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CHANGING CROPPING PATTERN IN SARIPATTY VILLAGE, MIRZAPUR

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ABSTRACT

The changing aspects of land use and land cover especially cropping pattern is affected through bio-physical, socio-economic and ecological drivers. Land use and land cover analysis is an interdisciplinary approach to analyse the different problems that can be identified through scientific and cultural study and it is more decisive for qualitative and quantitative evaluation. Land use of an area depends upon soil, climate, hydrological characteristics and prevailing socio-economic conditions. The man-land relationship is well developed in the rural environment where cultivation forms the primary occupation of the people. This research paper mainly focuses on socio economic drivers that play a major role in transforming current land use and cropping pattern in Saripatty village using official estimates from C.D.O data. The farmer's lifestyle, occupation, economic status replicates the cultural landscape in the study area. The study reveals that major factors causing the change in cropping pattern are rapid increase in the village population, Agricultural drought and lower income.

KEYWORDS: Cropping pattern, Rural

transformation, Agriculture, Socio-economic status, Statistical analysis.

INTRODUCTION :

The study of 'land use' is of fundamental importance for land development. The land is regarded as one of the most important natural resources for its capacity of producing crops. LULC vicissitudes can provide precarious input to decision-making of environmental management and planning the future (Lu et al., 2005; Fan et al., 2007). Its assessments and improvements are, therefore, essential to any significant increase in food supply in the country, where there is an enormous pressure

of population on land. The land is required to meet the ever increasing demand of food, fibre, materials of house-building and fuel. There are also other concomitant demands on land for housing, industry, communication and recreation. It is, therefore, necessary that a scientific land use planning strategy should be adopted so that a country can go ahead with her growing demands of various commodities without disturbing the ecological balance. The land use study is absolutely essential to evolve a rational pattern of use of this resource, because the supply of land to a particular region is fixed in amount in relation to its population change. Scientific management of the environment has assumed



increasing importance in recent years because as civilization grew and developed, it unwillingly led to an improper utilization of land and other natural resources. With the result of this unplanned and ruthless exploitation, the resources deteriorated. Though there appears to be conscious of the problem of the land misuses in the recent years, yet unfortunately, there is a dearth of scientifically furnished data information regarding these problems of great magnitude.

Therefore, at present the proper use of land has become the need of time, which is not only directly linked to the welfare of population but also with the general well-being of the country as a whole.

Population growth and their distribution are two key concerns in any population studies (Rubenstein, 2010, p. 28). India is said to be a country of villagers. About 80 % of its population lives in villages and 60 % people derive their means of livelihood directly from agriculture, so the need of village survey is of vital importance. Rural India is still being characterized by the trinity of agrarian economy, poverty and illiteracy (Singh, 2001). These are made more prominent by ever increasing population and impenetrable social and cultural practices. In this context geographical methods of survey, interpretation and analysis gain greater importance in solving rural land use problems, and to save the country from further choose. Land use is the result of a continuous field of tension created between available resources and human needs and acted upon by human effort. Thus land use of an area depends upon soil, climate, hydrological characteristics and prevailing socio-economic conditions. The man-land relationship is well developed in the rural environment where cultivation forms the primary occupation of the people (Singh, 2001). It is therefore; the prime thrust of the study is to deal the functional organization over the temporal and spatial framework of the rural space economy.

India speaks through its villages. Unless the planners and policy makers give due attention to the village. All the programmes of national development will move in a haphazard manner (Sharma, 2012). Also in view of the fact that about 75 percent of population resides in village and 70 percent its people drive their sustenance from agricultures, due attention.

Keeping the idea of grass-root planning in view, the village has been considered as the basic planning unit. Any planning cannot be successful without proper adjustment of land resource and population (Mishra, 1974). Therefore, land utilization survey is a vital necessity. As the population increases more rapidly on one hand, the resources are depleting faster on the other. The growing population and increasing socio-economic requirements creates a pressure on land use/land cover. This pressure results in unplanned and uncontrolled alterations in LULC (Seto et al., 2002). Planning and conservation have become the focus of studies. In the present context, the land use survey and planning have been undertaken for study. At this juncture, it may be remarked that the government should start from the grass root level, i.e. the villagers- the smallest development units. This further enhances the significance of such studies, where, through survey and analysis of the potentials and problems of the individual villages may be fully assessed and the solution can be readily suggested. In general, the land use problem is common to all villages so the need of village survey in India, from this perspective is urgent and of vital importance.

The paper includes study on the land-use and socio-economic aspects of the village and suggestions for a better rural transformation. Due to the hasty growth of population the land use pattern of every village is changing rapidly. This change is multidimensional. The objective of this paper is to assess changing cropping pattern due to socio-economic driving forces in Saripatty village.

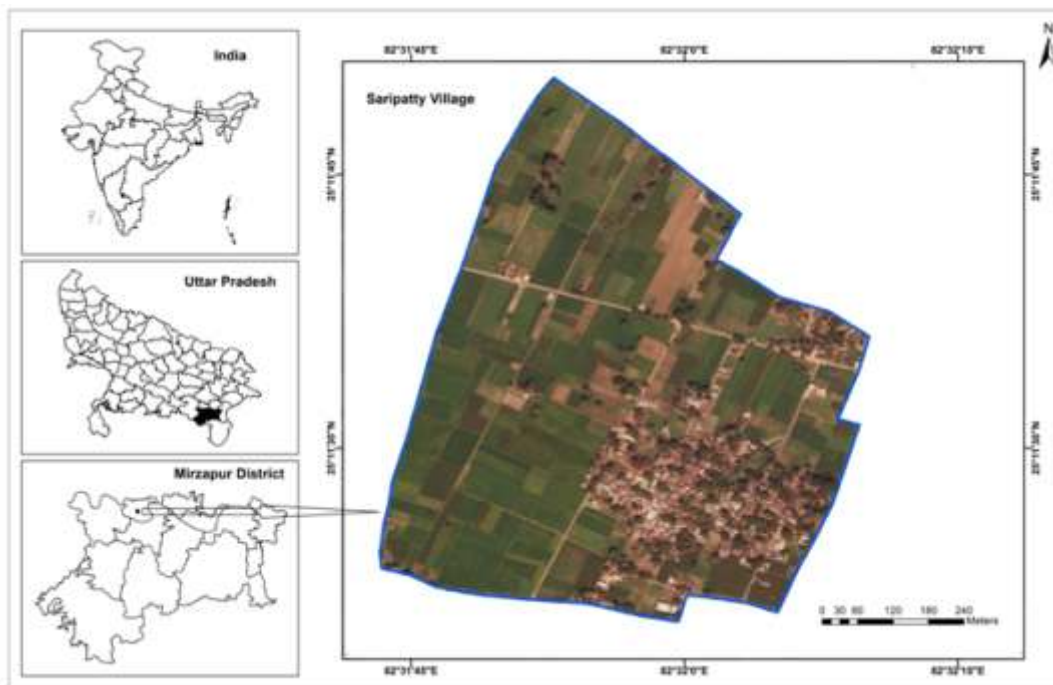
2. THE STUDY AREA

The village Saripatty is located in Kone block under Mirzapur district of Uttar Pradesh with geographic extension of 25°11'20" N to 25°11'50" N and 82°31'43" E to 82°92'11" E (Figure 1). The total geographical area of the village is 45.27 hectares. The village is surrounded by other villages like Saripatty, Cheksari, Parzapatpur, Rakkabhual and Vishnu patty on all sides. The actual population of village has been counted to be 1984 (2011).

Village Saripatty lies in the middle of Ganga plain. Its terrain is either practically flat or characterized by very gently slopes. The south-western part of the village is a few meters higher in elevation than the other parts. Its terrain, made up of alluvial deposits has all the characteristics of a level plain. A few ponds are located in the village break the monotony of its flatness. The drainage of the village collects in ponds located in the middle and

eastern part of the village.

The village is situated in the subtropical continental interior and enjoys monsoonal climate. There is a seasonal variation in the temperature, pressure, wind, rainfall and relative humidity conditions prevailing in the area. The monsoon breaks about the mid to last June. The change in weather from the dry hot season is marked not only by high atmospheric humidity but also by frequent rainfall. The temperature of Saripatty village varies from 5 to 45 from winter to summer season and annual Rainfall is 175 cm approximately.



Source: Prepared by author based on Census of India, 2011 and CDO office, Mirzapur
 Figure. 1: Location of Saripatty village

3. DATABASE AND METODOLOGY

The land use data have been collected from C.D.O. office. All the data have been collected from two points of time entire data are grouped, analysed and presented in map and tables. The data obtained from the primary and secondary sources were analyzed by using Microsoft Excel 2010. Present study was carried out with the help of visual presentation of the data by the means of bar chart and Line chart. bar chart and line charts are appropriate presentation methods for the present study as both can reveal the pattern of hidden data.

4.RESULTSAND DISCUSSION

4.1 Settlement Pattern and Land use/Land Cover

Within the village, much type of settlements nucleated and concentrated in the middle part and along the roads. Some of settlements made of thatched surface and wattle wall, maximum settlements made of cement, break, and concrete materials

The land use map of the village indicates that most of the land is under agriculture. The general description of land use pattern in the village is based on official records of CDO, Mirzapur for the year 2015. The general land use can be studied under three main categories, for instance cultivated land, uncultivated land (Dwellings, Garden, Fallow land and Waterbodies) and cultivable land (Barren land) (Figure 2).



Figure 2. Land use pattern of the village (A satellite view)

4.1.1 Cultivated Land

The general land use pattern of village changed considering during 2005- 2006. Most of the land (62 %) is under agriculture and spreads all over, mainly along the pond sides. The major portion of agricultural land is irrigated by water from pond and tube wells. The average plot size is about 1100sq.m. There are several water bodies near the plots which proves water for irrigation. It is noted that single cropped area has changed into double crop about 69 % of plots are small in size and are below 1200 sq.m. In recent year the cropping pattern also changed significantly. It is noted that single cropped area has changed into double crop area (Table 3).

4.1.2 Uncultivated Land

The uncultivated land of the village includes area settlement or built-up area, roads, water bodies, fallow land, barren and gardens. It covers about 57.14 % (25.87 hectare) of land (CDO, 2008), though later some changes have taken place. There is no permanent garden, but in scattered forms of trees are found. The most common trees in the village are Mango, Mahua, Neem, Babul, Bamboo etc. and the water bodies includes ponds, one is situated in the middle part of village and another lies in the eastern parts. These ponds are full of water in the rainy season, but becomes dry in the summer season (Table 1).

4.1.3 Cultivable Land

This category includes land under economic boundaries such as barren and unused Lands. Every day an increasing pressure of population on the land resource inspired man to use the land which is cultivable waste. Hence, there has been a sharp decline in the area of this category of lands (Table 1).

Table 1: Pattern of land use

Land use categories	Area (in Hectares)	Area (in per cent)
Cultivated Land	14.10	31.14
Water bodies	2.10	4.60
Settlement	25.87	57.14
Barren land	3.20	7.0
Total	45.27	100

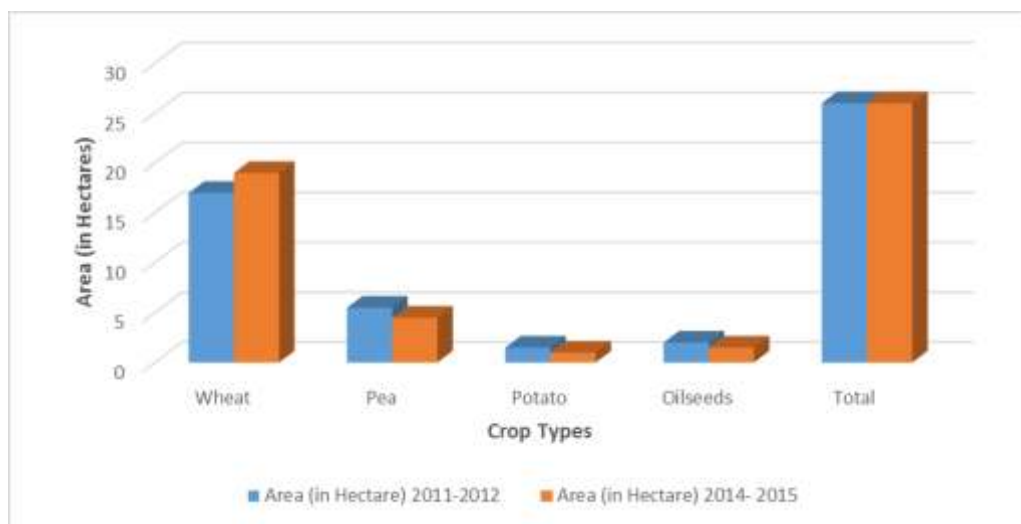
Source: Milan Khasara 2014-2015

4.2 Cropping Pattern

Production of many crops from some field is quite common in the village. This practise is adopted in Rabi and Kharif season. The Rabi and Kharif are the two main cropping season in the village life, all other village in the middle Ganga valley. The Zaid crop is less Important in the village.

4.2.1 Rabi Crop

The Rabi crops are shown in the months of October and November and are harvested in the month of March and April. The Rabi crops are more important because most of the foods are produced in the season in this village. Rabi crops play a significant role in the fulfilment of the food and fodder requirements of the cultivators for the whole year. The main Rabi crops of the village are wheat, mustard, peas, gram, oil seeds, potato and sugarcane. The temperature at the time sowing has to be moderately low. While at the time of harvesting higher temperature is required, the production of Rabi crops in the village mostly takes place with the help of irrigation (Figure 3).



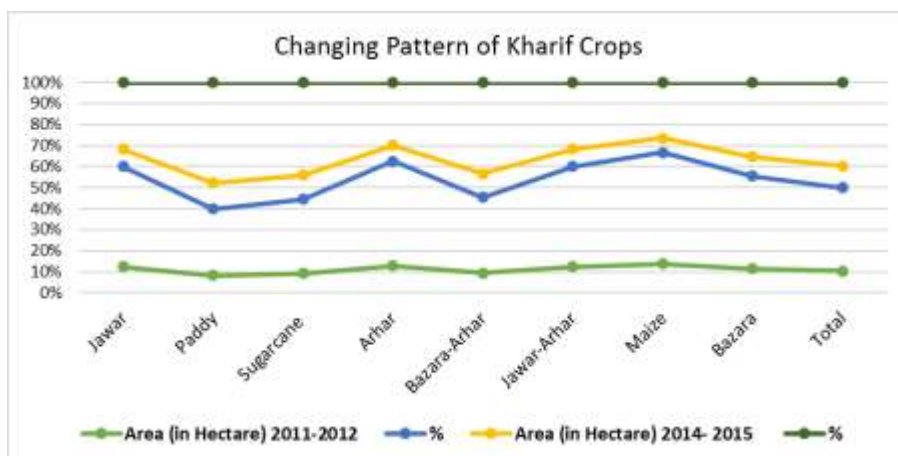
Source: Milan Khasara of Village 2014-15

Figure 3: Changing Pattern of Rabi Crops

4.2.2 Kharif Crops

The crops are paddy, sugarcane, grams and maize, which occupy 32.50 acreage of total crop respectively. Other crops accounts for the remaining 8.7 hectares. The wheat is the main crop of village. The Kharif crops are generally sown in June, July and harvested in October to November except in case of sugar cane and Arhar (Pulses) which require a longer growing season. The growth and yield of these crops largely depend upon the monsoon rains. However, with the increasing facilities of water supply through tube welts the dependency on

rain has decreased. Kharif crops form the main cropping pattern of the village at present about 90 % of the arable land is under the Kharif cultivation, the main crops of this season being paddy (Figure 4).



Source: Milan Khasara of Village, 2014-15

Figure 4: Changing Pattern of Kharif Crops

4.2.3 Zaid Crops

Zaid crops are of very little importance in this village because most of these crops are grown on small scale for family consumption only.

In this way, we have noted that the economy of this village is primarily based on agriculture, which is still of largely subsistence type.

4.3 Cropping Intensity

The cropping intensity refers to the single, double and triple cropping system the village of Saripatty, only Kharif and Rabi crops are prominently grown. The single or double cropped lands are associated with the fertility status of the soil and availability of irrigation wherever the irrigation facilities are available double cropping system are under practice. In this village at present double cropping occupies more than 30 % of the total land areas under cultivation. Double cropping, including Arhar and Bazra, Musterd seeds and Wheat, grams and oil seeds, peas and muster seeds are mostly in practice in the surrounding villages. Triple cropping is almost absent in the village except at a few isolated places where the crops like some grams like Arhar, Urad/ Mung and Bazara, is grown on the same land (Table 2).

Table 2: Changing Cropping Intensity of Village

Crop	Area (in Hectare) 2011-2012	(in per cent)	Area (in Hectare) 2014-2015	(in per cent)
Single	10.5	40.38	8.5	32.69
Double	14.5	55.76	15.5	59.61
Triple	1	3.8	2	7.69
Total	26	100	26	100

Source: Milan Khasara of Village, 2014-2015

5. CONCLUSION

The present paper attempts at the diagnostic survey of land-use in village Saripatty and suggests remedial measure including a development plan for the village. The climate of the area is monsoonal and is

characterise by seasonal rhythms and extremes. The alkaline soil of the area is economic backbone of its inhabitants who practice intensive cultivation to keep pace with their increasing numbers. The population growth rate is 2.8 % per year. The population of village mainly depends on agriculture (69.2 %), and 8-9% of total population are government servants. 14-15 % working in private companies and factories.

In view of the rapid increase in the village population intensive cultivation has to be introduced for solving it food problems population has to be checked by adopting family planning methods. It is also felt that primary activities alone cannot fulfil the increasing needs of the villagers. Hence secondary and tertiary activities also need to be developed. Most of the villagers are still deprived of a reasonable good standard living attempt should be made to provide batter roads, establish better educational facilities and above all improved their living conditions on the village. Thus, various problems confronting the have been analysed and a development plan has been suggested for the purpose.

Now comes the question of sustainable agriculture with full protection of the environment and also an assessment of existing land use pattern. High yielding varieties of seeds required copious irrigations, plenty of chemical fertilizers application of insecticides and pesticides. The overuse of each not without danger.

It is evident for the figure that both of rapid growing population and central control development tradition have deteriorated local level resources on one side and have created imbalance development in terms of local resource development, supply of local, needs and preservation of local environment. All this has not only created economic tensions, mass poverty but the overall poor quality of bio-physical environment. It is evident to say that a new development approach which is based on local innovation indigenous experiences and locally suitable technology. Such development approach would help to balance economic development and environment one side and also help to optimise population size to local resource that can improve the socio-economic condition of the village.

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