

District Model Land Use Plan District – Allahabad Uttar Pradesh

Final Report

By

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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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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

Location and Extent:

The district of Allahabad^{*} is located between 24° 47' N and 25° 47' N latitudes and between 81° 19'E and 82° 21'E longitudes. It covers an area of 5246 km². This district lies in the southern part of the state in the Gangetic plain and adjoining Vindhyan Plateau of India. Allahabad district is surrounded by district Bhadohi and Mirzapur in the East, Kaushambi and Banda in the west, Pratapgarh and Jaunpur in the North and Banda and Madhya Pradesh are in the south. River Ganga and Yamuna flow through the district.

Administrative Divisions:

The district comprises of eight tahsils, namely Sadar, Soraon, Phulpur, Handia, Bara, Karchana, Koraon and Meja. Tahsil Meja is biggest one according to the area while as per population Tahsil Sadar is the biggest Tahsil of the district. It has 20 development Blocks, 2715 villages and 10 towns.

Geology:

Geologically the district presents a greater complexity than any other district of U.P. with the exception of Mirzapur. The whole Trans-Ganga tract, the greater portion of Doab are composed of gangetic alluvium. The alluvial detritus of the Vindhyan is found in the southern part of the Doab. The Trans-Yamuna tract, the Vindhyan detritus merges in the gangetic sand and silt. The gangetic alluvium consists of alterations of fluvial deposition of sand silt and clay. The thickness of alluvium increases from south to north. The mineral products that are commonly found in the district are glass sand, building stone, kankar, brickearth and reh. Glass sands deposits are found in the neighborhood of Shankargarh (Tehsil Bara) and the requirements of most of the glass factories in northern India are drawn from these deposits. Building stone (kaimur sandstone) is extracted either by blasting or by splitting the chief quarries. Bricks and pottery, earth-material are available in the alluvial tract of the district and are locally used for the manufacture of bricks and earthenware. 'Reh' is found as a white encrustations in the 'usar' land expacially in trans-ganga tract. Soda ash, which is extracted from it, is used in making of soap and glass, in the dyeing industry and for the treatment of hard water.

Topography:

The district may be divided in the three distinct Physical parts. the trans-Ganga or the Gangapar Plain, the doab and trans-Yamuna or the Yamunapar tract which are formed by the Ganga and its tributary, the Yamuna, the latter joining the former at Allahabad, the confluence being known as sangam.

Trans Ganga tract comprises poor sandy soil (full of kankar) with stretches of sodic lands popularly known as 'USAR'. In tehsil Handia, the water table is high and the water in excess, collecting in numerous lakes which form the most noticeable feature of the area, especially in northern part.

The Trans Yamuna tract forms a part of Bundelkhand region.

River System:

The rivers of the district belong to the main system of Ganga and comprise several sub-systems of which the most important are the Yamuna and the Tons, other including the minor systems of the Varuna and the Sai.

Climate:

The climate of Allahabad district is characterised by a long and hot summer, a fairly pleasant monsoon and cold seasons. The winter usually extends from mid-November to February and is followed by the summer which continues till about the middle of June. The south-west monsoon then ushers in the rainy season which lasts till the end of September. October and the first half of November constitute the post-monsoon season.

Rainfall:

The district has 8 rain-gauge stations – Allahabad, Handia, Karchhana, Meja, Phulpur and Soraon with records ranging from 62 to 98 years. The rainfall of Allahabad district generally decreases from the south-east to the north-west. About 88 percent of the annual rainfall is received during the monsoon season. July and August being the months of maximum rainfall. The normal rainfall in the district is 975.4 mm. (38.40") but the variation from year to year is appreciable on an average there are about 48 rainy days in a year, the variation in different parts of the district being negligible.

Temperature:

There is one meteorological observatory in the district, the records of which may be taken as representative of the meteorological conditions in the district.

From about the middle of November, the temperatures begin to fall rapidly and in January (the coldest month) the mean daily maximum is 23.7°C (74.7°F). In association with cold waves in

* The district of Allahabad was bifurcated into Allahabad and Kaushambi in 1997, Before the bifurcation it covered an area of 7261 km² with nine tehsils and 28 CD blocks. The Doab region covering an area of 2015 km² with three Tehsil, and 8 CD blocks was created as Kaushambi.

the wake of western disturbance passing eastwards, the minimum temperature may go down to a degree or two above the freezing point of water and slight frosts may occur. Temperatures rise rapidly after February. The heat in the summer season-particularly in May and the early part of June is intense. May usually being the hottest month of the year with the mean daily maximum temperature at 41.8°C (107.2°F) and the mean daily minimum at 26.8°C (80.2°F). The hot dry and often dusty westerly winds (locally known as loo) make the heat more intense during the daytime specially in the trans-Yamuna tract due to the radiation from the stony outcrops.

Humidity and Cloudiness:

The climate is marked by high relative humidity i.e. 70 to 80 percent during monsoon and progressive decrease in humidity (during the summers humidity is very low i.e. 15 to 20 percent only).

During the monsoon season the skies are heavily clouded but during the rest of the year they are clear or lightly clouded except for short spells of a day or two during the cold season when in association with the passing western disturbances, they become cloudy.

Winds:

Winds are generally light throughout the year with some increase in force in the summer (particularly in the afternoons) and during the south west monsoon season. From November to April they blow predominantly from the west or north-west. By May easterlies and north-easterlies also appear. In the monsoon season, the direction of the winds is either south west to west or north-east to east. By October the north easterlies and easterlies become less frequent. The mean wind speed for the district in Kilometres per hour is 4.2 in January, 5.0 in February, 6.0 in March, 6.6 in April, 7.6 in May, 8.7 in June, 7.7 in July, 6.9 in August, 6.0 in September, 3.7 in October, 2.7 in November, and 3.2 in December, the mean annual speed being 5.7.

Flora:

The reserved forest area under the state forest department in the district is 19839 hectares of which nearly 98 percent lie in trans Yamuna own mainly in two sub-divisions Meja 14832 and Bara 4806. Phulpur and Karchhana have no forest cover. Till the beginning of the present century patches of 'dhak' were found in the trans-Ganga tract mostly between Phulpur and Sarai Mamrez, along the bank of the sasur khaderi, but most of them were cleared for agricultural purposes during the following decades. The right bank of the Ganga has patches of babul. Forest now exist only in the trans-Yamuna tracts in Bara tahsil and the southern tracts of tahsil Meja.

The chief varieties of trees found in these forest are Dhak (*Butea monosprma*), Kakor, (*Ziziphus globerrima*), Aonla (*Emblica officinalis*), Kahwa (*Terminalia arjuna*), Jharberi (*Ziziphus numilaria*), Kanju (*Holoptelea integrifolia*), Mahua (*Madhuca indica*), Semal (*Salmalia Malabarica*), Salai (*Boswellia Serrata*), Khair (*Acacia Catechu*), Harra (*Terminalia chebula*), Chiraunji (*Buchanania lanzon*), Bahera (*Terminalia belerica*) and Babul.

Fauna:

Forest cover plays an important role in the economy of the district. The supply of fuel, fodder and bamboo's etc. is made from these forests.

The wild life of the district has depleted considerably owing to the destruction of forest and reckless shooting in the past. In 1880 wolves became such a pest that rewards were given for their destruction. They are found in the trans-Yamuna tract and specially along the banks of the Ganga. The number and species of wild animals are much greater in the trans-Yamuna tract than elsewhere in the district. The tiger (*Panthera tigris*) visits the district from Mirzapur or Madhya Pradesh. The bear (*Melursus ursinus*) is found in the southern part of the trans-Yamuna tract and the leopard (*Panthera Pardus*) is sometimes seen in the ravined area of the Yamuna in tahsil Bara and the southern part of the tahsil Meja. The bear and the Chinkara (*Gazella bennetti*) also known as the Indian gazelle or ravine deer are found in tahsil Bara and the Sambar (*Cervus unicolor*) occurs in small numbers in the southern part of tahsil Meja. The hyaena (*Hyaena hyaena*), considerable herds of the Indian blank buck (*Antelope cervicapra*) and the boar (*sus scrofa*), which do much damage to the crops, are also found in the last also being met with in the flood plain of the Ganga and the doab. The milgai or blue bull (*Boselaphus tragocamelus*) is found in the tahsil of trans-Yamuna tract. The fox (*Kulpus bengalensis*), the hare (*Lepus rufica udatus*), and the sahi or Indian porcupine (*Hystrix leucura*) are found throughout the district.

Minerals:

Minerals wealth of the district has great significance in terms of socio-economic prosperity and economic base. It contributes largely for developing an area by providing economic opportunities and enriching an area with its natural endowments. The mineral products that are commonly found in the district are glass sand, building stone, Kankar, brick earth and reh.

Glass Sand: Some of the best glass sand deposits are found in the neighbourhood of Shankargarh and Lohgara (both in tahsil Bara) and the requirements of most of the glass factories in northern India are drawn from these deposits.

Building Stone: The Kaimur sandstone is an excellent building stone. It lies in beds varying between 150 m.m and 2.5 m.m thickness. These stones one found in the southern parts of the district.

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.

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.

1.2 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 Shankargarh and Phulpur were selected from the district. The two villages were selected randomly from each of the selected blocks. Thus the villages selected are:

- (i) Golhaiya (Block – Shankargarh)
- (ii) Harro (Block – Shankargarh)
- (iii) Fazilapur (Block – Phulpur)
- (iv) Rajepur (Block – Phulpur)

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.

Chapter - 2

Population and Land Resources

2.1 Demographic Profile

2.1.1 Settlement

The total area of Allahabad district reduced from 7261.00 sq.km. to 5437.20 sq. km. 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 421771 in 1961 to 486256 in 1971 which shows an increase of 15.29 per cent during the decade. The trend in the increase of residential houses increased to more than 20.0 per cent during decades 1971-81 and 1981-91 which recorded an increase of 28.48 per cent during 1971-81 and 23.40 per cent during 1981-91 respectively.

Thus the number of residential houses have been increasing at the rate of around 24 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 Allahabad

Particular	Area	2001	1991 (After division)	1991 (Undivided)	1981	1971	1961
Area in Sq.Km.	Rural	NA	5321.00	7110.00	7114.20	7161.10	7369.20
	Urban	NA	116.20	150.00	146.80	93.90	89.20
	Total	5246	5437.20	7261.00	7261.00	7255.00	7458.40
Number of Residential Houses	Rural	NA	448667	618358	500050	398679	352110
	Urban	NA	141861	152577	124712	87577	69661
	Total	NA	590528	770935	624762	486256	421771

Number of Households	Rural	NA	461585	633663	522034	440498	NA
	Urban	NA	150299	161307	133441	104281	NA
	Total	NA	611884	794970	655475	544779	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 Allahabad had been divided, the area under urban limits increased from 89 sq.km. in 1961 to 146.8 sq.km. in 1981. i.e. an increase of 64.94 per cent during two decades. The share of urban population has increased from 18.12 per cent in 1961 to 24.72 per cent in 2001.

2.2 Population

The British made it a policy to discourage local manufacturers, which was the main cause of the decline of indigenous industries forcing more and more people to take to agricultural pursuits. Famines and epidemics were a regular feature till around 1931. The population pressure on agriculture was therefore not so acute till then.

The population pressure started to increase on agriculture since 1931. The decennial growth rate of population had been very high during the last three decades. This has resulted in the pressure of population on land (**See table 2.2.2 & 2.2.3**).

The situation has acquired a crisis situation as average size of holding is 0.75 hectare. The number of small and marginal farm holdings is 91.4 per cent and number of workers engaged in agricultural pursuits as percentage of total workers is 57.3 (**See table 2.2.1**).

**Table – 2.2.1
Population of District Allahabad**

Years	Total	Male	Female	Rural	Urban
1853	1379788	722798	656990	NA	NA
1865	1406624	744491	662133	NA	NA
1872	1396241	716070	680171	NA	NA
1881	1474106	741730	732376	NA	NA
1891	1548737	781509	767228	NA	NA
1901	1489358	744654	744704	1272012	217346
1911	1467136	744382	722754	1266356	200784
1921	1404445	722188	682257	1217566	186879
1931	1491913	767405	724508	1277760	214153
1941	1812981	928142	884839	1513696	292285
1951	2048250	1052022	996228	1682123	366127
1961	2438376	1263981	1174395	1994412	443964

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 23.9 per cent in 1971 to 46.1 per cent in 1991. The literacy rate among males and females was 62.8 per cent and 26.6 per cent respectively in 1991.

**Table – 2.2.2
Growth Rate of Population in District Allahabad**

Year	Decadal Variation		
	Rural	Urban	Total
1901-1911	-1.0	-8.0	-2.0
1911-1921	-4.0	-7.0	-4.0
1921-1931	5.0	13.0	6.0
1931-1941	18.0	40.0	22.0
1941-1951	11.0	22.0	13.0
1951-1961	19.0	21.0	19.0
1961-1971	20.0	22.0	21.0
1971-1981	26.0	43.0	29.0
1981-1991	29.0	32.0	30.0
1991-2001	26.94	28.22	27.28

Table – 2.2.2
Demographic Profile of the District Allahabad

	Area	2001			1991 (After division)			1991 (Undivided)		
		Male	Female	Total	Male	Female	Total	Male	Female	Total
Total Pop.	Rural	NA	NA	3728000	1552213	1383793	2936006	2063534	1835414	3898948
	Urban	NA	NA	1224000	525277	429330	954607	561295	461070	1022365
	Total	NA	NA	4952000	2077490	1813123	3890613	2624829	2296484	4921313
SC Pop.	Rural	NA	NA	NA	380412	342866	723278	564044	507601	1071645
	Urban	NA	NA	NA	64227	54517	118744	71269	60933	132202
	Total	NA	NA	NA	444639	397383	842022	635313	568534	1203847
ST Pop.	Rural	NA	NA	NA	1124	860	1984	1127	864	1991
	Urban	NA	NA	NA	127	86	213	127	86	213
	Total	NA	NA	NA	1251	946	2197	1254	950	2204
Literate Person	Rural	NA	NA	NA	690755	157775	848530	865219	196536	1061755
	Urban	NA	NA	NA	354460	221314	575774	376267	226074	602341
	Total	NA	NA	NA	1045215	379089	1424304	1241486	422610	1664096
Den. Per sq.km.	Rural	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Urban	NA	NA	NA	NA	NA	NA	NA	NA	NA
	Total	NA	NA	911	NA	NA	552	NA	NA	NA
Total Pop.		1981			1971			1961		
	Rural	1584096	1439344	3023445	1244391	1150784	2395175	1014917	979455	1994412
	Urban	424675	348913	773588	302891	239212	542103	249024	194990	443964
SC Pop.	Total	2008771	1788262	3797033	1547282	1389996	2937278	1263981	1174395	2438376
	Rural	422711	393221	815932	331929	315101	647030	NA	NA	NA
	Urban	61883	53260	115143	42683	35524	78207	NA	NA	NA
ST Pop.	Total	484594	446481	931075	374612	350625	725237	NA	NA	NA
	Rural	7	-	7	236	199	435	NA	NA	NA
	Urban	138	111	249	141	100	241	NA	NA	NA
Literate Person	Total	145	111	256	377	299	676	NA	NA	NA
	Rural	558865	76715	635580	367561	53352	420913	NA	NA	NA
	Urban	275017	152335	427352	184117	962663	280380	NA	NA	NA
Den. per sq.km.	Total	833882	229050	1062932	551678	149615	701293	NA	NA	NA
	Rural	NA	NA	425	NA	NA	NA	NA	NA	NA
	Urban	NA	NA	5271	NA	NA	NA	NA	NA	NA
	Total	NA	NA	523	NA	NA	NA	NA	NA	NA

2.3 Occupational Structure

The pressure on land in Allahabad continues to increase because a sizable work-force was found to be engaged in agricultural activities.

As per the 1991 census 43.26 per cent workers were cultivators and 25.94 per cent workers were engaged as agricultural labourers. The high proportion of agricultural workers shows that employment in secondary and tertiary sector was growing very slowly. This is evident from the

fact that number of workers engaged in household industry was 3.52 per cent while those engaged in other than household industry was 1.61 per cent only. The number of workers engaged in trade and commerce and other services was 6.67 per cent and 11.94 per cent respectively.

It could also be seen from table 2.3 that whereas the proportion of agricultural labourers has increased during 1981-91, the proportion of workers in household industry and in other services have declined during the same period.

This trend was in evidence in all the blocks of Allahabad district.

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

Sl. No.	Particular		1991			1981			1971			1961		
			Male	Female	Total	Male	Female	Total	Male	Female	Total	Male	Female	Total
1	Main Workers	Rural	80.61	93.32	83.32	80.57	91.41	82.10	81.87	94.47	84.16	82.77	96.85	87.55
		Urban	19.39	6.68	16.68	19.43	8.59	17.90	18.13	5.53	15.84	172.27	3.15	12.45
		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	53.43	43.35	51.02	58.87	36.38	55.34	57.99	31.24	52.51	65.22	64.73	65.04
		Urban	4.46	5.02	4.51	4.72	4.68	4.71	2.06	3.42	2.15	0.18	4.34	2.04
		Total	43.93	40.79	43.26	48.35	33.66	46.28	4.79	29.70	44.54	54.30	62.83	57.19
3	Agricultural Labour	Rural	24.84	47.24	30.19	21.89	53.49	26.85	25.82	61.23	33.08	15.87	26.59	19.89
		Urban	4.04	12.31	4.74	3.83	12.86	4.46	2.74	13.61	3.43	0.09	5.57	1.33
		Total	20.81	44.90	25.94	18.38	50.00	22.84	21.64	58.60	28.38	1.33	25.93	17.58
4	Livestock, Forestry, Fishing, Hunting, Plantation, Orchards & Allied Activities	Rural	0.53	0.24	0.46	-	-	-	0.23	0.22	0.23	0.39	0.23	0.33
		Urban	0.86	0.62	0.84	-	-	-	1.02	0.75	1.00	0.12	0.75	1.16
		Total	0.60	0.27	0.53	-	-	-	0.38	0.24	0.35	0.53	0.25	0.43
5	Mining and Quarrying	Rural	0.34	0.39	0.35	-	-	-	0.16	0.33	0.19	-	-	-
		Urban	0.10	0.23	0.11	-	-	-	0.01	-	0.01	-	-	-
		Total	0.29	0.38	0.31	-	-	-	0.13	0.31	0.16	-	-	-
6	Manufacturing, Processing, Servicing, Repairs in Households Industry	Rural	2.86	4.17	3.18	5.42	5.20	5.39	4.53	4.06	4.44	6.98	4.38	6.01
		Urban	4.36	14.63	5.24	5.47	14.95	6.12	6.39	7.43	6.46	0.47	13.12	5.38
		Total	31.54	4.87	3.52	5.43	6.04	5.52	4.87	4.25	4.76	6.58	4.66	5.93
7	Manufacturing, Processing, Servicing, Repairs in other than Households Industry	Rural	0.50	0.14	0.42	-	-	-	1.90	0.64	1.65	1.31	0.22	0.90
		Urban	7.28	10.77	7.58	-	-	-	15.40	5.15	14.74	1.73	7.34	16.44
		Total	1.82	0.85	1.61	-	-	-	4.35	0.89	3.72	4.03	0.44	2.82
8	Construction	Rural	0.27	0.02	0.21	-	-	-	0.36	0.07	0.30	0.35	0.03	0.23
		Urban	2.37	0.69	2.23	-	-	-	1.69	0.50	1.61	0.33	1.58	3.19
		Total	0.68	0.07	0.55	-	-	-	0.60	0.10	0.51	0.86	0.08	0.60
9	Trade and Commerce	Rural	3.56	0.73	2.88	-	-	-	2.41	0.47	2.01	2.94	0.87	2.16
		Urban	27.01	10.24	25.58	-	-	-	20.58	8.01	19.78	1.71	10.99	16.60
		Total	8.11	1.36	6.67	-	-	-	5.71	0.88	4.83	5.39	1.19	3.96
10	Transport, Storage Commerce	Rural	1.71	0.05	1.32	-	-	-	0.63	0.02	0.50	1.07	0.02	0.67
		Urban	7.31	1.58	6.83	-	-	-	9.45	1.27	8.92	1.35	1.21	12.41
		Total	2.80	0.15	2.24	-	-	-	2.23	0.09	1.84	3.20	0.05	2.13
11	Other Services	Rural	7.89	1.72	6.42	1.35	4.93	12.42	5.97	1.71	5.10	5.87	2.94	4.77
		Urban	38.74	47.45	39.48	85.98	67.52	84.73	40.66	59.85	41.89	4.02	55.10	41.44
		Total	13.87	4.78	11.94	27.84	10.31	25.36	12.26	4.92	10.92	11.78	4.58	0.93

2.3.1 Block-wise Analysis of Occupational Structure

There were only four blocks namely Bahadurpur, Saidabad, Handia, and Kaundhiara, where number of workers engaged in household industries was above 5.0 per cent of total workers (See table 2.4.1).

Table 2.3.1
Block-wise Distribution of Workers by Economic Category in Allahabad 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 Workers	Total Main Worker	Marginal Worker	Total Worker
Kaurihar	1971	47.43	25.97	0.03	0.01	2.51	1.13	0.21	2.11	0.27	4.41	NA	NA	100.0
	1981	57.67	29.11	0.00	0.00	2.98	0.00	0.00	0.00	0.00	8.93	98.69	1.31	100.0
	1991	45.06	34.75	0.29	0.02	0.77	1.16	0.91	3.09	1.35	10.61	98.00	2.00	100.0
Holagarh	1971	56.70	34.00	0.05	0.00	3.18	0.73	0.07	1.68	0.26	3.34	NA	NA	100.0
	1981	60.98	28.34	0.00	0.00	2.53	0.00	0.00	0.00	0.00	7.66	99.51	0.49	100.0
	1991	50.77	30.98	0.20	0.13	1.83	1.10	0.46	2.98	0.72	6.35	95.40	4.60	100.0
Mau-Aima	1971	62.64	24.69	0.05	0.01	5.49	1.34	0.14	1.52	0.18	3.94	NA	NA	100.0
	1981	62.57	18.95	0.00	0.00	4.80	0.00	0.00	0.00	0.00	10.23	96.55	3.45	100.0
	1991	51.41	20.94	0.28	0.02	3.40	1.85	0.74	3.27	1.08	8.05	91.04	8.96	100.0
Soraon	1971	46.44	35.41	0.16	0.03	2.93	2.41	0.53	3.11	0.99	8.00	NA	NA	100.0
	1981	52.16	23.35	0.00	0.00	4.92	0.00	0.00	0.00	0.00	17.67	98.10	1.90	100.0
	1991	44.19	27.46	0.39	0.05	3.47	2.14	1.16	4.68	2.26	9.93	95.73	4.27	100.0
Baharia	1971	58.39	31.26	0.12	0.02	2.68	1.18	0.14	1.06	0.32	4.83	NA	NA	100.0
	1981	63.92	18.19	0.00	0.00	3.36	0.00	0.00	0.00	0.00	11.74	97.33	2.67	100.0
	1991	54.20	18.54	0.49	0.05	1.74	2.64	0.92	2.59	1.13	5.51	87.79	12.21	100.0
Phulpur	1971	61.32	22.41	0.16	0.03	6.07	2.45	0.34	1.65	0.56	5.02	NA	NA	100.0
	1981	57.41	9.71	0.00	0.00	3.70	0.00	0.00	0.00	0.00	25.14	95.97	4.03	100.0
	1991	53.28	16.79	0.39	0.06	2.75	6.46	0.57	2.78	0.85	4.69	88.61	11.39	100.0
Bahadur Pur	1971	40.77	33.67	0.24	0.02	6.94	3.12	0.34	2.78	1.11	11.02	0.00	0.00	100.0
	1981	37.95	31.68	0.00	0.00	7.70	0.00	0.00	0.00	0.00	21.15	98.48	1.52	100.0
	1991	34.78	30.17	0.81	0.06	5.01	6.07	1.80	5.11	2.11	9.22	95.15	4.85	100.0
Pratap Pur	1971	58.83	27.13	0.14	0.05	6.17	1.42	0.25	2.16	0.22	3.62	NA	NA	100.0
	1981	58.97	10.30	0.00	0.00	6.90	0.00	0.00	0.00	0.00	9.29	98.90	1.10	100.0
	1991	57.97	15.19	0.46	0.12	4.83	3.74	0.53	3.24	0.91	5.05	92.04	7.96	100.0
Saidabad	1971	51.70	26.59	0.28	0.07	10.66	2.28	0.25	1.63	0.44	6.11	NA	NA	100.0
	1981	50.62	19.80	0.00	0.00	11.51	0.00	0.00	0.00	0.00	14.93	96.86	3.14	100.0
	1991	42.32	21.10	0.43	0.14	7.58	6.03	1.17	3.17	1.34	8.01	91.30	8.70	100.0
Dhanu Pur	1971	58.25	23.08	0.15	0.08	10.63	2.82	0.15	1.06	0.27	3.53	NA	NA	100.0
	1981	53.13	13.71	0.00	0.00	18.23	0.00	0.00	0.00	0.00	12.10	97.18	2.82	100.0
	1991	49.56	15.38	0.48	0.12	9.98	9.29	0.80	2.40	0.74	4.22	92.97	7.03	100.0
Handia	1971	52.18	29.83	0.22	0.10	9.03	1.89	0.13	2.13	0.38	4.10	NA	NA	100.0
	1981	48.69	14.88	0.00	0.00	19.35	0.00	0.00	0.00	0.00	15.99	98.91	1.09	100.0
	1991	50.38	19.71	0.81	0.13	7.19	7.03	0.57	2.84	0.98	5.02	94.66	5.34	100.0
Jasra	1971	56.53	31.71	0.23	0.01	3.96	0.92	0.22	2.54	0.51	3.36	NA	NA	100.0
	1981	50.05	27.44	0.00	0.00	5.72	0.00	0.00	0.00	0.00	14.16	97.36	2.64	100.0
	1991	45.60	29.88	0.56	0.36	2.18	2.72	0.69	3.85	1.17	6.90	93.91	6.09	100.0
Shankargarh	1971	48.53	38.87	0.28	5.16	2.42	0.52	0.09	1.80	0.81	1.91	NA	NA	100.0
	1981	49.64	30.26	0.00	0.00	1.32	0.00	0.00	0.00	0.00	16.85	98.07	1.93	100.0
	1991	46.99	31.33	0.36	7.59	0.92	0.78	0.66	1.56	0.66	3.90	94.74	5.26	100.0
Chaka	1971	33.36	35.07	0.37	0.04	5.33	9.84	1.22	1.71	1.52	11.53	NA	NA	100.0
	1981	36.97	27.26	0.00	0.00	7.33	0.00	0.00	0.00	0.00	27.41	98.97	1.03	100.0
	1991	26.65	30.96	1.26	0.34	2.82	14.25	1.57	4.43	2.39	12.80	97.48	2.52	100.0

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Blocks	Years	Cultivators	Agriculture Labour	Livestock, Forestry Plantation etc.	Mining & Quarrying	Household Industry	Other than Household Industry	Construction	Trade & Commerce	Transport, Storage & Communication	Other Workers	Total Main Worker	Marginal Worker	Total Worker
Karchh ana	1971	58.52	26.80	0.05	0.01	4.58	1.81	0.27	1.28	0.40	6.28	NA	NA	100.0
	1981	58.44	22.54	0.00	0.00	5.92	0.00	0.00	0.00	0.00	12.27	96.03	0.82	100.0
	1991	48.90	25.78	0.32	0.07	3.05	3.92	1.12	3.02	1.37	8.89	96.43	3.57	100.0
Kaund hiyara	1971	51.60	35.12	0.12	0.05	8.06	1.05	0.41	0.91	0.29	2.39	NA	NA	100.0
	1981	49.54	26.09	0.00	0.00	8.23	0.00	0.00	0.00	0.00	13.23	97.09	2.91	100.0
	1991	50.38	26.45	0.56	0.04	7.82	1.67	0.37	1.76	0.46	3.84	93.35	6.65	100.0
Uroova	1971	44.81	40.28	0.20	0.00	4.79	0.61	0.32	1.31	1.28	6.40	NA	NA	100.0
	1981	45.52	29.70	0.00	0.00	6.55	0.00	0.00	0.00	0.00	17.18	98.95	1.05	100.0
	1991	39.18	33.16	1.12	0.11	3.86	5.39	0.44	2.89	2.85	7.77	96.76	3.24	100.0
Meja	1971	50.41	40.38	0.09	0.05	2.85	0.54	0.28	1.73	0.21	3.47	NA	NA	100.0
	1981	62.31	26.14	0.00	0.00	2.24	0.00	0.00	0.00	0.00	7.35	98.04	1.96	100.0
	1991	48.83	27.80	0.59	0.25	2.26	3.71	0.52	2.21	1.44	4.07	91.68	8.32	100.0
Koraon	1971	47.96	45.63	0.12	0.01	1.78	0.68	0.07	1.51	0.16	2.07	NA	NA	100.0
	1981	52.49	32.50	0.00	0.00	3.10	0.00	0.00	0.00	0.00	8.80	96.88	3.12	100.0
	1991	56.61	32.04	0.24	0.11	1.34	1.50	0.18	1.49	0.30	2.18	96.01	3.99	100.0
Manda	1971	54.34	36.80	0.33	0.10	1.51	0.98	0.41	1.57	0.92	3.03	NA	NA	100.0
	1981	50.88	27.53	0.00	0.00	5.56	0.00	0.00	0.00	0.00	14.39	98.24	1.76	100.0
	1991	48.50	24.18	0.72	0.26	4.19	4.67	0.43	2.27	3.36	4.07	92.65	7.35	100.0

Source: District Statistical Handbook (of various years).

2.4 Distribution of Landholdings

The average size of landholding was 0.88 hectare during 1980-81 and declined to 0.75 hectares as per the 1995-96 agricultural census. It could also be seen from the table that during 1995-96, 91.43 per cent holdings belonged to the small and marginal farmers, while they accounted for only 57.25 per cent of total area under all landholdings, while during 1980-81, 89.51 per cent holdings belonged to small and marginal farmers, and these categories accounted for 50.77 per cent of area under total holdings (**See table 2.4.1 & 2.4.2**).

Table 2.4.1
Block-wise Distribution of Landholding (Size & Area) in Allahabad District
(In percent)

Blocks	Years	Bellow 1.0 Hect		1.0 to 2.0 Hect.		2.0 to 3.0 Hect.	
		Number	Area	Number	Area	Number	Area
Kaurihar	1978-79	73.73	26.62	14.61	20.44	5.23	12.79
	1980-81	76.31	29.50	13.82	21.73	4.94	13.23
	1985-86	79.02	32.14	12.63	21.86	4.24	13.75
Holagarh	1978-79	73.86	26.74	14.63	20.54	5.04	12.85
	1980-81	76.98	31.02	13.42	22.46	4.79	13.50
	1985-86	78.70	33.53	12.82	22.28	4.27	13.80
Mau-Aima	1978-79	73.74	26.74	14.61	20.54	5.23	12.85
	1980-81	76.60	30.99	13.36	22.44	4.78	13.50
	1985-86	78.30	36.96	12.77	21.43	4.33	13.22
Soraon	1978-79	73.74	30.04	14.60	23.08	5.23	14.43
	1980-81	77.03	31.40	13.30	22.63	4.75	13.56
	1985-86	78.79	35.06	12.67	22.14	4.27	13.69
Baharia	1978-79	73.72	26.58	14.61	20.42	5.23	24.60
	1980-81	75.73	31.53	13.86	23.34	4.95	17.41
	1985-86	78.72	32.93	13.17	22.20	4.43	13.62
Phulpur	1978-79	73.73	26.74	14.61	20.54	5.23	12.85
	1980-81	76.18	29.71	13.77	21.87	4.92	13.30
	1985-86	77.93	32.83	12.91	22.25	4.35	13.81
BahadurPur	1978-79	73.73	23.36	14.61	21.49	5.23	13.45
	1980-81	76.46	29.09	14.07	21.59	5.03	13.21
	1985-86	78.79	30.06	12.63	22.69	4.36	14.38
PratapPur	1978-79	73.73	26.93	14.61	19.98	5.22	12.94
	1980-81	75.97	29.73	13.72	21.88	4.90	13.30
	1985-86	77.41	25.06	13.71	16.66	4.42	33.84
Saidabad	1978-79	74.77	26.74	14.82	20.54	5.30	12.85
	1980-81	76.96	29.78	13.88	21.90	4.96	13.31
	1985-86	76.63	31.37	13.84	20.85	4.34	14.47
DhanuPur	1978-79	73.72	26.74	14.60	20.54	5.23	12.85
	1980-81	76.08	30.36	13.63	18.77	4.88	13.40
	1985-86	78.58	33.15	12.44	20.80	4.43	13.59
Handia	1978-79	73.73	26.73	14.60	20.54	5.22	12.85
	1980-81	76.73	26.47	13.52	23.19	4.83	14.35
	1985-86	78.25	29.17	12.60	19.89	4.41	14.35
Jasra	1978-79	74.13	26.77	14.61	20.56	5.23	12.86
	1980-81	75.90	30.39	14.10	21.98	4.84	11.46
	1985-86	79.09	33.31	12.87	22.41	3.61	13.86
Shankargarh	1978-79	73.72	26.74	14.61	20.54	5.23	12.85
	1980-81	74.63	29.47	14.49	20.18	4.82	13.64
	1985-86	77.59	31.00	13.16	21.35	4.42	13.53
Chaka	1978-79	73.48	26.72	14.61	20.52	5.23	12.84
	1980-81	76.56	30.20	13.16	20.74	4.99	13.16
	1985-86	78.02	27.22	12.04	23.99	4.90	13.69
Karchhana	1978-79	73.73	26.74	14.60	20.54	5.23	12.85
	1980-81	76.15	26.63	13.27	19.65	4.95	13.78
	1985-86	77.60	35.66	13.26	22.63	4.44	17.34
Kaundhiyara	1978-79						
	1980-81	76.04	24.37	12.63	23.46	2.20	13.03
	1985-86	77.55	31.39	13.10	22.12	4.42	13.85
Uroova	1978-79	21.24	26.75	67.10	20.54	5.22	12.85
	1980-81	76.42	30.59	13.47	22.26	4.81	13.44
	1985-86	78.50	31.91	12.93	21.75	4.17	13.70
Meja	1978-79	73.73	22.96	14.61	17.64	5.23	25.17
	1980-81	74.81	28.14	14.16	21.17	5.06	13.07
	1985-86	77.79	33.96	13.10	21.56	4.40	13.44
Koraon	1978-79	73.77	26.74	14.60	20.54	5.22	12.85
	1980-81	74.51	28.43	14.30	21.53	5.11	12.42
	1985-86	76.53	31.25	13.73	21.92	4.59	13.03
Manda	1978-79	73.73	26.74	14.61	20.54	5.23	12.88
	1980-81	71.71	28.67	14.14	21.53	5.06	13.30
	1985-86	76.95	31.72	13.49	21.77	4.52	13.80
Rural	1978-79	73.73	27.21	14.61	20.59	5.23	12.91
	1980-81	75.72	29.14	13.79	21.68	4.96	13.32
	1985-86	77.69	32.12	13.11	21.81	4.43	13.75
Urban	1978-79	73.41	24.42	14.70	18.80	5.25	20.99
	1980-81	72.81	17.80	16.89	30.09	4.59	12.62
	1985-86	75.21	20.11	15.92	30.84	4.06	13.35
Total District	1978-79	73.73	26.74	14.61	20.55	5.23	12.85
	1980-81	75.66	28.99	13.85	21.78	4.95	13.31

	1985-86	77.77	31.96	13.02	21.93	4.43	13.75
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Blocks	Years	3.0 to 5.0 Hect.		Above 5.0 Hect.		Total		Average size of ha
		Number	Area	Number	Area	Number	Area	
Kaurihar	1978-79	3.77	14.39	2.67	25.75	100.00	100.00	0.97
	1980-81	3.03	14.37	1.91	21.16	100.00	100.00	0.88
	1985-86	2.60	13.71	1.50	18.55	100.00	100.00	0.79
Holagarh	1978-79	3.77	14.46	2.69	25.41	100.00	100.00	0.97
	1980-81	3.13	14.43	1.68	18.60	100.00	100.00	0.83
	1985-86	2.82	13.39	1.38	17.00	100.00	100.00	0.79
Mau-Aima	1978-79	3.76	14.47	2.66	25.40	100.00	100.00	0.97
	1980-81	3.12	14.43	2.15	18.64	100.00	100.00	0.83
	1985-86	2.82	13.05	1.79	15.35	100.00	100.00	0.83
Soraon	1978-79	3.76	16.24	2.66	16.21	100.00	100.00	0.86
	1980-81	3.07	14.43	1.84	17.98	100.00	100.00	0.82
	1985-86	2.76	13.45	1.52	15.65	100.00	100.00	0.79
Baharia	1978-79	3.76	14.38	2.68	14.02	100.00	100.00	0.97
	1980-81	3.36	14.93	2.10	12.79	100.00	100.00	0.82
	1985-86	2.97	13.58	0.72	17.67	100.00	100.00	0.83
Phulpur	1978-79	3.77	14.46	2.67	25.40	100.00	100.00	0.97
	1980-81	3.31	14.44	1.82	20.68	100.00	100.00	0.87
	1985-86	2.88	13.71	1.92	17.40	100.00	100.00	0.80
BahadurPur	1978-79	3.76	15.14	2.68	26.57	100.00	100.00	0.92
	1980-81	3.43	14.45	2.00	21.66	100.00	100.00	0.90
	1985-86	2.80	14.23	1.43	18.63	100.00	100.00	0.75
PratapPur	1978-79	3.76	14.57	2.67	25.59	100.00	100.00	0.96
	1980-81	3.30	14.44	2.12	20.65	100.00	100.00	0.87
	1985-86	2.88	9.90	1.59	14.55	100.00	100.00	1.08
Saidabad	1978-79	3.82	14.46	1.30	25.41	100.00	100.00	0.98
	1980-81	3.33	14.44	0.88	20.56	100.00	100.00	0.88
	1985-86	3.10	12.30	2.09	21.02	100.00	100.00	0.83
DhanuPur	1978-79	3.76	14.46	2.69	25.40	100.00	100.00	0.97
	1980-81	3.22	14.41	2.26	19.67	100.00	100.00	0.85
	1985-86	3.04	13.43	1.50	19.04	100.00	100.00	0.76
Handia	1978-79	3.77	14.47	2.68	25.42	100.00	100.00	0.97
	1980-81	3.16	15.41	1.76	20.83	100.00	100.00	0.79
	1985-86	2.87	15.55	1.87	21.04	100.00	100.00	0.90
Jasra	1978-79	3.76	14.48	2.27	25.32	100.00	100.00	0.97
	1980-81	3.25	13.85	1.89	22.33	100.00	100.00	0.85
	1985-86	2.85	13.72	1.59	16.70	100.00	100.00	0.79
Shankargarh	1978-79	3.76	14.47	2.68	25.40	100.00	100.00	0.97
	1980-81	3.54	12.52	2.53	24.19	100.00	100.00	0.91
	1985-86	3.04	13.70	1.79	20.41	100.00	100.00	0.84
Chaka	1978-79	3.76	14.54	2.92	25.38	100.00	100.00	0.97
	1980-81	3.42	14.09	1.87	21.81	100.00	100.00	0.82
	1985-86	3.45	11.95	1.60	23.15	100.00	100.00	0.92
Karchhana	1978-79	3.77	14.47	2.68	25.40	100.00	100.00	0.97
	1980-81	3.35	16.01	2.29	23.94	100.00	100.00	0.97
	1985-86	2.98	13.66	1.72	10.71	100.00	100.00	0.80
Kaundhiyara	1978-79							
	1980-81	3.97	12.86	1.94	26.29	100.00	100.00	0.99
	1985-86	3.43	13.81	1.50	18.83	100.00	100.00	0.81
Uroova	1978-79	3.76	14.46	2.67	25.40	100.00	100.00	0.97
	1980-81	3.17	14.43	2.13	19.27	100.00	100.00	0.84
	1985-86	2.80	13.79	1.59	18.84	100.00	100.00	0.81
Meja	1978-79	3.76	12.42	2.67	21.81	100.00	100.00	1.13
	1980-81	3.53	14.45	2.43	23.17	100.00	100.00	0.92
	1985-86	2.96	13.50	1.75	17.54	100.00	100.00	0.83
Koraon	1978-79	3.76	14.46	2.65	25.42	100.00	100.00	0.97
	1980-81	2.17	14.85	2.48	22.77	100.00	100.00	0.91
	1985-86	3.18	14.19	1.97	19.61	100.00	100.00	0.85
Manda	1978-79	3.76	14.47	2.67	25.37	100.00	100.00	0.97
	1980-81	3.51	14.66	2.31	21.83	100.00	100.00	0.90
	1985-86	3.14	14.05	1.90	18.66	100.00	100.00	0.84
Rural	1978-79	3.76	14.57	2.67	25.59	100.00	100.00	0.96
	1980-81	3.37	14.39	2.16	21.47	100.00	100.00	0.88
	1985-86	3.00	13.66	1.77	18.66	100.00	100.00	0.83
Urban	1978-79	3.81	21.40	2.83	14.38	100.00	100.00	1.06
	1980-81	2.85	14.58	2.76	24.92	100.00	100.00	0.60
	1985-86	2.54	14.08	2.26	21.62	100.00	100.00	0.55
Total District	1978-79	3.76	14.47	2.67	31.15	100.00	100.00	0.97
	1980-81	3.36	14.39	2.17	21.52	100.00	100.00	0.88
	1985-86	2.99	13.67	1.78	18.69	100.00	100.00	0.82

Source: District Statistical Handbook of different years.

Table 2.4.2
Distribution of Landholding (Size & Area) in Allahabad District

Blocks	Years	Bellow 0.5 Hect		0.5 to 1.0 Hect.		1.0 to 2.0 Hect.		2.0 to 4.0 Hect.	
		Number	Area	Number	Area	Number	Area	Number	Area
Kaurihar	1990-91	61.21	19.70	20.52	18.07	11.26	21.76	5.10	19.62
	1995-96	62.88	23.85	20.08	18.61	12.01	28.40	4.46	22.98
Holagarh	1990-91	60.96	20.29	20.43	18.61	11.43	21.90	5.13	19.44
	1995-96	67.18	26.24	17.21	18.56	10.55	26.43	4.43	22.44
Mau-Aima	1990-91	60.71	21.04	20.55	19.30	11.42	21.44	5.22	18.96
	1995-96	67.24	26.91	17.34	18.98	10.32	25.48	4.49	22.19
Soraon	1990-91	61.08	20.97	20.47	19.24	11.31	21.51	5.13	19.06
	1995-96	67.46	25.43	16.69	20.23	10.82	26.90	4.41	21.71
Baharia	1990-91	60.34	20.30	20.23	18.63	11.87	20.93	5.35	22.98
	1995-96	62.99	22.16	19.59	20.48	10.93	23.92	5.59	25.81
Phulpur	1990-91	60.28	19.30	20.21	17.71	11.72	22.08	5.33	19.82
	1995-96	63.52	21.77	18.67	20.97	11.20	27.16	5.60	22.92
BahadurPur	1990-91	60.93	19.61	20.43	18.00	11.56	21.72	5.02	19.60
	1995-96	62.63	21.41	19.25	20.72	12.12	28.26	5.17	21.84
PratapPur	1990-91	60.50	20.64	20.28	18.94	11.73	21.28	5.30	19.01
	1995-96	65.08	26.75	20.92	26.07	9.73	23.73	3.81	18.72
Saidabad	1990-91	60.65	20.05	20.34	18.39	11.68	21.96	5.29	19.29
	1995-96	65.40	26.18	20.75	24.45	9.63	25.44	3.77	19.14
DhanuPur	1990-91	60.66	19.93	20.34	18.29	11.58	21.95	5.26	19.52
	1995-96	66.84	26.67	19.95	25.34	9.12	23.83	3.69	19.17
Handia	1990-91	61.02	18.43	20.45	16.92	11.25	22.61	5.24	20.55
	1995-96	67.73	25.49	19.57	23.33	8.69	25.24	3.60	20.39
Jasra	1990-91	60.15	20.72	20.16	19.01	12.26	22.38	5.32	17.12
	1995-96	41.80	9.93	22.34	10.96	16.33	16.79	12.85	23.14
Shankargarh	1990-91	59.88	19.56	20.07	17.95	12.45	21.13	5.26	21.01
	1995-96	41.90	8.69	22.95	11.89	16.44	17.94	12.10	27.79
Chaka	1990-91	60.93	20.37	20.43	18.69	11.10	20.77	5.33	19.46
	1995-96	60.48	19.03	17.11	17.71	14.13	23.73	6.24	23.47
Karchhana	1990-91	60.85	18.20	20.40	16.70	11.28	20.17	5.32	20.85
	1995-96	58.57	18.39	17.77	16.32	15.48	22.25	6.24	25.99
Kaundhiyara	1990-91	60.57	17.44	20.30	16.00	10.76	24.98	5.89	20.44
	1995-96	61.27	17.48	15.74	15.72	13.75	34.83	6.97	16.94
Uroova	1990-91	61.45	20.10	20.60	18.45	11.51	21.98	4.34	19.48
	1995-96	50.20	11.20	22.34	14.44	14.19	17.15	7.89	22.39
Meja	1990-91	60.38	19.31	20.24	17.72	11.79	21.61	5.34	19.63
	1995-96	50.41	11.25	22.46	13.17	12.86	18.53	9.17	23.84
Koraon	1990-91	59.72	19.37	20.02	17.78	12.33	22.08	5.56	18.82
	1995-96	49.07	11.78	21.63	12.74	14.47	16.66	9.40	24.40
Manda	1990-91	59.98	19.46	20.11	17.85	12.11	21.69	5.47	19.71
	1995-96	48.63	11.02	21.39	13.72	15.03	18.12	9.59	23.17
Rural	1990-91	60.44	19.63	20.27	18.02	11.77	21.77	5.30	19.73
	1995-96	59.46	17.76	19.82	17.18	12.18	22.41	6.31	22.96
Urban	1990-91	58.94	12.90	19.76	11.82	14.36	32.13	4.94	19.95
	1995-96	43.18	7.91	36.87	24.61	9.55	16.68	7.42	24.93
Total District	1990-91	60.40	19.52	20.25	17.91	11.84	21.95	5.29	19.74
	1995-96	59.23	17.64	20.06	17.26	12.14	22.35	6.32	22.98

Contd...

Blocks	Years	4.0 to 10.0 Hect.		Above 10.0 Hect.		Total		Average size in ha
		Number	Area	Number	Area	Number	Area	
Kaurihar	1990-91	1.69	15.39	0.22	5.46	100.00	100.00	0.70
	1995-96	0.55	5.80	0.02	0.35	100.00	100.00	0.51
Holagarh	1990-91	1.84	14.82	0.21	4.94	100.00	100.00	0.71
	1995-96	0.61	6.03	0.01	0.30	100.00	100.00	0.52
Mau-Aima	1990-91	1.83	14.71	0.27	4.54	100.00	100.00	0.73
	1995-96	0.59	6.04	0.02	0.41	100.00	100.00	0.54
Soraon	1990-91	1.79	14.73	0.22	4.50	100.00	100.00	0.72
	1995-96	0.61	5.39	0.02	0.34	100.00	100.00	0.54
Baharia	1990-91	1.95	14.23	0.26	2.93	100.00	100.00	0.77
	1995-96	0.87	7.36	0.02	0.28	100.00	100.00	0.68
Phulpur	1990-91	2.24	15.53	0.22	5.56	100.00	100.00	0.72
	1995-96	0.99	6.91	0.01	0.28	100.00	100.00	0.60
BahadurPur	1990-91	1.83	15.51	0.23	5.56	100.00	100.00	0.72
	1995-96	0.81	7.49	0.02	0.28	100.00	100.00	0.63
PratapPur	1990-91	1.93	15.01	0.26	5.12	100.00	100.00	0.75
	1995-96	0.45	4.46	0.01	0.27	100.00	100.00	0.55
Saidabad	1990-91	1.94	15.14	0.11	5.17	100.00	100.00	0.74
	1995-96	0.44	4.60	0.01	0.20	100.00	100.00	0.54
DhanuPur	1990-91	1.89	15.23	0.29	5.07	100.00	100.00	0.72
	1995-96	0.38	4.76	0.01	0.24	100.00	100.00	0.52
Handia	1990-91	1.82	15.99	0.21	5.49	100.00	100.00	0.67
	1995-96	0.39	5.37	0.01	0.18	100.00	100.00	0.47
Jasra	1990-91	1.88	14.99	0.24	5.78	100.00	100.00	0.71
	1995-96	5.76	27.16	0.91	12.02	100.00	100.00	1.29
Shankargarh	1990-91	2.03	14.05	0.31	6.30	100.00	100.00	0.73
	1995-96	5.91	24.32	0.70	9.38	100.00	100.00	1.28
Chaka	1990-91	1.98	15.11	0.22	5.62	100.00	100.00	0.67
	1995-96	1.85	12.71	0.18	3.34	100.00	100.00	0.74
Karchhana	1990-91	1.88	17.77	0.28	6.31	100.00	100.00	0.79
	1995-96	1.76	14.06	0.19	3.00	100.00	100.00	0.83
Kaundhiyara	1990-91	2.25	14.01	0.24	7.12	100.00	100.00	0.78
	1995-96	2.09	12.22	0.17	2.82	100.00	100.00	0.80
Uroova	1990-91	1.86	15.17	0.24	4.82	100.00	100.00	0.71
	1995-96	4.66	24.89	0.72	9.92	100.00	100.00	1.09
Meja	1990-91	1.99	15.62	0.26	6.11	100.00	100.00	0.74
	1995-96	4.60	26.14	0.51	7.08	100.00	100.00	1.06
Koraon	1990-91	2.09	16.11	0.29	5.84	100.00	100.00	0.75
	1995-96	4.93	25.99	0.50	8.43	100.00	100.00	1.09
Manda	1990-91	2.05	15.78	0.28	5.50	100.00	100.00	0.75
	1995-96	4.82	26.14	0.54	7.83	100.00	100.00	1.10
Rural	1990-91	1.96	15.32	0.25	5.53	100.00	100.00	0.73
	1995-96	2.03	15.40	0.20	4.29	100.00	100.00	0.75
Urban	1990-91	1.67	16.54	0.34	6.66	100.00	100.00	0.47
	1995-96	2.54	18.33	0.43	7.54	100.00	100.00	0.60
Total District	1990-91	1.95	15.34	0.26	5.54	100.00	100.00	0.73
	1995-96	2.04	15.44	0.20	4.32	100.00	100.00	0.75

Source: District Statistical Handbook of different years.

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 Allahabad district as well. The proportion of net sown area in the district varied around 63 per cent to 65 per cent during 1960-61 to 1994-95. But the net sown area as percentage of total reporting area increased to above 67 per cent in 2000 (**See table 3.1**). This is so, because the blocks which have remained with Allahabad district had higher proportion of net sown area.

But the net sown area as per cent of total reporting area varied among different blocks of the district. Blocks where proportion of net sown area was high (i.e. above 70 per cent) during 2000-2K are Holagarh, Mau-Aima, Baharia, Phulpur, Pratappur, Saidabad, Dhanupur, Karchhana, Kaundhiara and Koraon. Except Koraon, in the these blocks, net sown area has remained stagnant within the range of 2 per cent to 3 per cent around their present level.

Blocks with medium share of net sown area (i.e. between 60 per cent to 70 per cent) are Soraon, Bahadurpur, Jasra, Uroowa and Meja. Except Meja, all these blocks had attained high level of share of net sown area (i.e. above 70.0 per cent) in the past. That is in future, they could easily exhibit high level of net sown area.

There are also some blocks where net sown area as percentage of total reporting area was low (i.e. less than 60.0 per cent). These included Kaurihar, Shankargarh, Chaka and Manda.

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 Allahabad district had increased since 1960-61, slowly during the period 1960-61 to 1996-97. Thus it has increased from 126.09 in 1960-61 to 143.8 in 1996-97. Thereafter it increased to 157.30 in 2000-01.

Block-wise analysis of cropping intensity during 2000-01 shows that cropping intensity was on the lower side (i.e. below 150) in following blocks – Kaurihar (148.6), Phulpur (145.99), Bahadurpur (140.32), Jasra (143.22), Shankargarh (141.22), Chaka (127.66), Karchhana (135.64), Uroowa (134.8) and Meja (135.23).

Blocks where cropping intensity was in the medium range (i.e. between 150-170) include following blocks. Baharia (153.50), Dhanupur (162.17), Handia (160.6) and Kaundhiara (165.64).

Only five blocks had shown high cropping intensity (i.e. above 170). These included Holagarh (200.84), Mau-Aima (197.14), Soraon (178.24) Koraon (176.45) and Manda (186.44).

The blocks of Allahabad 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 170 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 effected cropping intensity is irrigation.

3.3 Irrigation

The Allahabad 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 23.16 per cent in 1990-91 to 71.31 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 i.e. above 90.0 per cent in two blocks namely Holagarh (95.45 per cent) and Mau-Aima (96.87 per cent) during 2000-01, and low in Shankargarh block (**See table 3.1 and 3.1.2**).

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 115.46 in 1980-81 to around 162.8 in 2000-01 (**See table 3.1 and 3.1.3**).

Block-wise analysis of gross irrigated area as percentage of net irrigated area is shown in table 3.1.4. We can categories the blocks in three groups. In the first category we put those blocks where gross irrigated area as percent of net irrigated area was high (i.e. above 180), these include Holagarh, Mau-Aima, Soraon and Koraon.

In the medium category those blocks are included where gross irrigated area as percentage of net irrigated area was between 160 to 180. The blocks included in this category are Bahaira, Pratappur, Saidabad, Dhanupur, Handia and Kaundhiara.

The blocks where gross irrigated area as percentage of net irrigated area was low (i.e. less than 160) are: Kaurihar, Phulpur, Bahadurpur, Jasra, Shankargarh, Chaka, Karchana, Uroowa, and Meja.

Table 3.1**Year-wise Irrigation and Cropping Intensity of Allahabad District**

Year	Irrigation Intensity	Net sown Area as % of Total Reporting Area	Cropping Intensity
1960-61	23.16	63.38	126.09
1965-66	25.75	62.96	
1970-71	29.36	64.22	129.46
1975-76	32.99	63.86	
1980-81	42.83	63.23	135.71
1985-86	49.25	64.13	142.96
1990-91	57.47	65.12	142.21
1994-95	61.71	64.64	139.57
1998-99	70.06	67.68	153.87
2000-01	71.31	67.13	157.30

Table 3.1.1**Block-wise Cropping Intensity in Allahabad District**

Blocks	1980-81	1985-86	1990-91	1996-97	2000-01
Kaurihar	129.28	164.55	154.40	163.4	148.61
Holagarh	170.31	182.49	179.15	177.3	200.84
Mau-Aima	167.00	184.39	180.06	185.9	197.14
Soraon	194.12	173.33	169.74	177.9	178.24
Baharia	145.91	137.93	153.66	135.1	153.88
Phulpur	153.53	137.62	136.26	130.2	145.99
Bahadurpur	144.77	133.72	126.67	120.4	140.32
Pratappur	128.98	153.50	157.18	151.2	156.66
Saidabad	127.03	136.20	149.40	141.1	153.50
Dhanupur	150.05	161.17	164.34	161.7	162.17
Handia	142.03	147.36	151.88	153.3	160.60
Jasra	133.93	133.95	130.02	13.08	143.22
Shankargarh	127.10	128.82	132.34	120.1	141.22
Chaka	141.90	129.31	124.51	135.7	127.66
Karchhana	129.53	132.60	127.59	129.8	135.64
Kaundhiyara		150.69	147.97	151.1	165.64
Uroova	136.11	151.01	136.36	144.2	134.81
Meja	131.09	145.46	142.44	129.3	135.23
Koraon	141.61	168.75	151.87	163.0	176.45
Manda	132.30	137.50	133.25	126.2	186.44
Rural	135.90	143.23	142.24		157.44
Urban	119.54	126.13	140.00		143.76
Total District	135.71	142.96	142.21	143.8	157.30

Source: District Statistical Handbook (of various years).

Table 3.1.2

Block-wise Net Sown Area as % of Total Reporting Areas

Block	1980-81	1985-86	1990-91	1996-97	2000-01
Kaurihar	60.67	59.71	59.07	56.94	57.77
Holagarh	67.97	65.26	65.32	70.88	70.48
Mau-Aima	64.06	63.98	65.39	69.43	71.07
Soraon	72.65	70.92	72.05	69.87	69.27
Baharia	64.56	71.14	71.99	76.65	77.85
Phulpur	63.80	72.51	73.63	75.18	75.35
Bahadurpur	46.88	70.10	68.06	67.78	68.14
Pratappur	68.60	67.50	68.26	70.08	72.92
Saidabad	74.52	92.79	69.96	71.40	73.12
Dhanupur	72.66	72.69	71.90	74.18	75.73
Handia	65.18	70.61	70.22	71.53	70.91
Jasra	73.28	70.85	72.97	68.43	68.41
Shankargarh	51.69	52.72	53.98	52.16	51.96
Chaka	55.71	59.33	57.68	51.37	57.22
Karchhana	71.01	72.07	69.55	72.80	73.24
Kaundhiyara		74.56	74.42	76.40	74.94
Uroova	71.48	71.87	67.45	68.07	69.23
Meja	53.95	36.52	59.86	61.46	63.96
Koraon	58.12	54.28	63.39	58.96	82.45
Manda	50.53	51.18	25.92	57.03	58.94
Rural	65.19	65.06	65.97		68.81
Urban	18.06	32.71	30.53		19.09
Total District	63.23	64.13	65.12	64.84	67.13

Table 3.1.3
Block-wise Irrigation Intensity in Allahabad District

Blocks	1980-81	1985-86	1990-91	1996-97	2000-01
Kaurihar	58.41	72.93	68.98	63.5	63.06
Holagarh	82.81	99.04	89.20	89.9	95.45
Mau-Aima	78.37	89.30	83.93	89.2	96.87
Soraon	69.36	70.90	78.25	73.7	84.48
Baharia	63.08	69.65	76.19	66.0	73.48
Phulpur	67.06	67.95	75.14	80.3	84.86
Bahadurpur	65.20	40.93	46.62	40.9	50.93
Pratappur	58.01	78.91	78.99	74.2	85.91
Saidabad	48.52	47.24	65.62	57.9	66.44
Dhanupur	69.56	80.87	85.33	90.9	83.88
Handia	51.03	58.62	65.95	69.0	68.36
Jasra	41.07	31.36	53.78	57.7	57.75
Shankargarh	12.05	21.73	41.62	44.2	44.59
Chaka	40.11	43.43	50.10	54.2	65.60
Karchhana	33.70	41.06	43.44	51.8	67.56
Kaundhiyara		45.48	74.80	74.9	77.31
Uroova	42.78	49.97	56.09	53.4	89.22
Meja	41.01	71.73	32.11	62.0	71.04

Koraon	35.91	59.32	59.68	64.2	70.40
Manda	27.90	28.16	77.40	52.8	77.48
Rural	43.02	49.32	57.41	NA	71.24
Urban	26.54	44.42	63.15	NA	78.64
Total District	42.83	49.25	57.47	63.79	71.31

Source: District Statistical Handbook (of various years).

Table 3.1.4

Block-wise Gross Irrigated Area as % of Net Irrigated Area

Blocks	1980-81	1985-86	1990-91	1996-97	2000-01
Kaurihar	104.24	120.88	146.92	201.5	159.82
Holagarh	124.41	147.86	181.54	188.4	202.64
Mau-Aima	112.24	113.59	196.80	202.4	198.13
Soraon	156.80	145.10	178.25	208.1	183.45
Baharia	119.88	117.58	138.89	146.9	173.03
Phulpur	117.43	116.06	133.99	126.0	154.10
Bahadurpur	90.92	123.50	130.54	143.6	122.82
Pratappur	114.78	100.87	129.78	169.6	163.88
Saidabad	123.85	117.08	132.12	173.1	170.62
Dhanupur	112.52	115.26	154.98	156.2	173.20
Handia	107.26	117.57	128.38	167.6	179.27
Jasra	123.86	190.97	133.46	131.0	150.03
Shankargarh	124.38	113.78	130.74	132.2	143.99
Chaka	122.29	121.37	129.00	158.3	121.95
Karchhana	121.48	126.71	153.13	143.2	126.43
Kaundhiyara		173.97	149.68	169.4	177.24
Uroova	131.83	141.06	189.20	150.6	127.86
Meja	133.30	110.06	124.78	123.4	139.71
Koraon	133.02	149.69	166.15	174.7	180.70
Manda	128.67	169.33	153.97	112.7	169.55
Rural	117.97	127.09	142.76		163.05
Urban	184.64	204.65	117.61		139.04
Total District	118.46	128.12	142.45	157.0	162.80

Source: District Statistical Handbook (of various years).

3.5 Source of Irrigation

If we analyse the sources of irrigation in Allahabad 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. Canals and tubewells together covered less than 50 per cent of net irrigated area. The fact that other wells accounted for irrigation of more than 50 per cent of net irrigated area during this phase showed continuing importance of traditional sources of irrigation during this phase.

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 increased from around 25 per cent to around 45 per cent, and the area irrigated through tubewells increased from around 25 per cent to around 50 per cent. In this phase contribution of canals and tubewells was almost same.

The third phase could be said to have started since 1997-98. In this phase, the contribution of canals increased. Tubewell irrigation is now showing a declining trend (**See table 3.2**).

Block-wise analysis of sources of irrigation shows that there were only some blocks where canal still accounted for more than 60 per cent of net irrigated area in 2000-01 (**See table 3.2.1**). These are Holagarh (82.02 per cent), Mau-Aima (64.5 per cent), Jasra (80.64 per cent), Shankargarh (84.37 per cent), Kaundhiara (80.38 per cent), Meja (88.96 per cent), Koraon (96.45 per cent) and Manda (84.09 per cent). On the other hand there are many blocks where tubewell is the dominant source of irrigation. These include Kaurihar, Baharia, Phulpur, Bahadurpur, Saidabad, Dhanupur, Handia, Chaka, Karchhana and Uroowa.

There is another aspect of analysis of sources of irrigation. Though tubewells have become dominant source of many blocks, the role of public sources continues to be very important in some of them. 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 Allahabad District, (in Percent)

Years	Net irrigated area	Canal	Tube wells (Govt.+Pvt.)	Other wells	Tanks, Lakes, Ponds	Other sources
1960-61	23.16	25.76	8.36	53.41	11.77	0.73
1961-62	21.51	25.33	10.23	52.68	10.86	0.90
1962-63	21.91	24.37	11.39	51.90	11.20	1.14
1963-64	22.94	26.98	13.25	49.88	9.05	0.84
1964-65	21.59	29.94	14.48	48.57	6.17	0.85
1965-66	25.75	31.17	15.45	50.29	2.78	0.30
1966-67	24.97	25.14	17.98	53.70	2.88	0.30
1967-68	24.97	25.14	17.98	53.70	2.88	0.30
1968-69	19.84	26.37	25.20	43.31	3.81	1.30
1969-70	23.86	23.10	22.77	50.63	2.71	0.75
1970-71	29.36	31.96	27.55	35.08	4.42	0.99
1971-72	29.23	31.96	27.55	35.08	4.42	0.99
1972-73	29.88	31.08	37.48	25.77	4.50	1.18
1973-74	31.74	30.27	46.64	17.17	4.57	1.35
1974-75	32.43	30.27	46.64	17.17	4.57	1.35
1975-76	32.99	31.00	49.77	13.00	3.52	2.71
1976-77	35.11	31.55	56.15	9.50	2.50	0.31
1977-78	36.40	40.46	47.16	9.86	1.95	0.58
1978-79	40.28	39.21	51.49	7.15	1.58	0.56
1979-80	37.37	39.07	51.27	8.11	0.81	0.74
1980-81	42.83	37.96	52.15	6.66	2.44	0.79
1981-82	64.16	28.37	33.61	3.01	1.64	0.46
1982-83	47.20	42.46	49.94	4.49	2.39	0.72
1983-84	45.91	44.93	48.43	4.04	2.01	0.59
1984-85	46.01	44.19	48.32	4.04	2.75	0.70
1985-86	49.25	46.39	48.48	2.59	1.88	0.65
1986-87	50.79	46.74	48.36	2.64	1.41	0.85
1987-88	49.31	44.69	51.11	1.96	1.43	0.81
1988-89	52.29	40.33	55.02	2.30	1.47	0.89
1989-90	NA	NA	NA	NA	NA	NA
1990-91	57.47	48.70	47.21	2.01	1.07	1.02
1991-92	60.23	45.78	50.12	2.14	1.23	0.73
1992-93	59.68	47.29	48.80	2.02	0.82	1.08
1993-94	60.01	64.42	51.10	0.98	0.59	0.72
1994-95	61.71	43.31	53.89	1.23	0.72	0.85
1995-96	62.52	44.70	52.57	1.26	0.59	0.87
1996-97	63.79	57.03	39.11	1.66	1.17	1.04
1997-98	67.14	59.36	38.00	1.00	0.76	0.88
1998-99	70.06	64.33	34.27	0.48	0.53	0.40
1999-2K	71.88	58.15	40.06	0.77	0.65	0.37
2000-01	71.31	54.93	42.70	0.77	0.87	0.73

Table 3.2.1

Block-wise Irrigated Area by Different Sources in Allahabad District (in Percent)

Blocks	Years	Net irrigated area	Canal	Govt. tube wells	Pvt. tube wells	Other wells	Tanks, Lakes, Ponds	Other Sources
Kaurihar	1980-81	58.41	44.07	50.59		4.52	0.63	0.19
	1985-86	72.93	55.22	44.13		0.92	2.39	0.19
	1990-91	68.98	58.78	3.32	35.54	1.73	0.63	0.00
	1996-97	63.54	38.87	3.28	57.74	0.00	0.12	0.00
	2000-01	63.06	15.61	9.64	74.35	0.00	0.32	0.08
Holagarh	1980-81	82.81	68.43	24.97		2.89	3.53	0.18
	1985-86	99.04	77.94	18.75		1.42	1.28	0.00
	1990-91	89.20	80.10	0.00	17.82	1.08	1.00	0.00
	1996-97	89.89	66.41	2.11	30.44	0.00	0.56	0.48
	2000-01	95.45	82.02	0.00	17.98	0.00	0.00	0.00
Mau-Aima	1980-81	78.37	40.76	41.33		11.86	5.61	0.43
	1985-86	87.48	58.14	37.12		1.13	3.61	0.00
	1990-91	83.93	54.13	1.68	39.96	2.63	1.60	0.00
	1996-97	89.19	49.65	2.88	47.45	0.00	0.01	0.00
	2000-01	96.87	64.50	0.00	35.50	0.00	0.00	0.00
Soraon	1980-81	69.36	53.31	39.27		6.47	0.96	0.00
	1985-86	70.90	69.31	29.41		0.54	0.74	0.00
	1990-91	78.25	70.54	4.65	23.50	1.04	0.28	0.00
	1996-97	73.69	58.74	3.23	37.89	0.00	0.04	0.10
	2000-01	84.48	53.93	0.00	46.07	0.00	0.00	0.00
Baharia	1980-81	63.08	19.90	75.41		3.42	1.23	0.00
	1985-86	69.65	31.65	61.68		2.41	1.01	0.00
	1990-91	76.19	37.35	6.43	54.20	1.63	0.40	0.00
	1996-97	65.99	33.53	5.50	58.89	1.68	0.38	0.01
	2000-01	73.48	33.69	6.80	58.53	0.57	0.41	0.00
Phulpur	1980-81	67.06	6.56	80.28		3.51	9.65	0.00
	1985-86	67.95	27.43	62.04		0.64	9.88	0.00
	1990-91	75.14	41.19	6.68	46.57	0.17	5.36	0.02
	1996-97	80.25	45.04	9.66	40.52	0.14	4.62	0.02
	2000-01	84.86	7.26	5.12	80.67	3.70	3.26	0.00
Bahadur-Pur	1980-81	46.92	0.00	97.96		1.41	0.52	0.11
	1985-86	40.93	0.28	99.32		0.14	0.26	0.00
	1990-91	46.62	2.57	31.65	64.98	0.49	0.14	0.17
	1996-97	40.87	3.36	21.14	74.81	0.44	0.12	0.14
	2000-01	50.93	3.22	22.23	74.08	0.00	0.45	0.02
Pratappur	1980-81	58.01	0.00	96.12		3.39	0.49	0.00
	1985-86	78.91	18.39	76.51		4.01	1.11	0.16
	1990-91	78.99	27.87	25.45	42.31	1.25	1.08	0.29
	1996-97	74.18	23.34	14.03	61.74	0.00	0.78	0.11
	2000-01	85.91	21.96	8.48	68.92	0.00	0.64	0.00
Saidabad	1980-81	48.52	0.00	91.69		4.24	3.21	0.86
	1985-86	56.76	10.60	86.36		0.32	2.57	0.15
	1990-91	65.62	20.81	20.92	55.16	0.79	2.13	0.18
	1996-97	57.95	18.36	15.64	64.78	0.00	1.22	0.00
	2000-01	66.44	21.34	13.92	64.09	0.00	0.65	0.00
Dhanupur	1980-81	69.56	0.00	94.95		1.94	2.00	0.00
	1985-86	80.87	11.87	80.53		6.49	0.99	0.12
	1990-91	85.33	16.89	22.74	60.07	0.00	0.24	0.06
	1996-97	90.93	20.98	14.03	64.68	0.00	0.31	0.00

	2000-01	83.88	14.82	17.27	67.89	0.00	0.03	0.00
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Blocks	Years	Net irrigated area	Canal	Govt. tube wells	Pvt. tube wells	Other wells	Tanks, Lakes, Ponds	Other sources
Handia	1980-81	51.03	0.00	85.45		3.77	10.76	0.02
	1985-86	58.62	9.02	82.94		2.61	5.43	0.00
	1990-91	65.95	25.76	27.89	39.39	0.20	6.77	0.00
	1996-97	68.96	35.25	24.43	37.98	0.00	2.35	0.00
	2000-01	68.36	35.13	18.38	41.92	0.00	4.57	0.00
Jasra	1980-81	41.07	90.36	6.62		2.33	0.30	0.39
	1985-86	31.36	88.40	9.95		0.18	0.78	0.68
	1990-91	53.78	80.33	9.49	5.80	0.62	1.53	2.22
	1996-97	57.75	79.44	11.15	4.95	1.46	0.95	2.05
	2000-01	57.75	80.64	4.95	11.01	0.09	1.26	2.05
Shankargarh	1980-81	12.05	79.51	3.89		3.07	3.78	9.75
	1985-86	21.73	79.88	4.92		0.33	6.33	8.53
	1990-91	41.62	86.02	0.00	0.01	1.62	1.95	10.40
	1996-97	44.18	88.69	0.09	0.22	1.50	3.75	5.75
	2000-01	44.59	84.37	11.27	1.37	0.50	1.79	0.70
Chaka	1980-81	40.11	33.99	58.58		1.54	0.98	4.92
	1985-86	43.43	40.10	57.38		0.00	0.25	2.27
	1990-91	50.10	24.31	39.82	29.29	0.95	0.25	5.39
	1996-97	54.20	33.97	28.13	29.51	0.00	0.28	8.11
	2000-01	65.60	17.67	21.63	53.32	0.00	0.00	7.37
Karchhana	1980-81	33.70	50.60	42.52		5.72	1.11	0.05
	1985-86	41.06	72.88	26.87		0.10	0.15	0.00
	1990-91	43.44	49.94	32.78	17.33	0.45	0.09	0.26
	1996-97	51.78	41.57	30.03	28.37	0.00	0.00	0.02
	2000-01	67.56	30.45	34.98	34.56	0.00	0.00	0.01
Kaundhiyara	1980-81							
	1985-86	45.48	94.31	5.30		0.04	0.29	0.00
	1990-91	74.80	88.62	1.84	8.80	0.04	0.04	0.65
	1996-97	74.93	84.73	3.02	11.96	0.00	0.02	0.27
	2000-01	77.31	80.38	3.11	13.20	0.00	0.00	3.31
Uroowa	1980-81	42.78	65.00	25.72		8.04	1.23	0.00
	1985-86	49.97	66.10	31.26		1.43	0.94	0.21
	1990-91	56.09	50.88	21.83	24.27	2.32	0.53	0.17
	1996-97	53.40	44.64	30.24	21.55	2.61	0.96	0.00
	2000-01	89.22	32.00	30.36	34.93	1.80	0.91	0.00
Meja	1980-81	41.01	93.15	1.54		4.26	0.43	0.62
	1985-86	54.78	94.56	2.53		1.82	0.11	0.98
	1990-91	32.11	68.88	2.34	6.60	12.19	4.10	5.89
	1996-97	62.01	92.83	0.77	2.72	1.66	0.65	1.36
	2000-01	71.04	88.96	2.21	6.48	1.15	0.56	0.65
Koraon	1980-81	35.91	96.38	0.12		2.59	0.60	0.32
	1985-86	59.32	95.29	1.24		1.77	1.20	0.51
	1990-91	59.68	94.71	0.01	1.08	3.24	0.41	0.55
	1996-97	64.24	91.95	0.00	2.79	3.58	0.57	1.12
	2000-01	70.40	96.45	0.00	1.94	0.66	0.94	0.00
Manda	1980-81	27.90	68.49	2.99		17.37	1.92	9.24
	1985-86	28.16	77.29	4.67		10.27	1.47	6.31
	1990-91	77.40	94.16	0.13	0.14	3.78	0.46	1.33
	1996-97	52.81	63.51	2.70	12.95	14.57	3.88	2.40
	2000-01	77.48	84.09	0.45	7.88	4.13	1.11	2.33

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 30.7 per cent of net sown area in 1960-61 to around 57.06 per cent during 2000-01. Area under wheat cultivation increased from 11.60 per cent in 1960-61 to 57.31 per cent of net sown area in 2000-01. But area under different coarse grains declined during this period, for example area under barley declined from 18.7 per cent to 2.87 per cent, gram cultivation declined from 20.7 per cent to 10.07 per cent, and peas cultivation declined from 6.84 per cent to 1.76 per cent during 1960-61 to 2000-01.

Besides wheat and paddy, other crop whose area under cultivation increased is potato. The area under potato increased from around 0.90 per cent in 1960-61 to 3.36 per cent in 2000-01.

The main crops viz. paddy, wheat, and 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 6.85 qt./ha in 1960-61 to 18.30 qt./ha in 2000-01. The productivity of wheat increased from 8.72 qt./ha in 1960-61 to 22.70 qt./ha in 2000-01. As regards cash crops, the productivity of potato increased from 51.88 qt./ha in 1960-61 to 204.72 qt./ha in 2000-01.

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 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 of pulses, oil seeds and spices.
- (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.

Table – 3.3(a)

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

Crops	Area/ Productivity	1960-61	1970-71	1980-81	1990-91	2000-01
Paddy	Area	30.70	71.14	34.94	40.06	57.06
	Productivity	6.85	6.87	9.66	17.23	18.30
Maize	Area	0.10	0.44	0.18	0.07	0.06
	Productivity	10.67	16.00	4.18	17.70	21.17
Wheat	Area	11.60	19.84	40.09	50.88	54.78
	Productivity	8.72	10.83	14.53	17.78	22.70
Barley	Area	18.70	16.15	8.81	14.13	2.86
	Productivity	10.47	11.29	16.10	14.25	14.10
Gram	Area	20.70	17.44	14.47	12.84	10.07
	Productivity	6.91	8.42	11.14	9.12	8.97
Peas	Area	6.84	4.91	1.87	1.70	1.76
	Productivity	11.52	8.41	10.07	11.62	10.98
Arhar	Area	5.55	6.37	5.05	4.05	2.77
	Productivity	19.89	14.43	39.39	25.67	34.37
Potato	Area	0.90	1.60	2.36	3.36	3.36
	Productivity	51.88	93.91	139.69	185.40	204.72
Sugarcane	Area	1.32	1.08	0.62	1.21	0.32
	Productivity	489.40	350.82	339.28	272.20	461.86

**Table 3.3(b)
Percent of Cropped Area in Net Sown Area Allahabad District**

Crops	1960-61	1970-71	1980-81	1990-91	1999-2K	2000-01
Paddy	30.70	71.14	34.97	40.06	55.46	57.06
Juar	6.95	7.53	6.18	5.14	2.69	2.79
Bajra	10.75	13.76	11.05	9.98	7.42	8.57
Wheat	11.60	19.84	40.09	50.88	56.33	57.31
Barley	18.70	16.15	8.81	4.13	2.75	2.87
Gram	20.70	17.44	14.47	12.84	9.99	10.07
Peas	6.84	4.91	1.87	1.70	1.77	1.76
Arhar	5.55	6.37	5.05	4.05	3.72	2.77
Masur	1.03	0.59	0.27	0.35	1.15	1.19
Oilseeds	2.30	2.91	1.53	2.33	2.91	2.96
Potato	0.90	1.60	2.36	3.36	3.62	3.36

Block wise analysis of cropping pattern confirms this trend, except that in some blocks pulses and sugarcane was also grown at significant level.

The blocks where area under pulse cultivation as percentage of net sown area was above 10 per cent are Kaurihar (16.4 per cent), Holagarh (14.67 per cent), Mau-Aima (12.72 per cent), Soraon (15.77 per cent), Bahadurpur (19.47 per cent), Saidabad (14.5 per cent), Jasra (31.52 per cent) Shankargarh (28.82 per cent), Chaka (13.83 per cent), Karchhana (17.79 per cent), Kaundhiara (13.73 per cent), Uroowa (10.81 per cent), Meja (18.94 per cent), Koraon (26.85 per cent) and Manda (18.64 per cent).

Similarly blocks where area under oilseeds was above 5 per cent of net sown area are: Shankargarh (9.46 per cent), Meja (8.35 per cent) and Manda (6.81 per cent).

Even though area under potato cultivation has increased in the district, blocks where area under potato cultivation was above 5 per cent of net sown area are only few. These include Kaurihar (5.46 per cent), Holagarh (19.48 per cent), Mau-Aima (16.81 per cent) and Soraon (19.59 per cent).

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

Blocks	Year	Paddy		Wheat		Barley		Pulse	
		Total	Irrigated	Total	Irrigated	Total	Irrigated	Total	Irrigated
		3	4	5	6	7	8	9	10
Kaurihar	1980-81	37.20	11.77	36.47	93.27	2.07	27.05	14.52	20.16
	1985-86	40.63	38.81	58.54	94.38	5.79	26.32	23.01	21.72
	1990-91	41.84	74.66	51.33	97.16	4.79	23.57	17.41	28.45
	1996-97	50.09	97.49	54.29	98.00	2.35	14.29	17.63	43.48
	2000-01	36.00	95.42	47.96	95.33	5.87	5.55	16.40	23.50
Holagarh	1980-81	58.87	19.95	63.08	83.78	2.67	68.15	7.99	38.69
	1985-86	66.51	71.24	71.00	99.97	0.46	100.00	12.44	64.87
	1990-91	69.02	90.76	67.87	99.88	6.18	92.47	12.23	70.10
	1996-97	68.29	98.94	62.47	100.00	0.28	72.41	14.52	89.33
	2000-01	83.48	100.00	66.40	99.99	0.46	82.98	14.67	72.96
Mau-Aima	1980-81	56.57	0.00	62.99	99.48	1.17	91.23	11.07	74.12
	1985-86	69.41	11.74	65.87	100.00	0.25	92.00	13.13	75.93
	1990-91	72.06	88.65	66.16	100.00	0.55	77.78	12.99	90.80
	1996-97	79.05	99.98	63.74	100.00	0.12	100.00	11.18	90.59
	2000-01	85.47	98.06	66.90	100.00	0.12	83.33	12.72	95.47
Soraon	1980-81	41.60	12.91	72.77	91.76	9.53	24.71	17.93	22.94
	1985-86	46.89	50.12	58.69	93.23	2.06	35.50	16.28	42.90
	1990-91	66.08	32.04	56.73	99.95	1.42	20.29	15.18	56.19
	1996-97	53.04	99.70	57.92	93.64	0.62	29.31	18.36	67.23
	2000-01	56.83	99.90	61.12	89.32	0.71	21.21	15.77	75.22
Baharia	1980-81	40.40	3.93	55.06	96.13	6.25	52.69	15.14	49.98
	1985-86	44.37	20.98	51.81	99.11	2.06	30.68	15.19	41.78
	1990-91	47.47	50.31	60.74	97.85	1.83	6.73	12.11	55.35
	1996-97	38.88	55.02	57.05	97.90	1.69	19.57	10.85	57.71
	2000-01	54.77	92.79	58.90	97.30	1.68	14.24	9.29	55.44
Phulpur	1980-81	56.95	1.45	61.25	98.07	2.75	84.55	12.57	68.94
	1985-86	50.83	22.71	56.23	99.00	0.34	92.86	8.53	51.15
	1990-91	51.49	50.02	62.90	99.63	0.60	78.00	5.50	61.45
	1996-97	41.68	56.66	61.60	99.60	0.58	80.61	8.83	74.92
	2000-01	57.69	90.90	63.94	100.00	0.52	56.18	9.39	79.42
Bahadur Pur	1980-81	19.36	0.32	36.62	84.40	16.41	15.31	25.86	10.37
	1985-86	20.41	12.78	45.08	94.36	13.59	7.53	22.37	7.15
	1990-91	18.25	66.90	43.28	91.68	5.22	13.83	14.19	10.52
	1996-97	14.98	68.63	47.03	84.72	5.26	14.32	17.26	8.78
	2000-01	19.51	76.70	48.32	84.64	7.60	9.48	19.47	8.57
PratapPur	1980-81	40.65	0.17	50.49	96.82	5.43	75.44	12.27	60.10
	1985-86	45.21	15.13	59.20	98.80	1.59	90.35	11.80	47.60
	1990-91	49.85	38.12	71.11	99.61	1.10	43.67	10.32	41.80
	1996-97	50.86	84.63	72.70	99.95	0.70	52.88	8.63	37.85
	2000-01	60.48	97.83	70.46	100.00	0.85	45.80	8.41	37.87
Saidabad	1980-81	25.27	1.78	43.99	97.13	6.98	65.06	16.93	40.70
	1985-86	30.80	29.68	48.96	98.86	3.88	27.73	16.19	18.72
	1990-91	38.32	48.58	59.35	97.69	2.70	30.58	13.92	20.04
	1996-97	38.83	88.58	57.60	99.61	2.12	19.31	11.88	18.97
	2000-01	42.81	99.02	63.41	98.87	4.49	6.11	14.50	16.67
DhanuPur	1980-81	45.47	0.03	56.53	98.99	3.36	94.02	22.03	47.83
	1985-86	44.61	29.04	63.05	99.00	0.79	95.00	16.85	44.89
	1990-91	63.89	78.63	76.92	99.99	0.73	61.54	9.82	51.55
	1996-97	53.90	99.99	74.04	100.00	0.58	85.33	11.05	55.85
	2000-01	59.91	100.00	71.94	99.94	0.49	59.38	8.28	54.81

Contd...

Blocks	Year	Paddy		Wheat		Barley		Pulse	
		Total	Irrigated	Total	Irrigated	Total	Irrigated	Total	Irrigated
		3	4	5	6	7	8	9	10
Handia	1980-81	38.53	0.00	63.64	95.92	6.77	41.77	16.93	24.37
	1985-86	35.67	26.55	51.37	99.29	4.22	19.67	15.24	17.70
	1990-91	39.42	61.66	63.50	99.23	2.54	19.58	13.63	12.50
	1996-97	45.53	95.43	67.36	99.32	1.47	24.85	9.62	12.66
	2000-01	48.12	95.81	69.50	99.85	2.50	15.90	9.12	13.66
Jasra	1980-81	45.43	30.98	41.37	80.23	6.42	15.85	22.07	2.73
	1985-86	39.38	51.40	41.60	87.70	8.59	8.11	26.52	2.92
	1990-91	35.68	84.43	45.07	88.44	6.03	2.78	75.05	0.41
	1996-97	29.66	89.13	50.55	93.23	4.21	1.29	22.50	0.36
	2000-01	45.63	82.75	49.72	93.23	4.15	1.05	31.52	0.33
Shankargarh	1980-81	33.23	15.10	9.26	97.04	3.71	4.71	23.19	0.52
	1985-86	43.56	23.83	37.40	35.98	5.53	1.46	22.45	1.22
	1990-91	37.09	55.43	45.46	73.02	3.61	1.77	29.70	2.21
	1996-97	24.36	76.91	47.61	80.07	3.09	1.59	28.87	3.60
	2000-01	42.31	54.25	48.03	79.83	3.04	1.08	28.82	3.79
Chaka	1980-81	22.03	27.04	34.81	93.17	11.71	26.29	22.41	9.00
	1985-86	23.94	39.00	37.12	95.95	5.71	9.62	20.77	3.70
	1990-91	18.81	83.31	46.87	95.47	4.30	4.46	16.79	1.68
	1996-97	25.04	94.38	58.14	97.99	1.58	4.80	15.26	3.49
	2000-01	30.53	87.11	51.35	96.27	2.46	1.39	13.83	2.39
Karchhana	1980-81	20.61	4.13	33.63	91.51	12.00	28.67	28.26	7.14
	1985-86	22.93	43.66	37.45	93.32	8.08	16.24	29.88	3.79
	1990-91	27.09	72.76	45.90	90.38	5.27	2.70	24.44	3.13
	1996-97	24.55	85.61	51.49	93.03	3.83	1.08	19.88	2.32
	2000-01	32.68	84.16	55.89	94.58	4.00	1.91	17.79	2.74
Kaundhiyara	1980-81								
	1985-86	58.08	46.01	47.78	96.40	2.94	18.41	17.33	12.97
	1990-91	53.91	90.58	61.00	96.15	2.06	5.19	13.77	3.02
	1996-97	57.07	98.07	65.97	99.94	1.10	6.55	11.81	6.25
	2000-01	67.46	93.29	70.26	99.88	1.33	5.58	13.73	3.05
Uroova	1980-81	28.68	45.28	43.82	85.40	3.98	22.74	19.17	4.37
	1985-86	30.33	60.04	48.47	94.41	3.87	12.77	24.79	3.16
	1990-91	31.62	83.62	50.11	93.38	3.07	2.86	18.51	3.65
	1996-97	27.53	92.86	52.11	93.45	2.51	2.42	18.78	3.20
	2000-01	60.77	97.07	51.47	93.65	2.52	2.72	10.81	5.62
Meja	1980-81	39.66	58.11	40.35	70.75	7.06	11.07	24.65	3.80
	1985-86	40.95	57.50	57.59	72.84	4.96	4.29	30.42	3.81
	1990-91	45.74	84.11	50.07	91.77	2.42	1.70	24.06	3.36
	1996-97	34.31	84.61	47.12	95.03	2.17	8.97	23.44	3.23
	2000-01	55.29	93.12	47.74	95.61	2.03	9.38	18.94	3.23
Koraon	1980-81	49.84	53.21	43.13	52.48	4.95	4.43	28.60	2.99
	1985-86	60.39	80.07	52.96	72.44	4.05	5.06	31.95	3.21
	1990-91	32.67	98.50	53.86	93.55	2.47	6.53	24.24	2.07
	1996-97	55.59	90.12	63.12	95.53	2.41	8.54	24.46	2.07
	2000-01	81.07	94.90	50.95	96.58	3.50	5.23	26.85	0.66
Manda	1980-81	40.20	15.70	40.25	65.07	5.33	15.50	20.22	3.26
	1985-86	42.82	40.97	44.51	82.86	3.33	12.90	20.66	3.66
	1990-91	41.68	35.89	46.24	81.04	2.08	1.74	22.80	4.60
	1996-97	28.04	54.30	45.60	84.69	1.51	13.38	22.96	11.42
	2000-01	80.96	88.59	61.77	91.96	2.28	12.31	18.64	1.58

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

Blocks	Year	Oil Seed		Sugarcane		Potato	
		Total	Irrigated	Total	Irrigated	Total	Irrigated
		11	12	13	14	15	16
Kaurihar	1980-81	0.21	7.14	0.13	88.24	5.96	100.00
	1985-86	0.30	16.22	0.16	90.00	7.90	100.00
	1990-91	0.30	18.92	0.10	100.00	9.64	100.00
	1996-97	0.64	32.89	0.03	100.00	11.29	100.00
	2000-01	2.28	8.27	0.03	100.00	5.46	100.00
Holagarh	1980-81	0.38	26.32	0.50	100.00	14.18	100.00
	1985-86	0.29	78.57	0.84	100.00	13.87	100.00
	1990-91	0.32	35.48	0.54	100.00	16.93	100.00
	1996-97	0.23	58.33	0.21	100.00	19.31	100.00
	2000-01	0.30	36.67	0.04	100.00	19.48	100.00
Mau-Aima	1980-81	0.30	44.83	0.97	98.94	10.71	100.00
	1985-86	0.11	45.45	1.35	100.00	10.89	100.00
	1990-91	0.17	58.82	0.95	100.00	13.95	100.00
	1996-97	0.37	33.33	0.36	100.00	17.80	100.00
	2000-01	0.10	60.00	0.22	100.00	16.81	100.00
Soraon	1980-81	0.41	21.95	0.32	100.00	16.39	100.00
	1985-86	0.17	43.75	0.28	100.00	14.61	100.00
	1990-91	0.12	16.67	0.12	100.00	18.64	100.00
	1996-97	0.14	15.38	0.06	100.00	22.19	100.00
	2000-01	0.06	66.67			19.59	100.00
Baharia	1980-81	0.38	17.74	0.84	100.00	5.62	100.00
	1985-86	0.45	20.00	1.25	98.64	4.88	100.00
	1990-91	0.36	14.06	0.82	100.00	9.38	100.00
	1996-97	0.41	17.95	0.78	100.00	8.81	100.00
	2000-01	0.21	26.83	0.26	100.00	4.19	100.00
Phulpur	1980-81	0.58	2.50	1.10	100.00	3.48	100.00
	1985-86	0.43	21.43	2.07	100.00	2.91	100.00
	1990-91	0.29	14.58	0.89	100.00	4.73	100.00
	1996-97	0.35	23.73	0.79	100.00	4.63	100.00
	2000-01	0.14	21.74	0.39	100.00	4.42	100.00
Bahadur Pur	1980-81	0.41	4.11	0.09	100.00	1.54	100.00
	1985-86	0.43	5.06	0.19	100.00	1.43	100.00
	1990-91	0.62	3.57	0.06	100.00	4.16	100.00
	1996-97	0.73	8.40	0.11	100.00	4.19	100.00
	2000-01	0.33	28.81	0.04	100.00	3.38	100.00
PratapPur	1980-81	0.64	5.26	1.69	100.00	2.00	100.00
	1985-86	1.05	7.33	2.32	100.00	2.20	100.00
	1990-91	0.95	36.50	1.94	98.57	3.97	100.00
	1996-97	0.96	9.15	1.79	100.00	3.18	100.00
	2000-01	0.59	0.00	0.98	100.00	3.15	100.00
Saidabad	1980-81	0.28	4.55	0.65	100.00	2.94	100.00
	1985-86	0.69	2.94	1.01	100.00	2.92	100.00
	1990-91	0.24	0.00	0.64	100.00	3.85	100.00
	1996-97	0.58	7.59	0.43	100.00	3.36	100.00
	2000-01	0.43	1.69	0.27	100.00	4.42	100.00
DhanuPur	1980-81	1.33	1.74	1.93	100.00	2.75	71.91
	1985-86	1.10	7.91	27.47	100.00	3.36	100.00
	1990-91	0.59	13.51	2.19	98.54	3.03	100.00
	1996-97	1.14	9.59	1.93	100.00	3.10	100.00
	2000-01	0.56	0.00	1.59	100.00	3.10	100.00
Handia	1980-81	0.59	7.81	1.47	100.00	1.24	100.00
	1985-86	1.06	1.65	1.71	100.00	1.32	33.77
	1990-91	0.46	9.62	1.15	99.23	1.29	100.00
	1996-97	0.69	2.53	1.12	100.00	1.25	100.00

	2000-01	0.44	4.00	0.62	100.00	1.10	100.00
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Blocks	Year	Oil Seed		Sugarcane		Potato	
		Total	Irrigated	Total	Irrigated	Total	Irrigated
		11	12	13	14	15	16
Jasra	1980-81	0.84	0.45	0.35	85.11	0.80	100.00
	1985-86	3.26	0.96	0.10	100.00	0.50	100.00
	1990-91	3.62	1.12	0.02	100.00	0.57	100.00
	1996-97	3.96	0.27	0.02	100.00	0.65	100.00
	2000-01	3.89	0.28	0.02	100.00	0.62	100.00
Shankargarh	1980-81	5.04	0.00			0.08	95.45
	1985-86	9.09	0.44	0.01	100.00	0.08	90.00
	1990-91	7.72	1.14	0.00	100.00	0.06	100.00
	1996-97	9.15	2.37			0.03	100.00
	2000-01	9.46	2.81			0.03	100.00
Chaka	1980-81	0.21	0.00	0.59	100.00	2.06	100.00
	1985-86	0.92	0.00	1.10	98.00	1.48	98.52
	1990-91	0.65	3.45	0.44	100.00	1.69	100.00
	1996-97	0.79	0.00	0.90	98.59	1.61	100.00
	2000-01	1.10	6.25	0.34	100.00	2.50	100.00
Karchhana	1980-81	0.51	2.38	1.03	100.00	1.67	100.00
	1985-86	0.53	3.37	1.18	100.00	1.64	100.00
	1990-91	0.60	0.00	1.85	100.00	2.01	100.00
	1996-97	0.51	0.00	1.81	100.00	1.91	100.00
	2000-01	1.36	3.46	1.47	100.00	2.36	100.00
Kaundhiyara	1980-81						
	1985-86	2.24	0.60	1.02	100.00	1.18	100.00
	1990-91	18.93	0.85	0.92	100.00	0.94	100.00
	1996-97	1.19	6.04	0.99	100.00	2.29	100.00
	2000-01	0.95	0.71	0.71	100.00	1.54	100.00
Uroova	1980-81	0.27	9.38	0.35	100.00	1.74	100.00
	1985-86	0.35	2.38	0.55	100.00	2.27	100.00
	1990-91	2.20	3.19	0.36	100.00	2.12	100.00
	1996-97	1.14	9.16	0.32	100.00	3.61	98.80
	2000-01	1.14	10.53	0.29	100.00	3.00	100.00
Meja	1980-81	5.95	0.42	0.11	96.15	0.56	100.00
	1985-86	9.87	0.14	0.19	100.00	0.69	100.00
	1990-91	0.30	5.06	0.04	100.00	1.39	100.00
	1996-97	8.97	3.03	0.08	100.00	0.71	95.85
	2000-01	8.35	1.77	0.08	100.00	0.51	100.00
Koraon	1980-81	2.96	0.34	0.07	92.86	0.15	96.55
	1985-86	4.94	2.44	0.22	100.00	0.22	97.67
	1990-91	4.02	2.45	0.07	100.00	0.21	98.96
	1996-97	5.13	2.83	0.15	100.00	0.38	100.00
	2000-01	4.17	1.88	0.08	94.12	0.24	100.00
Manda	1980-81	6.37	0.45	0.26	90.74	0.74	99.35
	1985-86	7.17	1.65	0.38	100.00	0.94	97.71
	1990-91	6.81	1.06	0.25	100.00	0.86	100.00
	1996-97	9.70	5.01	0.24	100.00	1.24	97.96
	2000-01	6.81	0.94	0.20	100.00	0.70	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 3.4.1

Use of Fertiliser in Allahabad District (in MT)

Years	Nitrogen	Phosphate	Potash	Total Fertilizer
1980-81	21900	4284	1610	27794
1981-82	25660	4654	1754	32076
1982-83	24552	6192	1934	32678
1983-84	33974	6293	2488	42755
1985-86	43372	10580	3472	57424
1986-87	39106	10461	4191	53758
1987-88	53867	11525	2435	67827
1988-89	49660	12667	2732	65059
1989-90	50142	13043	2388	65573
1990-91	53366	11525	2435	67827
1991-92	55589	12363	2533	67485
1992-93	55341	8659	1199	65199
1993-94	54732	10926	933	66591
1994-95	61874	15571	2913	80358
1995-96	74645	12676	2213	89534
1996-97	59189	12549	1235	72973
1997-98	58663	11891	1403	71959
1998-99	61920	12837	2498	77255
1990-2K	63837	18735	3198	85770
2000-01	63301	16852	2157	82310

Table 3.4.2

Block-wise Use of Fertiliser in Allahabad District (in MT)

Blocks	Years	Nitrogen	Phosphate	Potash	Total Fertilizer
Kaurihar	1980-81	1608	159	56	1823
	1985-86	2299	454	140	2893
	1987-88	2186	466	104	2756

	1996-97	3255	766	68	4089
	2000-01	4708	2207	243	7158
Holagarh	1980-81	544	223	74	841
	1985-86	1491	387	138	2016
	1987-88	2033	419	91	2543
	1996-97	3067	589	66	3722
	2000-01	3499	823	116	4438
Mau-Aima	1980-81	830	163	47	1040
	1985-86	1607	418	105	2130
	1987-88	1981	542	109	2632
	1996-97	3275	666	70	4011
	2000-01	3708	985	104	4797

Contd...

Blocks	Years	Nitrogen	Phosphate	Potash	Total Fertilizer
Soraon	1980-81	1000	287	97	1384
	1985-86	1750	554	150	2454
	1987-88	2074	504	133	2711
	1996-97	3020	638	68	3726
	2000-01	3535	904	153	4592
Baharia	1980-81	444	53	29	526
	1985-86	1501	241	109	1851
	1987-88	1922	393	113	2428
	1996-97	3105	718	75	3898
	2000-01	3209	813	160	4182
Phulpur	1980-81	1645	313	108	2066
	1985-86	2364	677	151	3192
	1987-88	2374	508	108	2990
	1996-97	3154	648	76	3878
	2000-01	3456	921	164	4541
Bahadurpur	1980-81	1004	365	106	1475
	1985-86	1538	541	161	2240
	1987-88	2335	479	114	2928
	1996-97	3458	793	78	4329
	2000-01	3802	1245	184	5231
Pratappur	1980-81	708	283	30	1010
	1985-86	1360	444	98	1902
	1987-88	2129	426	95	2650
	1996-97	2949	691	68	3708
	2000-01	3644	675	113	4432
Saidabad	1980-81	1088	191	103	1382
	1985-86	1844	463	171	2478
	1987-88	1920	412	79	2411
	1996-97	3251	703	70	4024
	2000-01	3076	751	106	3933
Dhanupur	1980-81	830	132	34	996
	1985-86	1481	424	102	2007
	1987-88	1821	406	76	2303
	1996-97	3631	566	65	4262
	2000-01	3054	734	102	3890
Handia	1980-81	1011	219	109	1339
	1985-86	1762	484	171	2417
	1987-88	1758	347	66	2171
	1996-97	2769	576	65	3410
	2000-01	3124	808	104	4036
Jasra	1980-81	465	82	41	588
	1985-86	1235	252	99	1586
	1987-88	2025	379	87	2491
	1996-97	2886	649	58	3593
	2000-01	2562	601	70	3233
Shankargarh	1980-81	213	77	16	306
	1985-86	921	198	60	1179
	1987-88	1463	247	64	1774
	1996-97	2636	685	57	3378
	2000-01	2712	637	67	3416

Contd...

Blocks	Years	Nitrogen	Phosphate	Potash	Total Fertilizer
Chaka	1980-81	682	58	17	757
	1985-86	1391	231	98	1720
	1987-88	1138	292	94	1524
	1996-97	2860	677	55	3592
	2000-01	2035	677	53	2765
Karchhana	1980-81	543	90	33	666
	1985-86	1305	255	90	1650
	1987-88	1796	367	72	2235
	1996-97	2046	573	60	2679
	2000-01	2552	621	52	3225
Kaundhiyara	1980-81				
	1985-86	1227	264	107	1598
	1987-88	1933	308	69	2310
	1996-97	2421	491	60	2972
Uroova	1980-81	758	110	46	914
	1985-86	1504	424	108	2039
	1987-88	1963	314	71	2348
	1996-97	2953	539	50	3542
	2000-01	2782	781	54	3617
Meja	1980-81	354	88	35	477
	1985-86	1100	244	86	1430
	1987-88	1823	446	63	2332
	1996-97	2797	545	45	3387
	2000-01	2981	612	78	3671
Koraon	1980-81	660	120	29	815
	1985-86	1353	298	85	1736
	1987-88	2336	601	49	2986
	1996-97	3036	592	43	3671
	2000-01	3817	900	101	4818
Manda	1980-81	311	137	31	479
	1985-86	1133	292	82	1527
	1987-88	1894	318	61	2273
	1996-97	2620	444	38	3102
	2000-01	2643	575	90	3308

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, improved 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 resource, 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 remains significant in all the blocks (**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 – 3.5.1
Technology Available in Allahabad District**

Years	Wood Plough	Iron Plough	Harrow & Cultivator	Threshing Machine	Sprayer	Plough Machine	Tractor
1978	273126	34243	4988	2308	882	13077	927
1982	280919	46490	12424	6187	1704	31485	2281
1987	264191	55175	4508	28585	5634	42934	3709
1993	208742	48694	4129	22803	6545	43363	5028
1997	137670	56412	6228	41081	13674	53676	5973

**Table – 3.5.2
Block-wise Technology Available in Allahabad District**

Blocks	Years	Wood Plough	Iron Plough	Harrow & Cultivator	Threshing Machine	Sprayer	Sowing Machine	Tractor
Kaurihar	1978	14598	1711	-	NA	NA	NA	26
	1982	14798	2199	471	120	69	269	77
	1987	13291	2165	181	617	241	360	145
	1997	7435	4803	393	1572	1065	998	225
Holagarh	1978	9889	1159	-	NA	NA	NA	18
	1982	10089	1665	431	110	39	209	58
	1987	9429	2050	159	502	140	290	110
	1997	7727	5467	379	1316	1086	886	251
Mau-Aima	1978	8947	1049	-	NA	NA	NA	16
	1982	9147	1571	443	90	81	250	45
	1987	8603	1820	187	402	274	351	82
	1997	1177	12451	382	1129	1320	852	169
Soraon	1978	8479	994	23	NA	NA	NA	15
	1982	8776	1301	349	110	79	160	44
	1987	8234	1617	156	510	270	232	70
	1997	2528	7348	372	1439	1974	820	180
Baharia	1978	11117	1600	3	NA	NA	NA	47
	1982	11417	2007	331	130	659	315	78
	1987	10802	2400	107	602	208	456	162
	1997	9014	5248	360	1646	675	965	312
Phulpur	1978	9482	1365	2	NA	NA	NA	39
	1982	9682	1879	405	240	78	204	60
	1987	9020	2202	152	1350	295	285	115
	1997	9105	3897	363	2690	582	878	282
Bahadur Pur	1978	12424	1789	3	NA	NA	NA	53
	1982	12724	2008	611	210	61	340	87
	1987	11864	2202	231	970	214	280	185
	1997	9607	3857	346	2398	518	1042	278

Contd...

Blocks	Years	Wood Plough	Iron Plough	Harrow & Cultivator	Threshing Machine	Sprayer	Sowing Machine	Tractor
Pratappur	1978	9387	1668	19	NA	NA	NA	38
	1982	9587	2002	528	140	44	250	87
	1987	8962	2412	180	632	152	363	172
	1997	8275	1864	285	1679	382	854	206
Saidabad	1978	9063	1610	19	NA	NA	NA	36
	1982	9363	2005	530	350	79	250	84
	1987	8821	2410	182	1575	280	357	169
	1997	8657	1935	230	2830	698	932	249
Dhanupur	1978	8094	1437	16	NA	NA	NA	33
	1982	8392	2021	420	230	34	300	88
	1987	7881	2414	160	1044	117	510	176
	1997	6387	1580	268	2050	385	972	209
Handia	1978	7121	1265	14	NA	NA	NA	29
	1982	7321	1701	420	380	61	276	85
	1987	6719	2011	165	1980	202	268	170
	1997	5427	679	246	2819	345	1055	76
Jasra	1978	11336	1509	23	NA	NA	NA	47
	1982	10136	1633	304	170	41	886	89
	1987	9473	1952	109	763	135	1227	170
	1997	7509	400	215	1734	486	1820	230
Shankargarh	1978	18205	2403	36	NA	NA	NA	74
	1982	15200	2403	307	180	65	1691	99
	1987	14708	2825	114	511	244	2300	180
	1997	9409	1311	354	1216	318	2880	501
Chaka	1978	5368	708	10	NA	NA	NA	22
	1982	4668	871	210	290	43	347	31
	1987	4342	1023	82	1503	143	512	52
	1997	3896	974	276	2630	348	1082	160
Karchhana	1978	7468	985	15	NA	NA	NA	30
	1982	6268	1284	399	160	65	571	84
	1987	5905	1505	141	710	214	706	151
	1997	4590	228	284	1723	382	1235	214
Kaundhiyara	1978							
	1982	6905	1193	388	100	27	444	38
	1987	6501	1421	150	450	99	612	72
	1997	588	270	286	1201	975	1097	294
Uroowa	1978	4023	293	-	NA	NA	NA	22
	1982	4223	303	301	370	87	2123	85
	1987	4005	363	116	1324	313	3817	155
	1997	3571	785	241	2346	365	4678	313
Meja	1978	11337	822	-	NA	NA	NA	60
	1982	11437	1084	297	370	53	5401	103
	1987	10762	1209	107	1313	192	7312	180
	1997	8785	568	286	2672	398	8630	486
Koraon	1978	17005	1234	-	NA	NA	NA	90
	1982	17305	1804	300	290	46	8441	184
	1987	15121	1995	113	1462	155	10839	309
	1997	13770	394	250	3170	366	12914	843
Manda	1978	10423	756	NA	NA	NA	NA	56
	1982	10623	1011	301	180	51	5129	108
	1987	9927	1201	115	819	180	7061	185
	1997	7309	557	265	1939	354	8452	353

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 animals 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 1982-1997 shows interesting trends.

There are 50 per cent blocks in which the number of livestock has increased during 1982-97 specially after 1988. These include Holagarh, Mau-Aima, Soraon, Baharia, Phulpur, Saidabad, Jasra, Shankargarh, Meja and Koraon.

Another fall-out of growing urbanization and increase in extent of mechanization has been drastic decline in the number of livestock in Allahabad district. It is evident from **table 3.6** that number of all animals in the district have declined after 1988 excepting those of pig and poultry.

Table 3.6.1
Details of Livestock in Allahabad District

Years	Total Cattles (Cows & Oxen etc.)	Total Buffaloes	Sheep	Goats	Pig	Horse and Tattoos	Other Livestock	Total Livestock	Total Poultry
1972	NA	281523	179045	265678	125484	10390	15939	1855166	195170
1978	908439	341804	168972	267676	111168	11384	18918	1827808	182986
1982	899403	365747	198383	296347	99267	46765	167159	2073071	280317
1988	884794	412905	157414	311843	126640	8124	179571	2081991	256580
1993	768583	317121	132790	212620	112095	6432	145685	1695326	252070
1997	643097	389217	140501	234647	141133	4599	11544	1564738	455945

Table 3.6.2
Block-wise Details of Livestock in Allahabad District

Blocks	Years	Total Cattles (Cows & Oxen etc.)	Total Buffaloes	Sheep	Goats	Pig	Horse and Tattoos	Other Livestock	Total Livestock	Total Poultry
Kaurihar	1982	33326	18676	8316	17590	6795	1330	9674	95707	9256
	1988	32105	19882	6308	18598	6095	238	7674	90900	8456
	1997	22509	24048	2140	16584	8576	469	757	75083	13314
Holagarh	1982	22306	12565	4327	8918	4280	1771	4259	58026	4404
	1988	23341	14867	4228	8720	4375	277	4875	60683	4674
	1997	21989	16922	2972	12924	12524	411	445	68187	9393
Mau-Aima	1982	24156	8162	876	9117	3685	391	4793	52180	6857
	1988	23943	9499	2713	8019	3571	292	4998	53035	6887
	1997	20459	13699	2104	14489	9899	175	467	61292	16752
Soraon	1982	22662	10831	6556	6035	3611	1316	5750	56761	3009
	1988	21186	13533	5557	7035	3610	316	5853	57090	3265
	1997	18635	18601	4099	10483	7260	208	681	59967	15227
Baharia	1982	35019	13714	9209	9827	3008	1524	8444	80745	9935
	1988	36621	14074	6063	9527	4211	124	8944	79564	9015
	1997	37546	23777	3584	14657	8823	196	648	89231	27871
Phulpur	1982	29749	14151	4132	8321	2719	1312	7223	76607	20733
	1988	29525	14464	4841	7522	3725	416	7325	67818	17938
	1997	35524	26033	3717	12133	6854	62	658	84981	34807
BahadurPur	1982	30522	17330	9227	8523	2942	1326	4940	77810	11884
	1988	31019	17553	5980	9823	3939	425	7945	76684	9581
	1997	30291	23274	7131	10006	6414	130	618	77864	24114
PratapPur	1982	33767	13104	9997	6248	2413	1424	6270	73303	6802
	1988	34954	15667	6998	6243	3308	328	6570	74068	7076
	1997	23303	18983	7998	9211	6218	58	166	65937	15777
Saidabad	1982	26888	14670	-	10341	2109	1719	6470	62197	6521
	1988	27729	18274	3597	14042	2907	212	6865	73626	6520
	1997	27527	27320	14153	11111	5216	217	336	85880	19650
DhanuPur	1982	30370	13690	8652	6002	1802	1708	5183	67407	8117
	1988	31498	14893	7416	7088	2678	206	5491	69270	7538
	1997	22083	18343	5389	7343	2779	57	149	56143	12689
Handia	1982	27903	11833	9739	8013	1183	1898	5088	65657	5801
	1988	27185	13160	6741	9113	2174	395	5680	64448	5869
	1997	19212	15690	11588	5679	2473	53	137	54832	12165
Jasra	1982	28849	8143	9781	8886	5096	1178	3216	65149	6503
	1988	28696	9823	6786	8986	5211	273	3216	62991	6602
	1997	41506	14002	10997	8282	6424	37	94	81342	13761
Shankargarh	1982	42905	6374	8509	17799	989	1735	6325	84636	2429
	1988	43628	7108	500	18790	1981	235	6520	78762	2723
	1997	57949	14578	8050	16385	3611	66	170	100809	8011
Chaka	1982	16306	10613	-	5041	3415	1618	3663	40656	5570
	1988	16542	14218	4172	6043	5119	418	3866	50378	5067
	1997	21103	9369	5227	5900	6262	232	410	48503	14271
Karchhana	1982	16573	13232	8760	8865	3572	1689	5510	58201	4859
	1988	17622	15984	5737	9565	3870	289	5622	58689	3939
	1997	19636	14490	7751	4633	3686	145	173	50514	7833
Kaundhiyara	1982	23171	12555	3473	9471	3463	1430	4463	58026	13034
	1988	23280	18150	3372	7872	5448	234	4863	63219	10014
	1997	6615	8928	4278	5253	2571	23	23	27691	16022
Uroova	1982	54312	11658	6520	10144	2011	1250	5933	93828	5835
	1988	52999	7080	6115	11144	2734	258	6235	86565	5925
	1997	22384	11593	4159	4593	5195	25	489	48438	11234
Meja	1982	54662	11819	8600	10070	2200	1615	5190	94156	5875
	1988	55322	14218	6594	10040	2418	315	5488	94395	5892
	1997	43674	18263	15821	12686	3921	323	81	94769	8790
Koraon	1982	59774	11286	4910	18665	2200	1860	6170	108865	6556
	1988	52183	13187	6917	15685	2306	362	6475	97115	6664
	1997	90999	31748	7918	28683	5945	221	843	166357	21183
Manda	1982	55618	11831	9011	10560	2200	1665	6230	97115	5615
	1988	53890	12530	5917	9396	4156	265	6532	92686	5312

	1997	35746	23297	7812	7222	4293	13	34	78417	16720
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Source: District Statistical Handbook (of various years).

PART – B

Land Use Plan Related to Agricultural Land

In Allahabad district the average size of landholding was 0.75 hectare as per the 1995-96 agricultural census and 91.43 per cent holdings belonged to the small and marginal farmers, while they accounted for only 57.25 per cent of total area under all landholdings.

The net sown area as percentage of total reporting area increased from around 64 per cent to above 67 per cent after 1994-95.

But the analysis of block-wise net sown area shows that in most of the blocks the proportion of net sown area had been above 70.0 per cent during 2000-01 or during some past years. There were only 4 out of 20 blocks where net sown area had been low. These are Chaka, Karchana, Uroowa and Meja. Net sown area in Chaka was low because it is on the urban fringe. There is need to regulate land use on urban fringes. In other blocks net sown area could be increased through micro water shed management programmes.

The cropping intensity of the Allahabad district had almost consistently increased since 1960-61, and has increased to 157.3 during the period 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 23.16 per cent in 1960-61 to 71.31 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 118.46 in 1980-81 to around 162.8 in 2000-01 with fluctuating trends during intervening periods.

Canals and Tubewells are now the major sources of irrigation in Allahabad district, and account for more than 97 per cent of net irrigated area.

There is another aspect of analysis of sources of irrigation. The role of public sources continues to be very important. Because canals and government tubewells together account for more than 60 per cent of net irrigated area in the district. 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 many blocks of the district.

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

The main crops viz. paddy, wheat and potato have witnessed 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 Allahabad district. The number of all animals in the district have declined excepting those of pig and poultry after 1988.

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 lessees. 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 be transferred for use to other purposes.*
- (ii) *Maximum area should not 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 was around 2.7 per cent of total reporting area during the period 1970-71 to 1997-98. Thereafter it increased to around 3.6 per cent. There are four blocks in the district where area under forest has some sizable proportion. These are: Shankargarh (10.23 per cent), Meja (9.16 per cent), Koraon (8.24 per cent) and Manda (13.75 per cent). The area under culturable waste was above 5.0 per cent of total reporting area in the following blocks: Kaurihar, Baharia, Phulpur, Bahadurpur, Chaka and Meja, while area under other fallow was above 5.0 per cent of total reporting area in Kaurihar, Shankargarh, Meja and Manda blocks (**See table 4.1**).

The area under forest could be brought to around 5 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 9.5 per cent during 1960-61 and has risen to around 12 per cent by the end of year 2000 (**See table 4.1**).

Land in this category has been steadily increasing. However, this increase is faster in blocks located at the urban fringe. Chaka is one such block where land put to non-agricultural uses is 21.22 per cent of the total reporting areas.

Besides Allahabad, there are nine townships in Allahabad district. These have also affected growth of land put to non-agricultural uses.

Townships and Proportion of Land Put to Other Uses in Allahabad District

Name of Township	Name of Block	% of land put to other uses
Lal Gopal Ganj		
Phulpur	Phulpur	11.28
Mau-Aima	Mau-Aima	12.55
Bharatganj	Manda	9.92
Handia	Handia	14.89
Sirsa	Meja	9.95
Shankargarh	Shankargarh	8.65
Koraon	Koraon	4.64
Jhusi	Bahadurpur	11.75

Besides these, there are some non-notified local markets. Land put to non-agricultural uses is also high in them. These include Kaurihar (16.91 per cent), Soraon (14.15 per cent) and Saidabad (14.02 per cent).

Regulation of Land Use at Urban Fringes

There is need to regulate land use at urban fringes. This could be done by setting up an Allahabad 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.

Uroowa is one block where proportion of land under category of land put to non-agricultural uses is very high because the area of the block is small and a large part of it is covered by rail and road network.

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 13.5 per cent of total reporting area by the year 2010.

4.1.3 Barren and Unculturable Land

Barren and unculturable land could 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 3.5 per cent to 1.0 per cent of reporting area in district Allahabad.

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 2.46 per cent of total reporting area (**See table 4.1**). A part of it (say around 1.5 per cent) could be converted into social forestry and the rest i.e. around 0.9 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

Allahabad 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 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.

Table 4.1
Total Reporting Area (TRA) and Land Use Pattern in Allahabad 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	745834	2.12	6.67	9.53	7.04	0.23	3.67	0.01	7.36	63.38
1961-62	744685	2.12	6.32	9.58	6.80	0.30	3.51	0.01	6.70	64.65
1962-63	740496	2.13	5.82	9.62	6.86	0.12	3.45	0.02	6.81	65.17
1963-64	739460	2.14	5.88	9.65	6.93	0.11	3.22	0.02	8.60	63.44
1964-65	698547	2.26	5.35	10.34	7.17	0.07	3.26	0.64	3.50	67.42
1965-66	739268	2.14	5.26	9.49	6.65	0.05	3.07	7.64	2.74	62.96
1966-67	739059	2.14	5.20	9.62	6.64	0.06	3.00	2.12	5.83	65.39
1967-68	741891	2.13	5.18	9.59	6.61	0.44	2.98	4.97	2.96	65.14
1968-69	738401	2.14	5.06	9.67	6.36	0.07	2.97	5.06	2.60	66.07
1969-70	739339	2.24	5.48	9.60	6.43	0.09	2.91	5.18	4.24	63.83
1970-71	742412	2.70	5.13	10.17	6.47	0.12	2.90	5.51	2.76	64.22
1971-72	742011	2.70	5.07	10.20	6.04	0.13	2.83	6.07	2.42	64.54
1972-73	742101	2.71	4.97	10.11	5.55	0.13	2.73	5.59	2.44	65.76
1973-74	742032	2.71	4.96	10.12	5.71	0.13	2.70	6.69	2.57	64.39
1974-75	741959	2.71	4.96	10.13	5.87	0.13	2.68	7.80	2.69	63.01
1975-76	741948	2.71	5.02	10.15	5.73	0.13	2.69	6.92	2.78	63.86
1976-77	741135	2.72	5.02	10.21	5.65	0.13	2.65	6.84	3.27	63.51
1977-78	736435	2.74	4.81	10.50	5.69	0.14	2.73	6.86	2.66	63.89
1978-79	736392	2.74	4.24	10.75	5.03	0.14	2.80	6.05	2.72	65.54
1979-80	735660	2.74	4.88	10.78	4.23	0.17	2.67	10.46	3.21	60.87
1980-81	737206	2.73	4.95	10.75	3.92	0.18	2.49	7.56	4.19	63.23
1981-82	731930	2.75	5.16	10.50	3.95	0.18	2.18	5.95	4.64	64.69
1982-83	731607	2.75	5.09	10.61	3.95	0.17	2.29	6.17	4.96	64.02
1983-84	736545	2.73	5.10	10.54	3.77	0.17	2.49	5.90	4.52	64.77
1984-85	736545	2.73	5.10	10.54	3.77	0.17	2.49	5.90	4.52	64.77
1985-86	735740	2.74	4.95	10.73	3.79	0.17	2.30	6.26	4.93	64.13
1986-87	734397	2.74	4.77	10.82	3.90	0.18	2.20	5.53	4.78	65.08
1987-88	734397	2.74	4.81	10.84	3.79	0.18	2.09	7.04	4.90	63.61
1988-89	731742	2.75	4.53	10.97	3.95	0.31	2.21	5.65	5.30	64.33
1989-90	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
1990-91	730242	2.76	4.39	11.13	3.51	0.30	2.03	6.10	4.65	65.12
1991-92	729493	2.76	4.11	11.27	3.71	0.30	1.89	6.52	4.78	64.65
1992-93	727425	2.77	4.04	11.33	3.06	0.29	1.88	6.38	5.15	65.11
1993-94	727463	2.77	4.11	11.38	3.12	0.30	1.78	7.18	5.25	64.25
1994-95	727469	2.13	4.12	11.38	3.10	0.30	2.27	2.81	5.27	64.64
1995-96	727469	2.68	4.05	11.24	3.09	0.30	1.91	6.49	5.26	64.98
1996-97	727897	2.68	4.10	11.27	3.02	0.30	1.74	6.64	4.65	65.60
1997-98	738181	2.65	4.01	11.14	2.67	0.29	1.74	6.97	4.54	65.99
1998-99	528467	3.69	3.73	10.76	2.52	0.33	1.59	5.25	4.45	67.68
1999-2K	547384	3.63	3.52	11.85	2.47	0.30	1.56	4.77	4.28	67.63
2000-01	549589	3.61	3.50	12.17	2.46	0.30	1.56	5.00	4.27	67.13
Proposed 2010-11		5.00	1.00	13.50	-	1.20	2.06	5.00	2.87	69.00

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 – Kaurihar

In Kaurihar block the area under forest had been very small. It could be increased to around 5.0 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 1.5 per cent of total reporting area under other fallow land and 3.5 per cent of TRA under culturable waste land could be identified for development of forest in the block. Thus total area under forest could be increased to around 5.36 per cent of TRA 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 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 16.67 percent, area under this category does not rise beyond 17.67 per cent by 2010.

The area under culturable waste shows an increasing trend with wide fluctuations. 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. That means the area under pasture land could be increased from present 0.21 per cent to around 1.71 per cent by the year 2010.

The area of land under miscellaneous trees and groves has declined. It could be increased from its present level of 1.77 per cent of TRA to 4.27 per cent of TRA by using some part of other fallow 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 4.3.1

Total Reporting Area (TRA) and Land Use Pattern in Kaurihar Block (in percent)										
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Years	Total Reporting area in hect.	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
1980-81	22357	0.00	13.48	10.99	2.13	0.19	6.96	3.07	3.86	60.67
1985-86	20872	0.00	12.82	10.85	1.99	0.20	4.31	6.47	3.47	59.71
1990-91	20986	0.16	10.26	12.01	4.38	0.24	4.97	5.80	3.11	59.07
1996-97	20913	0.00	1.66	13.34	10.74	0.36	9.48	4.72	2.75	56.95
2000-01	40403	0.36	1.20	16.67	5.51	0.21	9.14	7.37	1.77	57.77

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 Kaurihar Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	0.36	5.36	Around 1.5 per cent from other fallow land and around 3.5 per cent from culturable waste
Barren and Unculturable land	1.20	0.20	Shift 1 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	16.67	17.67	Around 1.0 per cent from barren and unculturable land
Culturable waste	5.51	0.51	Around 3.5 per cent to forest and around 1.5 per cent for pasture grazing land
Pasture and grazing land	0.21	1.71	1.5 per cent from culturable waste
Current Fallow	9.14	6.91	2.23 per cent to net sown area
Other Fallow	7.37	3.37	1.5 per cent to forest and 2.5 per cent for orchard & groves
Land Under Miscellaneous trees and groves	1.77	4.27	2.5 per cent from other fallow
Net Sown Area	57.77	60.0	2.23 per cent from current fallow land
Total reporting area (in Hectares)	40,403.00	40,403.00	-

4.3.2 Block – Holagarh

In Holagarh block the area under forest had been nil. It could 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 2.0 per cent of TRA under culturable waste land could be identified for development of forest in the block. Concept of private micro forest and joint forest will have to be developed to increase area under forest.

In Holagarh block, proportion of area under barren and uncultivable land had declined from 3.56 per cent during 1980-81, 1.24 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 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.

The proportion of area under culturable waste shows a declining trend during 1980-81 to 1990-91 but has increased thereafter. 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 has declined over the years. It could be increased from its present level of 3.79 per cent of TRA to 4.79 per cent of TRA 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 1.65 per cent by 2010, out of which 1.0 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 Holagarh Block (in percent)

Years	Total Reporting area in hect.	Forest	Barren &	Land put to non-agr. Uses	Culturable Waste	Pasture land	Current fallow	Other Fallow	Land Under misc. trees & groves	Net Sown Area
			Unculturable land							
1980-81	14897	0.00	3.56	9.87	1.44	0.46	2.94	6.01	7.75	67.97
1985-86	14861	0.00	2.79	10.15	1.29	0.12	3.48	9.89	7.07	65.26
1990-91	14820	0.02	2.41	10.29	1.21	0.46	3.19	11.51	5.59	65.32
1996-97	14846	0.12	1.14	10.97	3.19	0.72	4.32	5.02	3.64	70.89
2000-01	14347	0.00	1.24	11.67	2.59	0.73	5.84	3.65	3.79	70.48

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 Holagarh Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	-	2.00	2.0 per cent from culturable waste
Barren and Unculturable land	1.24	0.24	Shift 1.0 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	11.67	12.67	Around 1.0 per cent from barren and unculturable land
Culturable waste	2.59	0.59	Around 2.0 per cent to forest
Pasture and grazing land	0.73	1.73	1.0 per cent from other fallow land
Current Fallow	5.84	5.84	-
Other Fallow	3.65	1.65	1.0 per cent to pasture and grazing land and 1.0 per cent for orchard & groves
Land Under Miscellaneous trees and groves	3.79	4.79	1.0 per cent from other fallow
Net Sown Area	70.48	70.48	-
Total reporting area (in Hectares)	14,347.00	14,347.00	-

4.3.3 Block – Mau-Aima

In Mau-Aima block the area under forest had been nil. It could 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 2.0 per cent of TRA under culturable waste land could be identified for development of forest in the block. 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 Mau-Aima block shows a trend of continuous decline. Barren and uncultivable land could be further reduced and a part of it could be utilized to meet increasing need of land for non-agricultural purposes. We propose 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.

The area under culturable waste has increased in the block over its level in 1980-81 after 1990-91. 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 had been very low i.e. around 1.8 per cent since 1996-97. We propose that some part of other fallow land could 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 Mau-Aima Block (in percent)

Years	Total Reporting area in hect.	Forest	Barren &	Land put to non-agr. Uses	Culturable Waste	Pasture land	Current fallow	Other Fallow	Land Under misc. trees & groves	Net Sown Area
			Unculturable land							
1980-81	15148	0.16	6.23	10.09	1.99	0.86	9.12	4.09	3.56	64.06
1985-86	15070	0.42	5.95	10.29	1.84	0.86	4.63	9.26	1.51	65.31
1990-91	15103	0.26	4.99	10.79	1.71	0.74	6.66	6.48	2.97	65.39
1996-97	15060	0.03	1.56	12.05	4.01	0.62	6.55	3.94	1.81	69.44
2000-01	14648	0.00	1.64	12.72	3.94	0.57	5.17	3.07	1.82	71.07

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 Mau-Aima Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	-	2.00	Around 2.0 per cent from culturable waste
Barren and Unculturable land	1.64	0.64	Shift 1.0 per cent of land for non-agricultural purposes
Land put to non-agricultural uses	12.72	13.72	Around 1.0 per cent from barren and unculturable land
Culturable waste	3.94	0.94	Around 2.0 per cent to forest and 1.0 per cent to pasture and grazing land
Pasture and grazing land	0.57	1.57	1.0 per cent from culturable waste land
Current Fallow	5.17	5.17	-
Other Fallow	3.07	2.07	1.0 per cent for orchard & groves
Land Under Miscellaneous trees and groves	1.82	2.82	1.0 per cent from other fallow
Net Sown Area	71.07	71.07	-
Total reporting area (in Hectares)	14,648.00	14,648.00	-

4.3.4 Block – Soraon

In Soraon block the area under forest had been very small. It could be increased to around 1.0 per cent if some part of culturable waste land could be used for social or energy forestry. We propose that around 1.0 per cent of TRA under culturable waste land could be identified for development of forest in the block. 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 Soraon block had almost remained stagnant around 1.6 per cent to 1.7 per cent of TRA. 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 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.

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 which cannot be converted into forest should be converted in pasture and grazing land in the long run.

The area of land under miscellaneous trees and groves has declined in the block. This could be increased by using some part of other fallow 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 Soraon Block (in percent)

Years	Total Reporting area in hect.	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
1980-81	13685	0.00	1.61	12.46	1.56	0.30	5.29	2.04	4.09	72.65
1985-86	13668	0.00	2.14	12.26	1.53	0.27	0.91	8.24	3.71	70.92
1990-91	13504	0.13	1.73	12.91	1.31	0.21	3.87	4.31	3.44	72.05
1996-97	13485	0.07	1.74	11.45	1.20	0.10	10.60	2.33	2.63	69.87
2000-01	13341	0.07	1.60	14.30	1.20	0.13	9.14	1.85	2.42	69.27

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 Soraon Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	0.07	1.07	Around 1.0per cent from culturable waste
Barren and Unculturable land	1.60	0.60	Shift 1.0 per cent of such land for non-agricultural purposes
Land put to non-agricultural uses	14.30	15.30	Around 1.0 per cent from barren and unculturable land
Culturable waste	1.20	0.20	Around 1.0 per cent to forest
Pasture and grazing land	0.13	0.51	-
Current Fallow	9.14	9.14	-
Other Fallow	1.85	0.85	Around 1.0 per cent to orchards
Land Under Miscellaneous trees and groves	2.42	3.42	1.0 per cent from other fallow land
Net Sown Area	76.32	76.32	-
Total reporting area (in Hectares)	13,341.00	13,341.00	-

4.3.5 Block – Baharia

In Baharia block the area under forest had been nil. It could be increased to around 4.0 per cent if some part of culturable waste land could be used for social or energy forestry. We propose that around 4 per cent of TRA under culturable waste land could be identified for development of forest in the block. 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 has drastically declined in the block after 1990-91, it has hovered around 0.78 per cent after 1996-97. Barren and uncultivable land could be further 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 0.56 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 0.56 per cent.

The proportion of area under culturable waste in Baharia block increased after 1990-91. 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. We also suggest that those areas of culturable waste which can not be converted into forest should be converted into pastures.

The area of land under miscellaneous trees and groves in the block fluctuated between 1.0 to 2.0 per cent of TRA. It could be increased from present level by using some part of other fallow 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 4.3.5

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

Years	Total Reporting area in hect.	Forest	Barren &	Land put to non-agr. Uses	Culturable Waste	Pasture land	Current fallow	Other Fallow	Land Under misc. trees & groves	Net Sown Area
			Unculturable land							
1980-81	25361	0.00	6.53	10.78	1.94	0.53	8.00	8.06	1.73	64.56
1985-86	24875	0.00	8.54	7.14	1.97	0.50	6.69	2.59	1.41	71.14
1990-91	24876	0.00	8.54	7.37	0.78	0.50	6.31	3.21	1.28	71.99
1996-97	24875	0.00	0.78	7.37	8.54	0.50	1.63	3.24	1.28	76.65
2000-01	24654	0.00	0.79	7.44	8.12	0.51	1.62	2.39	1.28	77.85

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 Baharia Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	-	4.0	Around 4.0 per cent from culturable waste land
Barren and Unculturable land	0.79	0.23	Shift 0.56 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	7.44	8.0	Around 0.56 per cent from barren and unculturable land
Culturable waste	8.12	2.12	Around 4.0 per cent to forest and 2.0 per cent to grazing land
Pasture and grazing land	0.51	2.51	2.0 per cent from culturable waste land
Current Fallow	1.62	1.62	-
Other Fallow	2.39	1.39	1.0 per cent for orchard & groves
Land Under Miscellaneous trees and groves	1.28	2.28	1.0 per cent from other fallow
Net Sown Area	77.85	77.85	-
Total reporting area (in Hectares)	24,654.00	24,654.00	-

4.3.6 Block – Phulpur

In Phulpur block the area under forest had been nil. It could be increased to around 3.0 per cent if some part of culturable waste land could be used for social or energy forestry. We propose that 3.0 per cent of reporting area under culturable waste land could be identified for development of forest in the block. 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 had continuously declined since 1980-81. 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 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.

The proportion of area under culturable waste has generally increased in Phulpur block. Furthermore 2.0 per cent could be converted into pastures. 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 fluctuated between 1.2 per cent to 1.33 per cent of TRA. It could be increased from present 1.23 to 2.23 per cent by using some part of other fallow 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 4.3.6

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

Years	Total Reporting area in hect.	Forest	Barren &	Land put to non-agr. Uses	Culturable Waste	Pasture land	Current fallow	Other Fallow	Land Under misc. trees & groves	Net Sown Area
			Unculturable land							
1980-81	21796	0.00	9.24	12.35	1.60	0.80	8.99	4.66	1.33	63.80
1985-86	22529	0.00	5.82	10.83	2.32	0.78	4.10	2.46	0.00	72.51
1990-91	22529	0.00	5.38	10.83	2.81	0.78	1.03	2.53	1.25	73.63
1996-97	22529	0.00	2.81	10.83	5.82	0.78	0.89	2.44	1.25	75.19
2000-01	22529	0.00	2.79	11.28	5.37	0.78	0.85	2.35	1.23	75.35

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 Phulpur Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	-	3.0	Around 3.0 per cent from culturable waste
Barren and Unculturable land	2.79	1.79	Shift 1.0 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	11.28	12.28	Around 1.0 per cent from barren and unculturable land
Culturable waste	5.37	0.37	Around 3.0 per cent to forest and around 2.0 per cent for pasture grazing land
Pasture and grazing land	0.78	2.78	2.0 per cent from culturable waste land
Current Fallow	0.85	0.85	-
Other Fallow	2.35	1.35	1.0 per cent for orchard & groves
Land Under Miscellaneous trees and groves	1.23	2.23	1.0 per cent from other fallow
Net Sown Area	75.35	75.35	-
Total reporting area (in Hectares)	25,529.00	25,529.00	-

4.3.7 Block – Bahadurpur

In Bahadurpur block the area under forest had been nil. It could be increased to around 3.0 per cent if some part of culturable waste land could be used for social or energy forestry. We propose that around 3.0 per cent of TRA under culturable waste land could be identified for development of forest in the block. 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 declined drastically after 1990-91. Barren and uncultivable land could be reduced very little 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 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.

The proportion of area under culturable waste has increased in 1996-97 and was 7.79 per cent in 2000-01. We have already discussed that a part of culturable waste could be converted into forest. Furthermore 2.0 per cent could be used as pastures also. 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 remained within the limits of 3 to 4 per cent of TRA. We propose to convert 1.0 per cent of TRA under other fallow land for purposes of developing orchards 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 Bahadurpur Block (in percent)

Years	Total Reporting area in hect.	Forest	Barren &	Land put to non-agr. Uses	Culturable Waste	Pasture land	Current fallow	Other Fallow	Land Under misc. trees & groves	Net Sown Area
			Unculturable land							
1980-81	26430	0.00	2.02	23.51	0.78	0.38	1.10	0.88	3.42	67.60
1985-86	26468	0.00	10.83	8.34	0.70	0.01	2.96	4.02	3.04	70.10
1990-91	26468	0.00	10.83	8.35	1.99	0.01	4.24	2.67	3.86	68.06
1996-97	26468	0.00	1.99	8.35	10.83	0.01	3.82	3.37	3.86	67.79
2000-01	26482	0.00	1.99	11.75	7.79	0.01	3.76	2.64	3.92	68.14

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 Bahadurpur Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	-	3.0	3.0 per cent from culturable waste
Barren and Unculturable land	1.99	0.99	Shift 1.0 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	11.75	12.75	Around 1.0 per cent from barren and unculturable land
Culturable waste	7.79	2.79	Around 3.0 per cent to forest and 2.0 per cent for pasture and grazing land
Pasture and grazing land	0.01	2.01	2.0 per cent from culturable waste
Current Fallow	3.76	3.76	-
Other Fallow	2.64	1.64	1.0 per cent for orchards
Land Under Miscellaneous trees and groves	3.92	4.92	1.0 per cent from other fallow land
Net Sown Area	68.14	68.14	-
Total reporting area (in Hectares)	26,482.00	26,482.00	-

4.3.8 Block – Pratappur

There is little scope of changing land use pattern in Pratappur block. The area under forest had been nil. It could still be increased to around 1.0 per cent if some part of culturable waste land could be used for social or energy forestry. We propose that around 1.0 per cent of TRA under culturable waste land could be identified for development of forest in the block. Concept of private micro forest and joint forest will have to be developed to increase area under forest.

The proportion of area under culturable waste has hovered around 1.5 per cent to 2.0 per cent of TRA since 1980-1981. 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 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 has also not shown any significant changes since 1990-91. We propose that other fallow land could be reduced by 1.0 per cent 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 Pratappur Block (in percent)

Years	Total Reporting area in hect.	Forest	Barren &	Land put to non-agr. Uses	Culturable Waste	Pasture land	Current fallow	Other Fallow	Land Under misc. trees & groves	Net Sown Area
			Unculturable land							
1980-81	21523	0.00	3.34	8.55	1.88	0.08	10.30	3.08	3.28	68.60
1985-86	21227	0.00	3.45	10.83	1.54	0.13	10.97	3.26	1.99	67.50
1990-91	21122	0.11	2.23	12.08	1.45	0.16	7.77	6.59	2.30	68.26
1996-97	21101	0.00	0.56	11.42	1.86	0.12	9.77	3.46	2.72	70.09
2000-01	21091	0.00	0.42	12.93	1.79	0.12	6.27	3.51	2.03	72.92

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 Pratappur Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	-	1.0	Around 1.0 per cent from culturable waste
Barren and Unculturable land	0.42	0.42	-
Land put to non-agricultural uses	12.93	12.93	-
Culturable waste	1.79	0.79	Around 1.0 per cent to forest
Pasture and grazing land	0.12	0.12	-
Current Fallow	6.27	6.27	-
Other Fallow	3.51	2.51	1.0 per cent for orchard and groves
Land Under Miscellaneous trees and groves	2.03	3.03	1.0 per cent from other fallow
Net Sown Area	72.92	72.92	-
Total reporting area (in Hectares)	21,091.00	21,091.00	-

4.3.9 Block – Saidabad

In Saidabad block the area under forest had been almost nil, It could be increased to around 1.5 per cent if culturable waste land could be used for social or energy forestry. We propose that around 1.5 per cent of TRA under culturable waste land could be identified for development of forest in the block. Concept of private micro forest and joint forest will have to be developed to increase area under forest.

The area under barren and unculturable land was less than 4.0 per cent of TRA till 1990-91, it further declined to 0.55 per cent in 2000-01. Barren and uncultivable land could be further reduced very little. Only a very small part of it could be utilized to meet increasing need of land for non-agricultural purposes. We propose that around 0.25 per cent of total reporting area which is in the category of uncultivable land will have to be utilized for non-agricultural purposes.

The area under culturable waste shows a declining trend during the period 1980-81 to 1990-91, it again increased to 2.32 per cent of TRA by 2000-01. We have already discussed that a part of culturable waste could be converted into forest. We furthermore propose that such part of culturable waste which cannot be converted into forest, 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.

The area of land under miscellaneous trees and groves had been around 3.0 per cent of TRA It could be increased by 1.0 per cent by using some part of other fallow 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 4.3.9

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

Years	Total Reporting area in hect.	Forest	Barren &	Land put to non-agr. Uses	Culturable Waste	Pasture land	Current fallow	Other Fallow	Land Under misc. trees & groves	Net Sown Area
			Unculturable land							
1980-81	21131	0.00	3.45	9.17	2.40	0.01	6.18	0.98	3.28	74.52
1985-86	19364	0.00	3.26	12.10	1.55	0.05	5.72	2.05	0.15	76.83
1990-91	19212	0.36	3.86	12.33	1.58	0.04	5.00	4.07	2.81	69.96
1996-97	19142	0.01	0.73	12.61	2.35	0.04	7.01	2.52	3.33	71.41
2000-01	18954	0.01	0.55	12.82	2.32	0.04	5.80	2.50	2.84	73.12

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

Box – 4.3.9
Proposal of Land Use Plan for Saidabad Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	0.01	1.51	Around 1.5 per cent from culturable waste
Barren and Unculturable land	0.55	0.30	Shift 0.25 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	12.82	13.07	Around 0.25 per cent from barren and unculturable land
Culturable waste	2.32	0.82	Around 1.5 per cent to forest
Pasture and grazing land	0.04	-	-
Current Fallow	5.80	5.80	-
Other Fallow	2.50	1.50	1.0 per cent for orchard & groves
Land Under Miscellaneous trees and groves	2.84	3.84	1.0 per cent from other fallow
Net Sown Area	73.12	73.12	-
Total reporting area (in Hectares)	18,954.00	18,954.00	-

4.3.10 Block – Dhanupur

In Dhanupur block the area under forest had been almost nil. It could be increased to around 1.0 per cent if some part of other fallow land and some part of cultivable waste land could be used for social or energy forestry. We propose that around 0.5 per cent of TRA under other fallow land and 0.5 per cent of cultivable waste land could be identified for development of forest in the block. Thus total area under forest could be increased to around 1.1 per cent of TRA by the year 2010. Concept of private micro forest and joint forest will have to be developed to increase area under forest.

In Dhanupur block, proportion of area under barren and uncultivable land had also been very low. Barren and uncultivable land could be reduced very little and only a small part of it could be utilized to meet increasing need of land for non-agricultural purposes. We propose that around 0.5 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.

The proportion of area under cultivable waste was very small (i.e. below 2.0 per cent of TRA since 1980-81 and shows a slow declining trend. We have already discussed that a part of cultivable waste could be converted into forest.

The area of land under miscellaneous trees and groves in the block declined from 4.88 per cent in 1980-81 to 3.5 per cent in 2000-01. It could be increased by 0.5 per cent by using some part of other fallow 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 4.3.10

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

Years	Total Reporting area in hect.	Forest	Barren & Uncultivable land	Land put to non-agr. Uses	Culturable Waste	Pasture land	Current fallow	Other Fallow	Land Under misc. trees & groves	Net Sown Area
1980-81	17832	0.00	1.38	9.12	1.95	0.08	7.54	2.09	4.88	72.66
1985-86	17425	0.00	1.38	11.00	1.96	0.02	5.34	3.49	4.09	72.69
1990-91	17369	0.07	1.41	11.32	1.64	0.03	4.97	4.23	4.42	71.90
1996-97	17322	0.10	0.94	11.53	1.14	0.07	5.71	1.94	4.38	74.19
2000-01	17231	0.10	0.61	11.68	1.06	0.07	5.20	2.05	3.50	75.73

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

Box – 4.3.10
Proposal of Land Use Plan for Dhanupur Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	0.10	1.10	Around 0.5 per cent from other fallow land and around 0.5 per cent from culturable waste
Barren and Unculturable land	0.61	0.11	Shift 0.5 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	11.68	12.18	Around 0.5 per cent from barren and unculturable land
Culturable waste	1.06	0.56	Around 0.5 per cent to forest
Pasture and grazing land	0.07	0.07	-
Current Fallow	5.20	5.20	-
Other Fallow	2.05	1.05	0.5 per cent to forest and 0.5 per cent for orchard & groves
Land Under Miscellaneous trees and groves	3.50	4.00	0.5 per cent from other fallow
Net Sown Area	75.73	75.73	-
Total reporting area (in Hectares)	17,231.00	17,231.00	-

4.3.11 Block – Handia

In Handia block the area under forest had been nil. It could be increased to around 1.0 per cent if some part of culturable waste land could be used for social or energy forestry. We propose that around 1.0 per cent of TRA under culturable waste land could be identified for development of forest in the block. 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 Handia block had been below 2.0 per cent of TRA during 1990-91 to 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 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.

The area under culturable waste was below 2.0 per cent of TRA during most of the periods since 1980-81. We have already discussed that a part of culturable waste could be converted into forest.

The area of land under miscellaneous trees and groves could be increased from present 2.36 per cent of TRA to 3.36 per cent by using some part of other fallow land for this purpose. We propose to convert 1.0 per cent of TRA under other fallow land for purposes other than agriculture as we feel it would be difficult to bring it back for agricultural purposes.

Table 4.3.11

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

Years	Total Reporting area in hect.	Forest	Barren &	Land put to non-agr. Uses	Culturable Waste	Pasture land	Current fallow	Other Fallow	Land Under misc. trees & groves	Net Sown Area
			Unculturable land							
1980-81	16657	0.00	3.26	12.90	1.72	0.04	9.43	2.95	4.55	65.18
1985-86	16228	0.00	3.07	13.22	1.86	0.04	4.41	3.32	3.39	70.61
1990-91	16053	0.00	1.56	12.57	2.13	0.05	5.92	4.32	3.01	70.22
1996-97	16067	0.00	1.00	13.14	1.86	0.06	7.51	1.89	3.01	71.54
2000-01	15962	0.00	1.38	14.99	1.51	0.06	6.35	2.44	2.36	70.91

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

Box – 4.3.11
Proposal of Land Use Plan for Handia Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	-	1.00	Around 1.0 per cent from culturable waste
Barren and Unculturable land	1.38	0.38	Shift 1.0 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	14.99	15.99	Around 1.0 per cent from barren and unculturable land
Culturable waste	1.51	0.51	Around 1.0 per cent to forest
Pasture and grazing land	0.06	0.06	-
Current Fallow	6.35	6.35	-
Other Fallow	2.44	1.44	1.0 per cent for orchard & groves
Land Under Miscellaneous trees and groves	2.36	3.36	1.0 per cent from other fallow
Net Sown Area	70.91	70.91	-
Total reporting area (in Hectares)	15,962.00	15,962.00	-

4.3.12 Block – Jasra

In Jasra block the area under forest had been nil. It could 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 2.0 per cent of TRA under culturable waste land could be identified for development of forest in the block. 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 Jasra block had been 1.88 per cent of TRA since 1996-97. 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 1 per cent of total reporting area which is in the category of uncultivable land will have to be utilized for non-agricultural purposes.

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 1.0 per cent of TRA under such land be utilized for pasture and grazing land.

The area of land under miscellaneous trees and groves had been below 0.5 per cent of TRA since 1985-86. We propose to convert 2.0 per cent of TRA under other fallow land for purposes to develop orchards as we feel it would be difficult to bring it back for agricultural purposes.

Table 4.3.12

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

Years	Total Reporting area in hect.	Forest	Barren &	Land put to non-agr. Uses	Culturable Waste	Pasture land	Current fallow	Other Fallow	Land Under misc. trees & groves	Net Sown Area
			Unculturable land							
1980-81	36188	0.00	1.07	9.70	2.43	0.24	7.44	4.15	1.68	73.28
1985-86	26957	0.00	4.28	11.39	2.31	0.04	6.60	4.23	0.00	70.85
1990-91	26960	0.01	5.07	11.55	1.93	0.03	4.55	3.44	0.45	72.97
1996-97	26958	0.00	1.88	11.59	4.86	0.02	9.22	3.66	0.33	68.43
2000-01	26965	0.00	1.88	11.96	4.49	0.02	9.21	3.66	0.37	68.41

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

Box – 4.3.12
Proposal of Land Use Plan for Jasra Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	-	2.00	Around 2.0 per cent from culturable waste
Barren and Unculturable land	1.88	0.88	Shift 1.0 per cent such land for non-agricultural purposes
Land put to non-agricultural uses	11.96	12.96	Around 1.0 per cent from barren and unculturable land
Culturable waste	4.49	1.49	Around 2.0 per cent to forest and around 1.0 per cent for pasture grazing land
Pasture and grazing land	0.02	1.02	1.0 per cent from culturable waste land
Current Fallow	9.21	9.21	-
Other Fallow	3.66	1.66	Around 2.0 per cent for orchards
Land Under Miscellaneous trees and groves	0.37	2.37	2.0 per cent from other fallow land
Net Sown Area	68.41	68.41	-
Total reporting area (in Hectares)	26,965.00	26,965.00	-

4.3.13 Block – Shankargarh

In Shankargarh block the area under forest had been quite significant. There is need to convert it into thick and quality forest.

The area under barren and uncultivable land and land put to non-agricultural uses as percentage of total reporting area have also been quite significant in the block, because much of it is used for mining purposes. There is need to separately identify and classify such land, so that illegal mining could be stopped.

The proportion of area under culturable waste was quite high till 1990-91 but then declined to around 2.82 per cent by 2000-01. A part of culturable waste could be converted into pasture and grazing land. We have suggested to bring down area under this category at the minimum as 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 had been very low. It could be increased from present level of 0.37 per cent of TRA to 2.37 per cent by using some part of other fallow 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. Here it is also important to state that many farmers are also engaged in illegal mining in their farm land. This they do with the connivance of local revenue functionary, who records such land as fallow land. That is why area under fallow land (both current and other fallow land) had been quite high in Shankargarh block.

Table 4.3.13

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

Years	Total Reporting area in hect.	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
1980-81	56504	7.42	6.22	8.63	9.76	0.05	9.54	6.22	0.61	51.69
1985-86	46993	8.93	4.33	8.06	10.90	0.08	7.27	6.13	0.94	52.72
1990-91	46374	10.36	5.97	7.98	9.72	0.05	5.09	6.28	0.58	53.98
1996-97	46908	10.27	8.82	8.01	3.26	0.03	7.25	9.83	0.38	52.16
2000-01	47091	10.23	8.77	8.62	2.82	0.03	7.62	9.58	0.37	51.96

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

Box – 4.3.13
Proposal of Land Use Plan for Shankargarh Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	10.23	10.23	-
Barren and Unculturable land	8.77	8.00	Shift 0.77 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	8.62	9.39	Around 0.77 per cent from barren and uncultivable land
Culturable waste	2.82	1.82	Around 1.0 per cent to pasture and grazing land
Pasture and grazing land	0.03	1.03	Around 1.0 per cent from culturable waste
Current Fallow	7.62	7.62	-
Other Fallow	9.58	7.58	2.0 per cent for orchard & groves
Land Under Miscellaneous trees and groves	0.37	2.37	2.0 per cent from other fallow
Net Sown Area	51.96	51.96	-
Total reporting area (in Hectares)	47,091.00	47,091.00	-

4.3.14 Block – Chaka

Chaka block is at urban fringe and getting urbanized very fast. In Chaka block the area under forest had been nil. It could be increased to around 2.0 per cent if some part of culturable waste land could be used for social or energy forestry. We propose that 2.0 per cent of reporting area under culturable waste land could be identified for development of social forestry in the block. 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 that it had declined very fast after 1990-91. Barren and uncultivable land could be further reduced and a part of it could be utilized to meet increasing need of land for non-agricultural purposes. We propose that around 2.0 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.

The proportion of area under culturable waste increased drastically after 1990-91 in Chaka block. We have already discussed that a part of culturable waste could be converted into forest. We further suggest that 5.0 per cent of such land could be used for developing orchards and 2.0 per cent for pastures. 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 orchards and pasture and grazing land in the long run.

The area of land under miscellaneous trees and groves in the block had fluctuated between 2.0 per cent to 3.0 per cent during most of the periods. It could be increased from present 2.12 per cent of TRA to 7.12 per cent by using some part of culturable waste land for this purpose. We also propose that efforts should be made to convert other fallow land for purposes other than agriculture (such as orchard etc.) as we feel it would be difficult to bring it back for agricultural purposes.

Table 4.3.14

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

Years	Total Reporting area in hect.	Forest	Barren &	Land put to non-agr. Uses	Culturable Waste	Pasture land	Current fallow	Other Fallow	Land Under misc. trees & groves	Net Sown Area
			Unculturable land							
1980-81	16908	0.00	11.41	16.74	2.97	0.00	4.67	4.80	3.57	55.71
1985-86	15359	0.00	13.42	15.03	2.49	0.00	3.24	2.21	2.28	59.33
1990-91	15359	0.00	12.05	18.97	2.90	0.00	5.25	4.34	0.76	57.68
1996-97	15359	0.00	3.13	19.62	10.98	0.00	8.08	2.42	2.44	51.38
2000-01	15317	0.00	2.61	21.28	10.69	0.00	1.73	4.34	2.12	57.22

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

Box – 4.3.14
Proposal of Land Use Plan for Chaka Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	-	2.0	Around 2.0 per cent from culturable waste
Barren and Unculturable land	2.61	0.61	Shift 2.0 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	21.28	23.28	Around 2.0 per cent from barren and unculturable land
Culturable waste	10.69	1.69	Around 2.0 per cent to forest and around 2.0 per cent for pasture and grazing land and 5.0 per cent for orchards and groves
Pasture and grazing land	-	2.0	-
Current Fallow	1.73	1.73	-
Other Fallow	4.34	4.34	-
Land Under Miscellaneous trees and groves	2.12	7.12	5.0 per cent from culturable waste
Net Sown Area	57.22	57.22	-
Total reporting area (in Hectares)	15,317.00	15,317.00	-

4.3.15 Block – Karchhana

In Karchhana block the area under forest had been nil. It could be raised to around 1.0 per cent if some part of other fallow land and some part of cultivable waste land could be used for social or energy forestry. We propose that around 0.5 per cent of TRA under other fallow land and 0.5 per cent of TRA under cultivable waste land could be identified for development of forest in the block. 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 had been very low in the block. Barren and uncultivable land could be reduced very little 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 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.

The proportion of area under cultivable waste has declined rapidly after 1990-91. We have already discussed that a part of cultivable 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 cultivable 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 remained between 2.0 per cent to 3.0 per cent of TRA. This needs to be changed. This could be done by encouraging orchard development in some agricultural land. We propose to convert 2.0 per cent of TRA under other fallow land for this purpose as we feel it would be difficult to bring it back for agricultural purposes.

Table 4.3.15

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

Years	Total Reporting area in hect.	Forest	Barren &	Land put to non-agr. Uses	Culturable Waste	Pasture land	Current fallow	Other Fallow	Land Under misc. trees & groves	Net Sown Area
			Uncultivable land							
1980-81	23321	0.00	0.36	11.91	1.43	0.00	7.86	4.61	2.81	71.01
1985-86	23281	0.00	0.38	12.80	1.50	0.01	6.46	4.17	2.58	72.07
1990-91	23281	0.00	0.61	13.22	3.21	0.01	5.97	5.12	2.30	69.55
1996-97	23281	0.00	1.40	12.84	0.61	0.01	5.77	4.19	2.37	72.81
2000-01	23212	0.00	1.56	12.64	0.65	0.01	4.48	4.73	2.68	73.24

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

Box – 4.3.15
Proposal of Land Use Plan for Karchhana Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	-	1.0	Around 0.5 per cent from other fallow land and around 0.5 per cent from culturable waste
Barren and Unculturable land	1.56	0.56	Shift 1.0 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	12.64	13.64	Around 1.0 per cent from barren and unculturable land
Culturable waste	0.65	0.15	Around 0.5 per cent to forest
Pasture and grazing land	0.01	-	-
Current Fallow	4.48	4.48	-
Other Fallow	4.73	2.23	0.5 per cent to forest and 2.0 per cent for orchards
Land Under Miscellaneous trees and groves	2.68	4.68	2.0 per cent from other fellow land
Net Sown Area	73.24	73.24	-
Total reporting area (in Hectares)	23,212.00	23,212.00	-

4.3.16 Block – Kaundhiyara

In Kaundhiyara the area under forest had been nill. But the efforts of social forestry may yield some result. It could be increased to around 0.5 per cent if some part of culturable waste land could be used for social or energy forestry. Concept of private micro forest and joint forest will have to be developed to increase area under forest.

Barren and uncultivable land which slightly increased during 1996-97 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 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.

The proportion of area under culturable waste has shown a trend of continuous decline after 1985-86. It declined from 3.0 per cent in 1985-86 to 0.78 per cent in 2000-01. We have already discussed that a part of culturable waste could be converted into forest. 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 has been around 1.3 per cent since 1996-97. We propose that around 2.0 per cent of TRA under other fallow land could 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 4.3.16

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

Years	Total Reporting area in hect.	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
1985-86	20046	0.00	0.80	10.38	3.00	0.51	4.75	4.01	0.02	74.56
1990-91	20058	0.02	0.67	10.46	2.07	0.51	5.69	4.38	1.73	74.42
1996-97	20046	0.00	1.81	9.96	0.72	0.30	5.44	4.10	1.28	76.40
2000-01	19794	0.00	1.63	10.30	0.78	0.31	7.67	3.09	1.29	74.94

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

Box – 4.3.16
Proposal of Land Use Plan for Kaundhiyara Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	-	0.5	Around 0.5 per cent from culturable waste
Barren and Unculturable land	1.63	0.63	Shift 1.0 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	10.30	11.30	Around 1.0 per cent from barren and unculturable land
Culturable waste	0.78	0.28	Around 0.5 per cent to forest
Pasture and grazing land	0.31	0.31	-
Current Fallow	7.67	7.67	-
Other Fallow	3.09	1.09	2.0 per cent for orchard and groves
Land Under Miscellaneous trees and groves	1.29	3.29	2.0 per cent from other fallow
Net Sown Area	74.94	74.94	-
Total reporting area (in Hectares)	19,794.00	19,794.00	-

4.3.17 Block – Uroowa

In Uroowa block the area under forest had been nil. It could be increased to around 1.0 per cent of TRA if some part of culturable waste land could be used for social or energy forestry. We propose that around 1.0 per cent of TRA under culturable waste land could be identified for development of forest in the block. Concept of private micro forest and joint forest will have to be developed to increase area under forest.

The area under barren and unculturable land which was above 2.0 per cent of TRA till 1990-91, declined to 0.81 per cent during 1996-97 and 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 0.5 per cent of total reporting area which is in the category of uncultivable land will have to be utilized for non-agricultural purposes.

The area under culturable waste land had increased by around 1.0 per cent of TRA after 1985-86. The proportion of culturable waste land increased from 0.95 per cent in 1985-86 to 1.8 per cent in 2000-01. 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 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 had been above 3.0 per cent all along. It could be increased from present 3.58 per cent of TRA to 5.58 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 4.18 per cent to 2.18 per cent by 2010. 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 4.3.17

Total Reporting Area (TRA) and Land Use Pattern in Uroowa Block (in percent)										
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Years	Total Reporting area in hect.	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
1980-81	16709	0.00	2.20	15.44	1.20	0.00	3.84	2.39	3.48	71.48
1985-86	16890	0.00	2.13	15.45	0.95	0.02	2.58	3.44	3.32	71.87
1990-91	16891	0.01	2.41	18.30	1.72	0.02	2.98	3.98	3.19	67.45
1996-97	16890	0.00	0.81	18.17	1.80	0.01	3.85	3.72	3.58	68.05
2000-01	16876	0.00	0.81	18.19	1.80	0.01	2.20	4.18	3.58	69.23

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

Box – 4.3.17
Proposal of Land Use Plan for Uroowa Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	-	1.0	Around 1.0 per cent from culturable waste
Barren and Unculturable land	0.81	0.31	Shift 0.5 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	18.19	18.69	Around 0.5 per cent from barren and unculturable land
Culturable waste	1.80	0.80	Around 1.0 per cent to forest
Pasture and grazing land	0.01	0.01	-
Current Fallow	2.20	2.20	-
Other Fallow	4.18	2.18	2.0 per cent for orchard & groves
Land Under Miscellaneous trees and groves	3.58	5.58	2.0 per cent from other fallow
Net Sown Area	69.23	69.23	-
Total reporting area (in Hectares)	18,876.00	18,876.00	-

4.3.18 Block – Meja

In Meja block the area under forest had been quite significant, but the trend shows that it declined from 11.0 per cent during 1980-81 to 9.16 per cent in 2000-01. It could be increased to around 12.16 per cent if some part of culturable waste land could be used for social or energy forestry. We propose that around 3.0 per cent of TRA under culturable waste land could be identified for development of forest in the block. Concept of private micro forest and joint forest will have to be developed to increase area under forest.

In Meja block, proportion of area under barren and uncultivable land had declined from 6.25 per cent of TRA during 1980-81 to 2.92 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 1 per cent of total reporting area which is in the category of barren and uncultivable land could 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.

The proportion of area under culturable waste land shows that it increased to 6.2 per cent in 1996-97 but then slightly declined during 2000-01. 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. That part of culturable waste which cannot be developed into forest, should be used for developing grazing land.

The area of land under miscellaneous trees and groves in the block declined and had been very low since 1990-91. It could be increased from present 0.45 per cent to 2.95 per cent of TRA 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 5.07 per cent to 2.57 per cent of TRA by 2010. 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 4.3.18

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

Years	Total Reporting area in hect.	Forest	Barren &	Land put to non-agr. Uses	Culturable Waste	Pasture land	Current fallow	Other Fallow	Land Under misc. trees & groves	Net Sown Area
			Unculturable land							
1980-81	44334	11.02	6.25	8.34	4.56	0.02	7.66	7.74	1.18	53.95
1985-86	44221	11.04	5.47	9.40	4.57	0.01	5.34	6.56	9.05	47.83
1990-91	44694	10.90	6.28	9.30	3.66	0.01	6.97	2.58	0.45	59.86
1996-97	44221	8.55	2.87	9.05	6.20	0.01	5.93	5.47	0.45	61.47
2000-01	43466	9.16	2.92	10.13	5.78	0.00	2.53	5.07	0.45	63.96

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

Box – 4.3.18
Proposal of Land Use Plan for Meja Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	9.16	12.16	Around 3.0 per cent from culturable waste
Barren and Unculturable land	2.92	1.92	Shift 1.0 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	10.13	11.13	Around 1.0 per cent from barren and unculturable land
Culturable waste	5.78	0.78	Around 3.0 per cent to forest and 2.0 per cent for pastures & grazing land
Pasture and grazing land	-	2.0	2.0 per cent from culturable waste
Current Fallow	2.53	2.53	-
Other Fallow	5.07	2.57	2.5 per cent for orchard & groves
Land Under Miscellaneous trees and groves	0.45	2.95	2.5 per cent from other fallow
Net Sown Area	63.96	63.96	-
Total reporting area (in Hectares)	43,466.00	43,466.00	-

4.3.19 Block – Koraon

In Koraon block land use pattern drastically changed after 1996-97. the net sown area increased from 58.96 per cent of TRA to 82.45 per cent of total reporting area. While the share of area under all the other categories declined. Area under barren and uncultivable land declined from 4.64 per cent of TRA to 0.49 per cent of TRA while that of land put to non-agricultural uses declined from 8.85 per cent of TRA to 4.78 per cent during the last four years. Area under current fallow and other fellow also decreased sharply. There is need to see that area under forest does not decline and conversion of agricultural land for non-agricultural purposes takes place at minimal level.

Table 4.3.19

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

Years	Total Reporting area in hect.	Forest	Barren &	Land put to non-agr. Uses	Culturable Waste	Pasture land	Current fallow	Other Fallow	Land Under misc. trees & groves	Net Sown Area
			Uncultivable land							
1980-81	68256	11.91	1.34	7.91	5.42	0.15	10.93	4.94	0.56	58.12
1985-86	71942	11.30	1.01	8.59	3.54	0.18	14.24	6.55	0.98	54.28
1990-91	73512	9.55	0.88	8.86	3.10	1.39	6.53	4.54	1.75	63.39
1996-97	72370	8.35	4.64	8.85	1.02	1.36	7.72	8.67	0.43	58.96
2000-01	74201	8.24	0.49	4.78	0.99	1.24	0.44	0.97	0.40	82.45

4.3.20 Block – Manda

In Manda block the area under forest increased consist ently since 1980-81, but has increased at a faster rate after 1990-91. It could be increased to around 14.83 per cent if some part of culturable waste land could be used for social or energy forestry. We propose that around 1.0 per cent of TRA under culturable waste land could be identified for development of forest in the block. 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 Manda block shows that except during 1990-91 it has remained above 5.0 per cent since 1985-86. 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 1.0 per cent of total reporting area which is in the category of uncultivable land will have to be utilized for non-agricultural purposes.

We have already discussed that a part of culturable waste land could be converted into forest. 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 could be increased from present 1.40 per cent to 3.40 per cent by using some part of other fallow land for this purpose. We propose to convert 2.0 per cent of TRA under other fallow land for purposes other than agriculture as we feel it would be difficult to bring it back for agricultural purposes.

Table 4.3.20

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

Years	Total Reporting area in hect.	Forest	Barren &	Land put to non-agr. Uses	Culturable Waste	Pasture land	Current fallow	Other Fallow	Land Under misc. trees & groves	Net Sown Area
			Unculturable land							
1980-81	41462	6.13	3.77	8.86	8.29	0.04	10.33	7.57	3.92	50.53
1985-86	36415	6.98	5.51	9.97	6.66	0.05	6.69	6.01	8.24	51.18
1990-91	34541	8.49	1.33	9.71	7.19	0.07	11.22	4.96	0.95	56.08
1996-97	34643	13.75	5.28	9.94	1.40	0.03	5.82	5.51	1.23	57.03
2000-01	34465	13.83	5.03	9.97	1.40	0.01	3.53	5.89	1.40	58.94

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

Box – 4.3.20
Proposal of Land Use Plan for Manda Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	13.83	14.83	Around 1.0 per cent from culturable waste
Barren and Unculturable land	5.03	4.03	Shift 1.0 per cent of such land for non-agricultural purposes
Land put to non-agricultural uses	9.97	10.97	Around 1.0 per cent from barren and unculturable land
Culturable waste	1.40	0.40	Around 1.0 per cent to forest
Pasture and grazing land	0.01	0.01	-
Current Fallow	3.53	3.53	-
Other Fallow	5.89	3.89	Shift 2.0 per cent for orchard development
Land Under Miscellaneous trees and groves	1.40	3.40	2.0 per cent from other fallow land
Net Sown Area	58.94	58.94	-
Total reporting area (in Hectares)	34,465.00	34,465.00	-

Chapter – 5

Conclusion and Suggestions

The total area of Allahabad district reduced from 7261.00 sq.km. to 5437.20 sq.km. due to carving out of new districts.

The number of residential houses have been increasing at the rate of around 24 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.

Though Allahabad had been divided, the area under urban limits increased from 89 sq.km. in 1961 to 146.8 sq.km. in 1981. i.e. an increase of 64.94 per cent during two decades. The share of urban population has increased from 18.12 per cent in 1961 to 24.72 per cent in 2001.

The decennial growth rate of population had been very high during the last three decades. This has resulted in the pressure of population on land.

The pressure on land in Allahabad continues to increase because a sizable work-force was found to be engaged in agricultural activities.

It was also found that whereas the proportion of agricultural labourers has increased during 1981-91, the proportion of workers in household industry and in other services have declined during the same period.

6.1 Land Use Plan Related to Agricultural Land

In Allahabad district the average size of landholding was 0.75 hectare as per the 1995-96 agricultural census and 91.43 per cent holdings belonged to the small and marginal farmers, while they accounted for only 57.25 per cent of total area under all landholdings.

The net sown area as percentage of total reporting area increased from around 64 per cent to above 67 per cent after 1994-95.

But the analysis of block-wise net sown area shows that in most of the blocks the proportion of net sown area had been above 70.0 per cent during 2000-01 or during some past years. There

were only 4 out of 20 blocks where net sown area had been low. These are Chaka, Karchana, Uroowa and Meja. Net sown area in Chaka was low because it is on the urban fringe. There is need to regulate land use on urban fringes. In other blocks net sown area could be increased through micro water shed management programmes.

The cropping intensity of the Allahabad district had almost consistently increased since 1960-61, and has increased to 157.3 during the period 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 23.16 per cent in 1960-61 to 71.31 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 118.46 in 1980-81 to around 162.8 in 2000-01 with fluctuating trends during intervening periods.

Canals and Tubewells are now the major sources of irrigation in Allahabad district, and account for more than 97 per cent of net irrigated area.

There is another aspect of analysis of sources of irrigation. The role of public sources continues to be very important. Because canals and government tubewells together account for more than 60 per cent of net irrigated area in the district. 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 many blocks of the district.

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

The main crops viz. paddy, wheat and potato have witnessed 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 Allahabad 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 lessees. 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 three fold –

- (i) *Agricultural land 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 in that order.*
- (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 was around 2.7 per cent of total reporting area during the period 1970-71 to 1997-98. Thereafter it increased to around 3.6 per cent. There are four blocks in the district where area under forest has some sizable proportion. These are: Shankargarh (10.23 per cent), Meja (9.16 per cent), Koraon (8.24 per cent) and Manda (13.75 per cent). The area under culturable waste was above 5.0 per cent of total reporting area in the following blocks: Kaurihar, Baharia, Phulpur, Bahadurpur, Chaka and Meja, while area under other fallow was above 5.0 per cent of total reporting area in Kaurihar, Shankargarh, Meja and Manda blocks.

The area under forest could be brought to around 5 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 9.5 per cent during 1960-61 and has risen to around 12 per cent by the end of year 2000.

Land in this category has been steadily increasing. However, this increase is faster in blocks located at the urban fringe. Chaka is one such block where land put to non-agricultural uses is 21.22 per cent of the total reporting areas.

Besides Allahabad, there are nine townships in Allahabad district. These have also affected growth of land put to non-agricultural uses.

Besides these, there are some non-notified local markets. Land put to non-agricultural uses is also high in them. These include Kaurihar (16.91 per cent), Soraon (14.15 per cent) and Saidabad (14.02 per cent).

Regulation of Land Use at Urban Fringes

There is need to regulate land use at urban fringes. This could be done by setting up an Allahabad 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) 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 culturable land should be identified for development of micro-industrial estates and then for developing multistoried residential complexes which are land saving as well.

Uroowa is one block where proportion of land under category of land put to non-agricultural uses is very high because the area of the block is small and a large part of it is covered by rail and road network.

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-story 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 13.5 per cent of total reporting area by the year 2010.

Barren and Unculturable Land

Barren and unculturable land could 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 3.5 per cent to 1.0 per cent of reporting area in district Allahabad.

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 2.46 per cent of total reporting area. A part of it (say around 1.5 per cent) could be converted into social forestry and the rest i.e. around 0.9 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

Allahabad had two major rivers and many tributaries flowing through it. The patches of land along side these rivers are undulating and at some place 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 vegetable 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 Kaurihar block for year 2010 will have land use pattern as follows:

Box - 6.4.1
Proposal of Land Use Plan for Kaurihar Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	0.36	5.36	Around 1.5 per cent from other fallow land and around 3.5 per cent from culturable waste
Barren and Unculturable land	1.20	0.20	Shift 1 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	16.67	17.67	Around 1.0 per cent from barren and unculturable land
Culturable waste	5.51	0.51	Around 3.5 per cent to forest and around 1.5 per cent for pasture grazing land
Pasture and grazing land	0.21	1.71	1.5 per cent from culturable waste
Current Fallow	9.14	6.91	2.23 per cent to net sown area
Other Fallow	7.37	3.37	1.5 per cent to forest and 2.5 per cent for orchard & groves
Land Under Miscellaneous trees and groves	1.77	4.27	2.5 per cent from other fallow
Net Sown Area	57.77	60.0	2.23 per cent from current fallow land
Total reporting area (in Hectares)	40,403.00	40,403.00	-

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

Box - 6.4.2
Proposal of Land Use Plan for Holagarh Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	-	2.00	2.0 per cent from culturable waste
Barren and Unculturable land	1.24	0.24	Shift 1.0 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	11.67	12.67	Around 1.0 per cent from barren and unculturable land
Culturable waste	2.59	0.59	Around 2.0 per cent to forest
Pasture and grazing land	0.73	1.73	1.0 per cent from other fallow land
Current Fallow	5.84	5.84	-
Other Fallow	3.65	1.65	1.0 per cent to pasture and grazing land and 1.0 per cent for orchard & groves
Land Under Miscellaneous trees and groves	3.79	4.79	1.0 per cent from other fallow
Net Sown Area	70.48	70.48	-
Total reporting area (in Hectares)	14,347.00	14,347.00	-

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

Box - 6.4.3
Proposal of Land Use Plan for Mau-Aima Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	-	2.00	Around 2.0 per cent from culturable waste
Barren and Unculturable land	1.64	0.64	Shift 1.0 per cent of land for non-agricultural purposes
Land put to non-agricultural uses	12.72	13.72	Around 1.0 per cent from barren and unculturable land
Culturable waste	3.94	0.94	Around 2.0 per cent to forest and 1.0 per cent to pasture and grazing land
Pasture and grazing land	0.57	1.57	1.0 per cent from culturable waste land
Current Fallow	5.17	5.17	-
Other Fallow	3.07	2.07	1.0 per cent for orchard & groves
Land Under Miscellaneous trees and groves	1.82	2.82	1.0 per cent from other fallow
Net Sown Area	71.07	71.07	-
Total reporting area (in Hectares)	14,648.00	14,648.00	-

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

Box - 6.4.4
Proposal of Land Use Plan for Soraon Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	0.07	1.07	Around 1.0per cent from culturable waste
Barren and Unculturable land	1.60	0.60	Shift 1.0 per cent of such land for non-agricultural purposes
Land put to non-agricultural uses	14.30	15.30	Around 1.0 per cent from barren and unculturable land
Culturable waste	1.20	0.20	Around 1.0 per cent to forest
Pasture and grazing land	0.13	0.51	-
Current Fallow	9.14	9.14	-
Other Fallow	1.85	0.85	Around 1.0 per cent to orchards
Land Under Miscellaneous trees and groves	2.42	3.42	1.0 per cent from other fallow land
Net Sown Area	76.32	76.32	-
Total reporting area (in Hectares)	13,341.00	13,341.00	-

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

Box - 6.4.5
Proposal of Land Use Plan for Baharia Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	-	4.0	Around 4.0 per cent from culturable waste land
Barren and Unculturable land	0.79	0.23	Shift 0.56 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	7.44	8.0	Around 0.56 per cent from barren and unculturable land
Culturable waste	8.12	2.12	Around 4.0 per cent to forest and 2.0 per cent to grazing land
Pasture and grazing land	0.51	2.51	2.0 per cent from culturable waste land
Current Fallow	1.62	1.62	-
Other Fallow	2.39	1.39	1.0 per cent for orchard & groves
Land Under Miscellaneous trees and groves	1.28	2.28	1.0 per cent from other fallow
Net Sown Area	77.85	77.85	-
Total reporting area (in Hectares)	24,654.00	24,654.00	-

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

Box - 6.4.6
Proposal of Land Use Plan for Phulpur Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	-	3.0	Around 3.0 per cent from culturable waste
Barren and Unculturable land	2.79	1.79	Shift 1.0 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	11.28	12.28	Around 1.0 per cent from barren and unculturable land
Culturable waste	5.37	0.37	Around 3.0 per cent to forest and around 2.0 per cent for pasture grazing land
Pasture and grazing land	0.78	2.78	2.0 per cent from culturable waste land
Current Fallow	0.85	0.85	-
Other Fallow	2.35	1.35	1.0 per cent for orchard & groves
Land Under Miscellaneous trees and groves	1.23	2.23	1.0 per cent from other fallow
Net Sown Area	75.35	75.35	-
Total reporting area (in Hectares)	25,529.00	25,529.00	-

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

Box - 6.4.7
Proposal of Land Use Plan for Bahadurpur Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	-	3.0	3.0 per cent from culturable waste
Barren and Unculturable land	1.99	0.99	Shift 1.0 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	11.75	12.75	Around 1.0 per cent from barren and unculturable land
Culturable waste	7.79	2.79	Around 3.0 per cent to forest and 2.0 per cent for pasture and grazing land
Pasture and grazing land	0.01	2.01	2.0 per cent from culturable waste
Current Fallow	3.76	3.76	-
Other Fallow	2.64	1.64	1.0 per cent for orchards
Land Under Miscellaneous trees and groves	3.92	4.92	1.0 per cent from other fallow land
Net Sown Area	68.14	68.14	-
Total reporting area (in Hectares)	26,482.00	26,482.00	-

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

Box - 6.4.8
Proposal of Land Use Plan for Pratappur Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	-	1.0	Around 1.0 per cent from culturable waste
Barren and Unculturable land	0.42	0.42	-
Land put to non-agricultural uses	12.93	12.93	-
Culturable waste	1.79	0.79	Around 1.0 per cent to forest
Pasture and grazing land	0.12	0.12	-
Current Fallow	6.27	6.27	-
Other Fallow	3.51	2.51	1.0 per cent for orchard and groves
Land Under Miscellaneous trees and groves	2.03	3.03	1.0 per cent from other fallow
Net Sown Area	72.92	72.92	-
Total reporting area (in Hectares)	21,091.00	21,091.00	-

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

Box - 6.4.9
Proposal of Land Use Plan for Saidabad Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	0.01	1.51	Around 1.5 per cent from culturable waste
Barren and Unculturable land	0.55	0.30	Shift 0.25 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	12.82	13.07	Around 0.25 per cent from barren and unculturable land
Culturable waste	2.32	0.82	Around 1.5 per cent to forest
Pasture and grazing land	0.04	-	-
Current Fallow	5.80	5.80	-
Other Fallow	2.50	1.50	1.0 per cent for orchard & groves
Land Under Miscellaneous trees and groves	2.84	3.84	1.0 per cent from other fallow
Net Sown Area	73.12	73.12	-
Total reporting area (in Hectares)	18,954.00	18,954.00	-

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

Box - 6.4.10
Proposal of Land Use Plan for Dhanupur Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	0.10	1.10	Around 0.5 per cent from other fallow land and around 0.5 per cent from culturable waste
Barren and Unculturable land	0.61	0.11	Shift 0.5 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	11.68	12.18	Around 0.5 per cent from barren and unculturable land
Culturable waste	1.06	0.56	Around 0.5 per cent to forest
Pasture and grazing land	0.07	0.07	-
Current Fallow	5.20	5.20	-
Other Fallow	2.05	1.05	0.5 per cent to forest and 0.5 per cent for orchard & groves
Land Under Miscellaneous trees and groves	3.50	4.00	0.5 per cent from other fallow
Net Sown Area	75.73	75.73	-
Total reporting area (in Hectares)	17,231.00	17,231.00	-

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

Box - 6.4.11
Proposal of Land Use Plan for Handia Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	-	1.00	Around 1.0 per cent from culturable waste
Barren and Unculturable land	1.38	0.38	Shift 1.0 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	14.99	15.99	Around 1.0 per cent from barren and unculturable land
Culturable waste	1.51	0.51	Around 1.0 per cent to forest
Pasture and grazing land	0.06	0.06	-
Current Fallow	6.35	6.35	-
Other Fallow	2.44	1.44	1.0 per cent for orchard & groves
Land Under Miscellaneous trees and groves	2.36	3.36	1.0 per cent from other fallow
Net Sown Area	70.91	70.91	-
Total reporting area (in Hectares)	15,962.00	15,962.00	-

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

**Box - 6.4.12
Proposal of Land Use Plan for Jasra Block**

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	-	2.00	Around 2.0 per cent from culturable waste
Barren and Unculturable land	1.88	0.88	Shift 1.0 per cent such land for non-agricultural purposes
Land put to non-agricultural uses	11.96	12.96	Around 1.0 per cent from barren and unculturable land
Culturable waste	4.49	1.49	Around 2.0 per cent to forest and around 1.0 per cent for pasture grazing land
Pasture and grazing land	0.02	1.02	1.0 per cent from culturable waste land
Current Fallow	9.21	9.21	-
Other Fallow	3.66	1.66	Around 2.0 per cent for orchards
Land Under Miscellaneous trees and groves	0.37	2.37	2.0 per cent from other fallow land
Net Sown Area	68.41	68.41	-
Total reporting area (in Hectares)	26,965.00	26,965.00	-

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

Box - 6.4.13
Proposal of Land Use Plan for Shankargarh Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	10.23	10.23	-
Barren and Unculturable land	8.77	8.00	Shift 0.77 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	8.62	9.39	Around 0.77 per cent from barren and uncultivable land
Culturable waste	2.82	1.82	Around 1.0 per cent to pasture and grazing land
Pasture and grazing land	0.03	1.03	Around 1.0 per cent from culturable waste
Current Fallow	7.62	7.62	-
Other Fallow	9.58	7.58	2.0 per cent for orchard & groves
Land Under Miscellaneous trees and groves	0.37	2.37	2.0 per cent from other fallow
Net Sown Area	51.96	51.96	-
Total reporting area (in Hectares)	47,091.00	47,091.00	-

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

Box - 6.4.14
Proposal of Land Use Plan for Chaka Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	-	2.0	Around 2.0 per cent from culturable waste
Barren and Unculturable land	2.61	0.61	Shift 2.0 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	21.28	23.28	Around 2.0 per cent from barren and unculturable land
Culturable waste	10.69	1.69	Around 2.0 per cent to forest and around 2.0 per cent for pasture and grazing land and 5.0 per cent for orchards and groves
Pasture and grazing land	-	2.0	-
Current Fallow	1.73	1.73	-
Other Fallow	4.34	4.34	-
Land Under Miscellaneous trees and groves	2.12	7.12	5.0 per cent from culturable waste
Net Sown Area	57.22	57.22	-
Total reporting area (in Hectares)	15,317.00	15,317.00	-

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

Box - 6.4.15
Proposal of Land Use Plan for Karchhana Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	-	1.0	Around 0.5 per cent from other fallow land and around 0.5 per cent from culturable waste
Barren and Unculturable land	1.56	0.56	Shift 1.0 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	12.64	13.64	Around 1.0 per cent from barren and unculturable land
Culturable waste	0.65	0.15	Around 0.5 per cent to forest
Pasture and grazing land	0.01	-	-
Current Fallow	4.48	4.48	-
Other Fallow	4.73	2.23	0.5 per cent to forest and 2.0 per cent for orchards
Land Under Miscellaneous trees and groves	2.68	4.68	2.0 per cent from other fellow land
Net Sown Area	73.24	73.24	-
Total reporting area (in Hectares)	23,212.00	23,212.00	-

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

Box - 6.4.16
Proposal of Land Use Plan for Kaundhiyara Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	-	0.5	Around 0.5 per cent from culturable waste
Barren and Unculturable land	1.63	0.63	Shift 1.0 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	10.30	11.30	Around 1.0 per cent from barren and unculturable land
Culturable waste	0.78	0.28	Around 0.5 per cent to forest
Pasture and grazing land	0.31	0.31	-
Current Fallow	7.67	7.67	-
Other Fallow	3.09	1.09	2.0 per cent for orchard and groves
Land Under Miscellaneous trees and groves	1.29	3.29	2.0 per cent from other fallow
Net Sown Area	74.94	74.94	-
Total reporting area (in Hectares)	19,794.00	19,794.00	-

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

Box - 6.4.17
Proposal of Land Use Plan for Uroowa Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	-	1.0	Around 1.0 per cent from culturable waste
Barren and Unculturable land	0.81	0.31	Shift 0.5 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	18.19	18.69	Around 0.5 per cent from barren and unculturable land
Culturable waste	1.80	0.80	Around 1.0 per cent to forest
Pasture and grazing land	0.01	0.01	-
Current Fallow	2.20	2.20	-
Other Fallow	4.18	2.18	2.0 per cent for orchard & groves
Land Under Miscellaneous trees and groves	3.58	5.58	2.0 per cent from other fallow
Net Sown Area	69.23	69.23	-
Total reporting area (in Hectares)	18,876.00	18,876.00	-

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

Box - 6.4.18
Proposal of Land Use Plan for Meja Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	9.16	12.16	Around 3.0 per cent from culturable waste
Barren and Unculturable land	2.92	1.92	Shift 1.0 per cent for land for non-agricultural purposes
Land put to non-agricultural uses	10.13	11.13	Around 1.0 per cent from barren and unculturable land
Culturable waste	5.78	0.78	Around 3.0 per cent to forest and 2.0 per cent for pastures & grazing land
Pasture and grazing land	-	2.0	2.0 per cent from culturable waste
Current Fallow	2.53	2.53	-
Other Fallow	5.07	2.57	2.5 per cent for orchard & groves
Land Under Miscellaneous trees and groves	0.45	2.95	2.5 per cent from other fallow
Net Sown Area	63.96	63.96	-
Total reporting area (in Hectares)	43,466.00	43,466.00	-

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

Box - 6.4.19
Proposal of Land Use Plan for Manda Block

Land Use Categories	Present Level in Percentage (Year 2000-01)	Proposed Level in Percentage (for Year 2010)	Remarks
Forest	13.83	14.83	Around 1.0 per cent from culturable waste
Barren and Unculturable land	5.03	4.03	Shift 1.0 per cent of such land for non-agricultural purposes
Land put to non-agricultural uses	9.97	10.97	Around 1.0 per cent from barren and unculturable land
Culturable waste	1.40	0.40	Around 1.0 per cent to forest
Pasture and grazing land	0.01	0.01	-
Current Fallow	3.53	3.53	-
Other Fallow	5.89	3.89	Shift 2.0 per cent for orchard development
Land Under Miscellaneous trees and groves	1.40	3.40	2.0 per cent from other fallow land
Net Sown Area	58.94	58.94	-
Total reporting area (in Hectares)	34,465.00	34,465.00	-

6.5 Village Level Plans for Selected Villages

6.5.1 Land Use Plan for Golahiya Village

Golhaiya village has a large forest cover, and secondly much of land is rocky and stone covered (not fit for cultivation). And therefore, stone breaking is the main occupation of most of the workers. Land available for cultivation is small as compared to other villages. Poor villagers collect fuel and fodder from the forest area, which is legally prohibited.

The majority of workers are stone breaker who belong to Kol community which is a non-scheduled tribe in U.P. Kols have in-migrated to this village in 1982. They are landless and have not been allotted land even under land distribution programme.

A nullah (drain passage) passes through the adjoining area of the village. During rainy season some water is conserved through a bundhi (water retention structure) which is built on the nullah, which helps in cultivation of wheat in around 500 acres of land.

Most of the residents of village have built their houses on the hills and around half of households have also constructed their houses on agricultural land as well.

About 20 per cent of soil is red matiyar (clay soil) and 80 per cent is red domat (loam). Agriculture is totally dependent on monsoon.

The village land use plan for Golhaiya village will have to focus on four aspects of land use. These are forest, stone-breaking, agriculture and water management.

Forest: Presently, forest area is under forest department, and local poor people use its products for fuel or fodder. Our suggestion is that Golhaiya should be declared as forest village (or Van-gram). Once this is done, it will not be treated as revenue village but as a resource village. The resources will have to be preserved and their quality will have to be improved.

In order to preserve resources, all laws related to preservation of resources will have to be laid down in an integral form at one place.

Secondly, its conversion for other purposes or its acquisition should be made severely restrictive. It should not be through a notification by District Magistrate. Any conversion or acquisition in such villages should be done only after cabinet approval and through a G.O.

Thirdly, those who have stake in preservation of resources, should have share in the disposable produce of the resources. The stakeholders would include government, gram sabha, workers and investors. A Joint Cooperative Forest Management Committee could be formed with representatives of all the four to manage, invest and share the product benefits amongst them.

The forest could be divided into units and sectors. Whereas units could be leased-out to individuals, sectors would be looked after collectively by all unit holder members and investors jointly. Management of all the sectors would be looked after by the Joint Cooperative Forest Management Committee.

Stone Breaking: The stone breaking work is done by leasing-out such land to highest bidders. We suggest that such lease should be given to Self Help Groups of mining workers on priority basis.

It should also be made mandatory that renewal of lease would be done only if the land which has been used for mining (and where no further mining is to be done) is developed as a pond where rain water could be conserved and social forestry work is carried out on the embankment of such ponds.

The mining work should also be allowed in such private land which are rocky and where agriculture is not possible.

There is also need to check illegal mining. Illegal mining has been possible because many areas described as barren and uncultivable land, culturable waste, pastures, ponds etc. in the revenue record are being used for mining purpose.

Once the village is declared van-gram, a fresh land mapping will have to be carried out for describing land-uses of each land plot in the village.

Agriculture: In Golhaiya, no programme of land reclamation had been launched, but there had been individual efforts to convert some degraded land into cultivable land. Some farmers dug their land 4 to 5 ft. deep and filled it with soil brought from outside. But after some time even this land became usar again.

There is only one possibility. If a pond or tank could be constructed on the foots of hill then land adjoining the hill would become cultivable.

There is another problem for labourers with small piece of land. They earn less from cultivation than what they could earn by selling stone chips or silica on their fields.

Water Management: The land topography of the village is highly undulating, and water runs off swiftly. There is only one small dam on the drainage passage. Water so conserved is not sufficient to cover a significant portion of cultivable land under irrigation. The water thus conserved is also used for bathing and for cattle.

There were three ponds in the village. But water was found only in one pond, two other ponds were dry. When hill rocks are broken and also due to rains, top soils flow to ponds, resulting in siltation of these ponds. More water could be conserved in the village if ponds are desilted.

About twenty five years ago, irrigation department made an effort to get water through boring. However, when they could not get water even after boring upto 350 ft., they left the effort, and since then made no other effort in the village.

Even the number of livestock has decreased in the village. Because the number of persons who could look after animals is declining. People are engaged in other work. There is good potential to increase bovine cattle in the village. Because there is no problem of grazing in the village.

Most of the households in the village are related with the work of silica sand or stone breaking.

When work is on in the factory, ash of silica sand covers the whole village. This leads to pollution on the one hand on decline in productivity of land on the other.

6.5.2 Land Use Plan for Harro Village

Kols (a non-scheduled tribe) and Patels (an OBC caste) were the major caste groups in village Harro. Whereas Kols were wage labourers (mostly worked in mines) Patels were, by and large, cultivators.

The data on land use of selected households showed that landholdings have changed mostly due to division of family. There had also been some conversion of agricultural land for non-agricultural purposes. This was mainly for two reasons: (i) division of family and consequent need of land for construction of houses and (ii) development of village.

Water logging was a major problem of the village. The issues of water logging and water conservation are inter-linked. Following steps would help in proper water harvesting in the village.

- (a) Domestic water disposal system be linked with the village drainage;
- (b) A pullia (culvert) be constructed on the nullah (drainage);
- (c) A new drainage passage be constructed;
- (d) Renovate old ponds;
- (e) Construct new ponds also;
- (f) Remove encroachment of ponds.

As regards development of orchards, it was found that orchards were declining. This trend could be arrested if farmers are given incentives to develop orchards in their old fallow land. The incentives would include provision of HYV plants, techniques for their grooming, methods of protection of trees etc.

Summer crops are not grown due to non-availability of water during that season. Villagers send out their cattle to graze during this season. Hence even if some farmer plans to sow during summer, he cannot do so, as it would not be possible to protect summer crops from animals.

If water retention structure could be built, and water is made available even after March, then fodder could be grown, grazing land could be developed and even water for irrigation would be available. This will help in growth of both agriculture and animal husbandry.

6.5.3 Land Use Plan for Fazilapur Village

Waterlogging and seepage from ash ponds were the major problems of village Fazilapur. Encroachment of ponds had added to the problem of water logging. Ponds could also become most suitable way to conserve water in the village. Once water logging is managed and pollution from plant and ash pond is controlled then orchards could also be developed in some land, which are now fallow land.

- (i) Seepage of ash pond could be checked only by erecting 15 ft. deep concrete walls on all sides of ash ponds.
- (ii) Soil testing of village farms be conducted regularly.
- (iii) Illegal encroachment of ponds and tanks of village be removed and desiltation work be undertaken.
- (iv) Drinking water should be put to test every month. IFFCO should take responsibility/or pay for water testing. "Polluter must pay".
- (v) The nullah should be cleansed every year.
- (vi) Health check-up camps be organised for those who are affected due to fly ash or pollution of drinking water.

6.5.4 Land Use Plan for Rajepur Village

Village Rejepur has sizable proportion of culturable waste land, fallow land and area under waterlogging.

Culturable waste has consistently increased in the village – from 6.2 per cent of total reporting area in 1970-71 to 11.4 per cent in 1990-91 and 14.07 per cent during the period of survey. The fallow land has increased from 9.2 per cent in 1990-91 to 12.0 per cent at present. Besides these, usar (uncultivable) and sandy land consists of 7.0 per cent of total reporting area. According to farmers, in around 15.0 per cent of land (adjoining usar land) the productivity was very low.

The revenue record shows that habitation was on 4.0 per cent of total reporting area while actually it was on around 6.0 per cent of village area. Similarly area under water bodies was shown as 3 per cent in revenue records, while actually it was only in 1.0 per cent. The rest of land shown under water bodies had been encroached upon by the powerful people of the village, and even houses had been constructed on such land. Besides these, around 4.0 per cent land remains waterlogged from July to March/April due to overflowing of river/nullah or canal. Continuous waterlogging has also led to rise in the water table of ground water. Orchards have almost been destroyed due to waterlogging.

- (i) In order to overcome water logging, digging and desiltation work of river/nullah and canal should be taken up with right earnest. There is also need to construct a new nullah on the eastern side of the village.
- (ii) Land reclamation programme be launched again after proper awareness programme.
- (iii) Illegal encroachment of ponds be removed.

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	Malay Name
1	<i>Abrus precatorius</i>	LEGUMINOSAE (FABACEAE)	खटूक
2	<i>Abutilon indicum</i>	MALVACEAE	वफरचुक
3	<i>Acacia catechu</i>	LEGUMINOSAE (MIMOSAE)	[कफज]
4	<i>Acacia collicinna</i>	LEGUMINOSAE (MIMOSAE)	फ'कडकडकड
5	<i>Acacia nilotica</i>	LEGUMINOSAE (MIMOSAE)	ककय
6	<i>Acalypha hispida</i>	EUPHORBIACEAE	लगरकु
7	<i>Achyranthus aspera</i>	AMARANTHACEAE	वि केकख
8	<i>Aconitum heterophyllum</i>	RANUNCULACEAE	वफरफो"क
9	<i>Acorus calamus</i>	ARACEAE	ओपक
10	<i>Adallsonia digitata</i>	BOMBACACEAE	खकज {क
11	<i>Adhatoda vasica</i> (Nees)	ACANTHACEAE	वमडूक
12	<i>Adiantum lunulatum</i> (Burm)	POLYPODIACEAE	गडू/कन
13	<i>Aegle marmelos</i> (Corr)	RUTACEAE	फकयो
14	<i>Agave americana</i> (Linn)	AGAVACEAE	दडूक
15	<i>Ajallthusexcelsa</i> (Roxb)	SIMARUBACEAE	वज्योक
16	<i>Albizia lebbek</i> (Bellth)	LEGUMINOSAE (MIMOSAE)	फ'कज"क
17	<i>Allium cepa</i> (Linn)	LILIACEAE	कक. मक
18	<i>Allium sativum</i> (Linn)	LILIACEAE	कक
19	<i>Alocasia indica</i> (Roxb)	ARACEAE	ककडन
20	<i>Aloe barbadensis</i> (Mill)	LILIACEAE	?कडककक
21	<i>Alpinia galanga</i> (Willd)	ZINGIBERACEAE	कककककक
22	<i>Alstonia scholaris</i> (R.Br)	APOCYANACEAE	लकक. क
23	<i>Althea officinalis</i> (Linn)	ACEAE	[क#
24	<i>Amaranthus spinosus</i> (Linn)	AMARANTHACEAE	क. मकक;
25	<i>Amarryllis beladonna</i> (Linn)	AMARRYLLIDACEAE	कककककक ककक
26	<i>Amomum subulatum</i> (Roxb)	ZINGIBERACEAE	कककक
27	<i>Amorphophalus companulatus</i> (Blume)	ARACEAE	लककडन
28	<i>Anacardium occidentales</i> (Linn)	ANACARDIACEAE	कककक
29	<i>Anacyclus pyrethrum</i> (D.C)	ASTERACEAE (COMPOSITEAE)	ककक कक
30	<i>Ananas cosmosum</i> (Merr)	BROMELIACEAE	ककककक
31	<i>Andrographis paniculata</i> (Nees)	ACANTHACEAE	कककक
32	<i>Annonasquamosa</i> (Linn)	ANNONACEAE	लकककक

33	<i>Anthocephalus cadamba</i> (Miq)	RUBIACEAE	dnEc
34	<i>Apium graveolens</i> (Linn)	UMBELLIFERAE	vtelr
35	<i>Aralia nudicaulis</i> (Linn)	ARALIACEAE	y{e.kk

	Botanical Name	Family Name	fglnh uke
36	Arec~catechu (Linn)	PALMAE	i wkhQy
37	ArgeiT1one maxicana (Linn)	PAPAVARACEAE	dVq .kiz
38	Argyreia speciosa (Sweet Syn)	CONVOL VULACEAE	o) nkjd
39	Aristolochia indica, (Linn)	ARISTOLOCHACEAE	bžyh
40	Artemissia yulgaris (Linn)	ASTERACEAE (COMPOSITAE)	neud
41	Artocarpusintegrifolia (Linri)	MORACEAE	i u'k
42	Ascleplas curassavica (Linn)	ASCLEPIADACEAE	dkdukl k
43	Asparagus adscendens (Roxb)	LILIACEAE	ýreřkyh
44	Asparagus recemosus (Willd)	LILIACEAE	'krkoj
45	Asteracantha longifolia (Nees)	ACANTHACEAE	dkřdyk{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)	oá kykpu
51	Barleria prionitis (Linn)	ACANTHACEAE	i h ykokl k
51	Basella alba (Linn)	CHENOPODIACEAE	i řrdk
53	Bauhinia purpurea (Linn)	LEGUMINOSAE (CAESALPINACEAE)	dkřonkj ½ky½
54	Bauhin.ia v~riegata (Linn)	LEGUMINOSAE (CAESALPINACEAE)	dpukj
55	Berberis arlstata (D.C)	BERBERIDACEAE	nk#gYnh
56	Biophytum sensitivum (Linn)	GERANIACEAE (OXALIDACEAE)	vyřcřkk
57	Boerhaavia diffusa (Linn)	NYCTAGINACEAE	yky i quřbk
58	Brassica campestris	CRUCIFERAE (BRASSICACEAE)	l j l ka
59	Brassica Juncea (Linn)	BRASSICACEAE (CRUCIFERAE)	ykyjkbz
60	Brassica oleracea (Linn)	BRASSICACEAE (CRUCIFERAE)	i řrk xřřřř
61	Bryophyllum calycinum Salib	CRASSULACEAE	i řřřřř
62	Butea frondosa koenex (Roxb)	LEGUMINOSAE (FABACEAE)	i yk' k
63	Caesalpinia bonducela Fleming	LEGUMINOSAE (CAESALPINACEAE)	i řrdjř
64	Callicarpa macrophylla (Linn)	VERBENACEAE	fç; xq
65	Calotropis procera (Aif)	ASCLEPIADACEAE	vydř
66	Cannabis indica (Linn)	CANNABINACEAE	nřřřř
67	Cannabis Sativa (Linn)	CANNABINACEAE	Hkkx
68	Capsicum annum (Linn)	SOLANACEAE	fejpk
69	Carica papaya (Linn)	CARICACEAE	i i řrk
70	Carum copticum (Benth & Hook)	UMBELLIFERAE	vtok; u
71	Cassa auriculata (Linn)	CAESALPINACEAE	vcř
72	Cassia absus (Linn)	LEGUMINOSAE (CAESALPINACEAE)	p{řř; k

73	<i>Cassia angustifolia</i> (Vahl)	LEGUMINOSAE (CAESALPINACEAE)	luk;
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	Botanical Name	Family Name	fglnh uke
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' kfrokj
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

	Botanical Name	Family Name	fglnh uke
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	yfKIV
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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	Botanical Name	Family Name	fglnh uke
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 ŠBh
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.)	CAPPAR1DACEAE	'or gj&gj
158	Hedychium spicatum (Hamex. smith)	ZINGIBERACEAE	xzk i yk' kh
159	Helianthus Annuus (Linn)	ASTERACEAE (COMPOSIT AE)	l w Bqkh
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	eksjk
165	Jatropha Curcas (Linn)	EUPHORBIACEAE	0; k/kz , j.M
166	Jatropha gossypifolia (Linn)	EUPHORB1ACEAE	jrutkr
167	Juniperus communis (Linn)	CLJPRESSACEAE	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	ešlndk
171	Lepidium Sativum Linn	BRASSICACEAE (CRUCIFERAE)	pegl=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

	Botanical Name	Family Name	fglnh uke
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	djsyk
190	Momordica dioica (Roxb)	CUCURBITACEAE	ddk/dh
191	Moringa pterygosperma (Gaertn)	MORINGACEAE	l fga:uk
192	Morus indica (Griff.)	MORACEAE	l gnr
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	dyyk
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	tVkelh 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' kskk
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

	Botanical Name	Family Name	fglnh uke
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 kdk
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

	Botanical Name	Family Name	fglnh uke
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	jkguh
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. Merril & Perry.	MYRTACEAE	yks
273	Syzygium cumini Skeels Syn.	MYRTACEAE	cMh tkeq
274	Tagetes erecta (Linn)	ASTERACEAE	xnk
275	Tamarindus indica (Linn)	CAESALPINACEAE LEGUMINOCEAE	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	gjhrdh ½cMh½
284	Terminalia tomentosa. W & A.	COMBRETACEAE	vl u
285	Thevetia neriifolia Juss.	APOCYNACEAE	ihyk 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> (Burmf.) Merr.	ASCLEPIADACEAE	vd l . kh z
293	<i>Uraria picta</i> . Desv.	FABACEAE (LEGUMINOSAE)	i f J i . kh z

	Botanical Name	Family Name	fglnh uke
294	<i>Urginia indica</i> . kunth.	LILIACEAE	t x y h l ; k t
295	<i>Vernonia anthelmintica</i> (Willd)	ASTERACEAE (COMPOSITAE)	ou t h j k
296	<i>Vernonia cinerea</i> Less.	ASTERACEAE (COMPOSITAE)	l g n 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; çd xg ,oa u{k= ls lEcfU/kr iksks ds cks ea tkudkj ,d= dh Fkh rFkk uoxg ,oa u{k= okfVdk, a LFkfir dh FkhA lnò ls ;g ekU;rk jgh gS fd xg&u{k=ka ds dç:Hkkoka ls o{k ,oa ouLifr; kll/lekr ;k de dj ldrh gA

Hkkjrh; ekU;rk es l w Æ. My ds leLr 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 cnysr ugha çhr gksus vr% fLFkj vFkkZr u{k= dgs x; A Hkkjrh; euhf"ka; ka us vkl eku ea l unek ds ;k=k&iFk dks 27 Hkkxka ea ck/k rFkk gj 27oa Hkkx ea iMus okys rkjkeMy ds chp dñ foF"V rkjka dh igpku dj mlga ,d uke fn;k ftlga u{k= dgk x; kA bl çdkj uoxgka rFkk 27 u{k=ka dh igpku dh x; hA

fdlh 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=} ikskska dk mYy[k ikskf.kd] T; ksr"ka] vk; pñnd] rki=d o vl; xBFkka 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?k/ q ogr~ l p q] ukjk; .kh l fgrk
- rki=d xBFk 'kkjnk fryd] ea=egk.kb] Jh fo|k.kb ræ vfn
- vl; xBFk vkulnkJe izk'ku] ouLifr&v/; kRe] u{k=&o{k vkfn

l Hkh rF;ka ij fopkj djus ds ckn foFHKUu xgka ,oa u{k=ka ds fy, ftu ikskska ds uke fu"d"lz ea vk;s gA 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 ikskska dks mxkus ls Hkh ykska dks eukokf{kr Qy fey ldrk 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; q ty rFkk inkk.k jfgr i; kbj.k vko';d gA egkRek ry/hnk us fy[kk g%

"xxu lehj vuy ty /kjuhA budh ukFk lgt tM+ djuhAA"

bUga e; kZnr djus ea o{kouLifr; ka dh vge Hkiedk lnb ls jgh gA yxHkx l Hkh dkyka ea ^ou] ckl] miou] okVdk lj dh oklh l kgh* dh iFkk jgh gA vkt Hkh gfj; kyh rFkk 'kø] i; kbj.k ds ifr ge tkx: d gA

xgka dh 'kkär grq iutk&ikB] ; K&gou ea fo'kSk iztkfr ds iYyo] iqi] Qy] dk"B dh vko'; drk iMfh gS tks fd uoxg ,oa u{k=ka ls lEcfU/kr iKSk gh ns ldrs gA igk.kka ds vuq kj ftl u{k= ea xg fo|eku gka ml le; ml u{k= lca:kh iKSk dk ; RuiwZd l j{k.k rFkk iutu ls xg dh 'kkär gksh gS rFkk tkrd dks eukokä{kr Qy feyrk gA

rkfydk% 1
u{k=ka ls lEcfU/kr iKSk

Ø- la	u{k=	nørk	jkr' k	iKSk dk uke	
				l kdr	fglnh
1-	vf' ouh	vf' ouh	eSk	dkjdjk	dñpyk
2-	Hkj.kh		eSk	/kroh	vkøyk
3-	dfrdk	vfXu	eSk@o"k	mnñcj	xwYu
4-	jkfg.kh	cgek	o"k	tEcw	tkep
5-	exf' kjk	l ke	o"k@feFkq	[kfnj	[kS]
6-	vknlZ	: nz	feFkq	d".k	'kh' ke
7-	i qoZ q	vfifr	feFkq@dZ	oäk	ckä
8-	i qi	cgLifr	ddZ	v' oRFk	i hi y
9-	vk' y'Skk	l wZ	ddZ	tkx	ukxcd j
10-	e/kk	firj	fl g	oV	cjxn
11-	i wZ QkYxqih	Hkx	fl g	iyk' 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; k@eryk	foY;	cy
15-	Lokrh	ok; q	ryk	vtñ	vtñ
16-	fo' kk[kk	bntfxu	ryk@of' pd	fodnr	dVkbZ
17-	vuqk/kk	fe=	of' pd	odty	ekSyJh
18-	T; SBk	bnz	of' pd	l jy	phM+
19-	enyk	fu_fr	/kuq	l xZ	l ky
20-	i wZkZk<k	ty	/kuq	oaxY	tyorl
21-	mRrjk"kk<k	fo' onD	/kuq@edj	iul	dVgy
22-	Jo.k	fo".kq	edj	vdZ	enkj
23-	?kfu"Bk	ol q	edj@dñk	'keh	N; kñdj
24-	'krfe"kd	o: .k	dñk	dnEc	dnEc
25-	i wZ Hkknä n	vtñin	dñk@ehu	vkez	vke
26-	mRrjk Hkknä n	vfgZq/kU;	ehu	fuEc	uhe
27-	jorh	i wkk	ehu	e/kwd	egv/k

rkfydk% 2
xgka ls lEcfU/kr iKSk

Ø- la	xg dk uke	i tuøgou grq iKSk
1-	jfo	enkj
2-	l ke	iyk' k
3-	eaxy	[kS]
4-	cdk	vikekxZ ¼yVthjk½
5-	cgLifr	i hi y
6-	'kø	xwYj
7-	'kfu	'keh
8-	jkq	nnc
9-	drq	dqk

uoxg okVdk
mRrj

	dqk	i hi y	vikekxZ ¼yVthjk½
ir'pe	¼drñk	¼cgLifr½	¼cdk½
	'keh	enkj	xwYj
	¼'kfu½	¼jfo½	¼'kø½
	nnc	[kS]	iyk' k
	¼jkq½	¼eaxy½	¼l ke½

nf{k.k

Location Map



