

AGRICULTURAL LAND UTILIZATION ITS PROBLEMS, PLANNING AND PROSPECTS IN KHAGARIA DISTRICT: A GEOGRAPHICAL STUDY

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The Use of geographical area under different purpose is commonly known as land use. The agriculture is the most dominant feature of the district. The proper management and sustainable use of land can has to improve the ecosystem and its productivity of a particular region and it may also manage of a particular region and it may also manage a balance between human being and natural resources. The total reported area of district Khagaria was 148572.36 hectares out of which a big proportion of 94729.74 hectares(63.76 percent) orchards and Groves 936.01 hectares(0.63 percent) unculturable land 6715.47 hectares (4.52percent) culturable wast land 19626.41 hectares (13.21percent) Area not available for cultivation 8929.20 hectares (6.01 percent) pasture and grazing land 3149.73 hectares(2.12 percent) and forest 5660.61 hectares (3.81 percent) in 2011-12. A Comprehensive planning for the development in the agriculture of Khagaria district has given after careful preparation of local land use survey.

Keyword :- Landuse, sustainable cultivation, comprehensive planning, Khagaria district

Introduction:-

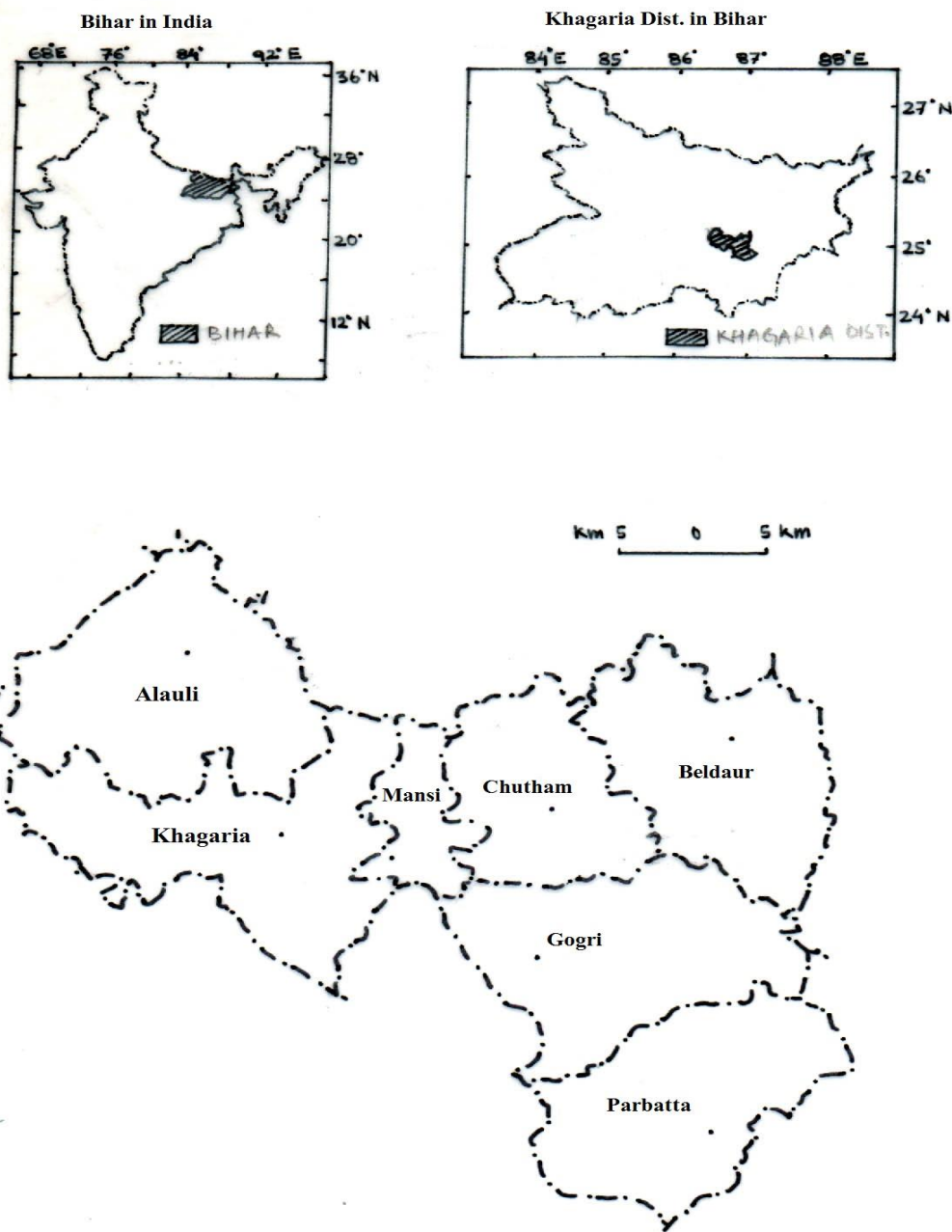
Land use is man-made dynamic process in which human uses land resource to full fill their various economic, social and cultural needs and it provides a base for development. Land utilization is the process of exploiting the land use that is applied to specific objective.

Study Area:-

Khagaria district is located on the northern bank of the Ganga river. The district is delimited by Saharsa district in the north, Begusarai, Munger and Bhagalpur districts in the south Madhepura and Bhagalpur districts in the east and Samastipur and Begusarai districts in the west. The geographical extension of the district is determined by northern parallels and eastern meridians. The district, being the southernmost part of Kosi division lies between $25^{\circ}30'30''\text{N}$. Latitudes and $86^{\circ}21'48''\text{E}$. long to $87^{\circ}05'25''\text{E}$ longitudes.

The Total Population of Khagaria District as According to 2011 census is 1657599 showing 29.46% increase over the population (1280364) of the district in 2001. Khagaria district has a density of 1116 persons per square km. This density is very high compared to the national and states average density of population. The sex ratio was recorded as 881 females per thousand males. The level of Literary (68.86%) in the district is also very Low.

Locational Map District Khagaria



Objectives:-

The main objectives of the presents research paper are to examine the spatial distribution of crops, live stock & other agricultural activities.

The second major objective is to ascertain the spatial concentration of agricultural phenomena.

The third objective is to make a comprehensive planning for that development in the agricultural of the district.

Methodology:-

The present research work based on the observational description and observational rational methods in order to decipher the theme of the research. Various statistical and cartographic methods has

applied where ever needed. The present research study based on both primary and secondary data. The primary data collected through personal observation, interview, questionnaires schedule etc. while the secondary data collected from concerned district or block headquarters. Map and diagrams, graphs etc. have been widely used in this research papers.

Hypothesis:-

There is immense population pressure on the agricultural land utilization, in most of the blocks agricultural practices resemble with subsistence pattern irrigational facilities are not satisfactory, Land tillers feel suffocation and the nature of agriculture is rarely commercial.

Discussion:-

Land use pattern refers the distribution of interaction of natural and man-made resources which lie on the earth surface.

Land Use Pattern (Khagaria)

Block Wise Land Use Of The Total Reported Area (in Hectares) 2012-13.

| Sl. No | Name of C.B.D. | Net Sown Area | Current Fallow Land | Old fallow Land | Orchards Groves | Unculturable Land | Culturable waste land | Area not available for cultivation | Pasture and grazing land | Forest | Block Total |
|--------|----------------|---------------|---------------------|-----------------|-----------------|-------------------|-----------------------|------------------------------------|--------------------------|---------|-------------|
| 1 | Alauli | 15739.27 | 1983.77 | 642.83 | 913.35 | 770.82 | 1198.41 | 2856.40 | 1233.31 | 2108.85 | 27447.00 |
| 2 | Khagaria | 14739.27 | 3306.26 | 399.61 | 2307.25 | 1241.63 | 637.47 | 123.69 | 1070.37 | 2235.89 | 26236.00 |
| 3 | Mansi | 3895.96 | 488.46 | 198.48 | 203.02 | 348.20 | 194.70 | 40.76 | 125.90 | 1066.52 | 7001.00 |
| 4 | Chauthan | 8547.33 | 1467.94 | 1030.57 | 541.84 | 660.48 | 423.21 | 906.62 | 734.85 | 2084.15 | 16397.00 |
| 5 | Beldaur | 12861.75 | 1169.25 | 2093.06 | 190.56 | 1704.33 | 1022.90 | 1304.93 | 1303.38 | 1205.84 | 22356.00 |
| 6 | Gogri | 13111.58 | 2867.27 | 1092.09 | 1910.07 | 2403.90 | 700.50 | 1144.30 | 820.15 | 981.14 | 25031.00 |

Source: - Dist. Statistical Office , Khagaria , 2012-2013

Agricultural land use:

The area under agricultural land use accounts to 108398.70 hectares that stands for 72.96% of the total geographical area of the district. It includes net sown area, current fallow land, other(Old) fallow and orchards & groves. the total area the district of Khagaria under net sown area in 2011-12 was 81512.22 hec. that stands for 54.86% of the total geographical area of the district. The area under current fallow land is 13517.39 hec. That stands for 9.10% of the total geographical area of the district. Other (old) fallow land covers 6295.46 hec. That stands for 4.24% of the total geographical area of the district. Again, Orchards and groves cover 7073.63 hec. of land that stands for 4.76% of the total geographical area of the district.

Total Non-Ag.Land Use: The total area of non-agricultural use consists unculturable waste land, culturable waste land, area not available for cultivation, pasture and grazing land and forest. All these sub-categories jointly covers 27.04% of the total geographical area of the district while culturable waste land covers 3.39% area nto available for cultivation covers 5.30% pasture and grazing land covers 4.13% and forest coves 8.08% of the geographical area of the district.

Agriculture is possible only in net sown area. This is the only resource on which man lives on directly or indirectly. The area under net sown area ranged from 55% to 65% of the total geographical area

of the district between 1990-91 to 2010-11 as is sown in the above mentioned table. In 1990-91, the total area under net sown area was 82101.09 hec. that stands for 55.26% of the total geographical area of the district while in 2000-01, it increased to 60.24% and in 2010-11 net sown area increased to 63.76% of the total geographical area of the district. During the period of twenty years, the average percentage of net sown during the period of twenty years, the average percentage of net sown area remained 59.75% of the total geographical area of the district.

District:- Khagaria

LANDUSE CATEGORIES

(Average of 1990-91,2000-01 & 2010-12) (Hect.)

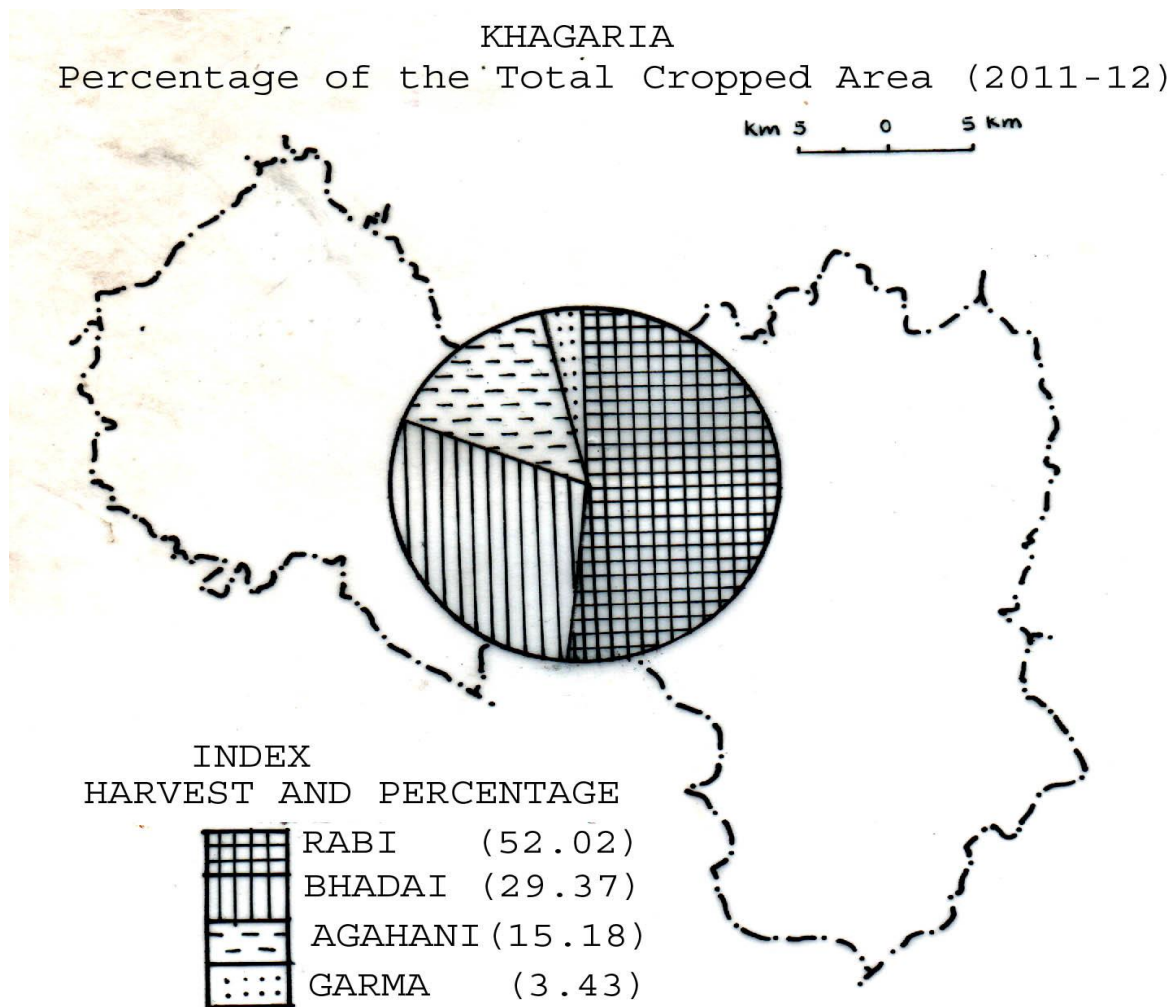
| S.No. | Lu Categories | 1990-91 | 2001-01 | 2010-11 | Average |
|--------------|------------------------------------|-----------|-----------|-----------|-----------|
| 1 | Net Sown Area | 82101.09 | 89499.99 | 94729.74 | 88776.94 |
| 2 | Current Fallow Land | 11306.36 | 8364.62 | 4427.46 | 8032.81 |
| 3 | Old Fallow Land | 8379.48 | 6953.19 | 4397.74 | 6576.80 |
| 4 | Orchards and Groves | 2926.88 | 1248.01 | 936.01 | 7003.63 |
| A | Agricultural Land Use | 104713.80 | 106065.81 | 104490.94 | 105090.18 |
| 5 | Unculturable Land | 10920.07 | 8498.34 | 6715.47 | 8711.29 |
| 6 | Culturable Waste Land | 9270.92 | 6522.33 | 19626.41 | 11806.55 |
| 7 | Area Not Available For Cultivation | 4397.74 | 9107.49 | 8929.20 | 7478.18 |
| 8 | Pasture And Grazing Land | 2154.30 | 4694.89 | 3149.73 | 3332.97 |
| 9 | Forest | 17115.14 | 13683.51 | 5660.61 | 12153.22 |
| B | Non-Agricultural Land Use | 43858.56 | 42506.55 | 44081.42 | 43482.18 |
| Total | | 148572.36 | 148572.36 | 148572.36 | 148572.36 |

Source: District Statistical Office, Khagaria, 2011-12.

District:- Khagaria
(Total Cropped Area 2011-2012)

| S.No. | Harvests | % age to the total cropped area |
|-------|----------|---------------------------------|
| 1 | Rabi | 52.02 |
| 2 | Bhadai | 29.37 |
| 3 | Agahani | 15.18 |
| 4 | Garma | 3.44 |
| | Total | 100.00 |

Source :- Zinsbar Report , Dist. Statistical Office , 2011-2012

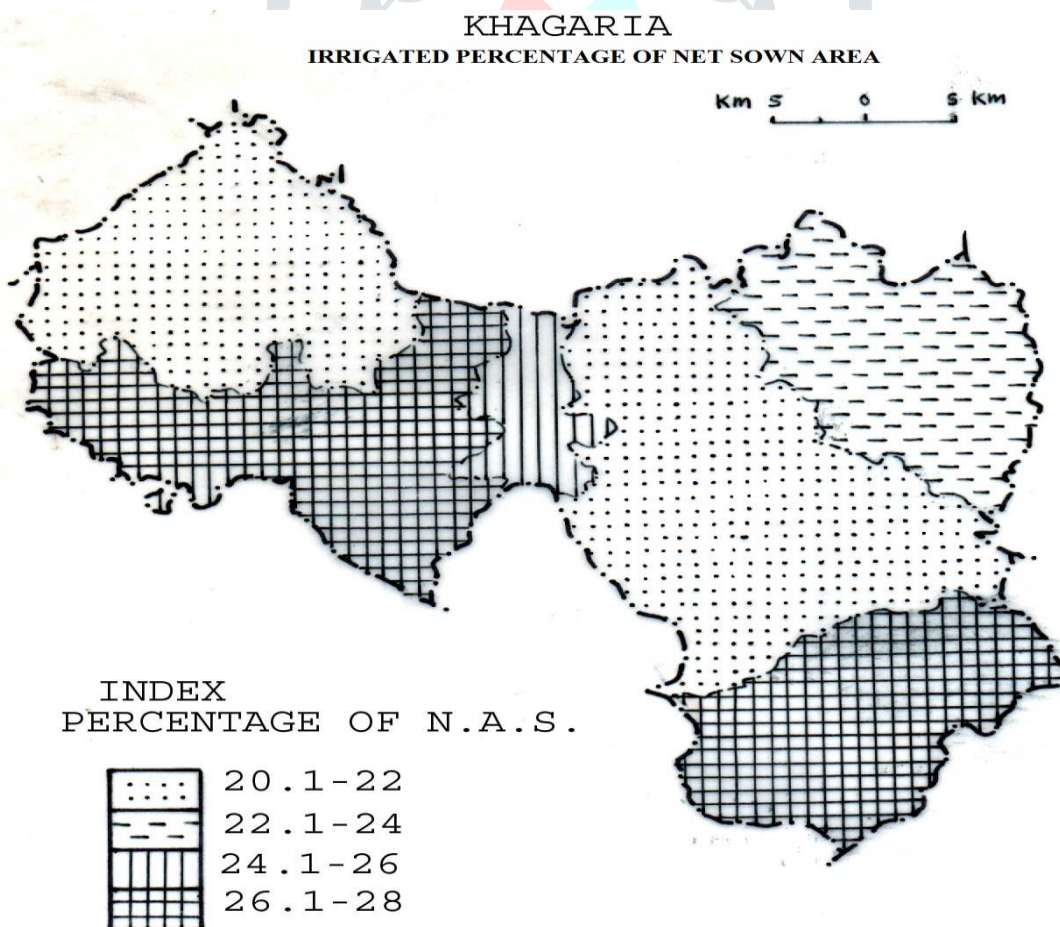


District:- Khagaria

AGRICULTURAL AREA

| S.N. | Crop | Category Crops | Area devoted in Hect | %age |
|--------------|---------------------|---|----------------------|--------|
| 1 | Cereal crops | Rice, Wheat, Maize, Barley | 91321.3 | 73.38 |
| 2 | Food cash crop | Sugarcane, Potato, Vegetable, Fruits, Spices, Oil seeds | 14325.4 | 11.51 |
| 3 | Pulses | Gra., Arhar, Mung, Urad, Peas, Khesari etc. | 3894.97 | 3.13 |
| 4 | Millets | Marua, Kodo, Sawan, Jowar, Bajra, Kauni etc. | 3145.45 | 2.53 |
| 5 | Fodders | Oat, jenera, Napier etc. | 2834.39 | 2.28 |
| 6 | Fibers | Sanai, Pat Jute etc. | 5647.95 | 4.54 |
| 7 | Non-food cash crops | Tobacco, Betel leaf etc. | 1814.67 | 1.46 |
| 8 | Other crops | Kerao, Bokla, Suthani Lulthi etc. | 1472.57 | 1.18 |
| Total | | | 124457 | 100.00 |

Source: Zinsbar Report, District Statistical Offices, 2011-12



The above mentioned table shows the land devoted to different crops in the district. Out of the total agricultural area 73.38% (91321.3 hec.) land is devoted to the cereal crop that comprises rice, wheat, maize, Barley etc. Food cash crops cover 11.51% (14325.4 hec) cultivable land in the district which consists sugarcane, potato, vegetables, fruits, spice, oilseeds etc. Pluses, gram, arhar, mung, urad, peas, khesari etc. are grown, Mallets that includes marua, kodo, sawan, jowar, Bajra, Kauni etc. covers 2.53% cultivable lands comprising 3145.45 hec. Fodders includes oat, jenera, napier etc, These crops are grown on 2834.39 hec. of cultivable land and it covers 2.28% of the total agricultural area.

Fibers crops include Sanai, Pat, Jute etc. 4.45% (5647.95hec) of the total agricultural area. A Non-food cash crop that includes tobacco, betel leaf etc. covers 1814.67 hec. Cultivable land that stands for 1.46% of the total cultivable land. Only 1.18% cultivable land is devoted to other crops kerao, bokla, suthn, lulthi, etc.

Land Use Planning

Flood disaster appears every year that proves a curse in the study area. Mass poverty and conservatism of the people particularly of farmers in the district are no better than a curse. The farmers are practically illiterate and often fail to understand the modern agro-technologies as well as the significance of intensive and commercial farming.

A comprehensive planning for the development in the agriculture of Khagaria district is required. Planning should be based on the careful preparation of local land use survey. In rural areas a sound land use plan is a basic part of agricultural policy. Land use planning has the following main objectives: To grow more crops in quality and quantity, To extend soil management, To expand the area of cultivation by using barren and cultivable land, sowing current fallow and other fallow and by maintaining balance in various uses of land, To give more stability to desirable land use To make all round development or integrated rural development through better use of land and by undertaking other economic and welfare measure.

The observations and planning may be grouped under four major categories.

- (i) **Field Managements:** The district is the playground of flood brought by rivers of the district. the terrain and the slope determine the size and shape of the field. lower is the slope larger would be the field and vice-versa is a universal truth. Generally in the study area fields are fragmented, disintegrated and over-subdivided due the law of inheritance. so the size of the field should be kept according to physical conditions omitting social causes. Consolidation of land-holdings should be enforced and co-operative or collective farming if possible, should be practiced for better yield of crops.
- (ii) **Crop Management:** Intensive cultivation will yield good result. the management includes the extension of crops to most of the available lands but also to evolve cropping pattern suitable Scientific method of cultivation should be encouraged to bring other improvement in changing crop pattern. Scientific methods, fertilizers, pesticides, improved seeds should be introduced in the district through block officer and co-operative societies.
- (iii) **Resource Management:** Irrigation controls agriculture Inadequate supply of water for irrigation is the main cause for low intensity of cultivation, minimum area under bhada, rabi and garma crops. The primary source of irrigation in the area is canal and tube well, but they are neither satisfactory nor proper, the first necessity is to provide adequate power supply; then wells and tube wells will irrigate more and more fields. The cattle wealth requires improvements.
- (iv) **Market Management:** The proper market management requires two things facilities the government or semi-government agencies in supply of seeds, fertilizers, pesticides and even food stuff etc, on reasonable price and the marketing produce on good price. The farmers should be encouraged to grow cash crops or commercial crops. There should be network of agricultural marketing agencies, which should provide suitable price of agricultural produce.

Planning for agro-industrial development:

planning related to the industrial development of study region includes both the invigoration of the sick and old industries and opening of the new one. Following steps should also be taken in the form of industrial development plan of the districts, under reference:-

- (a) Agro and forest based industries such as rice, flour, oil milling, gur making, wooden furniture making be promoted in every village having a population of 1,000 persons or more.
- (b) Small scale and cottage or village industries such as iron grills, steel furniture, rolling mills, etc. be encouraged and set up at least at every block headquarters.
- (c) One big centre each of dairy and poultry be set up at sub divisional headquarters with its subunits at every blocks headquarters to meet the requirements of milk and eggs of the inhabitants.
- (d) Financial assistance be provided to the young and needy antprenures for the construction of a granary house where the farmers can store their grains for selling them at proper time; a cold storage for keeping the potatoes, green vegetables, perishable goods etc.

Thus, it is clear from the above discussions that the agro based industries at each and every block headquarters would go a long way to diversify the agriculture in its wake. Only then the prospect of agriculture in the district will bright and it will bring happiness for the people in the district will bright and it will bright and it will bring happiness for the people in the district of Khagaria.

Conclusion & Suggestions:

During field survey so many suggestions have been collected among which some important suggestions for improving the cropping pattern of the district are as follow:

- ❖ The haphazard allocation of area to different crops by the individual farmers is not suitable for the better agricultural production hence it is urgently required to be mended.
- ❖ For the proper monitoring agricultural production District planning officers should be appointed in the whole district who will plan for the betterment of crops and also for their commercialization.
- ❖ An agricultural mechanization should be set up, where the size of holding is too big where the average farmer is unable to manage with hard labor.
- ❖ Transport facility for the improvement of agricultural production acts as artery and veins in human body. Thus, better is the transport facility better would be the agricultural production.

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