

Agricultural Land Use And Cropping Pattern Of Uttar Dinajpur District

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Abstract:-Cropping pattern is a dynamic concept because it changes over space and time. It can be defined as the proportion of area under various crops at a point of time. In India the cropping pattern is determined by rainfall, climate, temperature, soil type and technology. Agriculture is the backbone of the economy of the district. A core part of its economy is also derived from the forestry. Most of the lands in the district are used for agricultural purposes. More than half of its population are engaged in agriculture in order to earn their livelihood. The chief agricultural products in the districts are paddy, wheat, mustard, jute, chili. Every year a huge chunk of revenue comes from these agricultural products to help in its economy to a great extent. This district is well known for Tulaipanji rice. The switchover to less agro climatically suitable crops in this water scarce region has in fact reduced the total area under pulses and oilseeds, both of which are now in deficit in the district. The net cropped area increased year by year, where the gross cropped area is high, intensity of cropping found high.

Keywords:-Agriculture, land use, cropping pattern, cropping intensity

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I. INTRODUCTION

Indian economy hinges on agriculture. About 70% of Indian population is directly or indirectly dependent on agriculture (Majid Hussain)

Agriculture land use is the result of inter-action between man and environment. Besides physical factors such as relief, climate and soils, land uses are also affected by socio-economic and technological factors. The term "Agricultural land use" denotes the extent of the gross cropped area during the agricultural year under various crops. It is the result of decision made by the farmers regarding the choice of crops and methods for production. The physical as well as cultural environment affects on crop growth and production (Vaidya.B.C).

Variation in the area proportion under various crops at a time in any area results in the cropping patterns. The cropping pattern therefore can be described in terms of areal statistics. Evolution of cropping pattern in any area is mainly the decisions made by the farmers. It is in response to various physical and cultural factors and hence shows spatial as well as temporal variations.

Land use and cropping pattern is an important aspect of geographical studies particularly relevant to agricultural geography. Population growth and pressure on land has been increasing year by year. In this paper an attempt is made to analyse the change in the land use and cropping pattern during last 15 years in Uttar Dinajpur district.

OBJECTIVES:

To understand the land use pattern in Uttar Dinajpur district.

To analyse the different categories of land

To explain about the cropping pattern of the study area.

To explain the problem related to agricultural productivity of district.

To explain the cropping intensity which is related to irrigation facility of the study area.

To suggest solutions for improvement in agricultural production

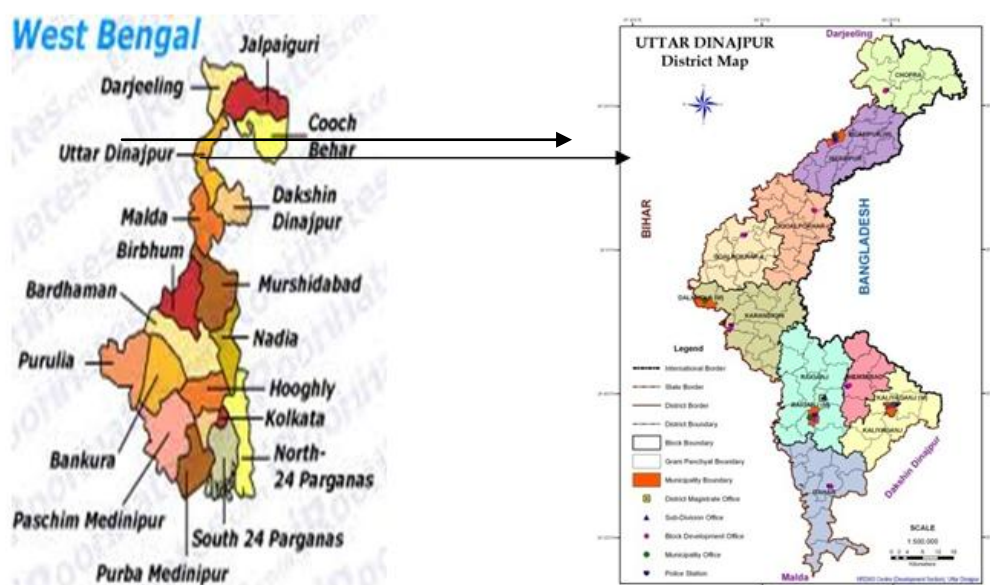
II. RESEARCH METHODOLOGY

The secondary data have been collected from socio-economic abstract of Uttar Dinajpur District (2015). The collected data were categorized, analyzed and presented in the form of tables and diagrams at suitable places. Simple statistical techniques (percentage and average) are used to analyse the changing trend in cropping pattern and crop intensity.

$$\text{Crop Intensity} = \frac{\text{Gross Cropped Area}}{\text{Net Sown Area}} * 100$$

III. STUDY AREA

Uttar Dinajpur district is surrounded by Bangladesh on the east, Bihar on the west, Darjeeling district and Jalpaiguri district on the north and Malda, Dakshin Dinajpur district on the south. Geographically the district lies at 25°61'N latitude, 88°13'E longitude and 53mts. Altitude. In Uttar Dinajpur districts there are 2 sub-division, Raiganj and Islampur, 110km apart from each other. There are 4 Municipality, 9 blocks and 98 gram panchayats covering 1577 villages. The total population is nearly 25 lakh, comprising mainly of rural masses. Bengali is the main language but a sizable number of Urdu and Hindi speaking people live in Islampur sub-division. The district forms a part of the basin lying between Rajmahal hills on the east. This district is bestowed with a very fertile soil. The soil is very rich in nature due to the alluvial deposition which helps to grow paddy, jute, mesta and sugarcane.



**Locational Map of Study Area
Fig No- 1**

Agricultural Land Use Pattern: Uttar Dinajpur is situated mainly on plain lands. The land is formed with alluvial soil generated from the different rivers in the district. The crop production depends largely on monsoon. This district is flood prone which occurs almost every year on the other hand, sometime drought hits and the cultivators cry hoarse for water.

The district shows the increasing percentage of net sown area under cultivation (87.50%, 87.93%, 88.22%). Here the agriculturable area that is net sown area decrease from 4.76%, 1.50% to 0.080%. The total percentage area of forest remain same for last so many years. Decrease in pastures and grazing lands leads to increase in agricultural lands. Improvement of irrigation facilities decreasing the land for uses as non agricultural land (2010-11=10.70%), (2014-15=10.59%).

Table no-1 Block Wise Agricultural land use pattern

Sl No	Name of the block	Total Area(hect)	Net cropped Area(hect)	Net Cropped Area(%)
1	Islampur	36010	26000	72%
2	Goalpokhar-I	35840	29500	82%
3	Goalpokhar-II	32208	29076	90%
4	Chopra	37840	22260	59%
5	Karandighi	38584	29061	75%
6	Raiganj	47421	35200	74%
7	Hemtabad	19160	16653	87%
8	Kaliyaganj	31160	23360	75%
9	Itahar	34856	30182	86%

Source- CDAP-Uttar Dinajpur District 2010

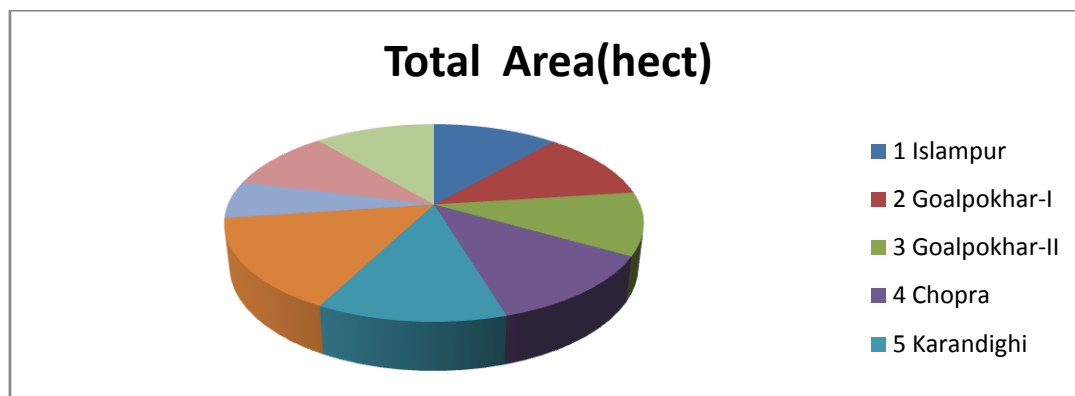
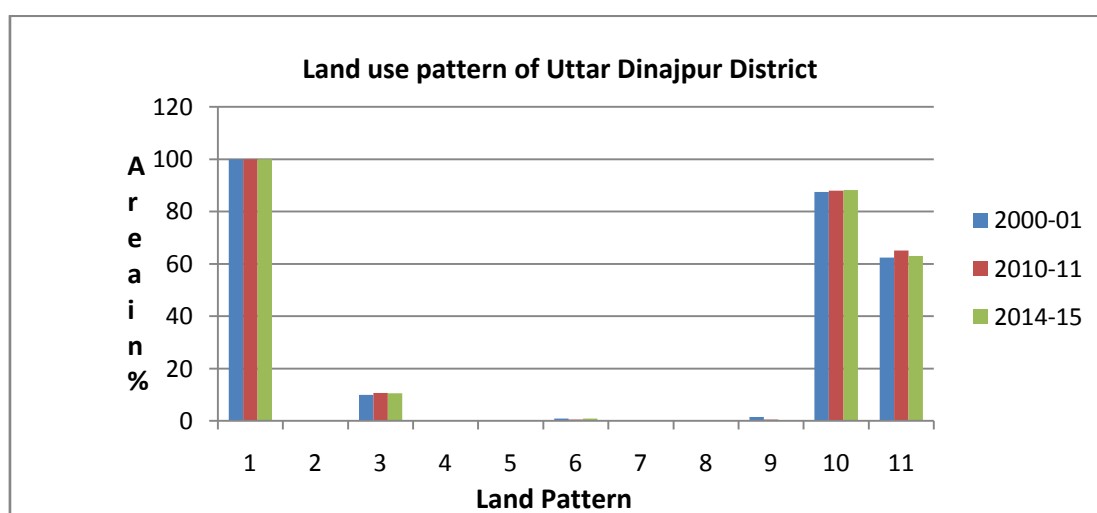


Fig-2

Table No- 2 Land utilization pattern in uttar dinajpur district

Land pattern	2000-01		2010-11		2014-15	
	Area (in thousands hect)	percentage	Area(in thousands hect)	percentage	Area(in thousand hect)	percentage
Reporting Area	312.47	100	312.47	100	312.47	100
Forest Area	0.58	0.19	0.58	0.19	0.58	0.19
Land put to non agriculturable uses	30.89	9.89	33.43	10.70	33.10	10.59
Barren land unculturable waste land	0.12	0.038	0.27	0.086	0.04	0.013
Parmanent pastures and other grazing land	0.07	0.022	0.13	0.042	0	0
Misc. tree crops and groves	2.49	0.80	1.51	0.48	2.68	0.86
Culturable waste	0.14	0.045	0.12	0.037	0.09	0.029
Fallow land other than current fallow	0.01	0.003	0.16	0.051	0.07	0.022
Current fallow	4.76	1.52	1.50	0.48	0.25	0.080
Net sown area	273.41	87.50	274.77	87.93	275.65	88.22
Gross cropped area	501.04	62.36	479.84	65.12	496.26	62.96

Source-Socio-Economic Abstract of Uttar Dinajpur District-2015



FigNo-3

Changing Pattern Of Land Use :- In order to study the changes in agricultural land use pattern in Uttar Dinajpur district compared the land use data of 2000-01, 2010-11, 2014-15 (Table no-2). Net

sown area, gross cropped area, Miss. Tree crops and groves showed increasing trend but some caterories like land put to non agricultural use (10.59%) ,barren and unculturable waste land (0.013%), culturable waste(0.029%), fallow land other than current fallow(0.022%) area decreased. The total net sown area increased 87.50%(2000-01), 87.93%(2010-11), 88.22%(2014-15) in last 15 years. But the area portion of forest remaining same(0.19%). A core part of its economy is also comes from the forestry.

Cropping Pattern:-The main crops of this area are paddy,jute,pulses and mustard. Jute is the main cash crop of the district. There has been a reducing trend in the last few years towards use of land for crop production. It is also observed that slowly but steadily tea plantation is creasing in the district which may affect agricultural lands at a great extent in future. Islampur, Goalpokhar-I and Chopra C.D blocks area has immense tea plantation and have big and small tea gardens .The district ranked 2nd in terms of production of Maize. Raiganj is well known for its Tulaipanji rice. Here the major Tulaipanji (paddy) growing areas are- Raiganj, Kaliyaganj, Hemtabad, Itahar. Pineapple is the major fruit in this district . Major pineapple growing areas are - Chopra, Hemtabad, Karandighi.

Aman rice is grown on a much wider scale across an aggregate area of 1.96 lakh ha spanning the entire district, boro rice cultivation is more localized in the central and southern blocks of Karandighi, Itahar, Raiganj and Goalpokhar-I. Through the remainder of the district gross rice outputs fall mainly because of the limited availability of irrigation and the consequently restricted scale of boro operations in the concerned blocks.

The main areas where jute cultivated are Chopra, Islampur, Raiganj and Itahar. Potatoes are only cultivated on a wide scale in Raiganj and Chopra. Oilseeds are winter crop and grown on a wider scale over a cumulative area of 0.42 lakh hact. The large scale shift to boro cultivation has been made at the cost of dry crops like pulses and oilseeds. The switchover to less agroclimatically suitable crops in this water scarce region has in fact reduced the total area under pulses and oilseeds, both of which are now in deficit in the district.

Table No-3 Production Of Principal Crops In Uttar Dinajpur District

CROPS	2000-2001		2010-2011		2014-2015	
	Cropped area(thou sands hact)	% to gross cropped area	Cropped area(thousan ds hact)	% to gross cropp ed area	Cropped area(thousa nds hect)	% to gross cropp ed area
Rice	283.2	23.62	249.5	21.94	218.4	18.70
Wheat	37.5	3.13	36.0	3.17	38.5	3.30
Barley	0.1	0.008	0	0	0	0
Maize	3.1	0.26	27.2	2.39	59.8	5.12
Ragi	0.6	0.05	0.2	0.02	0.2	0.17
Total Cereals	322.0	26.86	312.8	27.51	316.9	27.13
Other pulses	4.7	0.39	2.6	0.23	2.1	0.18
Total Pulses	9.1	0.76	4.6	0.40	4.4	0.38
Total Foodgrains	331.1	27.62	317.4	27.91	321.3	27.50
Total Oilseeds	45.4	3.79	44.6	3.92	49.8	4.26
Jute	59.0	4.92	43.6	3.83	50.3	4.31
Total Fibre	61.5	5.13	44.4	3.90	51.3	4.39
Sugarcane	0.4	0.03	1.0	0.09	0.4	0.03
Dry Chillies	4.1	0.34	6.9	0.61	7.1	0.61
Ginger	0.7	0.06	1.2	0.11	1.2	0.10
Total fruits	8.68	0.72	9.33	0.82	9.95	0.85
Total vegetables	27.77	2.32	35.75	3.14	36.53	3.13
Gross cropped area	1198.95	100	1137.8	100	1168.18	100

Source..... Socio Economic abstract of Uttar Dinajpur District (2015)

Cropping Pattern In Uttar Dinajpur District

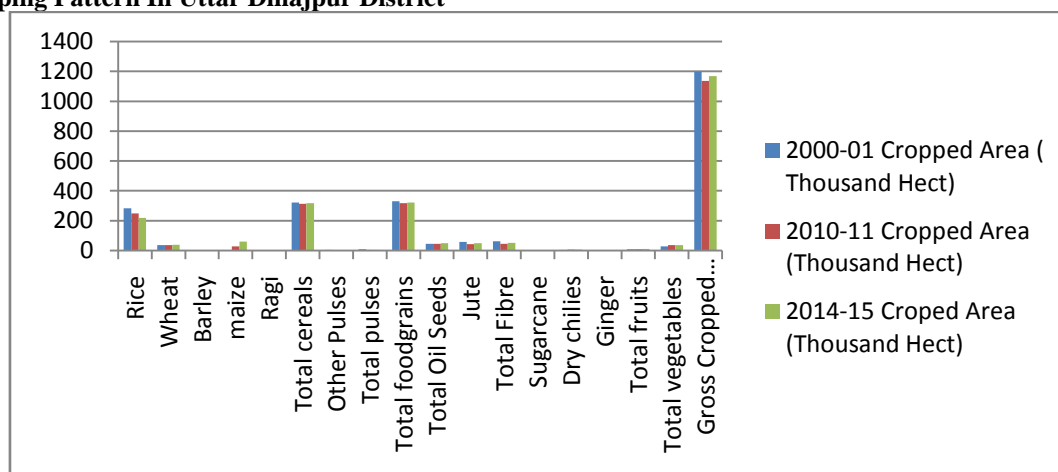


Figure 4

Changes In Cropping Pattern:-Last few years in net sown area was affected on changing cropping pattern in Uttar Dinajpur district. The proportion of area under total foodgrains decreases from 27.91% to 27.50%. Total oilseeds areas increases from 3.92 % to 4.26 % and total pulses areas decreases from 0.40% to 0.38%. The large scale shift of boro cultivation is the main reason for that. Total fruit areas increased from 0.82% to 0.85% but vegetables areas decreases slightly. The district is rich in horticulture product but due to lack of marketing and storage facility the same is not being used properly. Total cereals areas decreases from 27.51% to 27.13%. Among cereals production of Maize increased rapidly. In Maize production , this district ranked 2nd in state.

Cropping Intensity:-Cropping intensity is the number of times a crop is planted per year in a given agricultural area. It is the ratio of effective crop area harvested to the physical area. The cropping intensity is not same in all the blocks. The increase in cropping intensity will increase the agricultural production also. In 2000-01 the cropping intensity found higher (183%) but it decreases in 2010-11 and 2014-15 (175% and 180%).

The net cropped area increased year by year. Where the gross cropped area is high, intensity of cropping is high (2000-1 and 2014-15) but where gross cropped area is found low, the cropping intensity is also low. Now a days many schemes taken in this district to improve the irrigation facilities. That is the reason for increasing trend in cropping intensity.

The percentage of irrigated area is high in Hemtabad district ,here the percentage of gross cropped areas records low compared to the other blocks shows a positive relationship between the irrigated area and cropping intensity. The annual rainfall amount is not same all over the blocks, Hemtabad gets minimum rainfall, so the percentage irrigated area is high in Hemtabad but the cropping intensity shows low. But in Chopra block the annual rainfall is very high, percentage of irrigated area are moderate but cropping intensity shows very high here.

Table no-4

Intensity Of Cropping In Uttar Dinajpur District

Year	Gross cropped area(thousand hect)	Net cropped area(thousand hect)	Cropping Intensity(%)
2000-01	501.04	273.41	183
2010-11	479.84	274.77	175
2014-15	496.26	275.66	180

Source-State statistical Handbook-2015

IV. SUGGESTIONS

- As the farmers are poor for agricultural advancement the enhancement of income is needed, so that they can go for modernization in the agricultural sector.
- High yield variety of seeds needs to be introduced with organic farming as the cattle population is good in the district.
- The agricultural sector is mainly dependent on good irrigation facility the whole area needs to be brought under good irrigation facility.
- Crop diversification and technical advancement is needed for good growth of crops.

- Poor farmers may be brought under co-operative farming for better growth.
- Better marketing practice with good transportation facility is needed for the growth of horticulture and floriculture in the district.
- Approx 9505 hect. lies as cultivable waste in this district - a good resource for taking up new agricultural initiatives.
- Improve the land utilization of the various crops, so that the cropping area in the various blocks improves.

V. CONCLUSION

Uttar Dinajpur is mainly agriculture in nature but still many farmers follow the subsistence farming due to large population dependent on the agriculture land, small holding of the land and less money for agricultural input.

But inadequate implementation of effective management practices, low crop diversification and improper crop planning together with inadequate irrigation and drainage systems has led to stagnation. Non optimum use of ground water, presence of acidic soils and non availability of water during non monsoon periods had led to low crop production. To overcome all the problems like soil and water conservation, drainage and irrigation. Application of bio-fertilizers, diversification of crops and distribution of agricultural implementation are undertaken.

REFERENCES:-

- [1]. Majid Hussain (1999) "Systematic Agricultural Geography" .Rawat Publication, New Delhi.
- [2]. R.V.Hazare "Land use and cropping pattern" online International Interdisciplinary Research Journal(ISSN 2249-9598) vol-IV, jan-2014
- [3]. District Census Handbook, Uttar Dinajpur.
- [4]. Socio-Economic Abstract of Uttar Dinajpur District (2015).
- [5]. Vinod Kumar "Land Use and Cropping Pattern in Jaisalmer District", IJSETR Journal (ISSN-2278-7798) vol-5, issue-4 ,April-2016.
- [6]. Comprehensive District Agriculture Plan for Uttar Dinajpur District ,2009.
- [7]. UDDHR(2010)- Uttar Dinajpur District Human Development Report,HRDCC, Development and planning Department, Govt. of West Bengal.

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