



REVIEW OF RESEARCH

ISSN: 2249-894X

IMPACT FACTOR : 5.7631(UIF)

VOLUME - 13 | ISSUE - 11 | AUGUST - 2024



ASSESSMENT OF LAND USE CHANGE AND AGRICULTURAL LAND USE PATTERN IN GORAKHPUR DISTRICT, U. P.

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ABSTRACT

Land use is an assessment of the assigned functions of the land from the point of view of man. Land use is an important indicator of an appropriate use or misuse of land. Growing population and limited of land resource is obvious the study of land use planning. Land has limited carrying capacity beyond which there will be degradation and loss is productivity due to excessive use. Gorakhpur District has different types of land use and agricultural land use pattern. The study attempt to analysing assessment of land use changes and agricultural land use pattern in Gorakhpur district during 1998 to 2022. The study shows land use change in non-agricultural land, net shown area, current fallow land, other fallow land and pasture land etc. moreover agricultural land use pattern also change because of developmental activities and irregular monsoon, changing climatic condition etc. Present scenario of land use mostly determine by environmental survival So there is an urgent need of better agricultural land use planning to sustain it.



KEYWORDS : Land use, Land use pattern, natural resource, ecological environment, food grains.

INTRODUCTION

Land is a crucial natural resource and an important determinant of socio economic status of a country. Agriculture is the mile stone in the history of human civilization, due to agriculture man settled at particular place. Land use involves the management and modification of natural environment such as settlement, arable land, pastures etc. The layout or arrangement of the land use is known as 'Land use Patterns'. The enormous increase in human population and their requirements it's become complex. As a consequence of increasing pressure of population changes are occurring in the land use pattern. Land is the most important resource in the economy of any country. Urban and agricultural land uses are two most common land use classes. Owing to increasing pressure of human and livestock population on the land and over growing demand of food and raw material, there is an urgent needs of scientific, rational and economic use of every piece of land without disturbing ecological as well as socio economic status of the area.

LITERATURE REVIEW

A lot of work done by famous geographers on land use and land use pattern in different parts of the world. The idea of map showing the use of land was discuss by Carl O Sour. Land use has been an important subject in geography since 1930. The first land use survey and mapping was carried out by

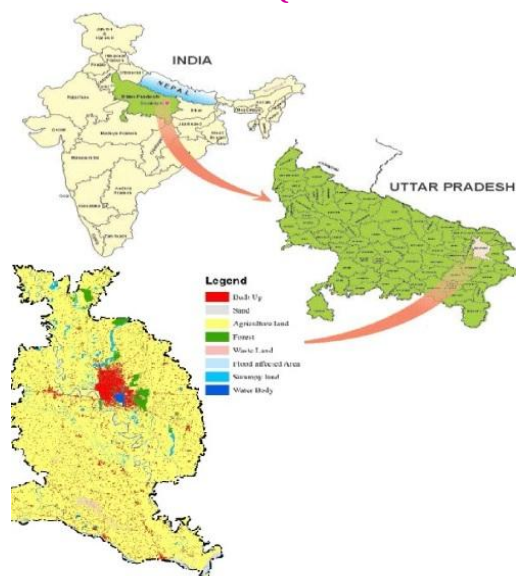
petrick geddis but the practical work on land use done by L.D. Stamp in Britain. Chatterjee, (1952) Land utilization survey of Horwah District. Shafi, (1969) Presented a plant for land use and classified the land and their capability. Prasad, P. (2006) Trace out land use change and environmental degradation in Dhanbad District. Singh, A.K. & Dwivedi, S. (2010) Analysed the land use pattern, cropping pattern, intensity and coverage under vegetation crops in different form size groups in Eastern Uttar Pradesh and also depicted the population pressure and its impact on land use in chakia block of Chandauli district Uttar Pradesh. Chopra, N. (2011) Searched out the land use/ land cover patterns with the help of remote sensing data. Singh, S.K. (2015) Presented theoretical and conceptual understanding of land, land use, land use change and land use pattern through inter conceptual relationship model. Devi, L.M., Naqvi, H.R., Siddiqui, L. & Siddiqui, M.A. (2014) Analysed and detected the land use/ land cover of Manipur. Singh, S.K. & Sharma, V.N. (2013) Analysed land use pattern in district UP Mirzapur. Singh, S.N. (2013) Depicted the role of land use for the livelihood of peri urban zone of Varanasi city. Chandramauli & Singh, S.B. (2012) The work on land assessment and management of robertsganj tehsil, Sonbhadra district. Singh, S. (2011) Depicted about land resource utilisation for agriculture purposes. Tiwari, A.N., Singh, G.N., & Sharma, P.R.,(2010) Suggested for the urban land use planning of Mirzapur city.

STUDY AREA

Gorakhpur district is located in the part of Central Ganga Plain in eastern Part of the Uttar Pradesh. It is also known as Purvanchal region. It is lie between $26^{\circ} 13'$ - $27^{\circ} 29'$ N latitude and $83^{\circ} 05'$ - $83^{\circ} 56'$ East Longitude, and elevation at sea level is 94 m. The total geographical area of the district is 3321 square km. The rural area covers 3106.4 Sq. Km. and urban recorded 214.6 Sq. Km. Gorakhpur is situated on the bank's of Rapti river which is a tributary of Ghagra River. The district bears its name and fame from renowned, ascetic 'Gorakshnath', who was an eminent profounder saint of 'Nath Sampradaya'. The district is administratively divided into 07 tehsils and 19 Development Blocks. The physical characteristics of the district are divided into the four sub-micro regions such as 1- Gorakhpur Plain, 2- Rapti Khadar, 3- Bansaon Uparhar Plain, 4- Ghaghara Khadar. The soils of the district are mainly transported i.e. alluvial soil, comprising sand, silt and clay in varying proportions and rich in humus. The alluvial soil of the districts is subdivided into older alluvial soil and younger alluvial soil. The main sources of irrigation are tube wells, canals, ponds and lakes like Ramgarh Tal, Narhai Tal, Domingarh Tal. The total reported area of the district during 2022 was 316943 hectares. More than 75% of the land is devoted to agriculture but a large part of land is also used for non-

Agricultural purpose. The utilization of land under various purposes is variable from one block to another block.

MAP OF STUDY REGION (GORAKHPUR DISTRICT)



OBJECTIVES, METHODOLOGY

The main objectives of the study are:-

- I. To analyze land use change and land use pattern in Gorakhpur district.
- II. To investigate the factor influencing land use change and agricultural land use pattern in Gorakhpur district.

The work has been carried out with the help of secondary data collected from District Statistical Handbook published by Economic and Statistics Division, State Planning Institute and Internet. All the collected data analysed or tabulated by using EXCEL-13 and SPSS software to obtain the data of different land use categories and agricultural land use pattern at the district level during 1998 to 2022.

RESULTS & DISCUSSION

The land use changes of regions are highly determined by the physical profile, climatic condition, population pressure, level of industrialization and commercialization and recreation of that area. Total geographical area of the district is 3321 square km. The rural area covers 3106.4 Sq. Km. and urban recorded 214.6 Sq. Km. The district of Gorakhpur occupies a part of Middle Ganga, eastern Plain and its comprise north of the river Ghaghara and its tributaries. The district is plain, form a level tract which slopes gently from west to south-east. In the north of the district a stretch of forest land which extends downwards in patches as in centre of the district.

Table.1 Assessment of land use change and land cover in Gorakhpur District during 1998-2022 (Area wise in hectares)

Year	Total reporting area (in hect)	Forest	Barren and unculturable land	land put of non agri uses	Cultivable waste	Pastures and other land	misc. tress crops and groves	current fallow land	other fallow land	net sown area
1998-99	336223	2933	4310	41504	4485	207	4437	5184	10283	262880
2002-03	335223	5754	3468	42520	4184	219	3035	14972	8139	252932
2006-07	335164	6031	4010	44692	2378	200	2894	18017	6445	250496
2010-11	335217	5754	2175	46619	4052	273	2696	23364	6401	243883
2014-15	335217	5842	4390	47022	5291	205	2805	19403	7578	242681
2018-19	335217	5842	4300	49630	6124	313	3357	14533	13120	237998
2021-22	316943	5842	4755	52545	5124	313	3257	1538	4571	238998

Source Compiled from District Statistical Handbook of Gorakhpur 1998 to 2022

Table.2 Assessment of land use change and land cover in Gorakhpur District during 1998-2022 (percentage wise)

Year	Total reporting area (in hect)	Forest	Barren and unculturable land	land put of non agri uses	Cultivable waste	Pastures and other land	misc tress crops and groves	fallow current land	other fallow land	net sown area
1998-99	336223	0.87	1.28	12.34	1.33	0.06	1.32	1.54	3.06	78.19
2002-03	335223	1.72	1.03	12.68	1.25	0.06	0.91	4.47	2.43	75.45
2006-07	335164	1.80	1.20	13.33	0.71	0.06	0.86	5.37	1.92	74.74
2010-11	335217	1.72	0.65	13.91	1.21	0.08	0.80	6.97	1.91	72.75
2014-15	335217	1.74	1.31	14.02	1.58	0.06	0.84	5.79	2.26	72.40
2018-19	335217	1.74	1.28	14.80	1.82	0.09	1.00	4.33	3.91	70.99
2021-22	316943	1.84	1.50	16.59	1.61	0.09	1.02	0.49	1.44	75.41

Source Compiled from District Statistical Handbook of Gorakhpur 1998 to 2022

ASSESSMENT OF LAND USE CHANGES

Assessment of land use change have studied for reported area, net sown area, area of non-agricultural land, cultivated waste, current fallow and other fallow land, forest, tree crops & groves and Barren land etc. The land use change was studied for year 1998 to 2022. For the purpose of find out general land use change in 1998-99, total reported area was 336223 to reduced 316943 in 2021-22 it means decreased almost 6% during 24th year. Net shown area was 78.19% after 24th year in 2021-22 net shown area has reduced 75.41%, showing decrease of 2.78%. The net sown area has decreased by 2.78% from 1998-99 to 2021-22 Apart from this non-agricultural land use increase by almost 6% due to urbanization and industrialization and increasing pasture and barren land. Forest area has increased and current fallow, other fallow land decreased due to effort government policy of afforestation and developmental initiative. The study of land uses assessment present a clear picture to the potentialities of land use and provide a fruitful planning for a massive agriculture turnover.

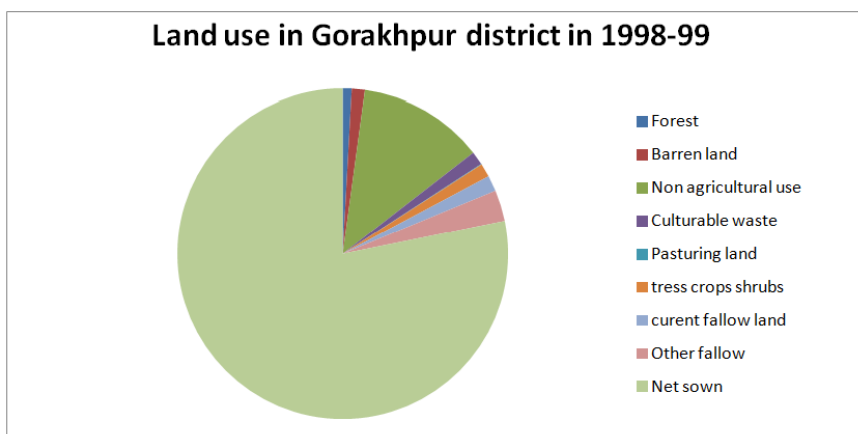


Figure.1

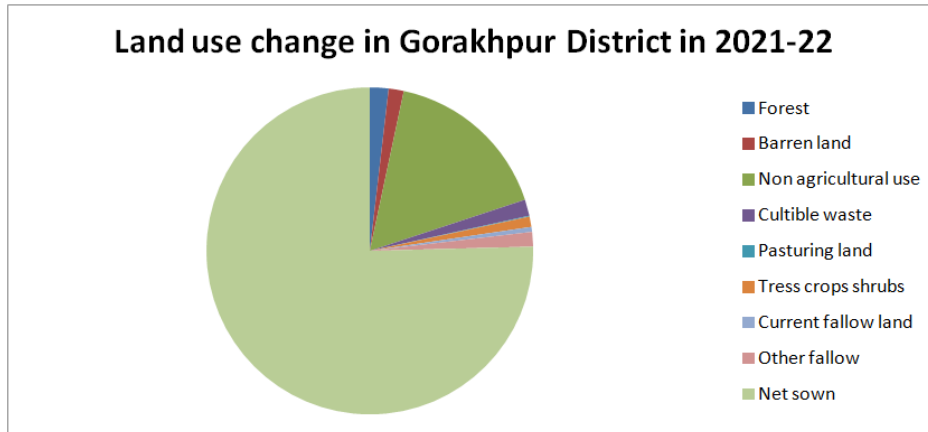


Figure.2
Comparing Land use changes Gorakhpur District from 1998-2022

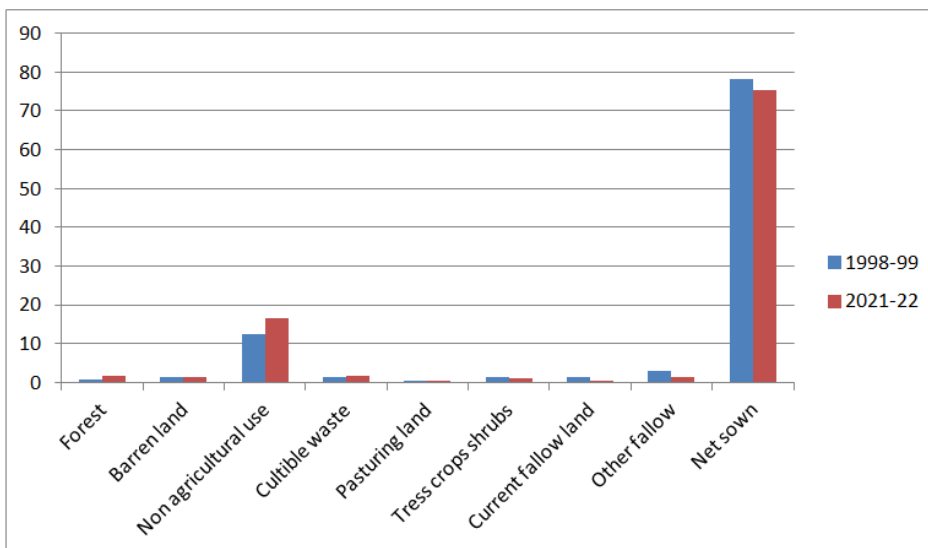


Figure.3
Comparing Land use changes Gorakhpur District from 1998-2022

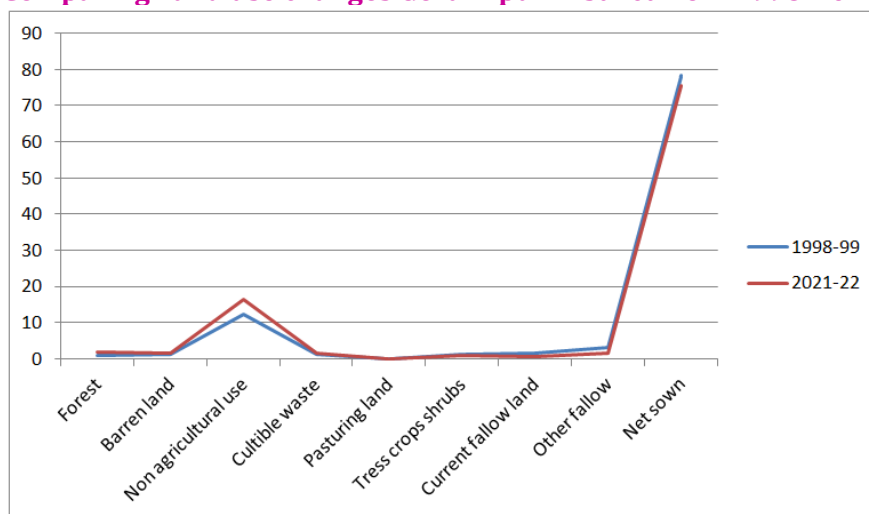


Figure.4

Table no.3 Assessment of Agricultural land use pattern in Gorakhpur District during 1998-2022 (Area wise in hectares)

Year	Total food grains	Rice	Wheat	Barley	Maize	Pulses	Oil seeds
1998-99	548949	152138	359917	6619	3722	26553	8140
2002-03	575836	175919	368419	5073	4193	22232	8473
2006-07	578442	180747	371958	3823	4179	17635	9767
2010-11	613582	219161	376655	3276	2997	11467	9711
2014-15	603994	207495	382476	2186	3172	8608	9754
2018-19	603994	207495	382476	2186	3172	8608	9754
2021-22	734493	312583	404112	1891	4724	11156	11208

Source Compiled from District Statistical Handbook of Gorakhpur 1998 to 2022

ASSESSMENT OF AGRICULTURAL LAND USE PATTERN

The district occupies Middle Ganga Plain and its comprise Rapti river with its tributaries Tarauna Nadi, Ami river and Gaura Nadi form water resource availabilities for the agricultural crops of the district. Northern region soil variety is doma and The Southern region comprise light domat and in the eastern part, Math soil is found. It is rich soil for agriculture. Assessment of agricultural land use pattern. The cropping pattern and production of crop in the district has vastly changed during the last 24th years. Total reported area has increased from 548949 hectares to 734499 hectares during last 24th year. It means increase 134% of reported area. Apart from this Rice 205%, Wheat 112%, Maize 127% and Oil seeds 138% increase in area wise but decrease in Barley 28.5% and Pulses 42% in the year of 1998-99 to 2021-22.

Comparing Grains shown area in hectares Gorakhpur District from 1998-2022

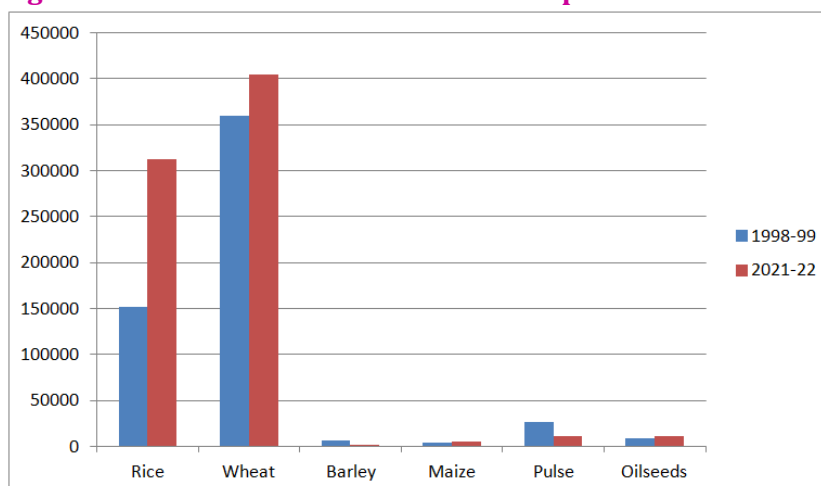


Figure.5

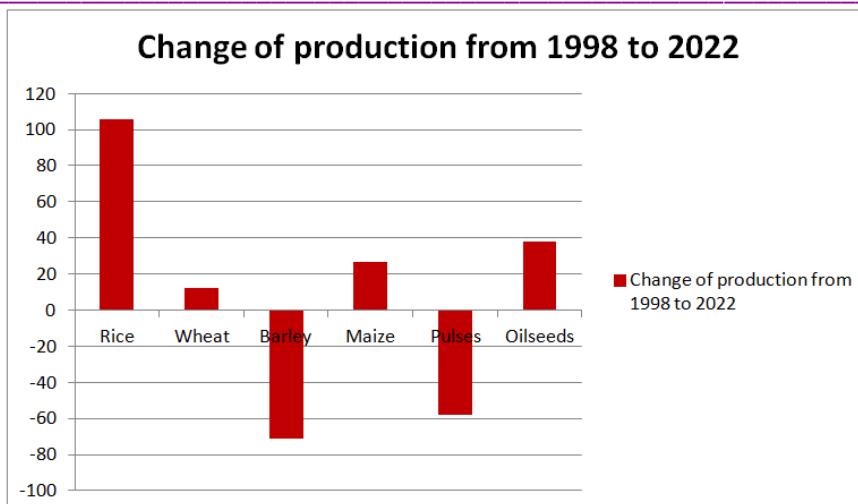


Figure.6

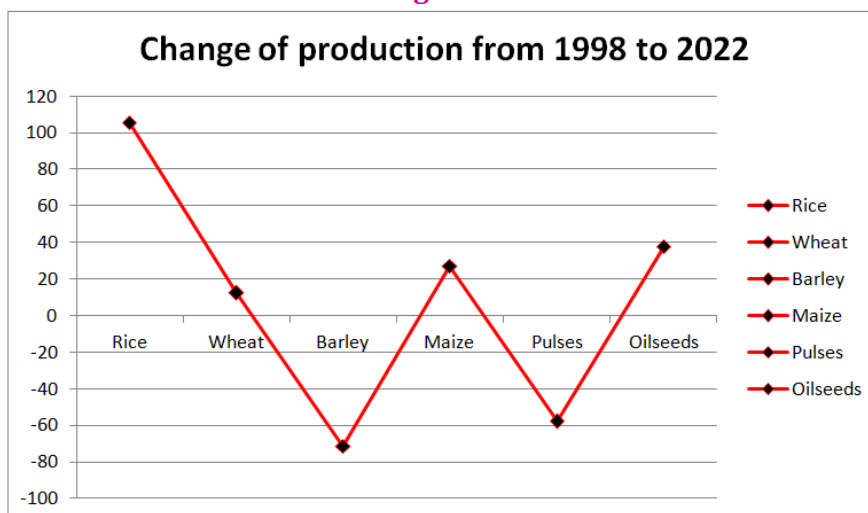


Figure.7

CONCLUSION

Agriculture is still the most dominant sector of the Indian Economy and Crop production plays a vital role in determining growth and sustainability of any country or a region. Total irrigated area has been increase especially in rice, wheat, oil seeds and maize its good because for increasing crop production but decrease in barley and pulses. In Gorakhpur district data shows decrease in net sown area, increase barren pasture land is serious concerned .So there is an urgent need of better agricultural land use planning to allocate the agricultural land for the better management.

REFERANCE

1. District Statistical Handbook of Gorakhpur district.
2. Siddiqui N.A. (1976) "spatio-temporal changes in the crop land use efficiency in the Ganga Yamuna doab" The geographer vol. XXIII No.2.
3. Singh A.K. and Dwivedi Sudhakar (2010) land use and cropping pattern followed by vegetables growers in Eastern Uttar Pradesh Research Journal of Agricultural Sciences 448-450.
4. Shafi, 1961. "Land utilization in Eastern Uttar Pradesh, "Aligarh Muslim University Aligarh.
5. Chatterjee (1952)," Land utilization survey of Horwah Districts". Geographical review of India vol 39.

6. Chandramauli & Singh, S.B. (2012) "Land use Assessment and Management- A Case Study of Robertsganj Tehsil, Sonbhadra", NGJI, BHU, Vol. 58, p. 1, March 2012.
7. Singh, S.K. & Sharma, V.N. (2013) "Land use pattern in District Mirzapur" Earth surface review Geographical Development Research Institute, Gorakhpur, U.P. Dec. 2013, Vol. 4, No.2, pp.8-15.
8. Singh, B. (1962) Land utilization in Chakia Tehsil, Banaras District(U.P.), Ph.D. thesis, Department of Geography, BHU, Varanasi pp. 201-214.
9. Devi, L.M., Naqvi, H.R., Siddiqui, L. & Siddiqui, M.A. (2014) "Land use/ land cover changes Detection in Analysis in Manipur, India", NGJI, BHU, Varanasi, Vol. 60, p. 3, Sept. 2014, pp. 245-262.
10. Bhatia C.S. (1981) "Changing land use and cropping pattern in Bihar" perspective in Agricultural Geography concept publication New Delhi.