ii) construction of new ponds and tanks for fisheries (iii) for plantation (See table 5.4.9.1).

Only 10 out of 20 respondents were aware about the government programmes to reclaim usar land (See table 5.4.9.2).

Only one farmer could say as to which department undertook the work of reclamation of usar land (See table 5.4.9.3).

And no farmer has benefited from any such scheme (See table 5.4.9.4).

Reasons for not availing the facilities of schemes for land reclamation, is shown in the table 5.4.9.5.

**Table – 5.4.9.1**

*Distribution of Responses to the query "Barren land could be put to which uses"*

Reason	Number
Construction of House	2
Construction of New Ponds/ Fisheries	1
Plantation	1
Total Respondents	20

**Table – 5.4.9.2**  
Distribution of Responses to the question  
"Are you aware of the Government  
Programmes to recalrm Usar Land"

Responses	Number
Yes	10
No	9
Don't know	1
Total Respondents	20

**Table – 5.4.9.3**  
Distribution of Responses to Query "Which  
Department Undertook the work of  
Reclamation of Usar Land"

Agency	Number
NGO	1
Reporting respondents	1
Total Respondents	20

**Table – 5.4.9.4**  
Distribution of Responses to the Query  
"In what way you benefited from the  
schemes"

Responses	Number
Not benefited	20
Total Respondents	20

**Table – 5.4.9.5**  
Distribution of Responses to the Query "Reasons for  
Not-availing the Facilities of Schemes for Land  
Reclamation"

Responses	Number
Scheme not implemented in the village	5
Don't need	7
No response	8
Total Respondents	20



## 5.4.10 Water Harvesting

Water harvesting is a serious challenge at the village level. It has two aspects one is water logging and the other is water conservation. The problem of water logging either due to floods or other reasons was reported in Boonchi. When asked, what measures could be adopted to avoid water logging due to rain water, 8 out of 20 (i.e. 40 per cent) respondents suggested it should be linked with drainage system while one farmer suggested that there was need to construct new nullah **(See table 5.4.10.1)**.

As regards water conservation, when farmers were asked, what could be done to conserve rain water in the village, 15 (i.e. 75 per cent) suggested that old ponds be renovated. Thus ponds are considered by most of the farmers as most suitable way to conserve rain water **(See table 5.4.10.2)**.

Farmers were also questioned about the potential use if more water could be conserved in the village. Farmer suggested that if more water could be conserved in the village, then it could be used for irrigation, for animals and for bathing/washing clothes etc. **(See table 5.4.10.3)**.

**Table – 5.4.10.1**  
**Distribution of Responses to the Query "What measures could be adopted to avoid water logging due to rain water"**

Reasons	Number
Link with drainage system	8
Construction of new nullah	1
Not applicable	11
Total Respondents	20

**Table – 5.4.10.2**  
**Distribution of Responses to the Query "What could be done to Conserve rain water in the village"**

Reason	Number
Renovation of old Ponds	15
Not Needed	3
Total Respondents	20

**Table – 5.4.10.3**  
**Distribution of Responses to Query "If more water could be conserved in the village then, it could be put to what uses?"**

Responses	Number
Irrigation	13
For animal	10
Fisheries	1
Bathing/Washing	8
Total Respondents	20

We also enquired about the present status/use of those ponds, which have totally or partially disappeared. It was reported by respondents that such land had been encroached upon, and a school has been constructed on such land (**See table 5.4.10.4**).

When asked what efforts should be made to renovate/revive those ponds, farmers said that desiltation, raising of bunding and removal of encroachments were necessary for renovation of ponds (**See table 5.4.10.5**).

Villagers expected various benefits if disappeared ponds could be renovated/revived. The water thus available then could be used for irrigation, for cattle and also for domestic use. One farmer also suggested that it would help in managing water logging (**See table 5.4.10.6**).

The present use of ponds did not show an encouraging sign. Three suggested that it was used for cattle, one told that it was used for domestic purposes while 16 reported that it was unusable (**See table 5.4.10.7**).

**Table – 5.4.10.4**  
**Distribution of Responses to the Query "What is the present use of land of those ponds, which have totally or partially disappeared"**

Reason	Number
Grazing land	1
Encroachment	4
House constructed	1
School constructed	11
No use	1
No response	1
Total Respondents	20

**Table – 5.4.10.5**  
**Distribution of Responses to the Query "What efforts could be made for revival of ponds"**

Reason	Number
Desiltation	17
Raise bunding	3
Remove encroachments	3
Not applicable	1
Total Respondents	20

**Table – 5.4.10.6**  
**Distribution of Responses to query "In what way the revival of Ponds will help villagers"**

Reason	Number
Irrigation	16
For Cattle use	14
Fisheries	2
Manage water logging	1
Domestic use	4
Total Respondents	20

**Table 5.4.10.7**  
**Distribution of Responses to query "What is the Present Use of Existing Ponds"**

Reason	Number
For cattle use	3
Domestic use	1
Un usable	16
Total Respondents	20

## 5.4.11 Orchards

Farmers were also asked whether the area under orchards has increased or decreased. Eighteen (i.e. 90 per cent) farmers suggested that it has decreased, while only 1 farmer reported increase in area under orchards (**See table 5.4.11.1**).

The main reason for decrease of orchards according to farmers were increase in felling of trees, need for agricultural land and water logging (**See table 5.4.11.2**).

The reason for increase in the area under orchards, and/or coming up of new orchards was mentioned by one farmer only. This he did with intention to develop it as a commercially viable orchard (**See table 5.4.11.3**).

**Table – 5.4.11.1**  
**Distribution of Responses to query "Whether the area under orchards has increased/decreased"**

Response	Number	Percent
Increased	1	5.0
Decreased	18	90.0
Constant	1	5.0
Total Respondents	20	100.0

**Table – 5.4.11.2**  
**Distribution of Perception of Respondent about Reason of Decrease of Orchard**

Reasons	Number	Percent
Tree felling increased	8	40.0
New orchards not coming	4	20.0
Water logging	5	25.0
Need for Agricultural Land	5	25.0
No response	2	10.0
Total Respondents	20	100.0

**Table – 5.4.11.3**  
**Perception of Respondent about Reason of Increase of Orchard**

Reason	Number
Non-fruit tree are being planted	1
Tendency for commercial groves	1
Total Respondents	20

When asked that why the potential of growth of orchards was low in the village, 7 (i.e. 35 per cent) farmers suggested that it was so because more land was needed for agriculture and 4 attributed to its long gestation period (**See table 5.4.11.4**).

The scope for developing new orchards in the village seemed to be very limited as farmers felt that new orchards could be developed on agricultural land (**See table 5.4.11.5**).

When asked, what kind of facilities would be required to increase area under orchard, two farmers suggested that gram sabha land be made available for the purpose, while six suggested that high yielding variety plants be given for the purpose. Development of water drainage system and economic assistance for the purpose were the other suggestions made by farmers (**See table 5.4.11.6**).

**Table – 5.4.11.4**  
**Distribution of Responses to query "Why the potential of growth of orchards is low"**

Reason	Number
More land needed for agriculture	7
Tendency declined	1
Seepage/water	1
Long gestation period	4
No response	7
Total Respondents	20

**Table – 5.4.11.5**  
**Distribution of Responses to query "On which type of land area under orchards could be increased"**

Type of Land	Number	Percent
Agricultural land	12	60.0
Usar Land	1	5.0
Road side and around hamlet	1	5.0
No response	6	30.0
Total Respondents	20	100.0

**Table – 5.4.11.6**  
**Distribution of Responses to query "What kind of facilities would be required to increase area under orchard"**

Reason	Number	Percent
Irrigation	2	10.0
G.S. land be made available for the purpose	2	10.0
H.Y.V. plants be given	6	30.0
System of water drainage be developed	4	20.0
Economic assistance	3	15.0
No response	3	15.0
Total Respondents	20	100.0

## 5.4.12 Livestock

In Boonchi, 17 out of 20 selected respondents reported that size of their livestock has decreased, while 3 reported increase in the livestock.

The main reasons suggested for decrease in livestock by respondents were increasing use of tractors, scarcity of fodder and grazing land and also because, there was no one in the family to look after livestock **(See table 5.4.12.1)**.

Out of the three (i.e. 15 per cent) respondents who reported increase in number of cattles, one said that it was so because of his attachment with the cattle, while two others increased number of cattles in order to increase income **(See table 5.4.12.2)**.

When asked that number of which type of livestock has decreased; the respondents reported that number of only two types namely bovine and bullocks had decreased **(See table 5.4.12.3)**.

The overwhelming majority of respondents suggested that their economic condition would improve if they increase bovine cattle **(See table 5.4.12.4)**.

The main constraints in increasing livestock were: economic constraint, scarcity of fodder/grazing land and lack of manpower to manage **(See table 5.4.12.5)**.

**Table – 5.4.12.1  
Distribution of Responses to query "Reasons for decrease in livestock"**

Reason	Number
Low income	1
Scarcity of fodder/ Grazing land	1
No one to look after them	4
Now use tractors	12
No response	2
Not applicable	3
Total Respondents	20

**Table – 5.4.12.2**  
Distribution of Responses to query  
"Reasons for increase in livestock"

Reason	Number
Attachment with cattle	1
Income increase	2
Not applicable	17
Total Respondents	20

**Table – 5.4.12.3**  
Distribution of Responses to query "Number  
of which type of livestock has decreased"

Type of Cattles	Number
Bovine	10
Bullock	10
Total Respondents	20

**Table – 5.4.12.4**  
Distribution of Responses to query  
"What type of livestock will improve your  
economic condition"

Types of Cattle	Number
Bovine	20
Total Respondents	20

**Table – 5.4.12.5**  
Distribution of Responses to query "What  
are the main constraints in increasing  
livestock"

Reason	Number
Economic constraint	10
Lack of manpower to manage	6
Scarcity of fodder/grazing land	4
Absence of veterinary services	2
No problem	1
Total Respondents	20

### 5.4.13 Agriculture

The main crops grown in the village Boonchi were wheat and paddy. The average production of wheat and paddy was 12 Qt./acre and 13.5 Qt./acre respectively (**See table 5.43.1**).

Out of the 20 selected farmers, 16 reported that productivity in their farms was lower than other farms. The main reasons for lower productivity were scarcity of resources, scarcity of manpower and inability to look after farming, low productivity of soil and lower use of fertilizer, pesticide, compost etc. (**See table 5.4.13.2**).

Farmers were also asked about the main constraints in better utilization of agricultural land. The constraints suggested included economic constraint, low productivity of land, water logging, low irrigation, erratic power supply and scarcity of manpower (**See table 5.4.13.3**).

**Table – 5.4.13.1**  
Cropping Pattern of Selected Household, Average Production and Use of Fertilizer

Crops	Net sown area (in acre)	Production (in Qt./Acre)	Compost (per acre)	DAP (in kg./acre)	Urea (in kg./acre)	Potas (in kg./acre)	Pesticide (Rs./Acre)
Wheat	39.5	12.0	-	58.5	52.6	-	-
Paddy	39.7	13.5	-	27.6	75.3	-	300.00
Potato	5.3	80.0	2.5 Trolley	250.0	150.0	100.0	500.00
Matar	2.9	4.3	-	40.0	-	-	-
Gram	2.5	4.5	-	50.0	-	-	-
Arhar	3.1	5.0	-	-	-	-	-

**Table – 5.4.13.2**  
Distribution of Responses to query "Reason for lower productivity of respondents farm from other farms"

Reason	Number
Low use of fertilizer/pesticide/compost etc.	5

Low irrigation	1
Scarcity of resources	4
Economic constraint	1
Scarcity of manpower and inability to look after farming	2
Low productivity of soil	4
Not applicable	4
Total Respondents	20

**Table – 5.4.13.3**  
**Distribution of Responses to query "What are the main constraints in better utilisation of agricultural land"**

Constraints	Number
Scarcity of manpower to manage	2
Low irrigation	1
Economic constraint	10
Low productivity of land	5
Scarcity of resources	1
Water logging/Seepage	4
No protection from stray animals	1
Erratic power supply	1
Total Respondents	20

The various suggestions made by farmers to remove these constraints included economic assistance should be provided, land reclamation should be done and irrigation facility be increased (See table 5.4.13.4).

**Tenancy:** Only two selected farmers leased out land (See table 5.4.13.5). The reason was that there was scarcity of manpower to manage farming (See table 5.4.13.6).

**Table – 5.4.13.4**  
**Distribution of Responses to query "How above mentioned constraints could be removed"**

Measures	Number
Increase irrigation facility	1
Economic/Credit assistance	10
Land reclamation	6
Cleaning of drainage	1
Protection from stray/wild animals	1
Increase power supply	1
HY Varieties be made available	1
Total Respondents	20

**Table – 5.4.13.5**  
**Distribution of Responses to query "Reasons for leasing out the land"**

Reason	Number
Scarcity of manpower to manage farming	2
Not applicable	18
Total Respondents	20

**Table – 5.4.13.6**  
**Distribution of Responses to query "Reasons for leasing in by tenants"**

<b>Reason</b>	<b>Number</b>
Not applicable	20
Total Respondents	20



## **(C) Land Use Plan for Boonchi Village**

Even though in the village records, there was no culturable waste, it was found that about 2.52 acres of land was culturable waste in the village. All such land is privately owned. Previously it was agricultural land, which was adjacent to water channels/drainage of the village. But since the cleaning and desiltation of drainage was never done, the water now overflows and the land adjacent to drainage are no more being used for cultivation purposes. The problem gets compounded when canal water is released. Thus agricultural land has become culturable waste due to water logging.

Besides culturable waste 4.41 acres of land was found to be under other trees and plantations. This land was also owned by cultivators. We gathered from discussions with farmers that even this land could be developed for growing more trees. Anwala tree could be more useful to them but even other fruit trees could be planted.

The main source of water in the village are handpumps, canals, pump sets and tubewells.

Water extracted through hand pump was used for drinking purposes, for domestic purposes and for livestock.

Water available through pump sets tubewells and canals was generally used for irrigation purposes.

The water drainage system in the village was found to be through natural drainage course, which according to villagers was useful, but not sufficient. The natural course also needed regular cleansing. There were no water channels for disposal of domestic water.

There were ponds in 2.84 acres of land. More rain water could be collected if degraded and disappeared ponds could be renovated. This water would then be available for livestock and even for irrigation. Encroachment and degradation of ponds has affected many activities. Ponds were earlier also used for grazing purposes when water dried in summer. When there was water, it was also used for various social and cultural activities as well. But now it has been encroached upon by an influential person who has also constructed a private school on it.

Land management has deteriorated in the village. The sanctity of communal/gram sabha land had severely got eroded due to two factors one distribution of land to landless and secondly due to encroachment.

The land management committee is dysfunctional for all practical purposes. Main landholders of the village belonged to Brahmin caste most of whom were also engaged in service. They leased out their land to poor/landless belonging to scheduled caste. Landowners bear all the cost of input, while the lessee provided labour. The share of lessee was one-fourth of the produce. There is need to revive land management committee for not only managing land use but also for effectively implementing land resources as per the guide lines after consolidation of holdings.

Farmers of the village are innovative and adopt newest available varieties of crops produced in the village.

Besides above suggestions following steps could be taken to regulate land use in the village:

- (i) Land Management Committee be reconstituted with representations of all sections and entrusted with specific responsibilities related to land use in the village.

- (ii) After consolidation, conversion of agricultural land for non-agricultural purposes is prohibited. Those who have violated this norm should be penalized. A fine based on current value of land and house be imposed.
- (iii) Building tax should be collected every year from those farmers who have constructed any house/building on farm land.
- (iv) Stringent action should be taken against those who have encroached upon pond of the village. They should be debarred from getting benefit of any government scheme and also debarred from contesting any elections.
- (v) Desiltation of drainage course should be done regularly.

## Chapter - 6

### Conclusion and Suggestions

The total area of Varanasi district reduced from 5092.00 sq.km. In 1991 to 1550.30 sq.km. in 2001 due to carving out of new districts.

The number of residential houses have been increasing at the rate of around 25 per cent or more per decade. Though this is an obvious off shoot of increase in population, it will have serious implication for land use planning during the coming decades. These implications would have two aspects. One, more and more land would be brought under the category 'land put to non-agricultural purposes'. Secondly, planning for housing in both urban and rural areas will have to be given serious thought such as:

- (i) how land saving devices could be adopted;
- (ii) how civic amenities could be provided;
- (iii) what kind of infra-structural facilities will be needed to be developed; and
- (iv) what kind of common use facilities will be required to be developed.

The pressure on land in Varanasi has mitigated because a sizable work-force was found to be engaged in secondary and tertiary sector.

There were only two blocks in the district namely Pindara and Cholapur where the proportion of workers depending on agriculture was above 60 per cent. And these are the two blocks where workers engaged in secondary sector was less than 15 per cent.

The average size of landholding was 0.56 hectare as per the 1995-96 agricultural census, 95.1 per cent holdings belonged to the small and marginal farmers, while they accounted for only 69.4 per cent of total area under all landholdings.

#### **6.1 Land Use Plan Related to Agricultural Land**

After division of the district, the net sown area as percentage of total reporting area increased to around 75 per cent. This is so, because the blocks which have remained with Varanasi district had higher proportion of net sown area.

The analysis of block-wise net sown area shows that in most of the blocks the proportion of net sown area had almost remained same and fluctuated within the range of two to three per cent during the last twenty years, i.e. Since 1980-81, barring the year 1995-96, which seems to be an exceptional year.

The cropping intensity of the Varanasi district had almost consistently increased since 1960-61 and has hovered around 150 during the period 1985-86 to 2000-01. The most important factor which has affected cropping intensity is irrigation. The irrigation intensity i.e. net irrigated area as

percentage of net sown area has increased from 51.91 per cent in 1975-76 to 78 per cent in 2000-01. This trend was discernible in all the blocks of the district as well.

Furthermore, gross irrigated area as percentage of net irrigated area has also increased during the last twenty five years from around 125 in 1975-76 to around 150 in 2000-01 with fluctuating trends during intervening periods.

Tubewell is now the dominant source of irrigation in Varanasi district, and accounts for more than 80 per cent of net irrigated area.

There is another aspect of analysis of sources of irrigation. Though tubewells have become dominant source of irrigation, the role of public sources continues to be very important. Because canals and government tubewells together account for more than 50 per cent of net irrigated area in most of the blocks. That means, public investment in irrigation will continue to play an important role in increasing gross irrigated area, which in turn would help in increasing the cropping intensity in these blocks.

The cropping pattern in the district has vastly changed during the last 30 years. The main crops viz. paddy, wheat, potato and sugarcane have witnessed very large increases in their productivity also during the period 1960-61 to 1998-99.

Thus farmers have shifted to crops, which are highly irrigated, fertilizer use is higher on them and whose productivity is also comparatively very high.

We need to make efforts to increase production of more pulses, oilseeds and spices. Cropping rotation also needs to be changed. Following steps are imperative to achieve it.

- (a) More thrust be given for developing high yielding varieties for these crops.
- (b) Rain fed areas should be encouraged to cultivate these crops.
- (c) Orchards, fallow land and land under social forestry could be used for growing such crops.
- (d) Processing industries of oilseeds and spices be promoted at local level with support for technology up gradation, packaging and market access facilities.

Use of fertilizer had been increasing in all the blocks. But their balanced and proportionate application has not been reported.

There is need to adopt following strategy to combat this menace:

- (a) Circulate guidelines for each gram-panchayat-on the basis of soil-testing – the proportion of fertilizer which is required to be applied.
- (b) Farmers' meeting be organised at village level before every cropping season to make them aware about such guidelines.
- (c) Farmers be also informed about hazardous impact of non-proportionate application of urea.
- (d) Government functionaries, specially at the gram-panchayat level be sensitised regarding these aspects.

The extent of mechanisation has increased in the district. The number of tractors, sowing machine, sprayers, threshing machine etc. have increased, while the number of wood plough have decreased during the last 20 years.

The trend of increasing mechanisation despite the fact that average size of landholdings has been decreasing indicates a new type of resource sharing in rural area. Those who cannot afford to purchase the equipment or machine, hire its services. Be it irrigation water, tractor, thresher or any other machine, their services are being hired by those who cannot afford to purchase or maintain them. Very poor farmers do not keep draught animals and hire services of new machines because they cannot afford to feed draught animals throughout the year.

Tenancy and share cropping was found in our survey in selected villages of the district. Thus sharing of land resource as well as services of machines indicates emergence of a new type of land-labour-capital relations.

Livestock plays two types of roles in rural economy, one it provides draught animals or for pulling carts. Secondly it generates income through animal products, which has serious implications for diversification of rural economy.

But the size of livestock has also a serious bearing on land use. The increase in livestock would mean that more land under pasture will be required, as well as more fodder will be required.

Another fall-out of growing urbanisation and increase in extent of mechanisation has been drastic decline in the number of livestock in Varanasi district. The number of all animals in the district have declined excepting those of pig and poultry after 1988.

### *Agricultural Production System and Framework for Land Use Plan*

It was found that the majority of land owners who leased out their land belonged to medium, small or marginal farmers. The fact that even small and marginal farmers were leasing out their land, revealed two trends - one, in case of uneconomic holdings farmers want to search other opportunities and will be content to get the market rent for their land yet they would prefer to retain the land instead of selling it out right. Moreover, the new generation, if educated seeks jobs in cities, and prefers to lease out the land. The other aspect was in regard to changing relationship. The exploitative relationship between tenant/share cropper and the land lord is fast changing. It is now purely an economic arrangement of mutual interests. Small and marginal farmers also lease-out land to other small and marginal farmers. Thus enterprising farmers are continuing agricultural activities by pooling resources from fellow farmers, while some other farmers are trying to make efforts in non-agricultural activities also.

Thus the new form of economic arrangement under tenancy was giving way to emergence of new enterprising farmers who were seeking ways to pool resources for higher productivity and application of new technology.

Dependency relationship based tenancy was declining because not many cultivators wanted to be tied up for the whole of year with some small parcel of land which they did not own, and further depend on the landlord for resources and credit. Landless or near landless people also now want to keep options open for seeking job elsewhere as well. So they preferred to work as casual agricultural labour during peak periods rather than working as an attached labour or as a tenant.

On the other hand leasing-out by small farmers was on the increase because many small farmers wanted to get job outside agriculture and at the same time wanted some income from their

land also. This was possible only by leasing-out land to fellow farmers at mutually agreed terms. This kind of tenancy was free from both the dependency and exploitative relationship.

Sharing of machines and equipments was also found to be widely prevalent among farmers of this district. It was found that almost all farmers owning agricultural machines and equipments hired out or shared their services with other farmers. many agricultural tools were also found to be shared among farmers on the exchange basis.

### *Factors Inhibiting Growth*

The immediate factors which inhibited growth among small and marginal farmers were: lack of resources, capital deficiency and lack of facility to sell at remunerative prices. The other factors included the problems of water logging, floods, drying of canals during summer, etc.

### *Framework for Agricultural Growth*

Among small and marginal farmers, agricultural productivity is hampered by poor logistical support and weak infrastructure. If food production is to be increased in a sustainable way, these deficiencies must be corrected and favourable economic framework for agriculture should be evolved. Such actions need to be backed up by practices aimed at maintaining or enhancing fertility and productivity.

The first step is to protect the best land for agriculture. In view of the scarcity of high quality arable land and the rising demand for food and other agricultural products, the land that is most suitable for crops should be reserved for agriculture. Government should map and monitor the more productive areas of farm land and adopt planning and zoning policies to prevent the loss of prime land to urban settlements. Village Land Management Committee and local authorities should be entrusted with responsibility to ensure that these policies are implemented in their areas.

We have found that the number of small and marginal farmers in the district is predominant. It was also found that the immediate factors which inhibited growth among small and marginal farmers were lack of resources, capital deficiency and lack of facility to sell at remunerative prices. The most important factor which could become basis for future restructuring of agricultural production system related to tenancy. It was found the majority of land owners who leased out their land (without entering into any written or formal contract) belonged to the category of medium, small or marginal farmers. This was for two reasons – one in case of uneconomic holdings, farmers wanted to search other opportunities and would be content to get the market rent for their land. Yet they would prefer to retain the land instead of selling it outright. The other aspect was in regard to non-exploitative nature of relationship between the lessor and the lessess. It is now purely an economic arrangement in which small and marginal farmers are also leasing out land to other small and marginal farmers. Thus enterprising farmers are continuing agricultural activities by pooling resources from fellow farmers, while some other farmers are seeking opportunities in non-agricultural activities also. Thus the new form of economic arrangement was giving way to pooling of resources by enterprising farmers, while other farmers who were leasing out their land were treating

their land as a share capital for which they will receive the rent as well as the share in profit. The process of pooling of resources was further strengthened by a simultaneous process of sharing of machines and equipments. It was found that almost all farmers owning agricultural machines and equipments hired out or shared their services with other farmers.

It seems to us that a limited restructuring of the production process in agriculture can be such that it serves the interests of small and marginal farmers and at the same time protects wider interests of the farming community.

One major step in this direction would be to allow formation of Collective Farming Society and Confederation of Farming Societies. In the collective farming society framework, tenancy to such farming societies could be permitted under specified conditions. In particular such societies may be formed of small and marginal farmers for a complete package of inputs, and it may then be permissible for any member of such a society to lease out land to the society or to any other member of the society.

At the next level, a confederation of such Collective Farming Societies could be formed which will work as service societies. These confederations would provide high cost machinery and equipments to Collective Farming Societies on rent. The idea essentially is that it should be possible to increase number of viable farms by permitting some of the non-viable farmers to go out of agricultural business and seek other jobs and economic opportunities. This should on the one hand, improve productivity of labour on the expanded farms and on the other aid in much needed shift of labour away from agriculture.

### *Collective Farming Society*

1. Collective farming units be allowed to be registered under a separate Collective Farming Society Registration Act.
2. Only small and marginal farmers be allowed to become members of such a society.
3. The number of members of a society should not be above twenty and below five.
4. Those who become members of such a collective farming society will be allowed to lease out their land to the society for a minimum of ten years on a fixed annual rent.
5. A collective farming society will not bring under its purview more than ten hectares of irrigated land.
6. A collective farming society will be allowed to pool its resources on hire or through raising capital from its members.
7. The produce will be shared among members in proportion to the share amount of each member.
8. The share amount of each member will be the weighted sum of (a) money invested under capital raising scheme plus, (b) the amount fixed as annual rent for the land leased out to the society, (c) operational holdings of actual cultivators.

## *Confederation of Collective Farming Societies*

For storage facilities, providing transportation facilities and to work as marketing syndicates of farming societies, a confederation of ten to twenty corporate farming societies be allowed to be formed.

These confederations will work in the following areas:

1. Marketing of agricultural goods at national and international level.
2. Provide transportation and storage facilities to Collective Farming Societies against such stored goods.
3. Function as cushions against speculative prices.
4. The confederation will also act as counselling centre for farmers projecting the production and demands of each agricultural commodity for the next two years.
5. Provide high costing tools and machines to Collective Farming Societies for land levelling, soil testing, land reclamation and other activities related to land and water management on rental basis.
6. Help in technological innovations and in increasing productive efficiency.

### **6.2 District Level Analysis of Land Use Pattern and Land Use Plan (Other than Agricultural Land)**

Our focus in preparing land use plan has been four fold –

- (i) Agricultural land should not be transferred for use to other purposes.
- (ii) Maximum area be brought under vegetative cover i.e.
  - (a) Increase forest
  - (b) Increase area under miscellaneous trees and groves.
  - (c) Increase area under pasture and grazing land.
- (iii) Use culturable waste and other fallow land for such purposes. Therefore, efforts should be made to convert land under these categories into forest, orchards or grazing land.
- (iv) Barren and unculturable land be used for constructing buildings or infra-structural facilities.

#### **Forest**

The forest land increased from around 14.5 per cent of total reporting area in 1960-61 to around 14.78 per cent by 1970-71. Thereafter in the next decade i.e. during 1971-1980, it registered a further increase to around 15 per cent. The area under forest further increased to around 15.2 per cent by the end of eighties. This trend continued till around 1996. **(See table 4.1).**

The area under forest dropped to nill after that and is presently only 0.47 per cent of total reporting area. The area under forest could be brought to around 2 per cent of total reporting area, if some part of the land under other fallow and some part of land under culturable waste is brought under forest. This could be done by forming Joint Forest Management Committees consisting of plant growers from poor peasantry class and representatives of forest department and land use committee. A cell should be formed to provide them the financial support and infra-structural support so that they could get suitable plants, methods to protect them and finally marketing of forest produce.



Secondly, development of such forests should be linked with watershed management in the area. For this purpose an area of 500 hectares to 1000 hectares should be chosen as unit for micro-watershed management.

This would include (i) construction of water retention structures (ii) clearing and desilting of natural courses of drainage systems and (iii) restoration/reconstruction of ponds/ tanks in totally barren lands or low lying lands.

Thirdly programmes like Pradhan Mantri Rojgar Yojana etc. should be now utilised for construction of bundhis, management of wild resources including fisheries, drainage maintenance and enhancement etc.

Fourthly, more emphasis will have to be laid on energy plantation which would provide fuel wood besides growing of fruit trees rather than timber linked growth of forests.

### **Private Micro Forests**

Private micro forest is different from orchards, as orchards generally comprise fruit bearing plants. The concept of private micro forest envisages that private individuals could also grow various varieties of plants. We have in the past found that eucalyptus had been grown in private land because it was expected to fetch good amount. The private waste land could also be used for growing timber, energy plants, etc. This could also be linked with purification of surroundings. For this purpose plants related to different planets (Navgrah) and different Nakshatra which are 27 in numbers could be planted as per specified arrangement.

Even plants with medicinal value could be grown in such land if people could be informed about their medicinal and commercial value.

### **Land Put to Non-agricultural Uses**

Area under land put to non-agricultural uses has been continuously increasing over the past 40 years. It was around 8 per cent during 1960-61 and has risen to around 13.25 per cent by the end of year 2000 (**See table 4.1**).

The proportion of land put to non-agricultural uses is already very high in present Varanasi district. During the last two decades, it had increased by 2 per cent of reporting area per decade. With the forest area having virtually become nil, increase of land put to non-agricultural uses needs to be restricted severely. Failing which, it would not be possible to convert land available under other uses to bring under plantation.

### **Regulation of Land Use at Urban Fringes**

There is need to regulate land use at urban fringes. This could be done by setting up a Varanasi Urban Fringe Development Authority. The UFDA could decide on the following:

- (i) Conservation of green areas such as orchards, agriculture, social forestry and allied activities.
- (ii) Development of water management and drainage system. Ponds and other water retention structures be revived. Any encroachment on such land should be identified and legal proceedings against encroachers be initiated.

- (iii) The provisions made under Zamindari Abolition and Land Reforms Acts (specially section 143 and 154) and Consolidation of Holdings Act be used effectively to check diversion of agricultural land for non-agricultural purposes.
- (iv) Heavy fine should be imposed (say ten times the cost of the land) in case of such diversion on the owner of the land.
- (v) In addition to it, if the agricultural land had been sold then capital gain tax should be imposed on purchaser of the land. Because huge capital gain accrues to the builders who develop colonies in such land.
- (vi) The first priority be given to development of social services in the fringe area which will include hospitals, educational centres, training centres for farmers and agro-based industries.
- (vii) Barren and unculturable land should be identified for development of micro-industrial estates and then for developing multistoried residential complexes which are land saving as well.

Besides urban fringes there is need to restrict the rate of increase of area under land put to non-agricultural uses, in rural areas in general.

This could be made possible by adopting following steps.

- (a) Discourage migration of people of nearby villages. This could be done by increasing transport facility and by improving road networks.
- (b) Strengthen household industries of rural areas by providing them institutional support and market facilities.
- (c) Develop green belt around city and any construction in the green belt area be strictly prohibited.
- (d) Encourage multi-storey buildings and economic flats to weaker sections.

One important aspect of land put to non-agricultural uses is increasing number of residential houses. However, since population growth rate is faster, per person living area is decreasing. Even more disturbing factor is that per person open area in houses premises is also declining. This is the trend in even rural areas. Hence space for community uses and common recreation places must be developed even in rural areas. In city planning we leave space for parks, playgrounds and recreation spots. Such planning should also be done for rural areas. Watershed management could then be linked with development of parks and recreation places. Some area could also be reserved for floriculture and horticulture.

### **Regulation of Land Use along Road Side**

There has been a tendency to change land use along road side – specially national highways and state highways. Houses and shops are constructed or such land is put to even other non-agricultural uses. As a result of this contiguous effect leads to further expansion of settlements near highways and such places become accident prone. Therefore, there is need to regulate land use along roadside. Following measures could be adopted in this respect:

- (i) A green strip be developed on both sides of road. Such green strip on each side should not be less than 10 meter wide.

- (ii) Wherever, highways are connected with other roads, construction along side even such connecting roads be prohibited for a length of at least one kilometer.
- (iii) Those who construct houses or buildings on agricultural lands along side road should be fined heavily (say ten times the cost of the land).

The rate of increase of area under the category of land put to non-agricultural uses could then be restricted to around 14.5 per cent of total reporting area by the year 2010.

### ***Barren and Unculturable Land***

Barren and unculturable land be used for further expansion of residential places, playgrounds and construction of building for common uses such as school or panchayat bhawan. It could also be used as Khalihan if it is nearby fields. And it could be used for cremation ground or graveyard if it is far away from habitation.

Thus, barren and unculturable land could be shifted for use as land put to non-agricultural purposes. Some part of it could also be used for developing as pasture and grazing land.

We hope that through these measures, area under barren and unculturable land could be reduced from 2.11 per cent to 1.0 per cent of reporting area in district Varanasi.

### ***Culturable Waste***

This is a category showing non-enterprise. To our mind, there should be no such category. If cultivation is not possible then it could be converted into area for social forestry or developed as pasture and other grazing land.

Currently area under culturable waste is 1.65 per cent of total reporting area (**See table 4.1**). A part of it (say around 0.65 per cent) could be converted into social forestry and the rest i.e. around 1.0 per cent could be developed as pasture and other grazing land. At some places, such land could also be used for fodder cultivation – specially those areas, which are owned by private individuals.

Support should be provided for developing pasture land and growing fodder.

### ***Culturable Waste along River Side***

Varanasi had two major rivers and many tributaries flowing through it. The patches of land along side these rivers are undulating and at some places with high mounds. These areas could be developed as reserved forest strips with one to two kilometers' width. Plant varieties which suit the local soils could be grown in these reserved forest strips.

Development of these reserved forest strips should also be linked with river water pollution control systems. It means that water which goes through drainage courses and which meets these rivers should be treated before it reaches the river. The management of reserved strip forest should be entrusted with the responsibility to operate the treatment plants.

Besides reserved forest strips, parks and picnic spots could be developed at various points along the river route. Such parks/picnic spots could become centres of sight seeing and attraction for tourists as well.

### ***Land under Miscellaneous Trees, Crops, and Groves not included in Net Sown Area***

Land use under this category had been the first victim of population growth and conversion for other uses.

Land under this category could be increased by 1.0 per cent of total reporting area by converting 1.0 per cent of total reporting area under other fallow land for growing miscellaneous trees and groves. We propose this because we feel that it would be difficult to bring back all the other fallow land under cultivation.

Reduction of such area increases run off of rain water. Such areas are best suited for agro-forestry. The main types of agro-forestry system are:

- (a) alley cropping – where annual crops are grown between lines of trees that produce valuable mulching material.
- (b) orchard systems – where the trees provide edible fruits, medicines and fuel wood, while the ground layer is cropped or grazed.
- (c) growth of scattered trees with pasture at the ground or grazing land.

**Conserve Genetic Resources:** Land under the above category should also be used to conserve genetic resources. This could be done by focussing on following programmes.

- ◆ Support grassroots associations of farmers and gardeners for the maintenance of traditional and local cultivars and breeds. Involve women's groups, Record farmers knowledge of traditional and local cultivars and breeds,
- ◆ Develop a common information service for exchange in information and germplasm among grassroots, state and national agencies.

## **6.3 Some General Suggestions**

### **6.3.1 District Level**

- (i) District Land Use Committee should be strengthened. The Committee must meet at least once in a year and take stock of changes which have occurred during past one year. It should also be informed about up-dating of records and changes which have taken place during the year.
- (ii) As regards its constitution, it should also include District Panchayat Adyaksha, BDOs and some more representatives of farmers.
- (iii) Each line department and BDO should be asked to furnish informations in a pre-structured proforma.
- (iv) The annual proceedings be documented and action plans drawn in the meeting be circulated to all concerned departments and functionaries.

### 6.3.2 Block Level

#### (i) Need for Block Level Land Use Committee (BLUC)

There is Land Use Committee at district level. There are Land Management Committees at the village level. But there are no land use committees at the block level.

Land records were maintained with a view to fix land revenue by the revenue department. There had been no systematic effort to maintain land records to identify land use categories on the basis of their potential development and quality.

The development perspective requires that unit for land use planning by made at block level. Because at district level it remains too generalised, while at village level, it would create operational problems in coordinating various line departments who have bearing on the land use. Therefore, there is need to create a planning cum implementing agency at the block level.

The Block level Land Use Committee may be formed with following as their members:

Block Pramukh	-	President
B.D.O.	-	Convenor
A.D.O. (Stat.)	-	Secretary

Other Members will include representatives from concerned line departments and some specialists, and

Three B.D.C. Members (to be selected by Kshetra Panchayat Members)

Block level Land Use Committee may take up the following issues for planning and implementation in the block:

#### (ii) Salinity and Alkalinity

The problem of alkalinity arises when infiltration rate of water in soil is low. This results in higher run off of surface water and creates problems of water logging in adjoining areas. As the water gets muddy, it also creates pollution of water streams. Reclamation of such land will have multiple effect. Such as increase in the infiltration rate, increase in recharge of ground water, reduction in water logging and control on water pollution.

Following steps should be encouraged for reclamation of such land:

- (a) Construction of field bunds – through boundary mounds,
- (b) Levelling of fields,
- (c) Use of gypsum/pyrites, depending upon the degree of alkalinity,
- (d) Rotation of crops.

Group of farmers be formed for their collective action. Then such groups could be provided financial, technical and infra-structural support for reclamation of alkaline land.

### **(iii) Water Management**

Reforms are needed to facilitate water management systems for various reasons:

- (a) rain and surface water needs to be preserved instead of being allowed to go waste via drain courses;

(b) natural drain courses should not be allowed to be obstructed otherwise it leads to avoidable water-logging

Increase in the number of private tubewells results in the lowering of level of ground water, therefore water management should include recharging by using rain/surface water.

By reducing run off we can check removal of top fertile soil on the one hand and maintain infiltration on the other. the catchment area of each water route should be mapped out and the programme to manage rain water should start from the highest land and end at the drainage basin.

Water harvesting will involve shaping farm land and sometimes also the catchment area of water course to slow the flow of water and thereby increase infiltration into soil. There are several cheap ways to make contours, if this is taken up collectively.

The sloppy areas and those along the drainage or field boundary which otherwise are not suitable for agriculture needs conservation efforts with optimum plant productivity. The strip plantations of multipurpose trees or shelter belts for crop lands will provide wood/leaf fodder and also ameliorate environment.

Water reservoir tanks/ponds/bundhis be constructed at places where main drain routes meet. Such land should be mapped and brought under community/panchayat ownership. No other construction be allowed to take place on such land through suitable modification in laws.

Drain network-allowing disposal of waste household water as well as community water using posts should be linked with natural drainage (by gravity flow) courses. Thus there should be micro drains (for disposal of household waste water), which will have to be connected to a community drain and finally the entire waste water has to be drained to other reservoir sites after proper treatment.

Area along the drainage route should be allowed for fodder cultivation and if possible for farm forestry. Fodder cultivation and farm forestry needs to be developed in chronically water-logged areas. To facilitate this, land along drain routes and water-logged land be kept outside the purview of tenancy provisions. Secondly, land owners of such land be permitted to form fodder or farm forest production units and lease out their land to such collective production units.

#### **(iv) Protection of Communal Land**

Common resource property has been one of the most important source of sustenance of livelihood of less privileged communities in many backward and remote areas.

A support system for maintenance and quality improvement in land use is needed to protect grazing land, land under trees, bushes etc. as well as protection of land for chak road and drainage system is also necessary. Through detailed mapping of each village, common resource property (water recharging, drainage, trees) etc. should be brought under community management and these should become non transferable and any activity that leads to their destruction should become unlawful.

The role of common resource property and its allocation systems becomes crucial in management of these natural resources. It must be emphasized that management of such resources be vested with the local communities who will take a longer view. Outside commercial interest will come and go with narrow economic interest only.

Effective communal property rights and resource management systems could be developed by empowering panchayats to develop modes of their use in their respective panchayats and by providing them technical and managerial skill as well as the needed capital resources.

### **(v) Culturable Waste Lands and Fallow Land**

Culturable waste land could be brought under vegetative cover by providing necessary institutional and infra-structural support.

We suggest following measures to facilitate their proper use.

- (a) Identification of Records:** Presently such lands are identified and delineated through revenue records. Block Level Land Use Committee (BLUC) be entrusted with the responsibility to identify and delineate such land in each block. Land Management Committees of each Gram Panchayat should be involved in the process.
- (b) Preparation of Land Use Maps:** Land use maps for all the villages be prepared by the proposed BLUC.
- (c) Put Such Land outside the Purview of Tenancy Clause:** These types of land require huge investment and long waitings for their reclamation. If they remain within the purview of Tenancy Clause, it would be difficult for farmers to pool such land and invest on them, because farmers generally prefer to invest on prime land rather than on degraded land.
- (d) Lease Out Such Land to Landless Peasants' Societies:** Most of such land is under *State* or *Gram Samaj* ownership. Distribution of small parcel of such land to individual small farmers or land less peasants will not work. Because individual peasants in these categories have neither the sufficient capital to invest nor they could wait for longer periods to reap the profits of their investments. Landless Peasants' Societies could be expected to make long term heavy investments provided such land are leased out to them for sufficiently a longer duration, and they are provided cheaper loans for this purpose.

### **(vi) A New Model for Culturable Waste and Degraded Land**

For taking up regeneration activities of culturable waste and degraded land we will have to keep the following factors in mind:

- (a) Size of such land in contiguity;
- (b) Nature of regeneration programme;
- (c) Raising of capital and acquisition of technical support
- (d) Incentive for participation of interested landless peasants and capacity building;

- (e) Changes in the tenural rights over such land; and
- (f) Distribution of benefits.

Keeping these in view we suggest another model in which local people could be involved, and its economic viability could be ensured.

We suggest that a joint venture of state sector with local organisation be formed for this purpose.

As a first step a Collective Land Development Society (or Self Help Group for Land Development) be formed at local level. This Collective Land Development Society or SHG should enter into a contract with any state department, which has been approved for the purpose by the government.

### **(vii) Land Development Society/SHG for Land Development**

- (a) A Land Development Society or SHG shall be formed for a land chunk of 10 to 25 acres.
- (b) The chunk of land be divided into 10-20 equal size sub-chunks.
- (c) Lease out around 1 acre of such sub-chunk land piece to one landless family each.
- (d) The tenure holder, in turn, will have to become member of the Land Development Society or SHG.

### **(viii) Joint Venture**

A Public Corporate Organisation (approved by the government for the purpose) will then enter into an agreement with Land Development Society or SHG for a minimum of ten years for jointly developing the land and for its utilization.

- (a) Members of Land Development Society or SHG would provide land and labour;
- (b) Public Corporate Organisation will provide capital, technology and technical know-how;
- (c) A joint management system will be evolved;
- (d) One-third of the profit shall be ploughed back for further raising the capital stock of the joint venture.
- (e) The rest of the profit shall be shared on 50:50 basis between the state unit and Land Development Society.

#### **6.3.3 Village Level**

- (i) The land use plan is almost finalized after consolidation of holdings is implemented in a village. It provides land for various purposes in the village besides consolidating holdings. These include -
  - (a) provision of roads and public irrigation channels,
  - (b) provision of land for house sites for scheduled castes and other weaker sections,
  - (c) provision of sector roads, inter village roads and link roads,
  - (d) provision of land for community purposes namely – schools, playgrounds, panchayat ghar, hospital, cremation ground, graveyards, threshing floor, manure pits, pasture land, plantation trees, flaying sites etc.



(e) solving of common disputes in the village regarding roads/naalis for irrigation for each field through chak roads and chak naalis.

The problem is that powerful persons in the village influence functionaries of the consolidation work and get some of government and community land located near their farms. And once consolidation work is over, they easily encroach upon such community land.

Therefore effort should be made that **Bachat** and Gram Sabha land is not left scattered at many places. The consolidation process should also consolidate government and gram sabha land in one or two large consolidated chaks.

The land which had been carved out as orchard, grazing land or pond/tank in the past, should not be allowed to be transferred for other purposes by new rounds of consolidation – neither through chak carving nor through readjustment of gram sabha land.

(ii) Whenever chakbandi is declared, illegal felling of trees takes place, land under orchards or pasture or such other uses is sought to be shown as land under cultivation. This happens on a large scale specially on Gaon Sabha and government land. In order to check such changes in land use on the eve of consolidation, revenue officials and consolidation officials should jointly prepare reports and send report to concerned courts for quick action. The power to decide such cases should be assigned to concerned SDM.

Similarly provisions of Consolidation of Holdings Act and Manual regarding provision of inter-village link road, bachat land, Gaon Sabha and Government land and other common property resources should be widely made known to people so that its strict implementation is done with peoples participation.

(iii) After consolidation is over land use for each plot of the villages is well defined.

It should be the responsibility of LMC to see that land use is not altered. There should be training of LMC members to make them aware of their roles and responsibilities.

(iv) Land Management Committee should be treated as Chakbandi Committee during the period of consolidation. Formation of separate committee does not prove helpful as it is at the mercy of consolidation department and Pradhan only and ceases to exist after consolidation work is over.

(v) All members of Chakbandi Committee should sign the final land use map prepared after consolidation work is over.

(vi) The map of the village should be made available to all the members of Land Management Committee, free of cost.

(vii) Encroachers of government and/or gram sabha land should be severely penalised and eviction proceedings against them should be made more stringent.

(viii) Land capability maps be prepared for each village. The land use of each type of land could then be planned for effective, efficient, sustainable and profitable use.

The land capability map will indicate about the texture and quality of soil. It will also give information about limitations of the land such as erosion, water logging, degree of alkalinity or salinity etc.

Thus land capability maps would provide necessary inputs for land use planning i.e. suitability of land for agriculture, horticulture, forestry etc. It will also indicate as to what measures would be needed for improving land for its optimum utilisation.

- (ix) The Land Management Committee at the village level be revamped. And there should be fair representation of weaker sections, beneficiaries of land allottees, self help groups and all the hamlets/communities of the village.

The committee should meet once every six months, develop plans for water conservation, drainage channels, regeneration of degraded land, effective use of lands in the category of (a) barren and uncultivable land, (b) pastures, (c) orchards groves and land under trees and (d) fallow land.

- (x) There are already legal provisions under consolidation of Holdings Act and Supreme Court Judgements in regard to protection of land uses. These should be widely circulated among members of Land Management Committee. Proceedings for eviction of encroachers should be launched in right earnest. The provision should be made in law for eviction of unauthorised occupation of Gram Sabha land by summary proceedings.

- (xi) The gaon sabha land or pond or forest land should be given on lease to self help groups or tree growers society or such other collective groups rather than to individuals.

## 6.4 Block Level Plans for Year 2010

The proposed land use plan of the Baragaon block for year 2010 will have land use pattern as follows:

**Box – 6.4.1**  
**Proposal of Land Use Plan for Baragaon Block**

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	0.11	2.00	Around 0.86 per cent from other fallow land and around 1.03 per cent from culturable waste
Barren and Unculturable land	2.11	1.10	Shift 1 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	11.13	12.13	Around 1.0 per cent from barren and unculturable land
Culturable waste	2.46	0.28	Around 1.03 per cent to forest and around 1.15 per cent for pasture grazing land
Pasture and grazing land	0.1	1.25	Around 1.15 per cent from culturable waste land
Current Fallow	1.09	1.00	-
Other Fallow	5.01	3.32	0.86 per cent to forest and 0.83 for orchard & groves
Land Under Miscellaneous trees and groves	3.17	4.00	0.83 per cent from other fallow
Net Sown Area	74.81	74.90	-
Total reporting area (in Hectares)	17,504.00	17,504.00	-

The proposed land use plan of the Pindara block for year 2010 will have land use pattern as follows:

**Box – 6.4.2**  
**Proposal of Land Use Plan for Pindara Block**

<b>Land Use Categories</b>	<b>Present Level in Percentage (Year 2000-01)</b>	<b>Proposed Level in Percentage (for Year 2010)</b>	<b>Remarks</b>
Forest	0.12	2.02	Around 0.9 per cent from other fallow land and around 1.0 per cent from culturable waste
Barren and Unculturable land	1.42	0.42	Shift 1.0 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	10.28	11.28	Around 1.0 per cent from barren and unculturable land
Culturable waste	1.27	0.27	Around 1.0 per cent to forest
Pasture and grazing land	0.04	0.04	-
Current Fallow	0.85	0.85	-
Other Fallow	3.7	1.50	0.9 per cent to forest and 1.3 for orchard & groves
Land Under Miscellaneous trees and groves	2.45	3.75	0.13 per cent from other fallow
Net Sown Area	79.86	79.86	-
Total reporting area (in Hectares)	22,482.00	22,482.00	-

The proposed land use plan of the Cholapur block for year 2010 will have land use pattern as follows:

**Box – 6.4.3**  
**Proposal of Land Use Plan for Cholapur Block**

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	0.60	2.00	Around 0.41 per cent from other fallow land and around 1.0 per cent from culturable waste
Barren and Unculturable land	1.89	0.89	Shift 1.0 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	10.22	11.22	Around 1.0 per cent from barren and unculturable land
Culturable waste	1.34	0.34	Around 1.0 per cent to forest
Pasture and grazing land	0.02	0.02	-
Current Fallow	1.04	1.00	-
Other Fallow	3.78	2.12	0.41 per cent to forest and 1.25 for orchard & groves
Land Under Miscellaneous trees and groves	1.07	2.32	1.25 per cent from other fallow
Net Sown Area	80.04	80.08	-
Total reporting area (in Hectares)	18,187.00	18,187.00	-

The proposed land use plan of the Chiraigaon block for year 2010 will have land use pattern as follows:

**Box – 6.4.4**  
**Proposal of Land Use Plan for Chiraigaon Block**

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	0.38	2.00	Around 1.5 per cent from barren and uncultivable land and around 0.12 per cent from culturable waste
Barren and Unculturable land	5.37	2.04	Shift 1.5 per cent for forest and 1.0 per cent such land for non-agricultural purposes and 0.83 per cent for trees and groves
Land put to non-agricultural uses	13.22	14.22	Around 1.0 per cent from barren and unculturable land
Culturable waste	0.79	0.17	Around 0.12 per cent to forest and around 0.5 per cent for pasture grazing land
Pasture and grazing land	0.01	0.51	Around 0.5 per cent from culturable waste
Current Fallow	1.69	1.69	-
Other Fallow	1.06	1.06	-
Land Under Miscellaneous trees and groves	1.17	2.00	0.83 per cent from barren and uncultivable land
Net Sown Area	76.32	76.32	-
Total reporting area (in Hectares)	19,362.00	19,362.00	-

The proposed land use plan of the Harahua block for year 2010 will have land use pattern as follows:

**Box – 6.4.5  
Proposal of Land Use Plan for Harahua Block**

<b>Land Use Categories</b>	<b>Present Level in Percentage (Year 2000-01)</b>	<b>Proposed Level in Percentage (for Year 2010)</b>	<b>Remarks</b>
Forest	0.58	2.00	Around 0.42 per cent from other fallow land and around 1.0 per cent from culturable waste
Barren and Unculturable land	0.75	0.20	Shift 0.55 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	11.45	12.00	Around 0.55 per cent from barren and unculturable land
Culturable waste	1.17	0.17	Around 1.0 per cent to forest
Pasture and grazing land	0.01	0.01	-
Current Fallow	1.52	1.52	-
Other Fallow	1.81	1.00	0.42 per cent to forest and 0.40 for orchard & groves
Land Under Miscellaneous trees and groves	1.56	1.96	0.40 per cent from other fallow
Net Sown Area	81.13	81.13	-
Total reporting area (in Hectares)	13,716.00	13,716.00	-

The proposed land use plan of the Sevapuri block for year 2010 will have land use pattern as follows:

**Box – 6.4.6**  
**Proposal of Land Use Plan for Sevapuri Block**

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	0.77	2.50	Around 0.7 per cent from other fallow land and around 1.03 per cent from culturable waste
Barren and Unculturable land	1.68	0.68	Shift 1.0 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	8.84	9.84	Around 1.0 per cent from barren and unculturable land
Culturable waste	2.20	0.37	Around 1.03 per cent to forest and around 0.8 per cent for pasture grazing land
Pasture and grazing land	0.04	0.84	Around 0.8 per cent from culturable waste
Current Fallow	1.96	1.96	-
Other Fallow	3.24	1.64	0.7 per cent to forest and 0.9 per cent for orchard & groves
Land Under Miscellaneous trees and groves	3.11	4.00	0.9 per cent from other fallow
Net Sown Area	78.16	78.16	-
Total reporting area (in Hectares)	16,968.00	16,968.00	-



The proposed land use plan of the Araziline block for year 2010 will have land use pattern as follows:

**Box – 6.4.7**  
**Proposal of Land Use Plan for Araziline Block**

<b>Land Use Categories</b>	<b>Present Level in Percentage (Year 2000-01)</b>	<b>Proposed Level in Percentage (for Year 2010)</b>	<b>Remarks</b>
Forest	0.29	2.00	Around 0.71 per cent from other fallow land and around 1.0 per cent from culturable waste
Barren and Unculturable land	1.07	0.39	Shift 0.68 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	9.32	10.0	Around 0.68 per cent from barren and unculturable land
Culturable waste	1.30	0.30	Around 1.0 per cent to forest
Pasture and grazing land	-	-	-
Current Fallow	1.71	1.71	-
Other Fallow	1.79	1.00	0.71 per cent to forest
Land Under Miscellaneous trees and groves	1.89	1.89	-
Net Sown Area	82.63	82.63	-
Total reporting area (in Hectares)	21,555.00	21,555.00	-

The proposed land use plan of the Kashi Vidya Peeth block for year 2010 will have land use pattern as follows:

**Box – 6.4.8**  
**Proposal of Land Use Plan for Kashi Vidya Peeth Block**

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	1.30	2.00	Around 0.7 per cent from culturable waste
Barren and Unculturable land	2.72	1.72	Shift 1 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	17.42	18.42	Around 1.0 per cent from barren and unculturable land
Culturable waste	1.93	0.23	Around 0.7 per cent to forest and around 1.0 per cent for pasture grazing land
Pasture and grazing land	0.01	1.01	Around 1.0 per cent from culturable waste land
Current Fallow	1.46	1.46	-
Other Fallow	3.66	2.99	1.46 for orchard and groves
Land Under Miscellaneous trees and groves	1.53	2.50	1.46 per cent from other fallow
Net Sown Area	69.98	69.98	-
Total reporting area (in Hectares)	15,896.00	15,896.00	-

## **6.5 Village Level Plans for Selected Villages**

### **6.5.1 Land Use Plan for Gopalpur Village**

The changing pattern of land use in Gopalpur shows a distinct trend of shift towards urban type development which is found in urban fringes. Construction of houses takes place on both sides of road. This kind of change was taking place at Gopalpur. Houses have been constructed in about 32 acres of land on both sides of road. This has happened despite the fact that consolidation work in the village has been over.

There is also a brick kiln in the village which is spread over in an area of 9.5 acres of land.

There are two ponds in the village, one is in the gram sabha land and the other is owned by a farmer of the village. The gram sabha pond was given to a person of mallah caste on ten years lease. He gradually constructed a house on around 0.63 acres of land of pond.

Old water channels have closed due to siltation. There is only one drainage course known as *Sikkahawa Nala* in the village. Drain channels were constructed on both sides of *Kharanja* road which passes through the house settlements.

The problems of water logging in the village has aggravated after the construction of the road. But it has also helped in reclaiming *Usar* land on both sides of road. Fodder crops are sown in these land, which had helped in improving soil quality.

The village level land management committee was reported to be dysfunctional.

### **6.5.2 Land Use Plan for Tarapur Village**

Village Tarapur is located on the banks of Ganga-river. A large tract of village land is uncultivable because it is sandy. Some part of such barren land is owned by farmers, while some part is owned by the gram samaj. However, revenue records show only that area under barren and uncultivable land, which is gram samaj land. About 50 acres of gram samaj land and 84 acres of private land could be put in this category. According to villagers this land can not be put to any use as it was totally sandy and got submerged during rainy season.

Not only this 100 acres of land in the village was found to be culturable waste due to water logging.

Similarly fallow land in the village was found to be higher than the area under such land in the revenue records. About 50 acres of current fallow was under private ownership, while 50 acres of other fallow was gram samaj land.

Reasons for not cultivating privately owned fallow land were reported as floods and absence of irrigation facility. It was suggested that privately owned fallow land could be brought under cultivation by (a) provision of irrigation facilities; (b) *eM+ CUnh* (making of boundary mound) and (c) land levelling.

The fallow land under gram samaj could be put to use if it is given on lease. A new experiment in this respect could be done. One or two self help groups with members belonging to dalit communities could be given such land on lease for five year period at a time. Assistance could then easily be provided to them through banks. Secondly, DRDA could be persuaded to undertake

such activities under employment generation activities which would help in regenerating uncultivable land.

The area under grazing land in the village declined over the years and presently only 20 acres of land was found to be under such use. The main reason for decline of grazing land was that much of the area has been brought under double crops. Even some of the exclusive pasture land had been brought under cultivation.

Area under trees, bushes and groves have also declined in the village. At present 20 acres were under private ownership. The area under such land has declined after consolidation of holdings. Farmers got such land valued as farming land and got consolidated plots allotted against such land.

It should become mandatory on consolidation officers to ensure that land under other uses are not valued as farm land.

### **6.5.3 Land Use Plan for Aswalpur Village**

The gram sabha land, which was earmarked as pasture land had been distributed to landless households and therefore no pasture land was left in the village. The non-existence of pasture land has adversely affected animal husbandry in the village.

Similarly except some trees which were in front of some houses, all the land under trees, bushes and groves have disappeared.

The area under water logging has increased in the village. It has increased from around 30 acres 20 years ago to around 65 acres at present. The main reason of water logging is canal water. It is therefore imperative that canal water be released in phases.

Main sources of drinking water are hand pumps in the village. Irrigation water is available through canals, government tubewell, and private handpumps.

The main sources of conservation of surface water in the village are ponds (in 5 acres), *Bundhi* – (in 2.5 acres) and canal (in 2.5 acres). Canal water overflows because water-grass has grown in canal channels.

Pond of the village should be renovated to make it more usable.

Land management committee had been formed in the village only recently. And opinion about its functioning could be formed only after a few years of its functioning.

The large part of gram sabha land, which has been given on lease is being used for agriculture and a part of it has been used for construction of houses under Indira Awas Yojana.

### **6.5.4 Land Use Plan for Boonchi Village**

Even though in the village records, there was no culturable waste, it was found that about 2.52 acres of land was culturable waste in the village. All such land is privately owned. Previously it was agricultural land, which was adjacent to water channels/drainage of the village. But since the cleaning and desiltation of drainage was never done, the water now overflows and the land adjacent to drainage are no more being used for cultivation purposes. The problem gets compounded when canal water is released. Thus agricultural land has become culturable waste due to water logging.

Besides culturable waste 4.41 acres of land was found to be under other trees and plantations. This land was also owned by cultivators. We gathered from discussions with farmers

that even this land could be developed for growing more trees. Anwala tree could be more useful to them but even other fruit trees could be planted.

The main source of water in the village are handpumps, canals, pump sets and tubewells.

Water extracted through hand pump was used for drinking purposes, for domestic purposes and for livestock.

Water available through pump sets tubewells and canals was generally used for irrigation purposes.

The water drainage system in the village was found to be through natural drainage course, which according to villagers was useful, but not sufficient. The natural course also needed regular cleansing. There were no water channels for disposal of domestic water.

There were ponds in 2.84 acres of land. More rain water could be collected if degraded and disappeared ponds could be renovated. This water would then be available for livestock and even for irrigation. Encroachment and degradation of ponds has affected many activities. Ponds were earlier also used for grazing purposes when water dried in summer. When there was water, it was also used for various social and cultural activities as well. But now it has been encroached upon by an influential person who has also constructed a private school on it.

Land management has deteriorated in the village. The sanctity of communal/gram sabha land had severely got eroded due to two factors one distribution of land to landless and secondly due to encroachment.

The land management committee is dysfunctional for all practical purposes. Main landholders of the village belonged to Brahmin caste most of whom were also engaged in service. They leased out their land to poor/landless belonging to scheduled caste. Landowners bear all the cost of input, while the lessee provided labour. The share of lessee was one-fourth of the produce. There is need to revive land management committee for not only managing land use but also for effectively implementing land resources as per the guide lines after consolidation of holdings.

Farmers of the village are innovative and adopt newest available varieties of crops produced in the village.

Besides above suggestions following steps could be taken to regulate land use in all the village:

- (i) Land Management Committee be reconstituted with representations of all sections and entrusted with specific responsibilities related to land use in the village.
- (ii) After consolidation, conversion of agricultural land for non-agricultural purposes be prohibited. Those who have violated this norm should be penalized. A fine based on current value of land and house be imposed.
- (iii) Building tax should be collected every year from those farmers who have constructed any house/building on farm land.
- (iv) Stringent action should be taken against those who have encroached upon pond of the village. They should be debarred from getting benefit of any government scheme and also debarred from contesting any elections.
- (v) Desiltation of drainage course should be done regularly.

## List of Herbal Plants

	Botanical Name	Family Name	fglnh uke
1	<i>Abrus precatorius</i>	LEGUMINOSAE (FABACEAE)	xqk
2	<i>Abutilon indicum</i>	MALVACEAE	vfrcyk
3	<i>Acacia catechu</i>	LEGUMINOSAE (MIMOSAE)	[kfnj
4	<i>Acacia collicinna</i>	LEGUMINOSAE (MIMOSAE)	f'kdldkbl
5	<i>Acacia nilotica</i>	LEGUMINOSAE (MIMOSAE)	ccny
6	<i>Acalypha hispida</i>	EUPHORBIACEAE	lgyrku
7	<i>Achyranthus aspera</i>	AMARANTHACEAE	vikexl
8	<i>Aconitum heterophyllum</i>	RANUNCULACEAE	vfrfo"kk
9	<i>Acorus calamus</i>	ARACEAE	opk
10	<i>Adallsonia digitata</i>	BOMBACACEAE	xkj{kh
11	<i>Adhatoda vasica</i> (Nees)	ACANTHACEAE	vMk
12	<i>Adiantum lunu1atum</i> (Burm)	POLYPODIACEAE	gll i knh
13	<i>Aegle marmelos</i> (Corr)	RUTACEAE	fcYo
14	<i>Agave americana</i> (Linn)	AGAVACEAE	dWkyk
15	<i>Aijallthusexcelsa</i> (Roxb)	SIMARUBACEAE	vjyoks
16	<i>Albizzia lebbek</i> (Bellth)	LEGUMINOSAE (MIMOSAE)	f'kjh"kk
17	<i>Allium cepa</i> (Linn)	LILIACEAE	iyk.Mq
18	<i>Allium sativum</i> (Linn)	LILIACEAE	yl q
19	<i>Alocasia indica</i> (Roxb)	ARACEAE	ekudn
20	<i>Aloe barbadensis</i> (Mill)	IJILIACEAE	?krdøkjh
21	<i>Alpinia galanga</i> (Willd)	ZINGIBERACEAE	egkHkjhop
22	<i>Alstonia scholaris</i> (R.Br)	APOCYANACEAE	l Iri .kz
23	<i>Althea officinalis</i> (Linn)	ACEAE	[k#
24	<i>Amaranthus spinosus</i> (Lilln)	AMARANTHACEAE	r.Mgyh;
25	<i>Amarryllis beladonna</i> (Linn)	AMARRYLLIDACEAE	cSykMksik fyfy
26	<i>Amomum subulatum</i> (Roxb)	ZINGIBERACEAE	cgnsyk
27	<i>AmorphophaJlus companulatus</i> (Blume)	ARACEAE	l jjudn
28	<i>Anacardium occidentales</i> (Linn)	ANACARDIACEAE	crkM+
29	<i>Anacyclus pyrethrum</i> (D.C)	ASTERACEAE (COMPOSITEAE)	vkdj dje
30	<i>Ananas cosmosum</i> (Merr)	BROMELIACEAE	vUukukl
31	<i>Andrographis paniculata</i> (Nees)	ACANTHACEAE	HkñuEc
32	<i>Annonasquamosa</i> (Linn)	ANNONACEAE	l hrkQy

33	Anthocephalus cadamba (Miq)	RUBIACEAE	dnEc
34	Apium graveolens (Linn)	UMBELLIFERAE	vtelr
35	Aralia nudicaulis (Linn)	ARALIACEAE	y{e.kk

	<b>Botanical Name</b>	<b>Family Name</b>	<b>fglnh uke</b>
36	Arec-catechu (Linn)	PALMAE	i wkhOy
37	ArgeiT1one maxicana (Linn)	PAPAVARACEAE	dVij . khz
38	Argyrea speciosa (Sweet Syn)	CONVOL VULACEAE	o) nkjd
39	Aristolochia indica, (Linn)	ARISTOLOCHIACEAE	bžyh
40	Artemissia vulgaris (Linn)	ASTERACEAE (COMPOSITAE)	neud
41	Artocarpusintegrifolia (Linri)	MORACEAE	i u' k
42	Ascleplas curassavica (Linn)	ASCLEPIADACEAE	dkdukl k
43	Asparagus adscendens (Roxb)	LILIACEAE	yreŧkyh
44	Asparagus recemosus (Willd)	LILIACEAE	' krtoj
45	Asteracantha longifolia (Nees)	ACANTHACEAE	dkŧdyk{k
46	A verrhoa carambola	OXALIDACEAE	dej [k
47	Azadirachta indica	MELIACEAE	uhe
48	Bacopa monieri (Linn)	SCROPHULARIACEAE	t yuhe
49	Balanites roxbu ghi (Planch)	SIMARUBACEAE	baxqh
50	Bombusa arundnacla (Willd)	POACEAE (GRAMINAE)	oŧkykpu
51	Barleria prionitis {Linn)	ACANTHACEAE	i hykoki k
51	Basella alba (Linn)	CHENOPODIACEAE	i frdk
53	Bauhinia purpurea (Linn)	LEGUMINOSAE (CAESALPINACEAE)	dkfonkj ½ky½
54	Bauhin.ia v~riegata (Linn)	LEGUMINOSAE (CAESALPINACEAE)	dpukj
55	Berberis arlstata (D.C)	BERBERIDACEAE	nk#gYnh
56	Biophytum sensitivum (Linn)	GERANIACEAE (OXALIDACEAE)	vyEcŧkk
57	Boerhaavia diffusa (Linn)	NYCTAGINACEAE	yky i quzbk
58	Brassica campestris	CRUCIFERAE (BRASSICACEAE)	l j l ka
59	Brassica Juncea (Linn)	BRASSICACEAE (CRUCIFERAE)	ykyjkbz
60	Brassica oleracea (Linn)	BRASSICACEAE (CRUCIFERAE)	i Rrk xkŧkh
61	Bryophyllum calycinum Salib	CRASSULACEAE	i RFkj pj
62	Butea frondosa koenex (Roxb)	LEGUMINOSAE (FABACEAE)	i yk' k
63	Caesalpinia bonducela Fleming	LEGUMINOSAE (CAESALPINACEAE)	i frdjŧ
64	Callicarpa macrophylla (Linn)	VERBENACEAE	fç; xq
65	Calotropis procera (Aif)	ASCLEPIADACEAE	vydZ
66	Cannabis indica (Linn)	CANNABINACEAE	nŧfdyh
67	Cannabis Sativa (Linn)	CANNABINACEAE	Hkkac
68	Capsicum annum (Linn)	SOLANACEAE	fejpk
69	Carica papaya (Linn)	CARICACEAE	i i hrk

70	Carum copticum (Benth & Hook)	UMBELLIFERAE	vtok; u
71	Cassa auriculata (Linn)	CAESALPINACEAE	vcj
72	Cassia absus (Linn)	LEGUMINOSAE (CAESALPINACEAE)	p{k}; k
73	Cassia angustifolia (Vahl)	LEGUMINOSAE (CAESALPINACEAE)	l uk;



	<b>Botanical Name</b>	<b>Family Name</b>	<b>fglnh uke</b>
74	Cassia fistula (Linn), Cassia rhombifolia	LEGUMINOSAE (CAESALPINACEAE)	veyrkl
75	Cassia occidentalis (Linn)	LEGUMINOSAE, (CAESALPINACEAE)	dkl enl
76	Cassiatora (Linn)	LEGUMINOSAE (CAESALPINACEAE)	pøenl
77	Catharanthes roseus (L.) vincarosea	APOCYANACEAE	l nckgkj
78	Cedrela toona (Roxb Syn) toona ciliata roem	MELIACEAE	ru
79	Cedrus deodara. (Roxb) Loud	PINACEAE	nønkj
80	Celastrus paniculatus (Willd)	CELASTRACEAE	eky dkxuh
81	Celosia argentea. (Linn)	AMARANTHACEAE	f' kfrkj
82	Centella asiatica (Linn) (Hydrocotyle asiatica)	UMBELLIFERAE	eMdi .klz
83	Cestrum diuranum (Linn)	SOLANACEAE	fnu dk jtkk
84	Cestrum nocturnum (Linn)	SOLANACEAE	jkrjkuh
85	Chenopodium albu (Linn)	CHENOPODIACEAE	cFkq/k
86	Chlorophytum borivilianum (Sant & Ferm)	LILIACEAE	l Qn et yh
87	Cicerarietinum (Linn)	LEGUMINOSAE (FABACEAE)	puk
88	Cinnamomum camphora (Nees & Eberm)	LAURACEAE	phud diij
89	Cinnamomum tamala (Nees & Eberm)	LAURACEAE	rstikr
90	Cinnamomum zeylanicum (Blume Syn)	LAURACEAE	nkyphu
91	Cissampelos pareira (Linn)	MENISPERMACEAE	i kBk
92	Cissus quadrangularis (Linn)	VITACEAE	gMt kM+
93	Citrullus colocynthis (Schrader)	CUCURBITACEAE	blk; .k
94	Citrus medica var. acida watt.)	RUTACEAE	dkxth uhew
95	Citrus medica (Linn)	RUTACEAE	fctlgk
96	Cleome viscosa (Linn Syn)	CAPPARIDACEAE	i hyk ggij
97	Clerodendron inerme (Lil111)	VERBENACEAE	Nk/k vjuh
98	Clerodendron phlomidis (Linn)	VERBENACEAE	vjuh
99	Clerodendron serratum (Spreng)	VERBENACEAE	Hkkj> -h
100	Clitoria ternatea (Linn)	FABACEAE (LEGUMINOSAE)	vijkftrk
101	Coccinia indica (W & A)	CUCURBITACEAE	dtn:
102	Coleus aromaticus (Benth)	LABIATAE	i RFkj pj
103	Commiphora mukul (Hook & Exstocks)	BURSERACEAE	xlxxy
104	Convolvulus pluricaulis (Choisy)	CONVOLVULACEAE	' k[ki ti h
105	Cordia myxa (Ro.xbSyn) Cordia dichotoma	BORAGINACEAE	fyI kMk
106	Coriandrum sativum (Linn)	UMBELLIFERAE	/kfu; k
107	Costus speciosus (Koen) smith	ZINGIBERACEAE	døp dln



	<b>Botanical Name</b>	<b>Family Name</b>	<b>fglnh uke</b>
108	<i>Crataeva nurvala</i> (Buch-Ham)	CAPPARIDACEAE	c#.k
109	<i>Crinum asiaticum</i> (Linn)	AMARYLLIDACEAE	l q' kZ
110	<i>Croton tiglium</i> (Linn)	EUPHORBIACEAE	tekyxk/k
111	<i>Cuminum Cyminum</i> (Linn)	UMBELLIFERAE	l On thjk
112	<i>Curculigo orchoides</i> (Gaertn.)	AMARYLLIDACEAE	dkyh e# yh
113	<i>Curcuma amada</i> (Roxb)	ZINGIBERACEAE	vkek gYnh
114	<i>Curcuma domestica</i> (Valsyn) longa	ZINGIBERACEAE	gYnh
115	<i>Cuscuta reflexa</i> (Roxb)	CONVOLVULACEAE	vejosy
116	<i>Cymbopogon citratus</i> (Andropogon citratus)	POACEAE (GRAMINAE)	Hkr'.k
117	<i>Cymbopogon Schoenanthus</i> (Linn)	POACEAE (GRAMINAE)	jkfg" k ?kkl
118	<i>Cynodon dactylon</i> (Linn) Pefs	POACEAE (GRAMINAE)	gjh nnc
119	<i>Cyperus rotundus</i> (Linn)	CYPERACEAE	ekfkk
120	<i>Dalbergia sissoo</i> (Roxb)	FABACEAE (LEGUMINOSAE)	'khl e
121	<i>Datura metal</i> (Linn. Syn) <i>Datura innoxia</i>	SOLANACEAE	dkyk /krjk
122	<i>Datura Stramonium</i> (Linn)	SOLANACEAE	dud /krjk
123	<i>Daucus Carota</i> L. Var. <i>Sativa</i> D. C.	UMBELLIFERAE	xktj
124	<i>Desmodium gangeticum</i> (D.C.)	FABACEAE (LEGUMINOSAE)	'kkyi .khl
125	<i>Digitalis purpurea</i> (Linn)	SCROPHULARIACEAE	fryi R=h
126	<i>Dillenia indica</i> (Linn)	DILLENACEAE	fpYVk
127	<i>Dioscorea bulbifera</i> (Linn)	DIOSCORIACEAE	okjgh dm
128	<i>Eclipta alba</i> (Hassk.)	ASTERACEAE (COMPOSITAE)	Hkxjkt
129	<i>Elettaria Cardamomum</i> (Maton.)	ZINGIBERACEAE	Nk/h byk; ph
130	<i>Embelia ribes</i> (Burm. F.)	MYRSINACEAE	ok; foMa -
131	<i>Emblica officinalis</i> (Geartn.)	EUPHORBIACEAE	vkeydh
132	<i>Erioborya Japonica</i> (Linn)	ROSACEAE	yfklV
133	<i>Ervatamia Coronaria</i> (Jacq. Syn) <i>Tabernaemontana divaricata</i>	APOCY ANACEAE	plmuh
134	<i>Erythrina indica</i> (Lam)	FABACEAE (LEGUMINOSAE)	i kfjHknz
135	<i>Euphorbia antiquorum</i> (Linn)	EUPHORBJACEAE	ctd.Vd
136	<i>Euphorbia hirta</i> (Linn) <i>E.pilllittera</i> (Ljnn)	EUPHORBIACEAE	nq/kdk
137	<i>Euphorbianeriifolia</i> (Linn)	EUPHORBIACEAE	l gqM
138	<i>Euphorbia tirucalli</i> (Linn)	EUPHORBIACEAE	'kkryk
139	<i>Euryale ferox</i> (Salisb)	NYMPHAEACEAE	e[kkuk
140	<i>Evolvulus alsinoides</i> (Linn)	CONVOLVULACEAE	uhy 'k[ki qi h
141	<i>Feronia elephantum</i> (Correa)	RUTACEAE	dfi jFk
142	<i>Ferula foetida</i> (Regd. Syn) <i>feruala narthex</i> (Boiss)	UMBELLIFERAE	ghx
143	<i>Ficus bengalensis</i> (Linn)	MORACEAE	oV

144	Ficus Carica (Linn)	MORACEAE	vãthj
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	<b>Botanical Name</b>	<b>Family Name</b>	<b>fglnh uke</b>
145	Ficus glomerata (Roxb. Syn) F. recemosa	MORACEAE	xnyj
146	Ficus religiosa (Linn)	MORACEAE	i hi y
147	Foel1iculum Vulgare (Mill)	UMB.ELLIFERAE	l kD
148	Fumaria indica (Pugsley)	FUMARIACEAE	fi Rr i ki Mk
149	Gardenia gummifera (Linn)	RUBIACEAE	Mhdkeyh
150	Gloriosa superba. (Linn)	LILIACEAE	dfyqkj
151	Glycyrrhiza glabra (Bois)	FABACEAE (LEGUMINOSAE)	e/kq ßBh
152	Gmelina arborea (Roxb)	VERBINACEAE	xEgkj
153	Gossypium herbaceum (Linn)	MALVACEAE	dikl
154	Grewia subinaequalis (D.c.Syn) gasiatica	TILIACEAE	Qkyl k
155	Grevillea robusta. (A.Cunn.)	PROTEACEAE	fl Yoj vktl
156	Gymnema Sylvestre (R. Br.)	ASCLEPIADACEAE	xMekj
157	Gynandropsis pentaphylla. (D.C.)	CAPPARIDACEAE	'or gj&gj
158	Hedychium spicatum (Hamex. smith)	ZINGIBERACEAE	xzk i yk' kh
159	Helianthus Annuus (Linn)	ASTERACEAE (COMPOSIT AE)	l w ßqkh
160	Hemidesmus indicus (R.Br.)	ASCLEPIADACEAE	l kfjok
161	Hibiscus rosa-sinesis (Linn)	MALVACEAE	xMgy
162	Holarrhena antidysenterica (Wall)	APOCY ANACEAE	dwt
163	Jasminum grandiflorum (Linn)	OLEACEAE	peyh
164	Jasminum Sambac (Ait.)	OLEACEAE	ekxjk
165	Jatropha Curcas (Linn)	EUPHORBIACEAE	0; k/kz , j.M
166	Jatropha gossypifolia (Linn)	EUPHORBACEAE	jrutkr
167	Juniperus communis (Linn)	CLIPRESSACEAE	gi tkk
168	Lagerstroemia speciosa (Pers. Syn.)	LYTHRACEAE	tk: y
169	Lantana camara (Linn)	VERBINACEAE	ou ryl h
170	Lawsonia inermis Linn. L. alba.	LYTHRACEAE	eßlndk
171	Lepidium Sativum Linn	BRASSICACEAE (CRUCIFERAE)	peyl=h
172	Leptadenia reticulata. W & A	ASCLEPIADACEAE,	thouh
173	Leucas Cephalotes spreng	LAMIACEAE (LABIATAE)	nkski qih
174	Linum Usitatissimum. (Linn)	LNACEAE	vyl h
175	Litchi chil1ensis Syl1. Nephelium litchi comb.	SAPINDACEAE	fyph
176	Loral1thus lol1gitlorus Desrsyn. Dendrophoe falcata	LORANTHACEAE	oknk
177	Luffaacutangula (Linn) Roxb Var.amaraclark.	CUCURBITACEAE	dMeh rkjbz
178	Lycopersicon esculentum Mill	SOLANACEAE	VekVj

179	MallotusPhillippinensis Mue'l Arg	EUPHORBIACEAE	dihyk
180	Mangifera indica. (Linn)	ANACARDIACEAE	vke

	<b>Botanical Name</b>	<b>Family Name</b>	<b>fglnh uke</b>
181	Meliaazedarach. (Linn)	MELIACEAE	odk; u
182	Mentha Piperata (Linn)	LAMIACEAE	fi i jfelV
183	Ment.ha Spicata (Linn)	LAMIACEAE (LABIATAE)	i qhuk
184	Mesua ferrea	GUTTIFERAE	ukxcds kj
185	Michelia champaca (Linn)	MANGNOLIACEAE	l kspEik
186	Mimosa pudica (Linn)	MIMOSAE (LEGUMINOSAE)	yTtkollrh
187	Mimusops elengi (Linn)	SAPOTACEAE.	cdy
188	Mirabilisjalapa (Lil111)	NYCTAGINACEAE	xyokl
189	Momordica charantia (Linn)	CUCURBITACEAE	djyk
190	Momordica dioica (Roxb)	CUCURBITACEAE	ddk/dh
191	Moringa pterygosperma (Gaertn)	MORINGACEAE	l fga:uk
192	Morus indica (Griff.)	MORACEAE	l gr
193	Mucuna Pruriens (Bek.)	FABACEAE (LEGUMINOSAE)	dkp
194	Murraya koenigii. Spreng	RUTACEAE	ehBh uhe
195	Murraya paniculata Jack Syn. M.exotica	RUT ACEAE	dkfeuh
196	Musa sapientum (Linn) M. paradisiaca.	MUSACEAE	dsk
197	Myrica nagi Thunb. M.esculanta ct1lq	MYRICACEAE	dk; Qy
198	Myristica fragrans Houtt.	MYRISTICACEAE	tk; Qy
199	Myristica fragrans Houtt	MYRISTICACEAE	tkfo=h
200	Nardostachys jatamansi	VALERIANACEAE	tVked h
201	Nelumbium speciosum (Willd)	NYMPHAEACEAE	dey
202	Nerium odorum Soland.	APOCYANACEAE	duj
203	Nigella Sativa Linn	RANUNCULACEAE	dylk h
204	Nyctanthes arbor-tristis (Linn)	OLEACEAE	gjfl xkj
205	Ocimum basilicum (Linn)	LAMIACEAE (LABIATAE)	dij ryl h
206	Ocimum canum sines. o. americanum	LAMIACEAE (LABIATAE)	ou ryl h
207	Ocimum grattisimum (Linn)	LAMIACEAE (LABIATAE)	jke ryl h
208	Ocimum sanctllm (Linn)	LAMIACEAE (LABIATAE)	xkgh ryl h
209	Oldenlandia Corymbosa (Linn)	RUBIACEAE	{ks- i i V
210	Operculina terpthum Silva Manso. Ipomoea terpthllm	CONVOLVULACEAE	fu' ksk
211	Oroxylum indicum Vent.	BIGNONIACEAE	l ksk i kBk
212	Oxalis Corniculata (Linn)	OXALIDACEAE	pkagj h
213	Pandanus odoratissimus Roxb	PANDANACEAE	cdMk

214	Papaver Somniferum (Linn)	PAPAVERACEAE	vQhe
215	Pedaliium murex (Linn)	PEDALIACEAE	cMk xksk#
216	Peucedonum graveolens (Linn)	UMBELLIFERAE	'kri tik
217	Phaseolus trilobus. Alt	FABACEAE (LEGUMINOSAE)	ou e#
218	Phyllanthus niruri (Linn) P. asperulatus	EUPHORBIACEAE	Hk#Z vkbyk

	<b>Botanical Name</b>	<b>Family Name</b>	<b>fglnh uke</b>
219	Physalis minima (Linn)	SOLANACEAE	Vdkjh
220	Phyllanthus nodiflorus. Lippia nodiflora Rich	VERBENACEAE	ty ihy
221	Picrodendron biza kurroa. Royle exbenth.	SCROPHULARIACEAE	dVph
222	Pinus longifolia Roxb.	PINACEAE	phM+
223	Piper betle Linn.	PIPERACEAE	i ku
224	Piper longum (Linn)	PIPERACEAE	fi li yh
225	Piper nigrum (Linn)	PIPERACEAE	dkyh efjp
226	Piper Sylvaticum Roxb	PIPERACEAE	igkM# ihy
227	Pluchea lanceolata Oliver & Hiern.	COMPOSITAE (ASTERACEAE)	Nf=e v'kkd
228	Plumbago Zeylanica Linn.	PLUMBAGINACEAE	fp=d
229	Plumeria acutifolia Poir.	APOCYNACEAE	jkl uk
230	Pluchea lanceolata Oliver & Hiern.	COMPOSITAE (ASTERACEAE)	[kj pEik
231	Pongamia Pinnata Syn P. glabra. Vent	FABACEAE (LEGUMINOSAE)	djat
232	Portulaca oleracea (Linn)	PORTULACACEAE	cM# ykstk
233	Portulaca quadrifida (Linn)	PORTULACACEAE	y?kq ykstk
234	Prosopis Spicigera	MIMOSAE (LEGUMINOSAE)	'keh
235	Prunus amygdalus Batsch.	ROSACEAE	ckne
236	Prunus Persica Batsch.	ROSACEAE	vkM#
237	Psoralea Corylifolia (Linn)	FABACEAE (LEGUMINOSAE)	ckdph
238	Psidium guajava (Linn)	MYRTACEAE	ve: n
239	Pterocarpus marsupium. Roxb.	FABACEAE (PAPILIONACEAE)	vl u
240	Pueraria tuberosa D.C.	FABACEAE (LEGUMINOSAE)	fokjh dm
241	Punica granatum. (Linn)	PUNICACEAE	vukj
242	Putranjiva roxburghii. Wall	EUPHORBIACEAE	firkt; k
243	Pyrus malis (Linn)	ROSACEAE	l p
244	Quisqualis indica (Linn)	COMBRETACEAE	e/kpkyrh
245	Randia dilatata Lam.	RUBIACEAE	enu
246	Raphanus Sativus Linn	BRASICACEAE (CRUCIFERAE)	eyh
247	Rauwolfia Serpentina Benth. ex. kurz.	APOCYNACEAE	l i kdkk
248	Ricinus communis Linn	EUPHORBIACEAE	, j. M
249	Rosa centifolia (Linn)	ROSACEAE	xgyc
250	Rubia cordifolia Linn	RUBIACEAE	eft" Bk

251	Saccharum officinarium. Linn	POACEAE (GRAMINAE)	bɔ̃k
252	Salmalia malbarica.	BOMBACEAE	l ey
253	Santalum album Linn.	SANTALACEAE	l On plnu
254	Sansevieria roxburghina Schult.	HAEMODORACEAE	ukxneu
255	Sapindus trifolialis (Linn)	SAPINDACEAE	jhBk
256	Saraca indica	CAESALPINACEAE (LEGUMINOSAE)	v' kkd

	<b>Botanical Name</b>	<b>Family Name</b>	<b>fglnh uke</b>
257	Saxifraga ligulata Wall.	SAXIFRAGACEAE	i k'kk. khkn
258	Sesamum indicum Linn.	PEDALIACEAE	fry
259	Shorea robusta Gaertn.	DIPTEROCARPACEAE	' kky
260	Sida cordifolia (Linn)	MALVACEAE	cyk
261	Sida rhombifolia (Linn)	MALVACEAE	egkcyk
262	Smilax china (Linn)	LILIACEAE	pkí phuh
263	Solanum indicum (Linn)	SOLANACEAE	cgrh
264	Solanum melongena (Linn)	SOLANACEAE	cšq
265	Solanum nigrum (Linn)	SOLANACEAE	edks
266	Solanum Surattense Brumt. S.Xanthocarpum.	SOLANACEAE	dvdkfjdk ½y?kž
267	Soymida febrifuga. A. Juss	MELIACEAE	jkghu
268	Spinacia oleracea (Linn)	CHENOPODIACEAE	iky d' kkd
269	Strychnos nux vomica (Linn)	LOGANIACEAE	dpyk
270	Swertia chirayata Roxb. Syn.	GENTIANACEAE	fpjk; rk
271	Symplocos racemosa Roxb. Syn. mu	SYMPLOCACEAE	ykskz
272	Syzygium aromaticum. Meril & Perry.	MYRTACEAE	yks
273	Syzygium cumini Skeels Syn.	MYRTACEAE	cMh tkeq
274	Tagetes erecta (Linn)	ASTERACEAE	xmk
275	Tamarindus indica (Linn)	CAESALPINACEAE LEGUMINOSAE	beyh
276	Tamarix articulata. Vahl.	TAMARICACEAE	Nkvh i=okl
277	Tamarix gallica (Linn)	TAMARICACEAE	cMh i=okl
278	Tectona grandis (Linn)	VERBINACEAE	l kxoku
279	Tephrosia purpurea Linn	FABACEAE (LEGUMINOSAE)	' kji d'k
280	Teramnus labialis Spreng	FABACEAE (LEGUMINOSAE)	ek'ki. khz
281	Terminalia arjuna. Bedd.	COMBRETACEAE	vtq
282	Terminalia belerica. Roxb.	COMBRETACEAE	foHkhrd
283	Terminalia chebula Retz.	COMBRETACEAE	gjh rdh ½cMh½
284	Terminalia tomentosa. W & A.	COMBRETACEAE	vl u
285	Thevetia nerifolia Juss.	APOCYNACEAE	i hyk duj

286	<i>Thuja orientalis</i>	CUPRESSACEAE	e; j i d k
287	<i>Tinospora cordifolia</i> (Willd) Miers.	MENISPERMACEAE	fxyls
288	<i>Trapa natans</i> (Linn)	TRAPACEAE	fl pkkMk
289	<i>Tribullis terrestris</i> (Linn)	ZYGOPHYLLACEAE	xk f kj
290	<i>Trichosanthes dioica</i> . Roxb.	CUCURBITACEAE	i joy
291	<i>Trigonella foenum graecum</i> (Linn)	FABACEAE (LEGUMINOSAE)	ef f d k
292	<i>Tylophora indica</i> (Burm.f.) Merr.	ASCLEPIADACEAE	vd l . kh z
293	<i>Uraria picta</i> . Desv.	FABACEAE (LEGUMINOSAE)	i f J i . kh z

	<b>Botanical Name</b>	<b>Family Name</b>	<b>fglnh uke</b>
294	<i>Urginia indica</i> . kunth.	LILIACEAE	t x y h l ; k t
295	<i>Vernonia anthelmintica</i> (Willd)	ASTERACEAE (COMPOSITAE)	ou th j k
296	<i>Vernonia cinerea</i> Less.	ASTERACEAE (COMPOSITAE)	l gn o h
297	<i>Vetiveria zizanioides</i> (Linn) Nash.	POACEAE (GRAMINAE)	o h j . k e y
298	<i>Viola odorata</i> Linn	VIOLACEAE	x g y c u i ' k k
299	<i>Vitex negundo</i> (Linn)	VERBENACEAE	f u x i M h
300	<i>Vitis Vinifera</i> (Linn)	VITACEAE	n k { k k
301	<i>Withania Somnifera</i> Dunal.	SOLANACEAE	v y x d k k
302	<i>Wrightia tinctoria</i> R. Br. Syn.	APOCYANACEAE	e h B k b l n z t o
303	<i>Zingiber officinale</i> Roscoe.	ZINGIBERACEAE	v n j [ k
304	<i>Zizyphus Vulgaris</i> Lam.	RHAMNACEAE	j k t c n j



## xg u{k= okfVdkvka dk jks .k

gekjs \_f"ka&efu; ka us çR; çl xg ,oa u{k= ls lEcfU/kr iksks ds cks ea tkudkj ,d= dh Fkh rFkk uoxg ,oa u{k= okfVdk, a LFkkfir dh FkhA lnò ls ;g ekU;rk jgh gS fd xg&u{k=ka ds dçHkkoka ls o{k ,oa ouLifr; kll l ekr ;k de dj l drh gA

Hkkjrh; ekU;rk es l w Æ. My ds l eLr lnL; ka o milnL; ka ¼ftlea l w l o plnek Hkh 'kkfey g& dks xg dgk x; k gA ;g /kjr dh ds djhc gksus ls budh fLFkr rst cnyrh jgrh gA u{k= /kjr dh ls vR; r nij gksus ls LFkku cnyrs ugha çrhr gksus vr% fLFkj vFkkz u{k= dgs x; A Hkkjrh; euhf"ka; ka us vkl eku ea l unek ds ;k=k&iFk dks 27 Hkkxka ea çk/k rFkk gj 27oa Hkkx ea iMus okys rkjke&My ds çp dñ fof"ka"V rkjka dh igpku dj mluga ,d uke fn; k ftluga u{k= dgk x; kA bl çdkj uoxgka rFkk 27 u{k=ka dh igpku dh x; hA

fdl h 0; fDr ds tle ds le; pnek /kjr dh ls ftl u{k= dh lh/k ea jgrk g& ;g ml 0; fdr dk tle u{k= dgykrk gA

xg] u{k=} ikska dk mYy[k ikskf.kd] T; ksr"ka] vk; pñnd] rki=d o vl; xBFka ea feyrk g& buea ls iæ[k xBFk g& %

- ikskf.kd xBFk ukjn igk.k
- T; ksr"ka xBFk ukjn l fgrk
- vk; pñnd xBFk jkt fu?ka] ogr- l p] ukjk; .kh l fgrk
- rki=d xBFk 'kkjnk fryd] ea=egk.kb] Jh fo|k.kb ra= vkfn
- vl; xBFk vkulnkJe izdk'ku] ouLifr&v/; kRe] u{k=&o{k vkfn

l Hkh rF; ka ij fopkj djus ds çkn fofHku xgka ,oa u{k=ka ds fy, ftu ikska ds uke fu"d"lz ea vk; s g& mudk fooj.k rkfydk 1 o 2 ea n'kkz k x; k gA

ikrduk'ku ,oa 'kkjhfd d"V fuokj.k gsrq xgka ds vuq kj jRuka ds /kkj.k djus dk T; ksr"ka 'kkL= ea ito/kku gA mlh izdkj xgka ,oa u{k=ka ls lEcfU/kr ikska dks mxkus ls Hkh ykska dks eukokr Qy fey l drk gA egf"lz pjd ds vuq kj /ke] vFk] dke] ek{k dks ikr djus gsrq vkjkk; jguk vko'; d gA

LoLFk 'kjhj ,oa nh?kzthou ikr djus ds fy, Hkstu] 'kq] ok; j ty rFkk inkk.k jgr i; kbj.k vko'; d gA egkRek ryl hkl us fy[kk g&

**"xxu lehj vuy ty /kjuhA budh ukFk lgt tM+ djuhAA"**

bluga e; kznr djus ea o{kouLifr; ka dh vge Hkfedk lnò ls jgh gA yxHkx l Hkh dkyka ea ^ou] çkx] miou] okfVdk l j dii oklh l ksgg\* dh iFkk jgh gA vkt Hkh gfj; kyh rFkk 'kq] i; kbj.k ds ifr ge tkx: d gA

xgka dh 'kkār grq iutk&iB] ;K&gou ea fo'kšk iztkfr ds iYyo] iqi] Qy] dk'B dh vko'; drk iMfh gS tks fd uoxg ,oa u{k=ka ls lEcfl/kr iškks gh ns ldrs gA ijk.kka ds vuqkj ftl u{k= ea xg fo|eku gka ml le; ml u{k= lca/kh iškks dk ; RuiwZ l j{k.k rFkk iutu ls xg dh 'kkār gksh gS rFkk tkrd dks eukokā{kr Qy feyrk gA

**rkfydk% 1**  
u{k=ka ls lEcfl/kr iškks

Ø- la	u{k=	nork	j{k' k	iškks dk uke	
				l kdr	fglnh
1-	vf' ouh	vf' ouh	ešk	dkjdjk	dfpyk
2-	Hkj.kh		ešk	/kkoh	vkopyk
3-	dfrdk	vfXu	ešk@o" k	mnfcj	xwYu
4-	jkfg.kh	cgek	o" k	tEcw	tkep
5-	exf' kjk	l ke	o" k@efkq	[kfrj	[kš
6-	vknlZ	: nz	feFkq	d".k	' kh' ke
7-	i qoZ q	vfifr	feFkq@ddZ	oā k	ckā
8-	i qi	cgLifr	ddZ	v' oRFk	i hi y
9-	vk' yšk	l wZ	ddZ	tkx	ukxdj j
10-	e/kk	firj	fl g	oV	cjxn
11-	i wZ QkYxqih	Hkx	fl g	i yk' k	Bkd
12-	mRrjh QkYxqih	vHkZ k	fl g@du; k	ly{k	ikdM+
13-	gLr	l fork	du; k	vfjoV	jhBk
14-	fp	Ro"Vk	du; keryk	foY;	cy
15-	Lokrh	ok; q	ryk	vtq	vtq
16-	fo' kk[kk	bntfxu	ryk@of' pd	fodrd	dVkbZ
17-	vuqk/kk	fe=	of' pd	odty	ekSyJh
18-	T; ŠBk	bnz	of' pd	l jy	phM+
19-	eyk	fu_fr	/kuq	l xZ	l ky
20-	i wZkk<k	ty	/kuq	oax	tyorl
21-	mRrj"kk<k	fo' onD	/kuq@edj	i ul	dVgy
22-	Jo.k	fo".kq	edj	vdZ	enkj
23-	?kfu"Bk	ol q	edj@dtk	' keh	N; kZdj
24-	' krfe"kd	o: .k	dtk	dnEc	dnEc
25-	i wZ Hkknā n	vtŠin	dtk@ehu	vkez	vke
26-	mRrj Hkknā n	vfgZqkU;	ehu	fuEc	uhe
27-	jorh	i wkk	ehu	e/knd	egqk

**rkfydk% 2**  
xgka ls lEcfl/kr iškks

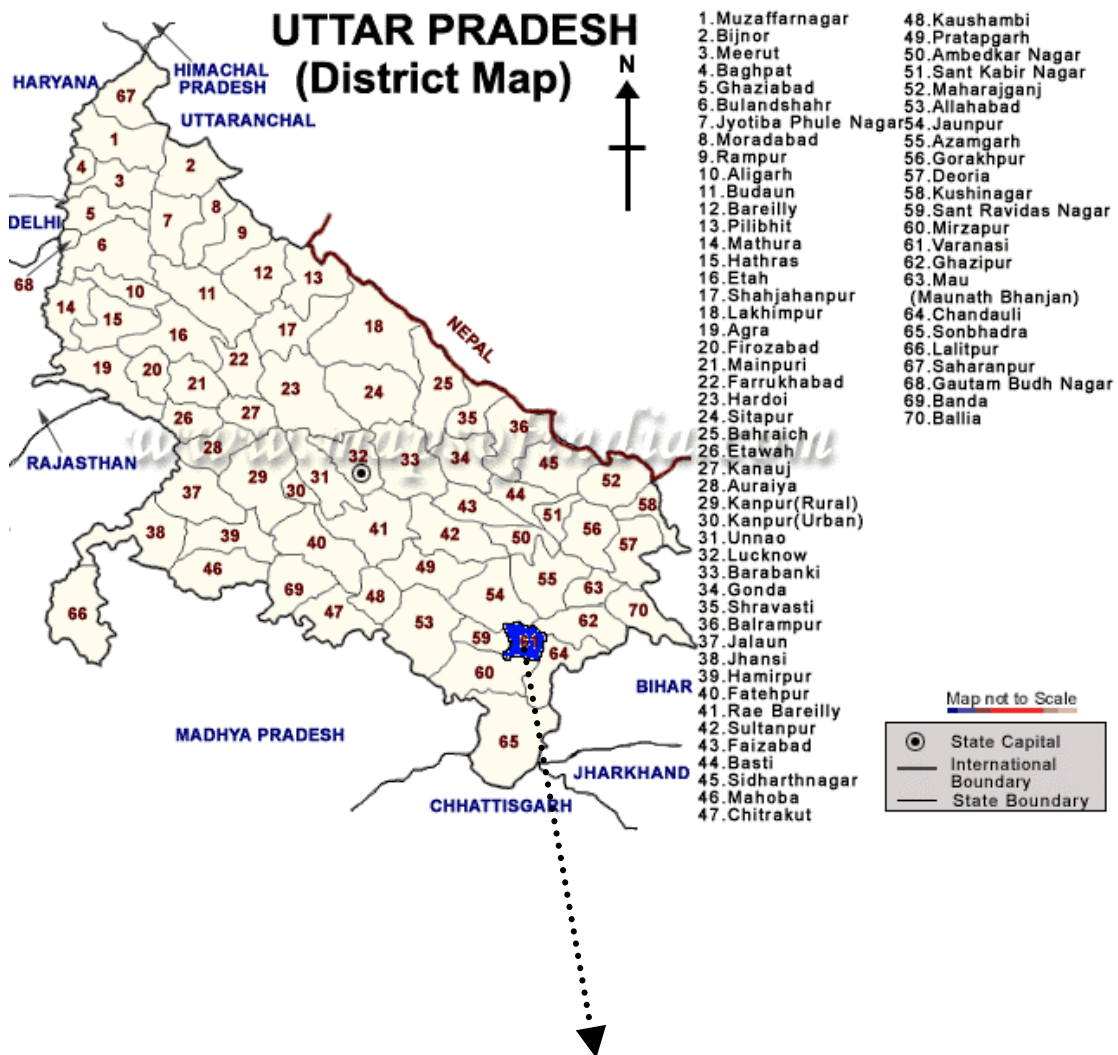
Ø-la	xg dk uke	iutu@gou grq iškks
1-	jfo	enkj
2-	l ke	i yk' k
3-	eaxy	[kš
4-	cdk	vikekxZ ¼yVthjk½
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6-	' kØ	xwYj
7-	' kfu	' keh
8-	jkq	nrc
9-	dsq	dqk

**uoxg okfVdk**  
mRrj

	dqk	i hi y	vikekxZ ¼yVthjk½
ir'pe	¼drk	¼cgLifr½	¼cdk½
	' keh	enkj	xwYj
	¼' kfu½	¼jfo½	¼' kØ½
	nrc	[kš	i yk' k
	¼jkq	¼eaxy½	¼l ke½
nf{k.k			

ir'pe

# Location Map



# VARANASI (Uttar Pradesh)

