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GROWTH OF NON-AGRICULTURAL USES ON ARABLE LAND IN PUNJAB (INDIA): A CASE STUDY FROM THE JALANDHAR DISTRICT

Sucha Singh*

Abstract

Growth of non-agricultural uses is a prominent feature of many areas especially periphery of the urban centers and along the major roads in India. Punjab has been noticing such encroachments on arable land in response to the rapidly growing urbanization, industrialization and network of transportation.The state has lost thousands of acres of agricultural land to non-agricultural uses since 1991. One such area of the state is Jalandhar-Nakodar Bypass of Jalandhar district which has seen noticeable growth of non-agricultural uses on vast tracks of fertile agricultural land. Thus the proposed research focuses on the spatio-temporal analysis of growth of non-agricultural uses on agricultural land along with the determinants affecting such conversion and its impact on the food insecurity in the study area during 2001-2016.The study is based on both secondary and primary sources of data. Geo-referenced maps showing spatio-temporal changes in the conversion of arable land have been prepared using ArcGis 9.2 software. The study finds that there are four purposes for which agricultural land has been converted. These areresidential followed by Commercial, Industrial and Institutional. It is found that except the urban periphery housing colonies, all other built up areas are unplanned, uncontrolled and not approved by PUDA. The major reasons for the arable land conversion were urbanization, expansion of transportation network, industrialization, declining farm incomes and absence of strict land use conversion policy. The decline in agricultural land along with stagnation in cropping intensity, gross irrigated area, productivity and low farm incomes would lead to food insecurity in the state in the long run.

KEYWORDS: Conversion, Arable Land, Residential, Commercial, Industrial, Institutional, PUDA, Food Security

* **Assistant Professor in Geography, University School of Open Learning, Panjab University, Chandigarh**

Introduction

Human beings always bring changes in the character of the land. Conversion of land especially from agriculture to non-agricultural uses is inevitable and irreversible (Tarrant, 1974, Northman, 1975, Ilbery, 1985, Trivedi and Sudarshan, 1994 etc.). Agricultural land is usually transferred to non-agriculture purposes, due to the increase in demand for industrial establishments. Change of agriculture land to non-agriculture is also caused by expansion of housing, roads, markets and institutions etc. The conversion of arable land is being considered as a threat to agricultural economiesboth in developed and developing world (Sundquist, 2007). This conversion is a prominent feature of many areas especially periphery of the urban centers and along the major roads in India. This is really a matter of serious concern for the country like India where land sources are limited and population concentration and population density are increasing at a fast rate.

The countryside in Punjab state of India has been noticing conversion of arable land in response to the growing urbanization, industrialization and network of transportation. During the last two decades, Punjab has lost thousands of acres of agricultural land to non-agricultural purposes, due to expansion of transportation network and growth of urban centers. The state has recorded a decline in the agricultural land i.e. from 4250 thousand hectares to 4145 thousand hectares during the period of 2001 to 2014, whereas, there has been an increase in the area under non-agricultural uses i.e. from 410 thousand hectares to 498 thousand hectares during 2001 to 2014 (Statistical Abstract of Punjab, 2015). Agricultural land conversion is more pronounced along the highways in the state. One such area of the state is Jalandhar-Nakodar Bypass of Jalandhar district which has seen conversion of vast tracks of fertile agricultural land to non-agricultural uses. As Punjab's economy is mainly based on agriculture, the uncontrolled and unplanned conversion of arable land has put a serious threat to the sustainable economic development especially food security in the long run in Punjab. These changes have received inadequate attention from the policy makers. Thus, the study related to conversion of arable land is, therefore of central importance in the state.

Objectives of the Study

There are very few studies on conversion of arable land to non-agriculturaluses in the state. The present study is thus intended:

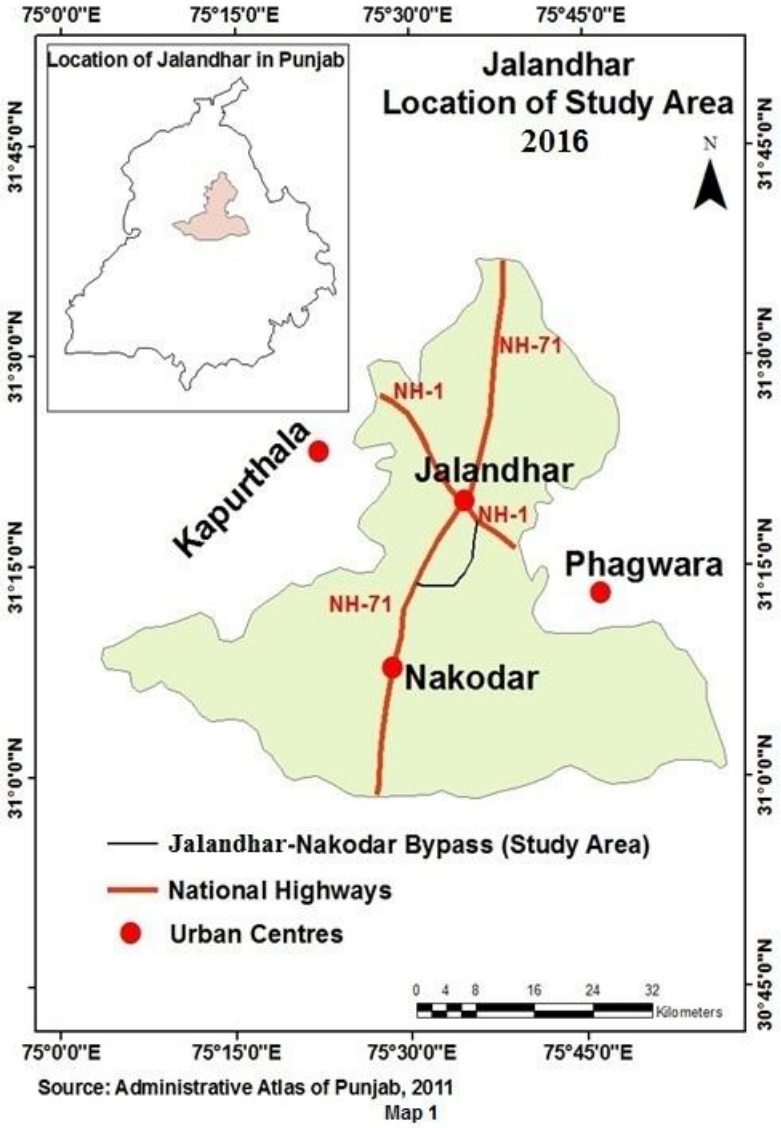
1. To conduct the spatio-temporal analysis of growth of non-agricultural uses on arable land in the study area during 2001-2016.
2. To examine the determinants affecting such conversion and their impact on the food security in the study area.
3. To suggest measures relevant for effective policy formulation to arrest this conversion and ensure food security.

Database and Methodology

The study is based on both secondary and primary sources of data. Secondary data has been obtained from the concerned Govt. offices such as Municipal Corporation, Revenue Records of the Tehsil Office and Google Earth. An intensive field survey of all the land conversions e.g. buyers and sellers of the agricultural land was conducted with the help of structured interview schedule to collect the primary data relating to various aspects of the study through focus Groups. Geo-referenced maps showing spatio-temporal changes in the growth of non-agricultural uses on arable land have been prepared using ArcGis 9.2 software.

Study Area

The present study is conducted along the Jalandhar-Nakodar Bypass road which lies between 31°14’ 59” N- 75°34’ 28” E and 31°17’ 40” N - 75°34’ 34” E and is situated in the Jalandhar-I tehsil of the Jalandhar district of Punjab(Map 1).The study area stretches over 16 Kms from National Highway-1 to National Highway-71 which connect Jalandhar city with Ludhiana and Firozpur districts respectively. This is the area which has recorded a sharp increase in the growth of non-agricultural uses on vast tract of fertile agricultural land in the Jalandhar district during 2001-2016.



Source: Administrative Atlas of Punjab, 2011

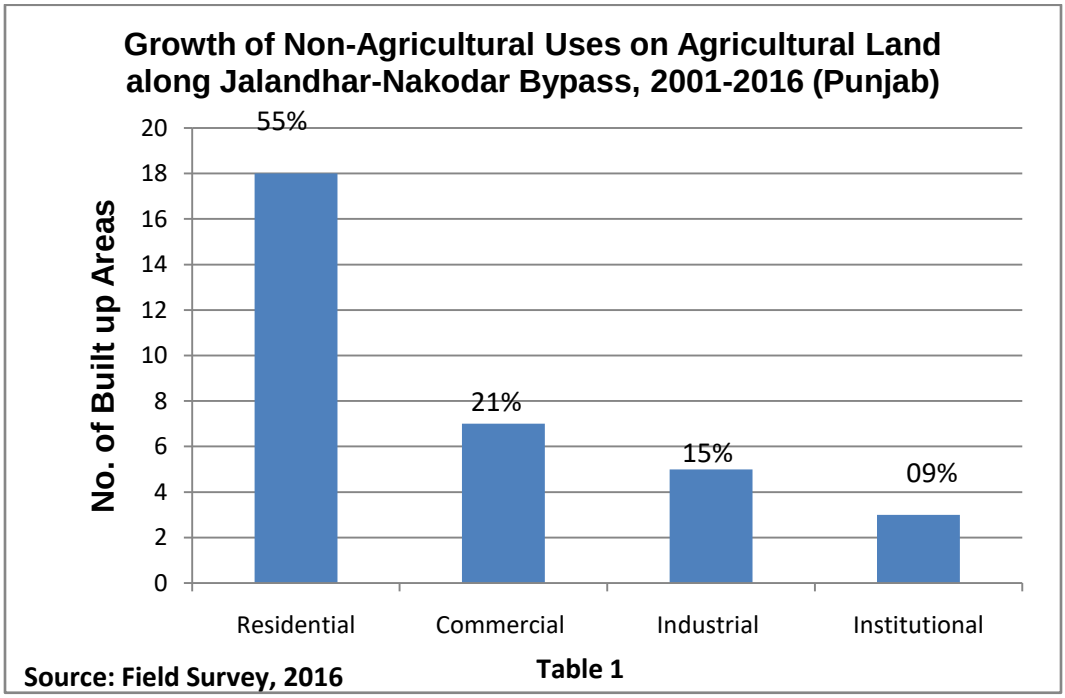
Map 1

Discussion and Findings

This part of the research paper has discussed the major findings of the selected objectives. The first objective was "to conduct the spatio-temporal analysis of growth of non-agricultural uses on arable land in the study area during 2001-2016".The analysisof Map 2 shows that there was not any growth of non-agricultural uses along the Jalandhar-Nakodar Bypass road stretch in 2001. The study area was an unmetalled road before 2003 and agricultural fields were a dominant feature along the 9 kilometers stretch from urban periphery to National Highway-71 whereas the total stretch of this road is 16 kilometers from NH-1 to NH-71. As this bypass road was not

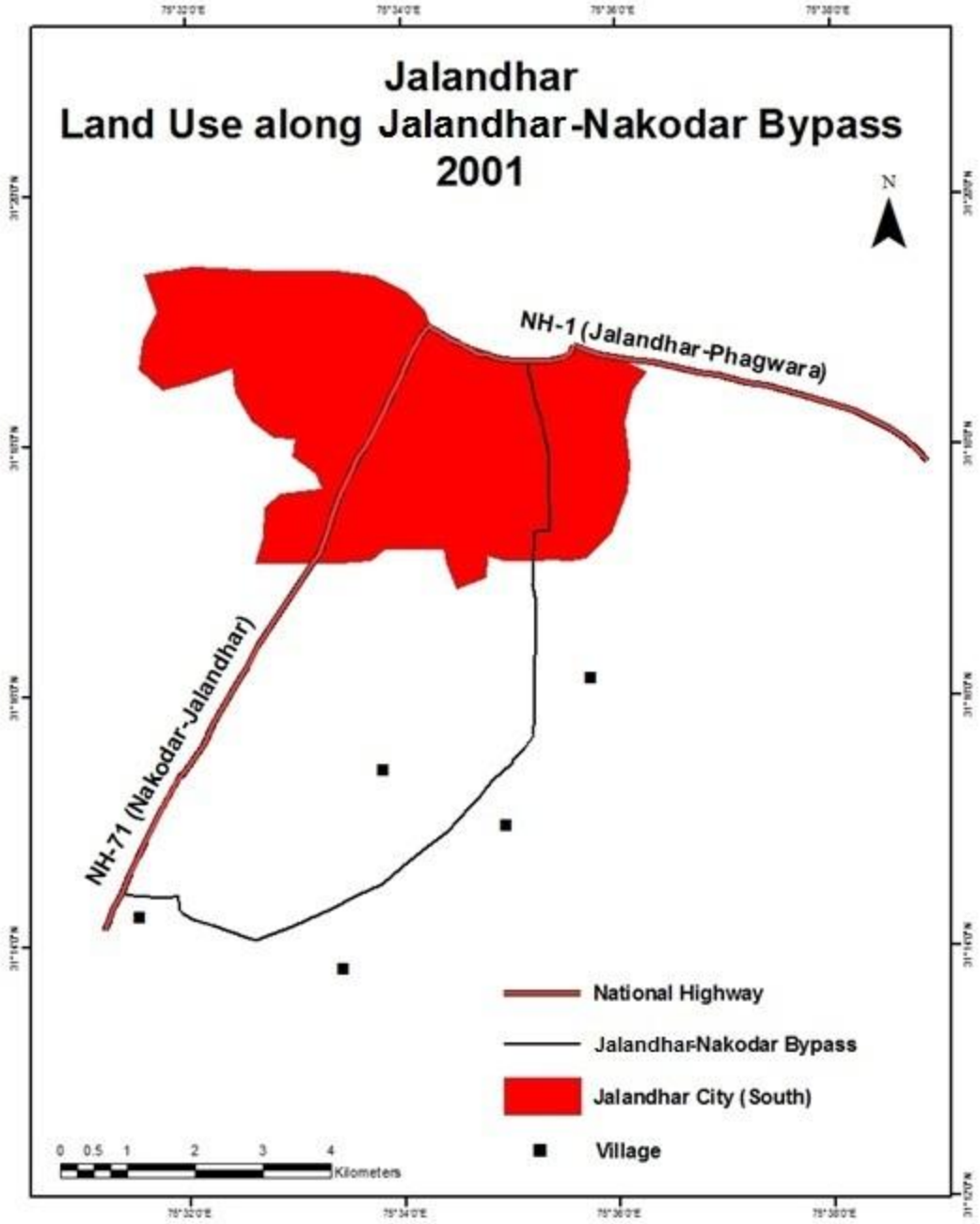
metaled, narrow and was known to very few people, so no land was put to non-agricultural uses along this 9 kilometers stretch before 2003.

In 2003, the Jalandhar-Nakodar Bypass road has been structured and widened by the Public Works Department. This led to emergence of demand for various non-agricultural uses such as commercial, industrial, institutional and residential. The analysis(Table 1& Map 3) revealed that 33 built up areas came into existence along the road during 2001-2016on agricultural land. These included e.g. 18 Residential (55%), 7 Commercial (21%), 5 Industrial (15%) and 3 Institutional (9%) sites. The arable land (Map 3) eaten up by eighteen residential uses includes housing colonies (8), vacant plots areas (4), housing flats (2), paying guest complexes (2) and villas areas (2). The seven commercial uses cover petrol pumps (3), restaurants (3) and mall (1); whereas five industrial units came up in the form of cold stores (3), factory (1) and sewage treatment plant (1). The three institutional uses emerged in view of the demand created by the residential areas and these are two schools and one college.



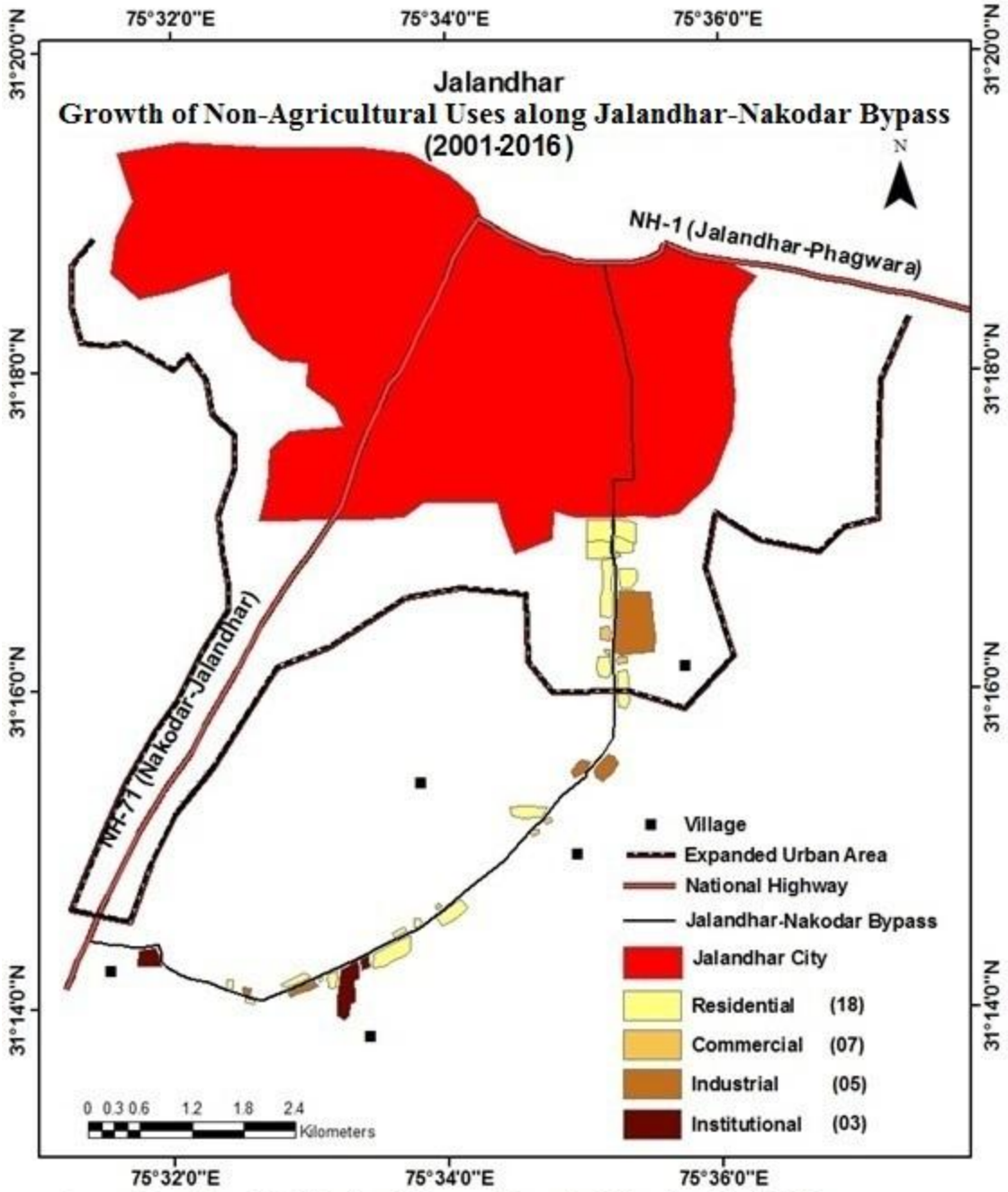
Source: Field Survey, 2016

Table 1



Source: Base Map of MC Jalandhar & Revenue Records of Jalandhar Tehsil, 2001

Map 2



Source: Base Map of MC Jalandhar & Revenue Records of Jalandhar Tehsil, 2016
(supplemented with information from Google Earth)

Map 3

The second objective was "to examine the determinants affecting such conversion and their impact on the food security in the study area". It is found from the analysis that there were two

major determining factors which led to the growth of non-agricultural uses on arable land in the study area. The first major factor was the expansion of urban fringe along the Jalandhar-Nakodar Bypass road, due to the growth of urban population. In this urban periphery area, the agricultural land was acquired mainly by the Punjab Urban Development Authority (PUDA). Analysis of focus groups conducted with the famers who sold the agricultural land revealed that less profitable farming activities of small & marginal farmers in comparison to the short term high returns from the sale of their holdings was the second major determining factor for the conversion of arable landto non-agricultural uses beyond the urban periphery.

Presently, the state is ensuring it's as well as national food security by being the top state in terms of Net Area Sown, Cropping Intensity, Gross Irrigated Area, Production of Food-grains and share of wheat and rice to central pool. But, the decline in Net Area Sown from land conversion along with stagnation in Cropping Intensity, Gross Irrigated Area, Productivity and declining farm incomes in the study area as well as in other parts of the state would lead to food insecurity in the coming years.

Summary and Conclusions

The study finds that there are four types of growth of non-agricultural uses such as Residential (55%) followed by Commercial (21%), Industrial (15%) and Institutional (09%) for which agricultural land has been convertedduring 2001-2016. The maximum conversion of arable land has taken place near the urban periphery along the Jalandhar-Nakodar Bypass road, due to the growth of urban population. The analysis of focus groups interviews shows that the converted land along the bypass was sold out by the small and marginal farmers, due to the short term high returns from the sale of land as compared to their less profitable farming activities. It is also found that except the urban periphery housing colonies, all other built up areas are unplanned, uncontrolled and are not approved by PUDA.

The major reasons for the growth of non-agricultural uses on arable land are urbanization, expansion of transportation network, industrialization, declining farm incomes of small and marginal farmers and absence of strict land use conversion policy particularly for the sale of fertile agricultural land to non-agricultural uses in the state. From the above discussion, it is

concluded that the decline in agricultural land caused by conversion of arable land to non-agricultural uses along with stagnation in cropping intensity, gross irrigated area, productivity and declining farm incomes in the study area as well as in other parts of the state would lead to food insecurity in the coming years.

Suggestions

The third objective was "to suggest measures relevant for effective policy formulation to arrest this conversion and ensure food security". The following suggestions are emerging out from the analysis of the present study.

The government should fix area-wise ceiling for non-agricultural uses on agricultural land. For checking the sale of agricultural land, special tax should be imposed. Government should introduce and implement State Land Use Conversion Policy for restricting unplanned housing, commercial and industrial projects. Agriculture should be made profitable and attractive especially by taking into consideration of the situation of small and marginal farmers. Agricultural diversification should be brought to curb the declining farm incomes from wheat-paddy cultivation in the state. In the last, strict population control measures should be adopted to restrict faster expansion of housing and road construction.

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