CHAPTER 5

AGRICULTURAL PANORAMA OF THE STUDY AREA

In the present chapter a close agricultural description of the study area viz. Bijnor and Udham Singh Nagar districts have been discussed.

5.1 General Setting

Bijnor: Bijnor, or more correctly Bijnaur occupies the north-west corner of the Rohelkhand and is roughly triangular stretch of country with its vertex to north. The western boundary is formed throughout by the deep stream of the river Ganga. Other rivers in the district are the Kho, Ban, Gangan, Karula, Malini, Chhoiya, Pili, Ghosan, Dara Panaili, Dhink, Pandhoi and Ramganga. The district may be described topographically as plain tract with slight undulations caused by the valley of few rivers.

It is located between 29°2’ and 29°57’ North latitude and 77°59’ and 78°56’ East longitude. It is surrounded on the East by the district – Udham Singh Nagar of Uttarakhand, on the West by the Muzaffarnagar on the North by Haridwar and Gharwal of Uttarakhand, on the North-West by the Shaharanpur, on the South-West by Meerut, on the South by the Moradabad and on the East-South by district Jyotibaphule Nagar. The Length of the district from North to South is 99.2 km and its breath from East to West is 98.6 km.

According to the census 2001, the estimated population of district is the 3031619. This population is dispersed on an area of 4,561 sq. km which is about 1.65 percent of the total area (238556 sq. km.) of the state. The density comes to 686 persons per sq. km in the district. The sex ratio
of the district Bijnor is 896 females per 1000 males. The total population of the district forms 1.75 percent of the state population.

**Udham Singh Nagar:** Udham Singh Nagar was a portion of district Nainital before the Tarai belt was separated to form the present Udham Singh Nagar on 30 September, 1995. **Udham Singh Nagar is basically an industrial district and many industry related professions are prevalent here, it is perfect example of 'Unity in Diversity' for which India is so widely known, on the other hand different cultures, religions and life styles are blended in absolute harmony. The fertile land lends itself to different forms of agriculture giving rise to agriculture related activities and industries making this land a green place which has resulted into prosperity all around. G.B. Pant University of Agriculture and Technology is a leading temple of learning in the fields of agriculture and technology with one of the finest built university all around the world. This place has rare sight seeing as it is surrounded by Kumaon Himalayas on one side and Nepal on the other (Tanakpur touches the Khatima border which is in Champawat district). Nanak Matta dam, Dronasagar and many other places are worth visiting. *Atariya mandir mela* and *Chaiti mandir mela* is famous where one can find local folk activities and mingle with local culture and traditions.

Udham Singh Nagar is agriculturally one of the most important districts among the total thirteen districts of Uttarakhand state. Udham Singh Nagar and Haridwar are the only two districts belonging to plains part of otherwise hilly state. This district is situated at the 28° 30’ North Latitude and 78° 81’ East Longitudes of Uttarakhand at an altitude of 243.8 meters. According to the 2001 census, this district covers an area of
about 3055 sq. km. and has a population of 914569 with a literacy rate of 51.7 percent. There are seven tehsils and seven community development blocks in this district, namely, Rudrapur, Gadarpur, Bazpur, Kashipur, Jaspur, Khatima and Sitarganj. The importance of Rudrapur has increased as it is the head quarter of district Udham Singh Nagar.

Table 5.1.1
Study Area at a Glance

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Particulars</th>
<th>Bijnor</th>
<th>Udham Singh Nagar</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Total Geographical Area (sq.km.)</td>
<td>4561</td>
<td>3055</td>
</tr>
<tr>
<td>2.</td>
<td>Total Population</td>
<td>3131619</td>
<td>1235614</td>
</tr>
<tr>
<td></td>
<td>Male</td>
<td>1651908</td>
<td>649484</td>
</tr>
<tr>
<td></td>
<td>Female</td>
<td>1479711</td>
<td>586130</td>
</tr>
<tr>
<td></td>
<td>Rural</td>
<td>2370268</td>
<td>832600</td>
</tr>
<tr>
<td></td>
<td>Urban</td>
<td>761351</td>
<td>403014</td>
</tr>
<tr>
<td></td>
<td>Scheduled Castes</td>
<td>655806</td>
<td>162782</td>
</tr>
<tr>
<td></td>
<td>Scheduled Tribes</td>
<td>2427</td>
<td>110220</td>
</tr>
<tr>
<td>4.</td>
<td>Tehsils</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1) Najibabad,(2) Nagina,(3)</td>
<td>(1) Khatima,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Chandpur, (4) Bijnor, (5) Dhampur</td>
<td>(2) Sitarganj,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(3) Kichha,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(4) Gadarpur,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(5) Bazpur,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(6) Kashipur,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(7) Jaspur</td>
<td></td>
</tr>
<tr>
<td>5.</td>
<td>Blocks</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>(1) Najibabad, (2) Kiratpur,</td>
<td>(1) Khatima,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(3) Mohd.pur Devmal, (4) Haldur,</td>
<td>(2) Sitarganj,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(5) Kotwali, (6) Afzalgarh, (7)</td>
<td>(3) Gadarpur,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Nehtaur, (8) Dhampur, (9) Seohara</td>
<td>(4) Bazpur,</td>
<td></td>
</tr>
<tr>
<td></td>
<td>(10) Jailipur, (11) Noorpur.</td>
<td>(5) Kashipur,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>(6) Jaspur</td>
<td></td>
</tr>
<tr>
<td>6.</td>
<td>Neighboring Districts</td>
<td>Udham Singh Nagar,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Muzaffarnagar,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Haridwar,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Garhwal,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Saharanpur,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Meerut,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Moradabad and Jyotibaphule Nagar</td>
<td></td>
</tr>
<tr>
<td>7.</td>
<td>Neighboring Country</td>
<td>Udham Singh Nagar,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Muzaffarnagar,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Haridwar,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Garhwal,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Saharanpur,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Meerut,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Moradabad and Jyotibaphule Nagar</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Nepa...</td>
<td></td>
</tr>
<tr>
<td>8.</td>
<td>Number Of inhabited Villages</td>
<td>2148</td>
<td>656</td>
</tr>
<tr>
<td></td>
<td>Languages</td>
<td>Hindi, Urdu,</td>
<td></td>
</tr>
<tr>
<td></td>
<td></td>
<td>Panjabi and Bengali</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Literacy rate</td>
<td>58.07</td>
<td>51.70</td>
</tr>
<tr>
<td>10.</td>
<td>Sex ratio</td>
<td>896</td>
<td>902</td>
</tr>
</tbody>
</table>

Sources: (1) Statistical Diary Uttarakhand, Directorate of Economics & Statistics, Dehradun, 2009-10.
(2) Zila Sankhiyiki Patrika, Bijnor, 2010.
5.2 Agro-Climatic Conditions

The summers are very hot while winters are fairly cool. In summer, the temperature goes up to 44° C in the month of May and June with desiccating dust-sweeping winds locally known as “Loo”. The monsoon commence in the last of June or in the first week of July, major part of rainfall is received during the month of July, August and September. Few showers of rain also occur during winter months. Winter rains are however uncertain and may benefit or adversely affect some of the Rabi crops.

Three distinct seasons are recognized which are mention as below:

(a) Summer season : Middle March to Middle June
(b) Rainy season  : Middle June to Middle October
(c) Winter season  : Middle October to Middle March

The variation in temperature is observed from season to season, and month to month. The summer season is characterized by heat with maximum temperature of 44° C, while in winter season cold waves are frequently which bring down the temperature to a minimum of 2° C.

The soils in Bijnor area are originated from Siwalik Belt of Himalaya. Generally sandy, clay-loam and light loam soils are found. These soils are low-medium in P$_2$O$_5$, medium-high in K$_2$O and higher in organic matter and available sulphur is marginal. Zinc deficiency also found. The soils are naturally fertile and owing to its inherent capabilities, the accumulated deposit of the centuries of grass and foliage has contributed to the enrichment of the humus contents of the soils. While the soils of the district Udham Singh Nagar range from silt clay loam to
sandy loam, which fall under Mollisol order. Soils in general are high fertile and respond well to fertilizer application. Rainfall of the areas varies from 886 mm to 1520 mm. Generally, the temperature varies from 2.1°C to 44.5°C.

5.3 Land Utilization

The land use pattern in Bijnor and Udham Singh Nagar districts are maintained and classified under the following major categories i.e. (i) Total reporting area, (ii) Forest, (iii) Barren cultivable land, (iv) Current fallow land, (v) Other fallow land, (vi) Barren and uncultivated land, (vii) Land put to non-agricultural uses (viii) Pasture land, (ix) Area under bushes, shrubs and orchards, (x) Net sown area, (xi) Area sown more than once and (xii) Gross cropped area. The land utilization of both districts is reported in the table 5.3.1.

The total reporting area in Bijnor district was estimated at 464578 hectares during the year 2010. Keeping in view the multifarious tangible and intangible services rendered to humanity, the forest management and conservation have a prime concern. The total forest area of Bijnor district is only 54898 hectares (11.81%) of the total reported area. The forest area is increasing due to some measures taken by the government to present deforestation and maintains ecological balance. Awareness among the people is also considering an important factor to increase forestation.
<table>
<thead>
<tr>
<th>S. No.</th>
<th>Particulars</th>
<th>Area (ha)</th>
<th>Bijnor</th>
<th>Udham Singh Nagar</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Total reported area</td>
<td></td>
<td>464578</td>
<td>243162</td>
</tr>
<tr>
<td>2.</td>
<td>Forest</td>
<td></td>
<td>54898 (11.81)</td>
<td>84537 (34.76)</td>
</tr>
<tr>
<td>3.</td>
<td>Barren cultivable land</td>
<td></td>
<td>4016 (0.86)</td>
<td>1716 (0.70)</td>
</tr>
<tr>
<td>4.</td>
<td>Current fallow land</td>
<td></td>
<td>4479 (0.96)</td>
<td>2761 (1.13)</td>
</tr>
<tr>
<td>5.</td>
<td>Other fallow land</td>
<td></td>
<td>3424 (0.73)</td>
<td>3880 (1.59)</td>
</tr>
<tr>
<td>6.</td>
<td>Barren and uncultivated land</td>
<td></td>
<td>4191 (0.90)</td>
<td>2773 (1.14)</td>
</tr>
<tr>
<td>7.</td>
<td>Land put to non agricultural uses</td>
<td></td>
<td>55053 (11.85)</td>
<td>27395 (11.26)</td>
</tr>
<tr>
<td>8.</td>
<td>Pasture land</td>
<td></td>
<td>478 (0.10)</td>
<td>68 (0.02)</td>
</tr>
<tr>
<td>9.</td>
<td>Area under bushes, shrubs and orchards</td>
<td></td>
<td>3101 (0.66)</td>
<td>1756 (0.72)</td>
</tr>
<tr>
<td>10.</td>
<td>Net sown area</td>
<td></td>
<td>334938 (72.09)</td>
<td>118376 (48.68)</td>
</tr>
<tr>
<td>11.</td>
<td>Area sown more than once</td>
<td></td>
<td>97766 (21.04)</td>
<td>------</td>
</tr>
<tr>
<td>12.</td>
<td>Gross cropped area</td>
<td></td>
<td>432704 (93.13)</td>
<td>170864 (70.26)</td>
</tr>
</tbody>
</table>

Sources: (1) Statistical Diary Uttarakhand, Directorate of Economics & Statistics, Dehradun, 2009-10.
(2) Zila Sankhyiyiki Patrika, Bijnor, 2010.

*Figures in parenthesis indicate the percentage.*
Under the category of barren cultivable land may be put for cultivation but they are lying as waste on account of number of reasons. The reason may be enumerated as encroachment by weeds, floods and erosion, poor drainage system, scarcity of water etc. A very low percentage of area constitute as barren cultivable land in Bijnor District that is 4016 hectares (0.86 %).

Current fallow land represents cropped area which is kept fallow during the current year. For example, any cultivated area, which is not cropped again in the same year, may be treated as current fallow land. Fallow land includes all those areas which have been temporarily kept out of cultivation due to one reason or the other for a period of at least one year but not more than four years land. Fallow land is a part of cultivated land but it differs from net sown area in the sense that, at the time of reporting the area covered by this class was without crops, although it was brought under cultivation during the previous agricultural season. The area falls under these categories are 4479 and 3424 hectares which amounts 0.96 and 0.73 percent of the total reported area respectively.

Barren and uncultivable land includes all such land which are practically useless or unproductive and virtually unfit for cultivation. This area is covered by sandy soils where not a single blade/row of vegetation grows. The area under barren and uncultivated land accounts for 4191 hectares (0.90 %).

Non-agricultural uses land covers a wide range of other uses. These lands are used for inhabitations, factories, roads for transportation, canals and reservoirs etc. This area covered 55053 hectares (11.85%) of the total reported area. Pasture land include all grazing lands whether they are permanent pastures meadows or not. Village common and grazing land
within forested area are included under this head. Taking the area of Bijnor district as a whole then we find that the area under pasture and grazing is not appreciable. This is account for 478 hectares (0.10%).

Area under bushes, shrubs and orchards denotes all cultivable land, which is not included in net sown area but is put to some agricultural use. It occupied 3101 hectares (0.66%) of the total reporting area. Net sown area is called as the total land area on which crops are grown in a region. During the year 2010, this is recorded an area of 334938 hectares amounting to the total is 72.09 percent. When more than one crop is grown on the same field in the same year is included in this category of area sown more than once. In the Bijnor district, this type of area covered 97766 hectares (21.04%). Gross cropped area shows the total area put under cropping. It was 432704 (93.13%) of total reporting area.

The table 5.3.1 indicates that the total reported area of district Udham Singh Nagar is 243162 hectares out of which net sown area are 118376 hectares constituting 48.68 percent of the total reported area. Forests account for 34.76 percent of the total reported area, which is as per National Forest Policy that one third of total area in the plains should be under forest. The area is characterized by absence of pasture land and low level of fallow lands. The area under Barren cultivable land, Barren and uncultivated land and Area under bushes, shrubs and orchards are amounting to the total area is 0.70, 1.14 and 0.72 percent respectively. Land put to non-agricultural uses is accounted for 27395 hectares which is 11.26 percent of the total reported area. Gross cropped area covers an acreage of 170864 hectares which is 70.26 percent of the total reporting area.
5.4 Size and Distribution of Land Holdings

According to agricultural census 1995-96, the total number of operational land holdings in district Udham Singh Nagar was 85641, covering an area of 155040 hectares. Land holding up to 4 hectare comprises 89.15 percent of the total holdings and command 54.23 percent of total cultivated land. Land holdings 4 to 10 hectares covers 31.09 percent of total cultivated area. Land holdings greater than 10 hectare constitute only 0.81 percent of total holdings and cover 14.65 percent of the total cultivated area. The data suggest that truly large farms are very small in number and majority of farmers have small land holdings.

Table 5.4.1

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Size of Holdings (ha)</th>
<th>Bijnor</th>
<th></th>
<th>Udham Singh Nagar</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>Total Area (ha)</td>
<td>Number</td>
<td>Total Area (ha)</td>
</tr>
<tr>
<td>1.</td>
<td>Below 0.5</td>
<td>136361 (42.97)</td>
<td>34541 (10.04)</td>
<td>28966 (33.82)</td>
</tr>
<tr>
<td>2.</td>
<td>0.50 – 1.00</td>
<td>71486 (22.52)</td>
<td>50996 (14.82)</td>
<td>16265 (18.99)</td>
</tr>
<tr>
<td>3.</td>
<td>1.00-2.00</td>
<td>61693 (19.44)</td>
<td>88147 (25.62)</td>
<td>16627 (19.41)</td>
</tr>
<tr>
<td>4.</td>
<td>2.00-4.00</td>
<td>35594 (11.21)</td>
<td>97357 (28.30)</td>
<td>14502 (16.93)</td>
</tr>
<tr>
<td>5.</td>
<td>4.00-10.00</td>
<td>11641 (3.66)</td>
<td>62520 (18.17)</td>
<td>8581 (10.01)</td>
</tr>
<tr>
<td>6.</td>
<td>Above 10.00</td>
<td>536 (0.16)</td>
<td>10361 (3.01)</td>
<td>700 (0.81)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>317311 (100)</strong></td>
<td><strong>343922 (100)</strong></td>
<td><strong>85641 (100)</strong></td>
<td><strong>155040 (100)</strong></td>
</tr>
</tbody>
</table>

Sources: Computed from Zila Sankhyiky Patrika, Udham Singh Nagar, 2006 and Bijnor, 2010.

*Figures in parenthesis indicate the percentage.*
In Bijnor district, the size and distribution of land holdings is that total number of operational land holdings are 317311 spreading over the area of 343922 hectares. Majority of the land holdings falls under the head of below 0.5 hectare which makes 42.97 percent of the total operational land holdings. Land holdings from 0.50 to 1 hectare comprise 22.52 percent of the total holdings amounting 14.82 percent of total area. Land holdings 1 to 2 and 2 to 4 hectare covers an area of 25.62 and 28.30 percent of total area respectively. Land holdings 4 to 10 and above 10 hectares add up to 3.66 and only 0.16 percent of total holdings which forms 18.17 and 3.01 percent of the total area.

5.5 Cropping Pattern

In order to analyze the cropping pattern in the both districts, it would be worthwhile to give some idea about the crops, their sowing and harvesting periods. Agriculture practices in both districts revolve around
two main seasons namely Kharif and Rabi. The sowing in the Kharif season (summer crops) begins generally with the onset of the southwest monsoon in mid June, while the Rabi season (winter crops) starts with the beginning of cold weather i.e., by the end of the month of October or early November. The important crops grown in Kharif season are: rice (Oriza sativa), pigeon pea (Cajanus indicus) and sugarcane (Saccharum officinarum), maize (Zea mays), soybean (Glycine max), green gram (Vigna radiata), black gram (Vigna mungo), ground nut (Arachis hypogea) and sesame (Sesamum indicum) which require relatively high temperature and plentiful moisture. The crops grown in Rabi season are: wheat (Triticum aestivum), barley (Hordeum vulgare), lentil (Lens culinaris), gram (Cicer arietinum), pea (Pisum sativum), potato (Solanum tuberosum), mustard (Brassica spp.), sunflower (Helianthus annus) and linseed (Linum usitatissimum) which require low temperatures and moderated amount of moisture during the period of their growth. The harvesting period of Kharif crops starts from the month of September to October while Rabi crops are harvested generally during the months of March to April and which may extend sometimes by the month of May. Table 5.5.1 shows the sowing and harvesting period of major crops grown in the study area.

**Table 5.5.1**

**Sowing and Harvesting Seasons of Selected Crops**

<table>
<thead>
<tr>
<th>Name of Crops</th>
<th>Sowing Time</th>
<th>Harvesting Time</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sugarcane</td>
<td>October and March</td>
<td>October-April</td>
</tr>
<tr>
<td>Wheat</td>
<td>November</td>
<td>April</td>
</tr>
<tr>
<td>Rice</td>
<td>June-July</td>
<td>October-November</td>
</tr>
<tr>
<td>Crop</td>
<td>Sowing</td>
<td>Harvest</td>
</tr>
<tr>
<td>--------------</td>
<td>----------</td>
<td>------------------</td>
</tr>
<tr>
<td>Barley</td>
<td>November</td>
<td>March</td>
</tr>
<tr>
<td>Maize</td>
<td>June</td>
<td>August-September</td>
</tr>
<tr>
<td>Black Gram</td>
<td>June-July</td>
<td>November</td>
</tr>
<tr>
<td>Green Gram</td>
<td>Mid Feb. – Mid April</td>
<td>Mid May - Mid July</td>
</tr>
<tr>
<td>Lentil</td>
<td>October</td>
<td>March-April</td>
</tr>
<tr>
<td>Gram</td>
<td>October</td>
<td>March</td>
</tr>
<tr>
<td>Pea</td>
<td>October</td>
<td>March</td>
</tr>
<tr>
<td>Pigeon Pea</td>
<td>June</td>
<td>November-December</td>
</tr>
<tr>
<td>Mustard</td>
<td>Oct.-Nov.</td>
<td>Jan.-March</td>
</tr>
<tr>
<td>Sesame</td>
<td>June-July</td>
<td>October</td>
</tr>
<tr>
<td>Sunflower</td>
<td>Mid Oct. - Nov.</td>
<td>March - April</td>
</tr>
<tr>
<td>Soybean</td>
<td>Last week of June - First week of July</td>
<td>October</td>
</tr>
<tr>
<td>Linseed</td>
<td>Oct.-Nov.</td>
<td>March-April</td>
</tr>
<tr>
<td>Potato</td>
<td>Oct.-Nov.</td>
<td>March-April</td>
</tr>
</tbody>
</table>

Cropping pattern of the district Bijnor includes both Rabi and Kharif crops in which more than 50 percent of the total area is covered by the sugarcane followed by the cereal crops (wheat, rice, barley and maize), fodder, vegetables (potato, onion and other vegetables), pulses
(black gram, green gram, lentil, gram, pea and pigeon pea) and oilseeds (mustard, sesame, ground nut, sunflower, soybean and linseed) occupying an area of 169180, 29237, 3563, 3359 and 3350 hectares amounting to 39.96, 6.90, 0.84, 0.79 and 0.79 percent of the total area under the crops respectively.

Table 5.5.2
Cropping Pattern in the Study Area

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Crops</th>
<th>Bijnor</th>
<th>Udham Singh Nagar</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Area(hect)</td>
<td>Percent of total Area</td>
</tr>
<tr>
<td>1.</td>
<td>Sugarcane</td>
<td>214592</td>
<td>50.69</td>
</tr>
<tr>
<td>2.</td>
<td>Cereals</td>
<td>169180</td>
<td>39.96</td>
</tr>
<tr>
<td>(i)</td>
<td>Wheat</td>
<td>112204</td>
<td>83029</td>
</tr>
<tr>
<td>(ii)</td>
<td>Rice</td>
<td>56939</td>
<td>108017</td>
</tr>
<tr>
<td>(iii)</td>
<td>Barley</td>
<td>18</td>
<td>69</td>
</tr>
<tr>
<td>(iv)</td>
<td>Maize</td>
<td>12</td>
<td>704</td>
</tr>
<tr>
<td>(v)</td>
<td>Others</td>
<td>7</td>
<td>---</td>
</tr>
<tr>
<td>3.</td>
<td>Pulses</td>
<td>3359</td>
<td>0.79</td>
</tr>
<tr>
<td>(i)</td>
<td>Black Gram</td>
<td>2005</td>
<td>172</td>
</tr>
<tr>
<td>(ii)</td>
<td>Green Gram</td>
<td>24</td>
<td>77</td>
</tr>
<tr>
<td>(iii)</td>
<td>Lentil</td>
<td>1134</td>
<td>1759</td>
</tr>
<tr>
<td>(iv)</td>
<td>Gram</td>
<td>98</td>
<td>202</td>
</tr>
<tr>
<td>(v)</td>
<td>Pea</td>
<td>64</td>
<td>1484</td>
</tr>
<tr>
<td>(vi)</td>
<td>Pigeon Pea</td>
<td>34</td>
<td>77</td>
</tr>
<tr>
<td>5.</td>
<td>Oilseeds</td>
<td>3350</td>
<td>0.79</td>
</tr>
<tr>
<td>(i)</td>
<td>Mustard</td>
<td>2200</td>
<td>5411</td>
</tr>
<tr>
<td>(ii)</td>
<td>Sesame</td>
<td>69</td>
<td>21</td>
</tr>
<tr>
<td>(iii)</td>
<td>Ground nut</td>
<td>1080</td>
<td>53</td>
</tr>
<tr>
<td>(iv)</td>
<td>Sunflower</td>
<td>1</td>
<td>248</td>
</tr>
<tr>
<td>(v)</td>
<td>Soya bean</td>
<td>---</td>
<td>113</td>
</tr>
<tr>
<td>(vi)</td>
<td>Linseed</td>
<td>---</td>
<td>13</td>
</tr>
<tr>
<td>6.</td>
<td>Vegetables</td>
<td>3563</td>
<td>0.84</td>
</tr>
<tr>
<td>(i)</td>
<td>Potato</td>
<td>757</td>
<td>733</td>
</tr>
<tr>
<td>(ii)</td>
<td>Onion</td>
<td>12</td>
<td>---</td>
</tr>
<tr>
<td>(iii)</td>
<td>Other vegetables</td>
<td>2794</td>
<td>---</td>
</tr>
<tr>
<td>7.</td>
<td>Fodder</td>
<td>29237</td>
<td>6.90</td>
</tr>
<tr>
<td>(i)</td>
<td>Rabi fodder</td>
<td>6920</td>
<td>4067</td>
</tr>
<tr>
<td>(ii)</td>
<td>Kharif fodder</td>
<td>19635</td>
<td>5230</td>
</tr>
<tr>
<td>(iii)</td>
<td>Zaid fodder</td>
<td>2682</td>
<td>2621</td>
</tr>
<tr>
<td>Total</td>
<td></td>
<td>423281</td>
<td>100.00</td>
</tr>
</tbody>
</table>

In the Udham Singh Nagar district, wheat and rice are the most important crops among the cereal crops. Rice is the largest growing crop occupying an area of 108017 hectares accounting for 42.76 percent of the total cropped area followed by wheat with an area of 83029 hectares constituting 32.87 percent of the total cropped area. Thus, the rice and wheat together cover three fourth of the total area under crops. Sugarcane is another significant crop occupying 15.10 percent of the total cropped area. Pulses, oilseeds, vegetables and fodder crops together cover a small part (8.82 %) of the total cropped area.
5.6 Irrigation Facilities

The sources of irrigation available in the both districts are canals, tube wells, wells, ponds etc. The total area irrigated by these sources is 276959 hectares in the Bijnor district. The below table 5.6.1 reveals clearly that 63 percent area is irrigated by the tube wells (private and government) followed by wells, canals and others covering 31.4, 5.50 and 0.30 percent area under total irrigated area respectively.

Table 5.6.1
Irrigation Facilities in the Study Area

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Source</th>
<th>Bijnor</th>
<th>Udham Singh Nagar</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Area (ha)</td>
<td>Percentage of total Area</td>
</tr>
<tr>
<td>1</td>
<td>Canals</td>
<td>15244</td>
<td>5.50</td>
</tr>
<tr>
<td>2</td>
<td>Tube well (Govt.)</td>
<td>2250</td>
<td>0.81</td>
</tr>
<tr>
<td>3</td>
<td>Tube well (Pvt.)</td>
<td>172637</td>
<td>62.33</td>
</tr>
<tr>
<td>4</td>
<td>Wells</td>
<td>85981</td>
<td>31.04</td>
</tr>
<tr>
<td>5</td>
<td>Ponds</td>
<td>---</td>
<td>--</td>
</tr>
<tr>
<td>6</td>
<td>Others</td>
<td>847</td>
<td>0.30</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td></td>
<td><strong>276959</strong></td>
<td><strong>100.00</strong></td>
</tr>
</tbody>
</table>

(2) Zila Sankhyiiki Patrika, Bijnor, 2010.
Fig. 5.6.1

It is evident from the table above that the total area in Udham Singh Nagar district is 141533 hectares. Among the different source of irrigation, tube wells cover the maximum area i.e. 69.02 percent of the total irrigated area. The other source of irrigation are canals (20.55 percent) followed by the wells (10.07 percent) of the total area under irrigation. The overall scenario shows that the facilities in the Udham Singh Nagar district are good and sufficient.

5.7 Livestock Population

As per available data of Sankhiyiki Patrika of districts Bijnor and Uhdam Singh Nagar, the total livestock population in both districts is 937225 and 388556. The livestock population is predominated by buffaloes (56.14 % and 45.27 %), followed by cows 27.86 and 31.89 percent respectively. Indigenous cows are much larger than that of crossbreed counterpart.
### Table 5.7.1
Livestock Population in the Study Area

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Particulars</th>
<th>Bijnor</th>
<th>Udham Singh Nagar</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Number</td>
<td>Percentage</td>
</tr>
<tr>
<td>1.</td>
<td>Cow (Indigenous)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Male (above 3 years)</td>
<td>95247</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female (above 3 years)</td>
<td>59952</td>
<td>23.82</td>
</tr>
<tr>
<td></td>
<td>Calves</td>
<td>68059</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Cow (Cross breed)</td>
<td>37910</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Male (above 2.5 years)</td>
<td>5817</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female (above 2.5 years)</td>
<td>14854</td>
<td>4.04</td>
</tr>
<tr>
<td></td>
<td>Calves</td>
<td>17239</td>
<td></td>
</tr>
<tr>
<td>1.</td>
<td>Cow</td>
<td>261168</td>
<td>27.86</td>
</tr>
<tr>
<td>2.</td>
<td>Buffalo</td>
<td>526188</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Male (above 3 years)</td>
<td>68275</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Female (above 3 years)</td>
<td>230883</td>
<td>56.14</td>
</tr>
<tr>
<td></td>
<td>Calves</td>
<td>227230</td>
<td></td>
</tr>
<tr>
<td>3.</td>
<td>Sheep</td>
<td>5769</td>
<td>0.61</td>
</tr>
<tr>
<td>4.</td>
<td>Goat</td>
<td>104429</td>
<td>11.14</td>
</tr>
<tr>
<td>5.</td>
<td>Horse</td>
<td>6898</td>
<td>0.73</td>
</tr>
<tr>
<td>6.</td>
<td>Pig</td>
<td>30655</td>
<td>3.23</td>
</tr>
<tr>
<td>7.</td>
<td>Other animals</td>
<td>2408</td>
<td>0.25</td>
</tr>
<tr>
<td>8.</td>
<td>Total animals</td>
<td>937225</td>
<td>100.00</td>
</tr>
<tr>
<td>9.</td>
<td>Poultry birds</td>
<td>146918</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Other birds</td>
<td>5409</td>
<td></td>
</tr>
<tr>
<td>9.</td>
<td>Total birds</td>
<td>152327</td>
<td></td>
</tr>
</tbody>
</table>

Source: Computed from Zila Sankhiyiki Patrika, Udham Singh Nagar, and Bijnor, 2010.
Fig. 5.7.1

Goat constitutes 11.14 and 11.45 percent, while sheep forms only 0.61 and 0.55 percent of the total livestock population in the both districts. Horse accounts only for 0.73 and 0.34 percent whereas pigs figured at 3.23 and 0.68 percent to the total livestock population. Poultry birds make a total of 146918 and 981860 and likewise other birds are 5409 and 15864 in the both districts.

5.8 Banking Facilities

The both districts are well netted by the financial institutions. The total numbers of branches of nationalized banks in both districts are 120 and 83. Regional rural banks in the districts are having 41 and 8 branches while there are 55 and 12 branches of other non-commercial nationalized banks located in the study area. Table 5.8.1 represents the distribution of various banks in the district Bijnor and Udham Singh Nagar.
Table 5.8.1
Distribution of Banks in Study Area

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Banks</th>
<th>Bijnor</th>
<th>Udham Singh Nagar</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Nationalized Banks</td>
<td>120</td>
<td>83</td>
</tr>
<tr>
<td>2.</td>
<td>Regional Rural Banks</td>
<td>41</td>
<td>8</td>
</tr>
<tr>
<td>3.</td>
<td>Other Non-Commercial Nationalized Banks</td>
<td>55</td>
<td>12</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>1.</strong></td>
<td><strong>216</strong></td>
<td><strong>103</strong></td>
</tr>
</tbody>
</table>


5.9 Distribution of Tribal Population

Block wise distribution of tribal population in Bijnor and Udham Singh Nagar is based on data of Zila Sankhiyiki Patrika of respective districts given in table 5.9.1. According to available data there is total tribal population in Udham Singh Nagar is 110220 comprised of population of total blocks (107627), forest (1181) and urban (1412) while Bijnor has a small number of tribal population that is only 2724 consisting of 2404 rural people and 23 urban people. The proportion of tribal population of both districts to the total state tribal population is 2.24 percent and 43.03 percent.

In district Bijnor, majority of the tribal people reside in rural areas and Kotwali block has a large number of tribal people followed by Najibabad and Afzalgarh blocks constituting 72.10, 16.60 and 10.13 percent respectively.
Table 5.9.1
Distribution of Tribal Population in Study Area

<table>
<thead>
<tr>
<th>S. No.</th>
<th>Bijnor Blocks</th>
<th>Population</th>
<th>Udham Singh Nagar Blocks</th>
<th>Population</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Najibabad</td>
<td>403(16.60)</td>
<td>Jaspur</td>
<td>5(0.004)</td>
</tr>
<tr>
<td>2.</td>
<td>Kiratpur</td>
<td>00</td>
<td>Kashipur</td>
<td>2917(2.64)</td>
</tr>
<tr>
<td>3.</td>
<td>Mohd.pur Devmal</td>
<td>00</td>
<td>Bazpur</td>
<td>12329(11.18)</td>
</tr>
<tr>
<td>4.</td>
<td>Haldaur</td>
<td>00</td>
<td>Gadarpur</td>
<td>10975(9.95)</td>
</tr>
<tr>
<td>5.</td>
<td>Kotwali</td>
<td>1750(72.10)</td>
<td>Rudrapur</td>
<td>161(0.14)</td>
</tr>
<tr>
<td>6.</td>
<td>Afzalgarh</td>
<td>246(10.13)</td>
<td>Sitarganj</td>
<td>32436(29.42)</td>
</tr>
<tr>
<td>7.</td>
<td>Nehtaur</td>
<td>00</td>
<td>Khatima</td>
<td>48408(43.19)</td>
</tr>
<tr>
<td>8.</td>
<td>Dhampur</td>
<td>4(0.14)</td>
<td>Total blocks</td>
<td>107627</td>
</tr>
<tr>
<td>9.</td>
<td>Seohara</td>
<td>00</td>
<td>Forest</td>
<td>1181(1.07)</td>
</tr>
<tr>
<td>10.</td>
<td>Jalilpur</td>
<td>00</td>
<td></td>
<td></td>
</tr>
<tr>
<td>11.</td>
<td>Noorpur</td>
<td>1(0.04)</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>Total rural</td>
<td>2404(99.05)</td>
<td>Total rural</td>
<td>108808(98.71)</td>
</tr>
<tr>
<td></td>
<td>Total urban</td>
<td>23(0.94)</td>
<td>Total urban</td>
<td>1412(1.81)</td>
</tr>
<tr>
<td><strong>Total</strong></td>
<td><strong>2427(100.00)</strong></td>
<td></td>
<td><strong>Total</strong></td>
<td><strong>110220(100.00)</strong></td>
</tr>
<tr>
<td><strong>Uttar Pradesh</strong></td>
<td>107,963 (2.24)</td>
<td><strong>Uttarakhand</strong></td>
<td>256129 (43.03)</td>
<td></td>
</tr>
</tbody>
</table>

Sources: Computed from Zila Sankhiyiki Patrika, Udham Singh Nagar, and Bijnor, 2010.

*Figures in parenthesis indicate the percentage.*

Khatima block is being in the majority of tribal population (43.19 %) followed by Sitarganj (29.42%), Bazpur (11.18 %), Gadarpur (9.95%) and Kashipur (2.64 %) respectively in the rural areas of district Udham Singh Nagar. An undersized number of tribal people are inhabited in
Jaspur and Rudrapur blocks. Tribal people have their homes in forests and urban areas are account only for 1.07 and 1.81 percent in the district Udham Singh Nagar.

Buksa a primitive tribal group is common in the both districts and most of them are farmers. In district Bijnor only Buksa tribe and in Udham Singh Nagar, Buksa and Tharu tribe constitutes the tribal fabrics. Out of eleven blocks in Bijnor there are only three blocks namely Kotwali, Najibabad and Afzalgarh where Buksa tribe is residing while in the district Udham Singh Nagar, out of seven blocks, Gadarpur block has a major population of Buksa tribe.

References

1. The Encyclopaedic District Gazetteers of India, Vol-6, Uttar Pradesh.
2. Zila Sankhiyiki Patrika, Various issues, District Udham Singh Nagar.
7. Office Records of Adim Janjati Vikas Pariyojana, Najibabad, District Bijnor.
8. Office Records of Servant of India Society, Bajpur, District Udham Singh Nagar.