

Level of Agriculture and Rural Development in Aligarh District, Uttar Pradesh (INDIA): A Block Level Analysis

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Abstract: *This paper is the study of Agricultural Level of Aligarh District. Agriculture in Aligarh District is not very well developed, because it is depend on Monsoon Season which is not fair in the Western Uttar Pradesh, Aligarh is part of it and also near to the boundary of Rajasthan, where rainfall is very short. The rainfall in the district is found about 100-156 c.m., which very short for agricultural development. And in other hand, it is found in few hands of the Zamindar and the poor persons of the district who are achieving their livelihood only, lacking behind the development, because they have not more land for agriculture and work as a labourer in the field.*

Keyword: *Level of Agriculture, Rural Development, HYV, Irrigation, Fertilizers.*

I. Introduction:

There are concerns regarding the agriculture sector in India as the compound growth rate of total food grains were less than two percent in the last decade i.e. area: 0.29, production: 1.96, yield: 2.94 (Ministry of Finance, 2011); making traditional farming a non viable agricultural activity. Disparities in productivity across regions/districts and even within crops persist with significant increase in small and marginal farm holdings.

Agricultural development denotes the quality of agricultural system of a region; it is a multi dimensional concept which mainly includes development in a real strength of cropped land, improvement in farm practices/system, improved farm implements, irrigation system and irrigated area, high yielding improved varieties of seeds, chemical fertilizers, insecticides and pesticides, intensity of cropping and specialization and commercialization of agriculture (Mohammed, 1980).The changing agro-economic scenario drew attention of research workers on diffusion of technological development in agriculture. In India majority of its population depend upon agriculture. So a vast rural mass tries to earn their livelihood from agricultural land. With fast increasing pressure of population on agricultural land, old methods and techniques of production cannot cope with growing demand. As a result, new technologies and commercial crops are adopted to develop agro-economy. For these reason emphases on the diffusion of agricultural innovation are stressed.

The present study is an attempt towards accelerated agricultural production in Alighr district of western Uttar Pradesh through the analysis of cropping pattern and level of agricultural development at block level, as well as assessing the role of modern agricultural technology in the development of agriculture in different blocks of this area.

II. Data base and methodology

For the assessment of agricultural development secondary data have been used for the period 2006-2012, collected from District Statistical Handbook, Statistical Abstract and ICT based district profile of Aligarh District. The major crops of this district are wheat, rice, sugarcane, potato, oilseeds, pulses and coarse cereals. For determining the levels of agricultural development various variables have been used such as crop productivity index, net sown area, cropping intensity, irrigated area, use of fertilizers, area under HYV (High Yielding Variety), agricultural labourers, commercial and Gramin banks and agricultural implements. To determine the overall levels of agricultural development and its uneven distribution in the study area the data of the all variables have been transformed into indices using Z-score technique.

In order to classify blocks according to their levels of development the composite Z-score have been grouped into high, medium and low. Further, the result of the standard score obtained for different indicators were aggregated by composite standard score (CSS) so that regional disparities in the level of development of block may be obtained on a common sale. The primary observation of the researcher is also involed, which makes the study very well or ground level.

III. Study Area:

Aligarh is one of the developed districts located in the northwestern part of Uttar Pradesh- a state of India. This district comprises the southern most portion of Meerut division and lies in the upper Ganga and Yamuna *doab*. It extends from 27°29' to 28°11' North latitudes and 77°29' to 78°38' East longitudes. It is

bounded by the district of Bulandshahr in the north, Mathura in the south and south-west and Etah in the south-east. The extreme north-eastern boundary is formed by the river Ganga that separates Aligarh from Budaun district whereas the extreme north-western boundary is formed by the river Yamuna which separates Aligarh from Gurgaon district of Haryana state. From the administrative point of view, the district has been divided into five Tehsils of Atrauli, Gabhana, Khair, Koil and Iglas. These tehsils are further subdivided into twelve blocks.

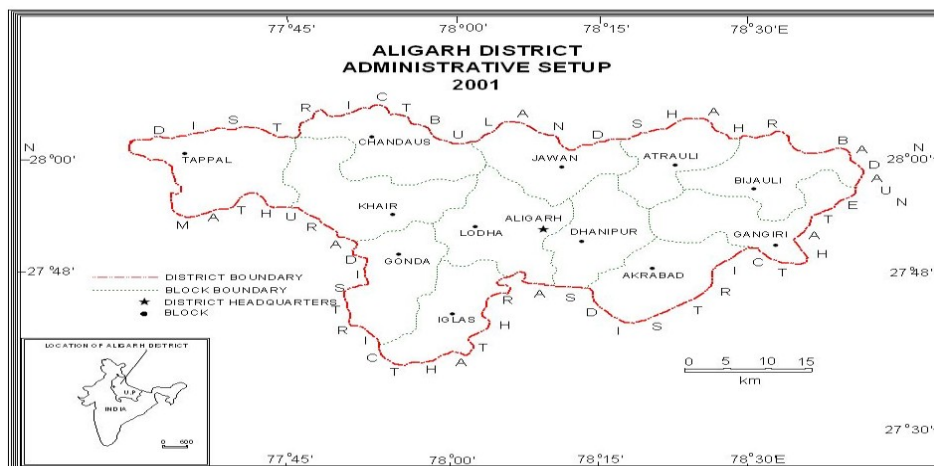


Fig.1. Aligarh District Administrative Setup, 2012

Source: Survey of India, Topographical Sheets No. 53H, 53L, 54E, 54I

PHYSICAL FEATURES

Geologically, Aligarh district forms a part of the Indo-Ganga plain which came into existence in the Pleistocene period. Viewed as a whole, the district is a remarkable fertile plain, sloping gently from the north to the south east. Aligarh district has a typical monsoon type of climate characterized by semi-arid conditions. Generally there are four distinct seasons. Natural vegetation in Aligarh covers by many places with *dhak jungles* when it first came into the hands of the British, but after the lapse of about sixty years the greater part had given way to the spread of cultivation and the scanty remains were fast disappearing. As per records of the District Statistical Office forest cover in Aligarh is about 808 hectares. The highest area under forest is found in tehsil Koil followed by others. The commonest trees are the *babul, neem, pipal, ber, faras, gular, jamun, Mango* etc.

The soils found in this district are almost same in composition and appearance as those of the *doab* as a whole. The soil of the district is alluvial both old and new alluvium. These soils differ considerably in their texture and consistency, ranging from sands through loams and silts to heavy clay that are ill drained, and sometimes charged with injurious salts known as *reh*. Good soil tracts are usually parallel to the river area. There are several rivers which constitute an important feature of the landscape in Aligarh district. All these rivers flow from north to southwest direction. The rivers Ganga and Yamuna form the eastern and western boundaries of the district for small distances. Tributaries of Yamuna River run through the central and the western parts of the district and cover considerably large areas while tributaries of the river Ganga run through the eastern part. Like these there are many other small rivers that flow in the district. These are *sengar, rind, karon, kali and neem*.

DEMOGRAPHIC FEATURES

The total population of Aligarh district according to the latest census 2001 is 2.99 million. The large number of population is found in Gangiri block (227328) and the lowest population in Akrabad (145040) and Iglas (155032). The average density of total population in the district was 654 persons per sq km in 1991 and it increased to 798 in 2001. While the average density of rural population for the district was 510 in 1991 and 599 in 2001. The highest density (737 persons per sq km) was recorded in Jawan block while the lowest (436 persons per sq km) was recorded in Tappal. Sex Ratio is concerned with the number of females per 1000 males. The sex ratio of Aligarh district is 861 in 2001. The disparity in population by sex is higher in rural areas as compared to the urban areas.

ECONOMIC FEATURES

According to 2001 census about 47.7% population of the Aligarh district is engaged in cultivation. Some of them don't have any agricultural land; they are working as agricultural laborers. It accounts for 21.64%. It is also observed in this study area that only 0.02% of workers are engaged in mining because the

district does not contain heavy mineral resources. Less concentration of work participation is also found in construction, fishing, forestry and livestock. Manufacturing other than household industry gives employment to about 12.20% of workers and only 18.5% employment is provided by the trade, commerce and services. About 80.54% land is under net sown area and 9.19% is under non-agricultural uses, while the remaining areas are under pastures, forests, groves and cultivable waste land. Aligarh district crops are Rabi, *Kharif* and *Zaid*. *Rabi* crops are the winter crops (wheat, barley, peas, gram, mustard etc.), *Kharif* the summer crops (paddy, maize, *jowar*, *bajra*, *urad*, *tur*, *moong*, cotton etc.) and *Zaid* the monsoonal crops (watermelon, muskmelon, cucumber, vegetables, sugarcane etc.) It is 168.93% in 2001. It is not uniform in all the blocks of district. Jawan, Lodha, Dhanipur, Atrauli, Bijauli, Gangiri and Akrabad blocks have more than the average cropping intensity of the district, while the lowest cropping intensity is recorded in Tappal block.

SOCIAL FEATURES

According to 2001 census, Hindus constitute 75.4% of the total population while Muslims are only 23.91% and the rest 0.69% consists of Sikhs, Christians, Buddhists, Janis and others. Main languages spoken in the district are Hindi and Urdu. According to 2001 census about 92.7% of population speaks Hindi and 7.03 % Urdu. In 1971 the literacy rate was 24.9%, it rose to 45% in 1991 and 60% in 2001. The male literacy rate was higher than that of females. According to 1991 census male literacy rate was 60% and female literacy rate 27% while in year 2001, it rose to 73% males and 44% females (District Statistical Bulletin, 2011).

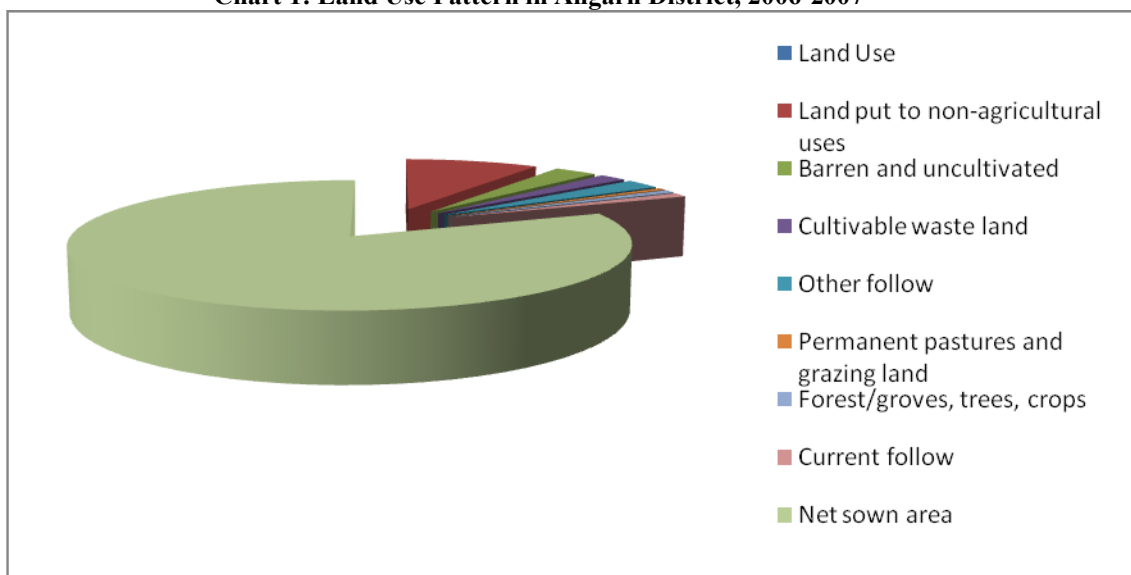
OBJECTIVE:

1. To study the level of agricultural development in the district.
2. To analyze the determinants of the agricultural development in the district.
3. To examine the level of rural development in the district.

LEVEL OF AGRICULTURAL DEVELOPMENT:

The level of agricultural development depends on the land use pattern, cultivation area, cropping pattern and use of fertilizers in the distict. These are following....

Chart 1: Land Use Pattern in Aligarh District, 2006-2007



Source: District Statistical Bulletin, Aligarh District, 2007

According to 2001-2002, the land use pattern in Aligarh District is very difficult, having 7.4 hectares area considers 100% land and divided into land put to non-agricultural uses having the area 0.34 hectares about 9.19%, barren and uncultivated land 0.11 hectares about 3.24%, cultivated waste land 0.07 hectares about 1.90%, other fellow 0.09 hectares about 2.43%, permanent pasture and grazing land 0.02 hectares about 0.54%, forest/groves, trees and crops having the area 0.03 hectares about 0.81%, current fellow 0.04 hectares about 1.35%, and net sown area 3.00 hectares considers about 80.54%. the net sown area having the highest percent of land use in the district and permanent pasture and grazing land having the lowest percent of land use. Barren and uncultivated land and other fellow having the moderate value of percent.

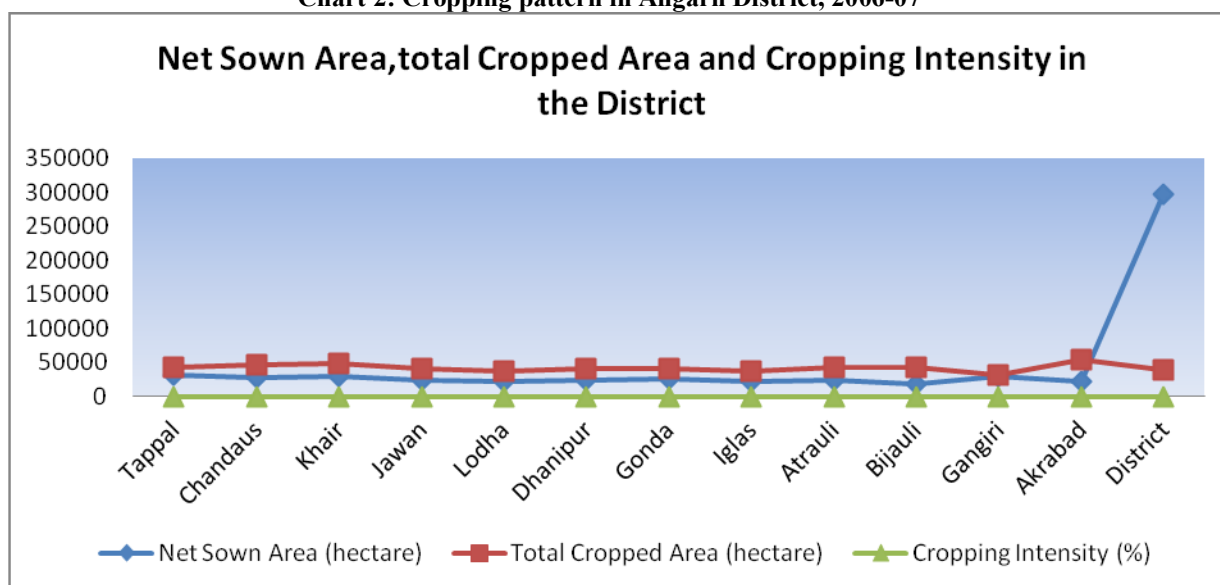
Table 1: Blockwise Cultivation Numbers and Area of the District, 2011

S.No	Blocks	Total Number of Cultivation (sq. km.)	
		Number	Area
1.	Tappal	21875	25215
2.	Chandaus	10732	12729
3.	Khair	17730	20024
4.	Jawan	13655	23133
5.	Lodha	15371	17883
6.	Dhanipur	25756	24509
7.	Gonda	17718	17839
8.	Iglas	25932	25112
9.	Atrauli	23454	22653
10.	Bijauli	28207	26120
11.	Gangiri	36827	41271
12.	Akrabad	30333	46047

Sources: - District Statistical Bulletin, 2008

Blockwise distribution of agricultural area in Aligarh District varies. The highest cultivated area found in Akrabad about 46047 sq k.m. followed by Gangiri 41271sq. k.m. the least cultivated area belong to Chandaus block about 12729 sq. k.m. before Lodha block 17883 sq. k.m. Bijauli, Atrauli, Iglas, Tappal have the moderate value of cultivated area.

Chart 2: Cropping pattern in Aligarh District, 2006-07



Source: District Statistical Bulletin, Aligarh District, 2007

According to 2001, the cropping pattern of Aligarh District varying block to block. The highest net sown area of cropping intensity found in Tappal Block (31888 hectare) of the district followed by the Khair Block (28924 hectare) of the district. The least net sown area of the district found in Bijauli Block (17954 hectare) of the district followed by Akrabad Block (21129 hectare) of the district. Jawan, Lodha, Dhanipur, Gonda, Atrauli, Iglas having the moderate value of net sown area in the district.

The total cropped area of the district is also varying. Akrabad Block (53679 hectare) of the district having the largest cropped area of the district followed by Khair (48192 hectare). The least cropped area found in Gangiri (31091 hectare) followed by the Iglas (36463 hectare). Chandaus, Tappal, Atrauli, Bijauli having the moderate value of cropped area in the district.

Cropping intensity is also not the same throughout the district. The highest cropping intensity found in the Gangiri (182.75%) followed by Jawan Block (181.52%). The lowest cropping intensity is in Tappal (135.68%) followed by Chandaus Block (163.15%). Jawan, Lodha, Dhanipur, Gonda, Iglas, Atrauli and Bijauli having the moderate value of cropping intensity in the district.

Table 2: Blockwise Distribution of Fertilizers in tonnes per year in Aligarh District, 2008.

S.No.	Blocks				Total
		Nitrozan	Phosforas	Potash	
1.	Tappal	3405	1978	136	5519
2.	Chandaus	3404	1900	130	5434
3.	Khair	3401	1900	131	5432
4.	Jawan	3401	1901	133	5435
5.	Lodha	3404	1905	136	5445
6.	Dhanipur	3404	1899	130	5433
7.	Gonda	3389	1898	121	5408
8.	Iglas	3413	1913	122	5448
9.	Atrauli	3409	1910	128	5447
10.	Bijauli	3404	1910	133	5447
11.	Gangiri	3407	1827	130	5364
12.	Akrabad	3412	1849	133	5394
Total Rural		40853	22790	1563	65206
Total Urban		0	0	0	0
Total District		40853	22790	1563	65206

Source: District Statistical Bulletin, Aligarh District, 2008

Fertilizers in Aligarh District are not the same and are varying from one block to another. The highest amount of Nitrozan used by the Akrabad about 3412 tonnes followed by Gangiri 3407 tonnes per year. Jawan and Khair used the least amount of Nitrozan fertilizer. Because of moderate amount of cultivated area and the productive soil, while the district used the total amount of Nitrozan is 40853 tonnes. The total amount of phosforas used in district is 22790 in which Tappal used the highest followed by Atrauli and Bijauli. The least amount of phosforas used in Gangiri followed by Akrabad because in these areas the minimum phosforas required crops grow as musterd, potato, etc. Potash is rarely or minimum used by the farmers because it is a medicine for the crops and soil. Tappal and Akrabad used it maximum and Gonda as well as Iglas used it in a minimum amount, while district amount of Potash is 1563 tonnes.

The total amount of fertilizers used in Aligarh district is 65206 tonnes in which Tappal used highest followed by Iglas. The least value of the fertilizers used in Gangiri and after that Akrabad. Other blocks of the district used moderate value of the same.

Agriculture And Rural Development:

Although agriculture contributes only 21% of India's GDP, its importance in the country's economic, social, and political fabric goes well beyond this indicator. The rural areas are still home to some 72 percent of the India's 1.1 billion people, a large number of whom are poor. Most of the rural poor depend on rain-fed agriculture and fragile forests for their livelihoods. The sharp rise in foodgrain production during India's Green Revolution of the 1970s enabled the country to achieve self-sufficiency in foodgrains and stave off the threat of famine. Agricultural intensification in the 1970s to 1980s saw an increased demand for rural labor that raised rural wages and, together with declining food prices, reduced rural poverty.

Sustained, although much slower, agricultural growth in the 1990s reduced rural poverty to 26.3 percent by 1999/00. Since then, however, the slowdown in agricultural growth has become a major cause for concern. India's rice yields are one-third of China's and about half of those in Vietnam and Indonesia. With the exception of sugarcane, potato and tea, the same is true for most other agricultural commodities.

The Government of India places high priority on reducing poverty by raising agricultural productivity. However, bold action from policymakers will be required to shift away from the existing subsidy-based regime that is no longer sustainable, to build a solid foundation for a highly productive, internationally competitive, and diversified agricultural sector. The agricultural and rural development in Aligarh District is very complicated. Some blocks having the highest production of agricultural but rural development is not good. Akrabad, Bijauli, Gangiri have the highest cropped areas but rural areas are backward because the main livelihood of the person is agriculture only. The person regionally backward because of depending primary activities. Jawan, Dhanipur, Tappal are highly developed regionally but agriculturally not well because the person are involved non-agriculture activity also.

ISSUES AND CHALLENGES

Slow Down in Agricultural and Rural Non-Farm Growth: Both the poorest as well as the more prosperous 'Green Revolution' states of Punjab, Haryana and Uttar Pradesh have recently witnessed a slow-down in agricultural growth. Some of the factors hampering the revival of growth are:

- Poor composition of public expenditures
- Over-regulation of domestic agricultural trade
- Government interventions in labor, land, and credit markets
- Inadequate infrastructure and services in rural areas.

Weak Framework for Sustainable Water Management and Irrigation:

- Inequitable allocation of water
- Deteriorating irrigation infrastructure
- Inadequate Access to Land and Finance:
- Stringent land regulations discourage rural investments
- Computerization of land records has brought to light institutional weaknesses
- Rural poor have little access to credit

Weak Natural Resources Management

- A purely conservation approach to forests is ineffective
- Weak resource rights for forest communities
- Weak delivery of basic services in rural areas:
- Low bureaucratic accountability and inefficient use of public funds

SANKALP has been focusing on strategic policy improvement and policy shift in agriculture development and rural development. There include;

- greater public investments in agriculture;
- promoting pro-poor rural and agricultural development by enhancing investments in rural infrastructure, particularly in rural roads and electrification;
- strengthening social safety needs and linking them to substantially employment generation in rural areas;
- streamlining the public distribution system;
- consolidating the human resource base in education, nutrition and skill development of women in rural areas;
- improving water management, particularly traditional and community based water harvesting structures;
- diversifying agriculture towards high-value agriculture that are now in high demands by India's growing middle classes and urban dwellers and which have new export potentials;
- ensuring greater coordination and collaboration between the farmers, governmental agencies , agriculture universities, agriculture research institutes and industry to take the R & D activities from lab to land;
- strengthening the agriculture marketing and processing of agricultural commodities;
- integrating and enhancing the role of nationalized banks and governmental financial institutions, and farmers confederations and cooperatives in providing soft loans to the farmers; and
- Taking advantage of full potentials of trade liberalization; with simultaneous thrust on streamlining the domestic markets, institutions and infrastructures; without compromising with the rights of the farmers.

The Organisation has been holding agriculture education and agricultural extension programmes to improve the traditional skills of farmers and to impart new appropriate skills. The Organisation also has been holding rural youth training programmes to acquaint the rural youth on various governmental agriculture and rural development programmes as well as impart skills in them for employment and self employment.

Another major plank of SANKALP'S activities is to involve the Panchayati Raj Institutions (PRIs) in the democratic self-governance and self-determination of the rural population; particularly the marginalized and landless poor. Capacity buildings/ trainings, workshops and advocacy programmes are being organized for the representatives of the PRIs and grass-root level Organisations to empower them for community-based and village-level governance.

IV. Conclusion

Aligarh District is very complicated in terms of agricultural and rural development. The present study reveals that the spatial distribution of variables and agricultural development is not uniform in Aligarh district. It provides very significant information about the level of agricultural development in Bulandshahr district of

western Uttar Pradesh. The study highlight that the majority of the district come under the medium category of agricultural development and the high level of agricultural development is seen in blocks lying in middle part of the study region, while the blocks lying on the northern boundary of the district or near to Ghaziabad, are agriculturally less developed because of development of industrialization due to influence of National Capital Region. For development there is a need for restructuring of the agriculture which has to be done within certain limits of economic, social, and political factors, as well as the national goal; and to making the agricultural society more dynamic. The study highlights the impact of location and spatial input on the agricultural development planning in Aligarh District. It is also include the study of rural development in the district with some important suggestions.

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