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RESEARCH ARTICLE

Dynamic cropping pattern within the last two decades: A case study of Gautam Buddh Nagar District, National Capital Region, India

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Abstract

Over the years, there is a change in agrarian structure, though 80% of farmers are operating small and marginal land holdings and having a weak access to critical production resources. In respect of this, the study was designed to find out the dynamic changes from last four decades in cropping pattern in Gautam Budh Nagar District of Uttar Pradesh falls under the perview of Delhi- National Capital Region. Data collection based on the standard methods in the selected villages of the district. A total of 35020 hectare agriculture lands belonged to fifteen villages, located 10 kilometres from the district head quarter, during January 2012 to April 2012. Six types of crops were grown by these villages. Gulistanpur was the largest and Rampur was the smallest village in the study area. Khodna Kala village had the maximum cultivable land while Gurjarpur village had the least cultivable land. Three villages (i.e. Gulistanpur, Rampur and Tughalpur) were recorded complete absence of cultivation because of human habitation and industrial influence. Most of the selected villages recorded similar cropping pattern from last 20 years. Due to rapid land acquisition by the Government, Farmers are distress to sell their land. If this trend of land acquisition continues in this area, no any land will be left in the future for cultivation.

INTRODUCTION

Over the years, there is a change in agrarian structure, though 80% of farmers are operating small and marginal land holdings and having a weak access to critical production resources. It is expected that India will have the largest agricultural manpower dominated by youths under 30 years of age by 2020. Majority of the Indian youths lives in villages and are engaged in agricultural activities [1]. India has a wide variety of flora and fauna similar to its socio-cultural diversity. Forest cover of India is around 23.68% which includes alpine forest in the Himalaya, deciduous forest in the central India, Mangrove forest in the coastal regions, and thorny forest in western region mainly in Rajasthan. These areas are well supported by various species of flora, fauna and indicate the high biodiversity and also reflected in the mélange of India's climate and topography. The forests provides home to many rare and unique species of flora and fauna. India is one of the countries in the world with such a rich variety of flora due to its wide range of climatic conditions with about reported 15,000 plant species [2].

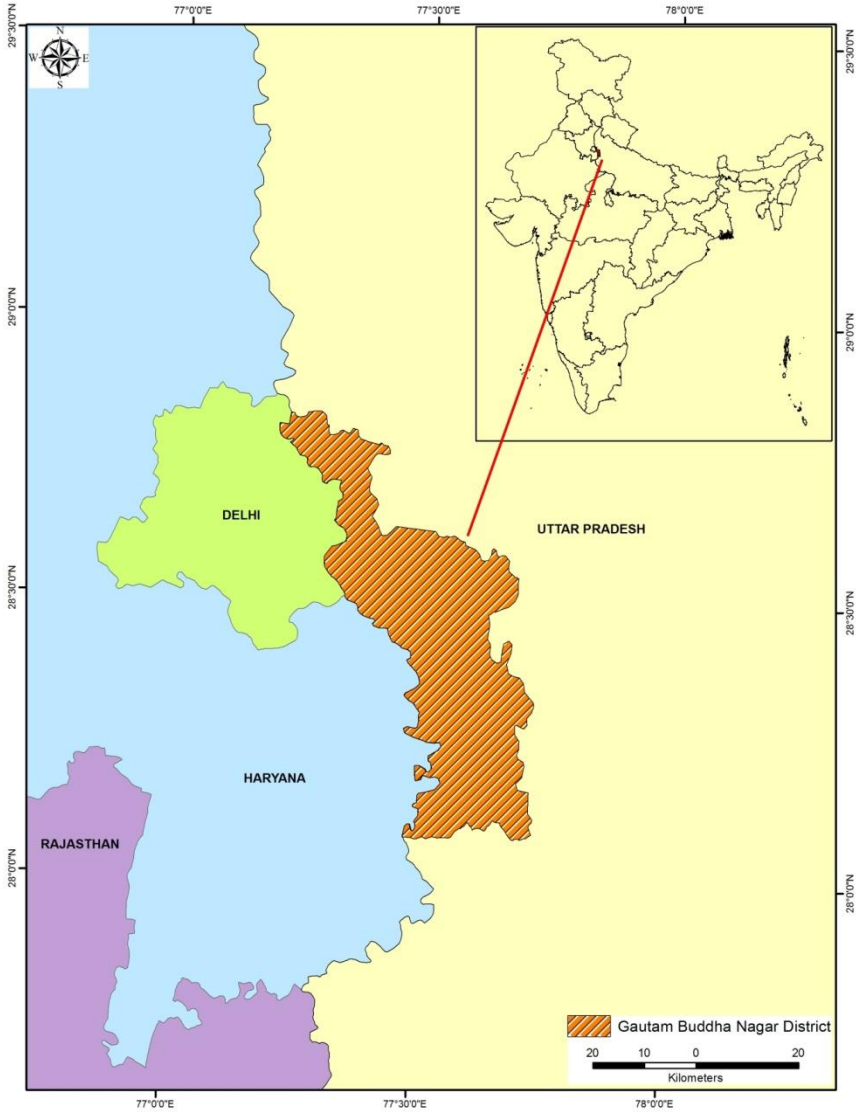
Being in the purview of National Capital Region, the development of the district is moving with a fast pace. Noida and Greater Noida district are the world class industrial hubs. In Noida/Greater Noida industrial areas many large scale industries have been established by the multinational companies like Daewoo Motor, Honda Siel Motors, CL, BPL, LG, HCL, etc. Industrialization is taking place in other areas of the district also. So, in terms of economical

structure, the district is important not just at state level but also at national level. 25% of the total revenue of Uttar Pradesh is received from Gautam Buddh Nagar.

India is currently home to about 1.21 billion people, representing a full 17% of the earth's population. India's 2011 census showed that the country's population had grown by 181 million people in the prior decade [3]. Due to rapid urbanization, demand of more food and more shelter will be high. To understand the better management practices, it is also essential to know the dynamic changes in agriculture crops. In respect of more demand and supply of food products, farmers may shift to grow from a normal to high yielding crop. Demand of excess food enhances the use of fertilizers and pesticides which may alter the ecology and creates nuisance impacts on biodiversity. Thus in respect of this, the study is designed to find out the dynamic changes from last two decades in cropping pattern in the area.

2. MATERIALS AND METHODS

Study Area



Methods

The study was conducted for the period of four months from January 2012 to April 2012 based on questionnaire survey and weekly field visits. A total of 15 villages were surveyed, located close to the district head quarter. The old age peoples or head of the villages (*Pradhans*) were the major concern for the questionnaire survey. Proper Data

sheets were used for the questionnaire survey, which includes general profile and land use of the village, details of crops cultivated and other information's regarding crops. Other than questionnaire survey, visiting of those sites were also done to verify the results.

3. RESULTS AND DISCUSSION

A total of 35020 hectare agriculture lands belonging to fifteen villages were surveyed during the stud period. Six types of crops Rice, Wheat, Pea, Bajra, Jowar and vegetables were grown by these villages. Gulistanpur village was the largest and Rampur village was the smallest village in the study area. As the district head quarter is located in Surajpur village, the distance of this village is zero and it is supposed to be the nearest village and Aicher is the farthest village (i.e. 8 km from the district head quarter). The maximum percentage of cultivable land falls in the village Khodna Kala (85 % of the total land) and Devla village (80 % of the total land) while the minimum cultivable land recorded in Gurjarpur village (2 % of the total land) because availability of water through Tilapta Canal. Whereas three villages Gulistanpur, Rampur and Tughalpur were recorded complete absence of cultivation because of human habitation and industrial influence, there was no land for cultivation (Table 1).

Most of the selected villages recorded similar cropping pattern from last 20 years. Mostly farmers follow organic farming and apply fertilizers, pesticides to increase their crop yields. No any farmer agree to change in present cropping pattern and also not agree to do farming in future decades because of many problems like, hiking of prices of fertilizers, lack of irrigation, high cost of fuel, unavailability of fertilizers on time in the commercial market, acquiring of land. Similar studies were also done in India by various workers [4], [5] and [6].

Table 1. List of selected villages for survey

S. No.	Villages name	Total area (Ha)	Distance from district collectorate (Km)	Cultivable land (%)	Crops grown
1.	Beghampur	1000	4	5	Rice, Wheat
2.	Bhuda	200	3	70	Rice, Wheat, Jowar
3.	Devla	300	3	80	Rice, Wheat
4.	Gulistanpur	1050	4	Nil	Nil
5.	Gurjarpur	150	2.5	2	Seasonal Vegetables
6.	Khodna Kala	170	4.5	85	Rice, Wheat, Pea, Bajra
7.	Khodna Khurd	150	4	75	Rice, Wheat, Jowar, Bajra
8.	Lakhnawali	5000	4	40	Rice, Wheat
9.	Makoda	7000	8	60	Rice, Wheat, Jowar, Vegetables
10.	Malakpur	4000	3	50	Rice, Wheat, Bajra, Pea
11.	Rampur	100	5	Nil	Nil
12.	Sakipur	1500	6	5	Rice, Wheat
13.	Surajpur	7500	0	3	Rice, Wheat
14.	Tilapta	400	6	50	Jowar, Wheat
15.	Tughalpur	6500	7	Nil	Nil

Cropping systems of a region are decided by and large, by a number of soils and climatic parameters which determine overall agro-ecological setting for nourishment and appropriateness of a crop or set of crops for cultivation. Nevertheless, at farmers' level, potential productivity and monetary benefits act as guiding principles while opting for a particular crop/cropping system. These decisions with respect to choice of crops and cropping systems are further narrowed down under influence of several other forces related to infrastructure facilities, socio-economic factors and technological developments, all operating interactively at micro-level [7]. These are: a. Infrastructure facilities: Irrigation, transport, storage, trade and marketing, postharvest handling and processing etc. b. Socio-economic factors: Financial resource base, land ownership, size and type of land holding, household needs

of food, fodder, fuel, fibre and finance, labour availability etc. c. Technological factors: Improved varieties, cultural requirements, mechanization, plant protection, access to information, etc.

The cropping pattern of any region is the outcome of a long process of historical evolution. In eastern India and coastal lowlands, especially the western coast south of Goa, rice is the predominant crop. Tea and jute are distinctive crops of east India. Jowar, bajra, pulses, cotton and groundnut are the chief crops in the plateau, while wheat is mainly raised in alluvial plains of Uttar Pradesh, Punjab and Haryana. Food producing agriculture is strikingly concentrated upon three grain crops, e.g., rice, millet and wheat, with some maize and barley. Pulses come next in the area, and then oilseeds. Though a substantial area in India lies under tobacco, potatoes, fruits and vegetables, their share in the total cropped area is relatively small [8].

Greater Noida is one of the finest city located close to Delhi National Capital Region and it is a newly developed city. Development works are in progress with a very fast speed which demands more and more land, subsequently the agriculture land is converted into commercial land. Farmers are distress to sell their land. So the land acquisition is one of the major problems of farmers of this area. If this trend of land acquisition continues in this area, no any land will be left in future for agriculture. The farmers of this area, have many problems, some major problems are: land acquisition, lack of fertilizer/pesticides on time and high cost of fertilizers and pesticides; hiking of electricity charges; hiking of fuel prices; unavailability of seeds on time; reduction of groundwater and lack of irrigation sources; crops raiding by Blue Bull (Nilgai); low rate of agriculture yield; unemployment etc.

Cropping pattern appears to be oriented towards cereals especially, wheat and rice in Indian States [9]. Conclusively, there is a slight change in agriculture pattern was followed in the villages surveyed. Since this district is close to Delhi, India's capital, it is developing with a very fast speed, due to this; majority of farmers want to shift to other occupations with high wealth of their land.

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5. REFERENCES

[1] Electronic database accessible at http://www.icar.org.in/node/2438 (accessed on 27/03/2012).

[2] SAC. (2011): National Wetland Atlas, SAC/EPSA/ABHG/NWIA/ATLAS/34/2011, Space Applications Centre, (ISRO), Ahmedabad, India, 310p.

[3] Electronic database accessible at http://geography.about.com/od/obtainpopulationdata /a/indiapopulation.html> (accessed on 27/03/12).

[4] Jha, B. and D. Jha (1995): "Farmers attitude towards risk in the Greenbelt of India". Journal of Rural Development, 14(3): 231-240.

[5] Jha B., A. Tripathy and B. Mohanty (2009): "Drivers of Agricultural Diversification in India", IEG Working Paper Series No.E/-/2009, Institute of Economic Growth, New Delhi.

[6] Shiyani R.L. and H.R. Pandya (1998): Diversification of Agriculture in Gujarat: A Spatiotemporal Analysis" Indian Journal of Agricultural Economics, 53, (4): 627-639.

[7] Das, P. (2000): Cropping Pattern (Agricultural and Horticultural) in Different Zones, their Average Yields in Comparison to National Average/Critical Gaps/Reasons Identified and Yield Potential. Status of farm mechanism in India.

[8] Bhaskar, S. (2009): Cropping pattern in India. Electronic database accessible at http://knowledgeofagriculture.blogspot.in/2009/11/cropping-pattern-in-india.html> (accessed on 26/03/2012).

[9] Jha, B., N. Kumar and B. Mohanty (2009): Pattern of Agricultural Diversification in India. Working Paper Series No. E/302/2009. Institute of Economic Growth, New Delhi India, pp. 54.