
CHANGING LAND USE PATTERN IN RURAL-URBAN FRINGE OF VARANASI

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ABSTRACT

The between the town and the countryside has created a Rural Urban fringe around a city, which exhibit an intermixing and overlapping of urban and rural character. The changing aspect of the rural urban fringe is revealed through its land use pattern. Thus in the fringe belt such changes take place first along the main roads radiating from the cities. In the process of urban sprawl rural landscape of the fringe area is converted into urban, with these hypotheses the present study has been under taken through the detailed study of 18 sample villages.

Rural-urban fringe around a city is a dynamic zone which undergoes considerable changes from time to time in terms of area and functional land use. Civic activities of Indian cities are expanding fast beyond their municipal boundaries and consequent upon the urban invasion in their immediate neighbourhood area, substantial changes are observed. As a reaction to the increasing land value, friction of space, congestion, crowding, air and noise pollution in the central part of cities, people tend to move from core to the outskirts, attracted by the lure of fresh air and ample space at relatively cheaper prices. Golledge, describing the changing aspect in the fringe area mentions it “as a zone of constantly changing pattern of land occupance, small farm sizes, intensive crop’s cultivation, mobile population of low and moderate density, semi-developed public utilities, services, speculative subdivisions and residential plots, all resulting into a continual movement of dynamism.”¹ Such changes in the urban periphery are associated with the transfer of the land from rural to urban uses, revealing rather more significant alteration than many other land use changes occurring in cities. The ‘greenfield’² developed in the peripheral area lies very much within the commuting range of the city. Lack of coherent landuse pattern, resulting from the outward growth process of the city, is a common phenomenon which is indeed representative of the fringe.³ Yadava argues that changing aspect of fringe area as its common character. The people and land both, under the influence of urban affairs, exhibit transformation⁴ in their demographic, organisational aspect as well as physical uses. Gupta mentions that ‘the transitional nature of suburbs is reflected in the life style, occupation, behaviour and attitude of residents.

The changing aspect of the rural-urban fringe is revealed through its landuse pattern, occupational structure, literacy, population growth, housing, urban amenities and public utility

services. Thus in the fringe belt such changes take place first along the main roads radiating from the cities. This is manifested by the new building activities, increased trade and commerce, construction of educational, health institutions and the expansion of civic functions. In the process of urban sprawl rural landscape of the fringe area is converted into urban. Former land used for non-urban purposes like cultivation, orchards, groves are gradually transformed into one for more urban uses.

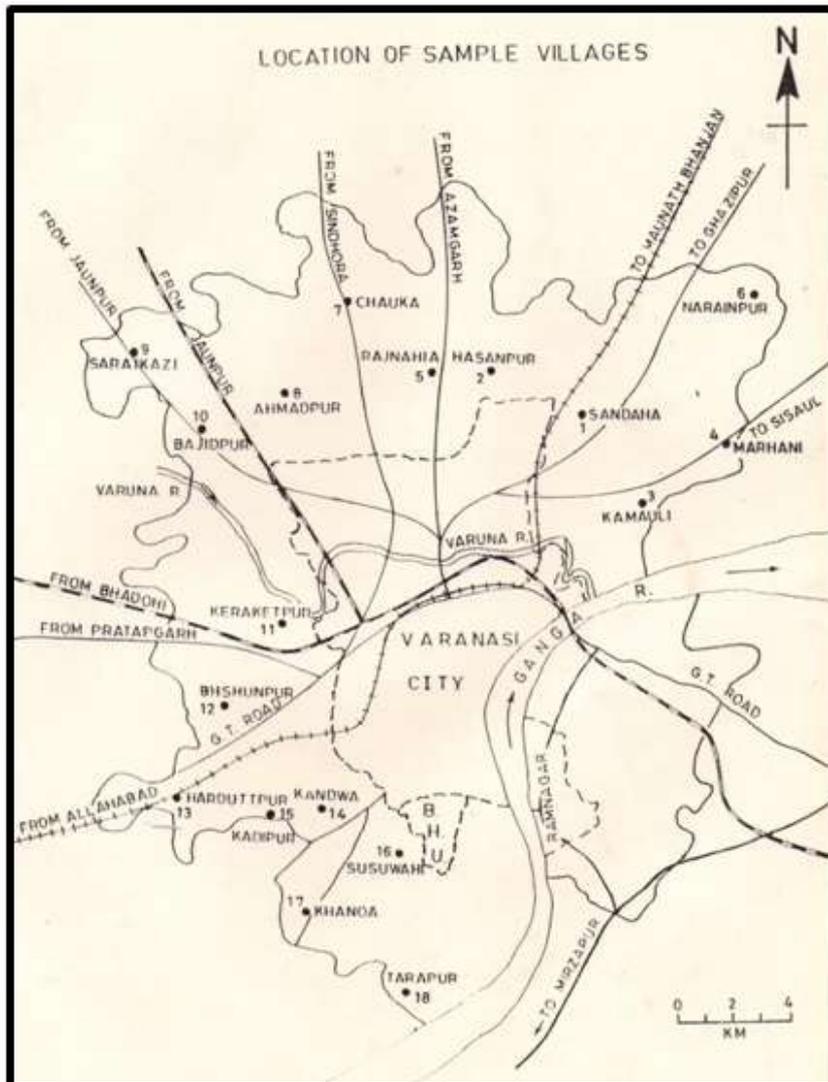
Analogous to other Indian cities, these changes are also obvious in the rural-urban fringe villages of Varanasi city, which have been intensively analysed through the detailed study of 18 sample villages, at two points of time in 1991 and 2011.

All these eighteen villages, which reveal the changing nature of entire rural-urban fringe of Varanasi, have been selected from different parts of the area. But care has been taken to assure that the sample villages must represent each of three types fringe delimited earlier. Therefore, they have been chosen from different directions, different locations (Roadside and interior) of varying distances from the Varanasi city, and also of different population size groups, so that the heterogeneous character of the primary, secondary and rural fringe may be lucidly exposed. This analysis of changing aspect in fringe area is supported with the help of the primary data collected through the household survey of these villages using detailed questionnaires. In all, 450 households were interrogated, taking 20-25 households from each village.

Location of Sample Villages:

All the eighteen sample villages have been selected employing purposive stratified sampling technique from each category of the rural-urban fringe of the city; their distance-wise location varies from 9 km. to 17 km. from the city. Of them 10 villages exist along pukka roads radiating from the city. They are Sandaha (Primary fringe) and Narainpur (Rural fringe) on Ghazipur road, Rajnahia (Secondary fringe) on Azamgarh road, Chauka (Rural fringe) on Sindhora road, Saraikazi (Rural fringe) on Jaunpur road, Kerakatpur (Primary fringe) on Bhadohi road, Hardattpur (Rural fringe) on G.T. road towards the southwest, Kandawa (Primary fringe) and Khanao on Chunar road (Fig. 16). The remaining sample villages have been selected from the interior parts (away from roads) of different fringe zones from all directions.

CHANGING LANDUSE PATTERN:



Changes in landuse pattern of these villages, indeed, depict the fringe character. Pastalan, considering the landuse changes as the main factor, mentions that in fringe zone, “rural landuse are giving way to urban landuse.”⁶ Kinen also upposed this change as an ‘effective display in the fringe area.’⁷ The conversion of agricultural land into urban landuses is a continuous phenomenon which gets stimulated as a result of the centrifugal forces of the city and their influence of the region.⁸ Godwa and Mahadev, having identified the changing nature of agriculture in the rural-urban fringe, state that “horticulture is the characteristic of fringe landuse and is positively related to the distance from the city.”⁹ Other important landuse in the fringe is the area not available for cultivation, which includes the barren land put to non-agricultural uses and all that land occupied by buildings, roads and railways and the area under waterbodies.⁹

To reveal the changing character in the rural-urban fringe area of Varanasi, the 1971 data has been collected from different secondary sources (Census, District Handbook and Tahsil records),

whereas the 1992 data is primary one based on demographic, socio-economic and household surveys of these sample villages conducted during field work.

The changes in landuse pattern in these fringe villages of Varanasi are consequent upon variegated and interrelated spatial and socio-economic factors as well as decision making process by private and public sectors. The factors like accessibility, topography and relief, distance from the city centre, increasing transport facility, inefficient control and lack



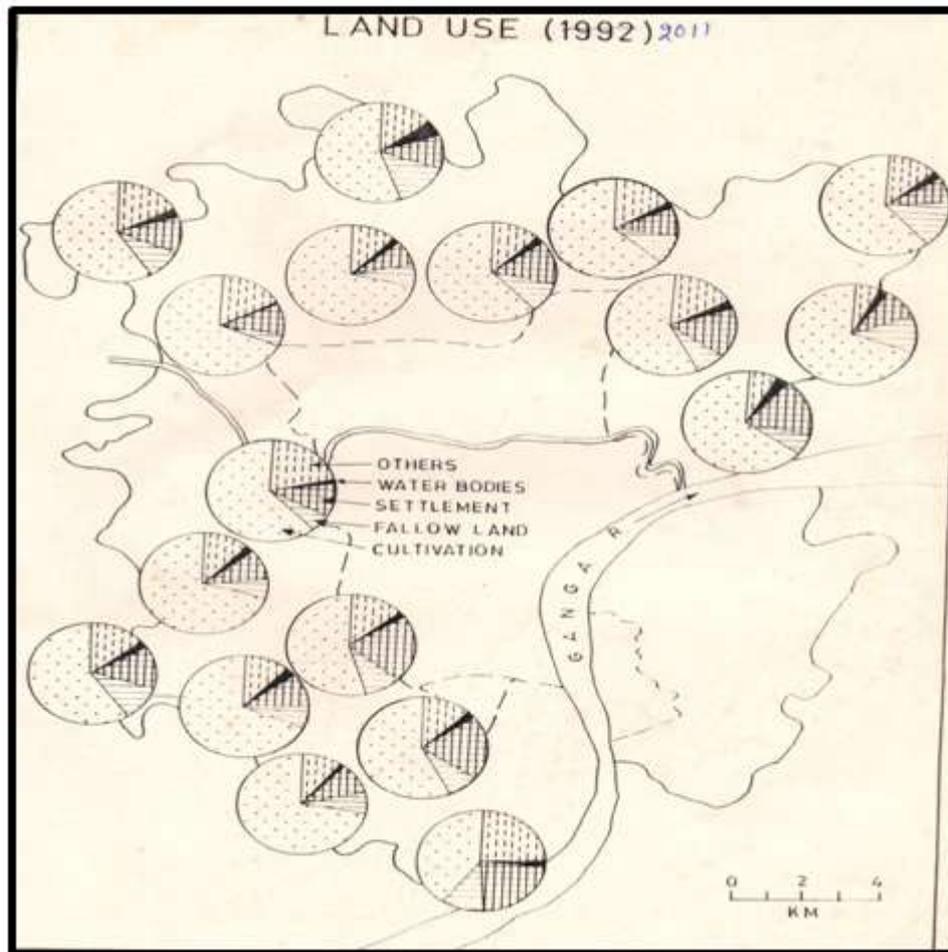
of coordination between developmental agencies have stimulated the conversion of agricultural land, fallow and waste land as well as shallow water bodies into urban landuses.

The impact of Varanasi city in the fringe is highly reflected through the dynamics of landuse changes. Usually, the greater is the physical contact of a settlement with the city more diversified are its landuses. The distance decay function is found to be operative for it. Multiplying urban impact associated with a number of physio-cultural aspects outweigh the distance and accessibility factors in determining the new landuse. The cultural elements such as caste and community structure, educational level and the way of the inhabitant's living, along with the physical elements like soil fertility, water supply and general character of land have played inevitable role in carrying the type and intensity of landuses. The existing landuse among all 18 sample villages of rural-urban fringe of Varanasi reveals a mixed pattern, that has been lucidly depicted through Table 4 and Fig. 1.

The intensity of land use changes is more or less reciprocal to the distance from the city. Among all sample villages the land under cultivation has decreased along with the changes in the nature of agriculture. In the primary fringe villages major part of the former cultivated land has been put to horticulture and cashcropping. By virtue in the vicinity of the city, the villages of primary fringe have to absorb the immigrants, mostly low class people comprising labourers, masons and artisans from other area. On the other hand the availability of efficient transport linkage and good market in the city the inhabitants instead of grain-farming intend to grow vegetables, fruits and flowers for higher economic gains. Consequently there has occurred a general decline in agricultural land. In susuwahi the agricultural land has decreased from 82 percent to 62 percent. More than three fourth of their cropped land has gone to horticulture, vegetable and fruit growing.

Among secondary fringe villages the decrease in the cultivated land has been found less than that in the primary fringe villages. Village Rajnahia has shown a decline from 84 percent to 82 percent, Chauka from 78 percent to 56 percent and Bajidpur from 87 percent to 69 percent in their cultivated area. But these villages also recorded the conversion of land under food crops into horticulture, vegetables and fruit cultivation. The rural fringe villages, however do not exhibit any substantial change in their cultivated land and the type of agriculture. The observed reduction in the agricultural land has been from 86 percent to 72 percent in Marhni village, from 77 percent to 64 percent in Hardutpur, from 81 percent to 60 percent in Saraikazi and from 74 percent to 59 percent in Narainpur village. The traditional cultivation practices of food crops have been converted to lesser extent into cashcrops among these villages of the rural fringe due to their location far away from the city market. The difficulty of daily communication has also diminished the changing intensity in the rural fringe area.

Formerly cultivated land and shallow waterbodies have in most cases been converted into residential settlements and other urban uses. In Sandaha the percentage of land under settlement has increased from 6 percent to 16 percent, in Rajnahia from 4 percent to 15 percent, in Chauka from 4 percent to 11 percent, in Kandawa from 4 percent to 18 percent, in Susuwahi from 3 percent to 21 percent. These villages have also shown an increase in the land under other uses like industrial sites, brick kilns, godowns, public schools and hospitals, shops, offices etc.; village Sandaha recorded an increase from 3 to 13 percent, Rajnahia 2 to 12 percent, Chauka 2 to 16 percent, Kandawa 2 to 14 percent and Susuwahi from 2 to 18 percent land of their total area under such uses. (Fig. 2. Number of residential houses and cottage industries especially saree weaving and hosiery works have increased in some villages. It includes majority Muslims who have neither land nor interest in agriculture. For instance in Saraikazi village the land under 'abadi' or residential use has gone up from 5 percent in 12 percent, while in other uses an increase from 4 percent to 17 percent has been observed and





in Hasanpur village there is an increase from 3 to 9 percent and 4 to 16 percent respectively. Kamauli, Marhni, Harduttpur, Narainpur, Bajidpur and Tarapur villages have also recorded considerable conversion or land under residential and other urban uses (Table 1). The area of waterbodies has decreased within two decades (1991-2011) due to filling of the shallow and waterlogged land and their use for settlements, brick kiln and the like.

In fringe belt many patches of cultivable land mainly along roads are lying unused. They are left vacant for the purpose of transferring them to some urban uses, prior to the introduction of land use controls, there used to be a free market in land transfer, but now a no objection certificate from the government is required before transferring any piece of agricultural land into non-agricultural one. In case of non-agricultural land use, such vacant and unused lands are converted into plots; they may be treated as residential, industrial or commercial land of future. In condition of uncertainty, the land is left idle both by the farmers and the developers, one seeking 'right offer' whereas the other 'right time' to gain the maximum profit. As a consequence many speculators and developers have purchased the agricultural land and converted it into a number of small plots. Many plots have already been used for industrial and residential purposes in a scattered manner. In this respect all these villages have recorded an increase in such kind of vacant land. In Susuwahi village it has increased from 5 percent to 12 percent, in Kerakatpur from 5 percent to 10 percent, in Kandawa 4 to 8 percent, in Marhni 6 to 12 percent and in Rajnahia 7 to 9 percent.



TABLE-1

LANDUSE CHANGE IN SAMPLE VILLAGE (1991-2011)

Category of Fringe	Name of Village	Area in Hectare (Ha)	Cultivated Land				Fallow and Barren				Settlement and Road				Water Bodies				Other uses			
			1991		2011		1991		2011		1991		2011		1991		2011		1991		2011	
			Ha	%	Ha	%	Ha	%	Ha	%	Ha	%	Ha	%	Ha	%	Ha	%	Ha	%	Ha	%
Primary	Sandaha	583	455	78	332	57	52	9	41	7	35	6	93	16	23	4	17	3	17	3	76	13
	Hasanpur	116	92	79	74	64	19	16	10	5	4	3	10	9	2	2	2	2	5	4	18	16
Urban	Kerakatpur	246	202	82	153	62	12	5	25	10	12	5	27	11	7	3	2	1	12	5	52	21
	Kandawa	373	325	87	205	55	15	4	30	8	15	4	82	22	11	3	4	1	8	2	52	14
Fringe	Susuwahi	576	507	88	334	58	29	5	98	17	17	3	109	19	12	2	6	1	12	2	92	16
Secondary	Kamauli	827	637	77	538	65	58	7	58	7	74	9	141	17	41	5	25	3	25	3	66	8
	Rajanahia	146	123	84	91	62	13	9	10	7	6	4	22	15	6	6	3	2	3	2	18	12
Urban	Chauka	211	165	78	118	56	27	13	27	13	8	4	23	11	6	3	8	4	4	2	32	15
Fringe	Ahmedpur	121	105	87	87	72	5	4	9	7	5	4	10	8	4	3	2	2	2	2	13	11
	Bajidpur	199	173	87	137	69	12	6	6	3	6	3	20	10	4	2	2	1	4	2	34	17
	Tarapur	535	305	57	219	41	102	19	59	11	64	12	123	23	22	4	11	2	43	8	123	23
Rural	Marhani	442	380	86	309	70	27	6	54	12	13	3	39	9	13	3	9	2	9	2	31	7
	Narainpur	968	716	74	571	59	555	16	145	15	39	4	87	9	29	3	19	2	29	3	155	16
	Saraikazi	145	117	81	87	60	9	6	12	8	7	5	17	12	6	4	4	3	6	7	25	17
	Bishunpur	286	246	86	206	72	14	5	14	5	11	4	29	10	9	3	3	1	6	2	32	11
Fringe	Hardutpur	320	246	77	205	64	22	7	32	10	16	8	51	16	10	3	6	3	13	4	38	12
	Kadipur	237	192	81	164	69	19	8	17	7	9	4	52	22	7	3	5	2	7	3	26	11
	Khanao	107	98	91	78	73	4	4	76	6	3	3	11	10	2	2	1	1	0	0	11	10



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