

LANDUSE OF RURAL SETTLEMENT IN NAWADA DISTRICT A GEOGRAPHICAL STUDY

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Abstract

The term 'Land' is referred to as 'The solid surface of the earth where it is not covered by water' or 'A part of the earth's surface marked off by natural or political boundaries' But, its surface utilization of all developed and vacant land on a specific point at a given time and space is called land use. This "leads one back to the village farm and the farmers, to the fields, gardens, pastures, fallow land, forests and to the isolated farmstead"¹ In other words, the term 'land use' is generally adopted to mean man's activities which are directly related to the land. It is an activity or development which occupies land. It could also be called 'human use of land' or 'human activities on land' which means that this idea deals as much with people as with land. Land-use is distinct from other parts naturally or politically, for economic, or cultural reasons.

Keyword – Surface, Natural, utilization economic, activity.

Land is one of the most important gifts of the nature to man and the greatest resources of a region. Man uses land in different ways according to his requirements, cultural outlook and economic approach. However, physical conditions are such elements that greatly affect the utilization of land. with the growth and development of civilization, the land resources has unwillingly undergone in improper utilization. The result is that these resources have deteriorated. Thus to control destruction of landuse, we must take careful stock of the situation. Though these appears to be the consciousness of the problem of land misuse, yet unfortunately there is a dearth of scientifically furnished data and information regarding this problem of great magnitude. The study of general landuse of Nawada district portrays the actual status of landuse. We get an index of overuse, underuse and optimum use of land under study.

Study Area :-

Nawada is a new district, the upgraded one of the subdivision of the same name from its parent district of Gaya (presently Magadh Division). It acquired the

status of an independent district on the 26th January 1973. The district extends over an area of 2474 Km (962.6 Square miles) stretching from 24⁰31'45" North to 25⁰6'45" North latitudes and 85⁰3'20" East to 86⁰17'20" East longitudes. It has a total population of 18,09,896 persons. It has 14 C.D. Blocks. Nawada is the largest town and district headquarters of the district.

'LAND' comes from a French term 'LANT' meaning 'OPEN SPACE, Webster's Seventh New Collegiate Dictionary (1971) defines the word 'LAND' as 'solid part of the surface of the earth' the study of landuse in the present context is the description of the surface area of a part of Bihar with all its natural environment and human circumstances to evaluate the socio-economic development.

PATTERN OF LAND UTILIZATION :-

Landuse is the surface utilization of all developed and vacant land on a specific point, at a given time and space. This leads one back to the village farm and the farmer to the fields, gardens, pastures, fallow land, forests and to the isolated farmstead. The role of geographers becomes to analyse the relationship between various uses of the land planning. "landuse is also related to conservation of Land from one major use to another general use". The use of land changes according to the changing needs of man. Stamp has classified the needs of man into six major category, viz. the need of work, home, food, transportation, communication, defence and recreation. To meet the needs, man has to look towards land. The need of food means conservation of good agricultural land for production and at the same time the development of poorer land for production of food and cash crops.

The geography of land use in one of the most developed branch of geography of the 20th century. Until 1930, it was at the primitive stage of its development in Great Britain. Plot to plot detailed land use survey was carried on for the first time in India during 1913-14 by the then British Govt. for the collection of land revenue.

A revisional survey work was carried on in the State of Bihar during 1965-70 in full detail on the basis of the different sets of land used for different purpose and cadastral survey maps of each village were prepared a fresh.

In 1954 Dr. E. Ahmad classified the rural land use into eleven categories with detailed coloured techniques for land use mapping. There are (i) Triple cropped land (ii) Double cropped land, (iii) Single cropped land, (iv) Fallow, (v) Land under grove and orchards, (vi) Land under scrubs, and grasses, (vii) Land

permanently under water, (viii) Built-up land, (ix) Land under communication, (x) Barren lands, and (xi) Forests.

In Bihar land use classification has been done as under :- (1) Net Sown Area, (2) Fallows, (3) Permanent pastures and orchards, (4) Barren and uncultivable waste (5) Non-agricultural uses, and (6) Forests.

Following table no. 1 shows the Landuse classification groups and the area occupied by them in Bihar State and Nawada District.

Table No. 01
Land Use Classification 1990 (in 000 hectares)

	State/ Districts	Net area shown	Land upt to nonj agricultural	Curent Fallow	Forest	Barren and uncultivated land
1	2	3	4	5	6	7
1990-91	Bihar State	5778 (61.42)	1449 (15.34)	670 (7.18)	621 (6.46)	436 (4.48)
2005-06	Bihar State	5891 (63.23)	1340 (10.46)	601 (6.38)	602 (5.19)	401 (4.00)
	Nawada District	132 (53.01)	36 (14.46)	06 (2.40)	60 (24.1)	09 (3.61)
2008-09	Bihar State	5250 (59.3)	1566 (17.8)	187 (2.0)	518 (6.6)	331 (4.6)
	Nawada District	195 (42.1)	30 (14.2)	28 (11.4)	54 (25.6)	11 (4.5)

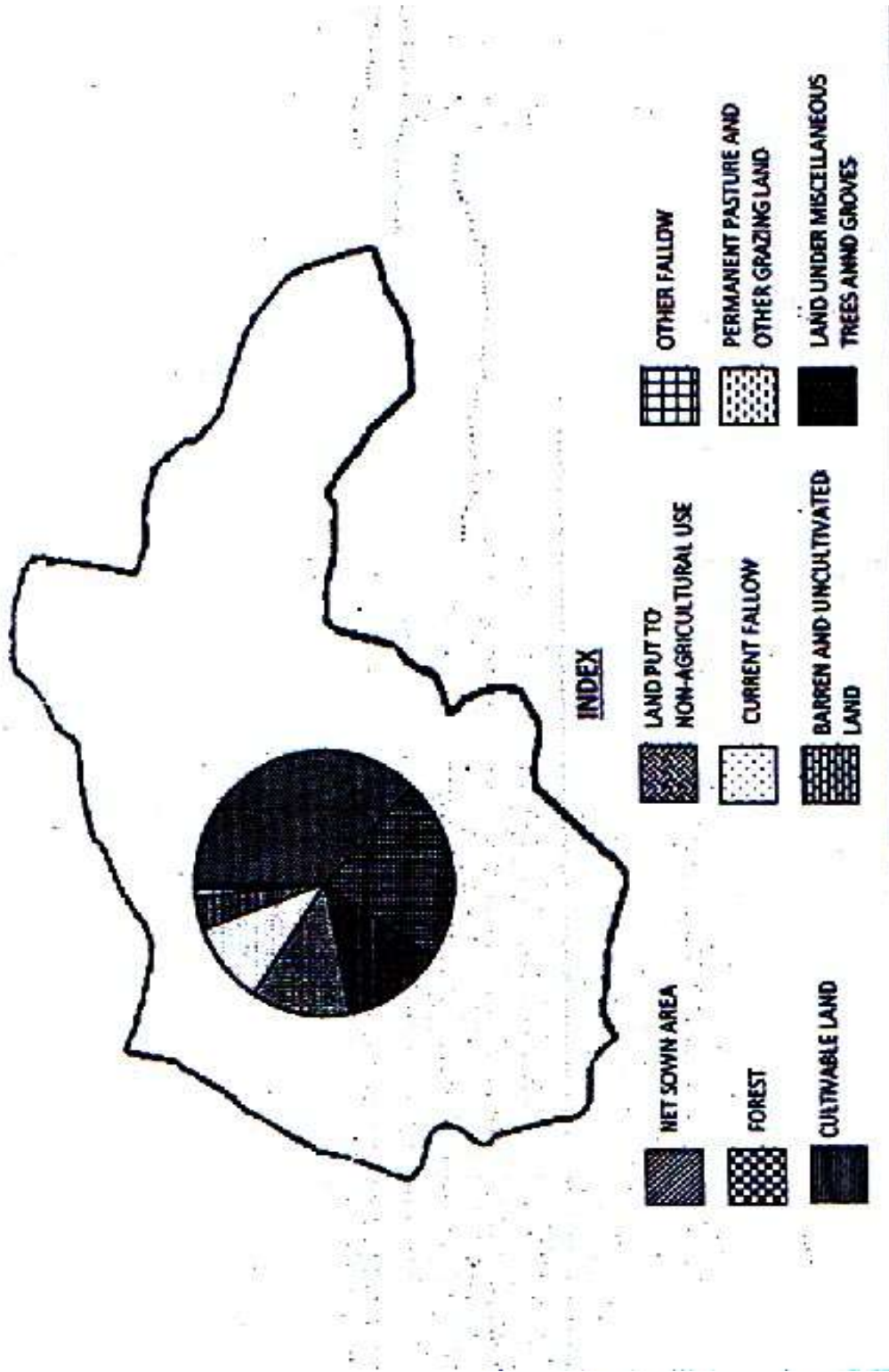
		Other Fallow	Land under miscellaneous trees and grovs	Cultivable Waste	Permanent pasture and other grazing land	Total area of the region	Area shown more than once	Total cropped area
1	2	3	4	5	6	7	8	9
1990-91	Bihar State	195 (2.09)	206 (2.11)	61 (0.55)	35 (0.37)	9325 (100.00)	2594 (27.82)	8319 (89.21)
2000	Nawada District	3 (1.20)	-----	02 (0.80)	02 (0.80)	249 (100.00)	47	172
2005-2006	Bihar State	191 (2.01)	200 (2.01)	57 (0.37)	30 (0.36)	9325 (100.00)	2701 (28.11)	9411 (91.01)
	Nawada District	02 (0.80)	-----	0.2 (0.80)	02 (0.80)	249 (100.00)	51	183
2008-2009	Bihar State	122 (1.3)	243 (2.6)	1466 (17.8)	47 (0.5)	9325 (100.00)	-----	-----
	Nawada District	2 (1.1)	0.5 (0.2)	30 (14.3)	1 (0.5)	249 (100.00)	-----	-----

Source : (i) Bihar through Figures, 1993

(ii) Directorate of Economics and Statistics, Govt. of Bihar, Patna

LANDUSE CLASSIFICATION OF NAWADA DISTRICT

2008-09



1. Net Arasown : Net area sown refers to the geographical extent of cultivated or sown land during a particular year. It measures 132 thousand hectares or 53.01 percent of the total land of the Nawada district (2005-06). But the net sown area does not present us the total acreage under different crops in a particular area. The ratio of net sown area to the total areas of the districts varies considerably from region to region, depending mainly upon the surface conditions including the fertility of soil, availability of water for irrigation and technological advancement. Growth of urban centres and urbanization followed by erection of building and laying of roads, railways, small scale industries, educational and administrative institutions together have left smaller acreage of land under net area sown. Extension of hilly and sandy land also have adverse effect on it.

Forest : Forest constitutes 6.46 percent or 621 thousand hectares of land of the State. Forests produce the requisite raw materials for industries, defence, communication and other agricultural purpose including domestic fuels. It contributes to the economy of the people creates large volume of employment in primary, secondary and tertiary sectors. It also provides materials like fuel wood, timber, fodder, grazing for stay cattle, etc, The present position of forests in Nawada district is more relics of their vast extent covering various parts of the district including central plain of the past. "Since then has penetrated within the precincts of plain and plateau, he has been clearing them for better land use. Their deforestation has reached a stage which not only requires protection and preservation but a forestation is now the only remedy to protect and preserve other land use categories. The vast tract of northern and central plain do not produce favourable environment for the growth of forests. But on the other hand, Southern high lands and rolling plains besides the eastern hilly tract are favourable sites for the growth of forests.

3. Barren and uncultivated Land: This group of land use incorporates all such lands which are practically useless unproductive and unfit for cultivation. These lands are either rugged (rocky and hilly) or sandy waste or alkaline tracts which cannot be brought under cultivation except at a high cost. On these soils growth of plant is admissible, therefore, are unsuitable for cultivation or pasture. The alkaline tract may be brought under cultivation if they are inundated for water so that the salt content might dissolve and percolate downward. 9000 hectares or 3.61% of the total land of the state is under this group. This land is found in all the districts with some variation.

The landscape of the district is characterized by the highlands, hills, rolling, plain, uneven surface, sandy river courses and plain lands determine the extent of land utilization under cultivation and otherwise.

Sirdala, Rajauli, Akbarpur and Gobindpur stand for highest percentage of cultivated land ranging from 70-80%. These anchals are marked by highland with dense vegetal covers and rugged surface. Adjoining anchal of Narhat, Hisua and Kawakol from the second category with 60% to 70% of the total land under non-agriculture uses. These anchals from parts of the southern highlands with the physical characteristics similar to the previous one. The percentage of uncultivated land abruptly falls down with sudden changed in the outstanding landcape. Below the highlands rolling plain marks significant increase in the land cultivation.

4. Land put to non-agricultural use: This group comprises of a number of different types of land which is not available for cultivation under the existing circumstances. This type of use represents the land occupies by building, roads, railway tracks, factories, water bodies, etc. and other land devoted to other than agriculture. Such land spans over an area of 36 thousand hectares or 14.46 percent of the total land of the State. This use ranks 2nd in position after the net area sown. This high percentage is explained due to the rapid growth of population which requires more land for residential houses, commercial establishment, educational and other institutions, industries, road, railways etc. The land use under this category is increasing fastly and bound to increase in future also with the rate of growth of urbanization. But this trend is detrimental to the balanced rural agrarian economy because the productive land is usurped by unproductive uses. This encroaches upon agricultural land.

The above table reveals that net sown area is more in 2005-06 (53.01) as compared to the area in 1990-91 (50.60%) of Nawada district. This area under net sown area in the district less than the average of the state which 61.42% in 1990-91 and 63.23% in 2005-06. The area under this landuse has considerably increased during fifteen year due to increasing mouths to be fed. The land put to non agricultural use has also increased in the district due to increasing settlements and other utility services. Fallow land has been reclaimed and hence land under this uses has decreased. Forest are cut regularly hence its area is shrinking. barren land s also decreasing. The land under cultivable waste and pasture and other grazing land is the same during the period of fifteen years. Area sown more than once and total cropped area has also increased considerably.

5. Land under Miscellaneous Trees and Groves: This category occupies less than one thousand hectares or 0.40 percent of the total land. This group of land is arable and is a source of an annual plantation. Crops like mango, guava, mahua are grown.

The main trees of orchards and groves are mango, guava, mahua, Yamuna, jackfruits etc. These are very valuable products and supplement the poor farmers weak economic conditions.

But due to the rapid growth of population and growing needs of food products area under orchards and groves are decreasing fast. The DighaMalda gardens in the environs of Patna are cut almost all.

6. Current Fallow: The term "Current Fallow" is variously defined in different parts of the country. "In Punjab for instance land is classified as current fallow if it has been left uncultivated for less than two years". But in Bihar, "Current Fallow" is applied to all such land which were not under crops at the time of reporting but which had been sown in the recent past. In other words, current fallows are a part and parcel of the arable land. The need for leaving the land fallow seems to arise when the soil is less fertile and soil exhausting crops are grown over it without much use of fertilizers.

This category of land in the State shares 670 thousand hectares or 7.18 percent of the total land. As regards the area under current fallow the diversity among different district may be observed.

7. Other Fallow : This land occupies 2000 thousand hectares or 0.80 percent of the total land. This land is in fact arable but due to the inherent infertility of the soil and other limiting factors it cannot be cultivated continuously. "Some short of rotation, not actually of crops but of cropping and fallowing have to be practised for the better conservation of soil. In this practice a cropping year is followed by 2 to 5 subsequent fallowing years. Thus, such lands become temporarily out of cultivation for a period of not less than one year and not more than 5 years. Such lands can be converted profitable by the use of manures and irrigational facilities.

8. Area sown more than once : The area sown more than once was 51 thousand hectares (2005-06). With the change of the NSA, the area sown more than once in year has also changed. It depicts the intensity of agricultural crops which is governed by the fast growth of population as well as agricultural renovations.

Land under Settlement and Transport Routes : This category of land accounts about 32% of the total non-cultivable land of the district, and 9.95% of the total district area. It covers a wide range of uses including all land under

buildings, factories, roads, railways and numerous other uses. This type of land is bound to increase in extent in view of the growing industrialization and growth of population in both villages and towns besides gradual expansion of the cultural landscape. For example one may find indiscriminate encroachments on farm land in sub-urban areas as the towns expand.

The activities of the mankind determined the human agglomeration and resultant settlement of varying sizes. Thus, it is not the area of any anchal man's activities that are to be considered so far as a landuse is concerned. Some anchals particularly in the northern plain utilize greater percentage of their land for the spread of human homes and passages. The higher density of population in rural areas explain considerable percentage of land under such non-agricultural uses. The urban and industrial landuse in the district varies in percentage of land under such uses.

The Kiul-Gaya Railway line bifurcating from the Manpur Junction covers part of Wazirganjanchals. The Nawada district is rich in road communication also. The most important road is Gaya-Nawada road going to Biharsharif. Again Hisua-Rajgir is also an important road of the district. The hit of metalled, semi-metalled and unmetalled road connect almost all the anchals, headquarters, rural growth centres and villages with significant population sites. But the distributional pattern of these roads varies with the varying surface conditions. The northern plain with high population and minimum number of river courses is well-connected by road. The southern highlands are poorly served, owing to fine drainage texture, rugged topography, dense mixed forest, sparse and scattered settlement with thin population.

The topography of the district has largely affected the distributional pattern of settlement. The entire northern plain is solely devoted to intensive cultivation, attracting a large number of population. To accommodate such a large numbers of persons, a large number of rural homes have been constructed over the surface forming village of different size and dimension. Owing to different sources of livelihood along the Southern highlands, the area is sparsely populated. These dwellings are also thin in proportion to population. The rolling and undulating country below the Southern highlands are moderately populated with moderate density of settlements.

In short, railways track, road nets and settlements have poor concentration along with southern highlands in general and cover smaller percentage of land under such uses. The rolling plain of the south-central segments to have moderate

percentage. The entire northern plain, with density of settlement and thus, occupying more percentage. The entire northern plain, with high density of settlement, fine texture of road nets and Nawada-Kiul railway line, witnesses high percentage of land under such cases. On the whole we observe that as we proceed from south to north, the percentage of land under such nonagricultural uses considerably increase.

Conclusion : Increasing human population put a great pressure on natural resources which is not available in unlimited quantity. Changing pattern of land use is obviously observed during the last decades. Vast tracts of land have been cleared of the natural vegetation for cultivation of crops and for plantations-bringing more and more land under plough for increasing human population, without applying sound ecological principles for the use of land in profitable manner. Pasture lands are diminishing to extend agricultural land. Urbanization is taking place on valuable agricultural land. In short, massive land use changes may be observed with the dynamics of population growth.

9. Cultivable Waste : It includes all lands available for cultivation but not taken up for cultivation or abandoned after few years for one reason or the other. "Cultivable or culturable waste lands are definitely cultivable but at present lying as waste on account of number of limitations. The limitations vary from one area to another which are as encroachment by wild weeds, floods, and erosion, poor drainage, scarcity of water, distance from settlement sites, etc"

Such land provides ample scope for extension of cultivation, particularly in the agrarian society as well as where the agricultural land is scarce.

10. Permanent pasture and grazing land : The other uncultivated lands excluding fallow land have been recorded under (i) Permanent pasture and other grazing lands, (ii) Land under miscellaneous trees and groves, and (iii) the Culturable waste lands. They together occupy 2000 or 0.80 percent of the total land. These lands cover all grazing land whether permanent pastures and meadows or not, such as village common land and grazing lands within forest areas and other uncultivated land under grass cover owned by Government or Private owners. Such land also comprises the vast tracts of protected grass land and the unreserved grass land where the cattle of any locality are allowed for stray grazing.

References :

1. Census of India, 2001, Series, 11, Bihar, Final population Totals, P. 162.

2. Kumar, V. (1989), Landuse Changes and Socio-Economic Development of Choshi Region, Bihar, An Unpublished Ph.D. Thesis (Bodh-Gaya, MagadhUnivesity), P. 3
3. Foreman, T. (1968), Geography and planning, (London, Hutchinson University Library), P. 74.
4. Nanavati, M.B. (1957) (Foreward), Readings in Land Utilizatioj, in The Indian Society of Agriculture Economics, (Bombay) P.2.
5. Stamp, L.D. (1948), The land of Britain and How it is used, (London, Longman I, PP. 74-77)
6. Kumar, jainendra, (1986), Landuse Analysis, (New Delhi, Inter-India Publications), P.I.
7. Stamp, L.D. (1960), Applied Geography, (Victoria, Harmonda Worth, Middleses, Vicotoria), P.38.
8. Ref. 1, op.cit., P.4.
9. Zimmermann, E.W. (1951), World Resources and Industries (New York) P.3.
10. Galbraith, J.K. (1968), The Affluent Society, (London, hanishhamilton), P. 254.
11. Ahmad, Md. Nasar (1992), Resource base of Industrialization: A Case study of Nawada District (Bihar), An Unpublished Ph.D. Thessis, (Bodh-Gaya, M.U.)l, P.19.
12. Ref. 6, op.cit P.64.
13. Stamp, L.D., The Land of Britain: Its use and Misuse (London).
14. Ahmad, E. (1954), Geographical Essays on India, (Patna), PP. 15-16.
15. Ref. 6 op.cit., P.72.
16. Nath, V., (1953), Land Utilization in India in Lournal of Soil and Water Conservation in India, Vol. 1,
17. Ref. 6. op. cit, P. 72.
18. Singh, R.P. and Kumar, A., 1970, Monograph of Bihar, Bharti Bhawan, Patna, P.32.
19. Ref. 6P. 64.
20. Ibid, P.81.
21. Ibid, P. 85.