

STUDY ON PARCEL FRAGMENTATION AND ITS IMPACTS

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Abstract

Parcel fragmentation refers to a small or incomplete part or piece broken off; it means separated from the whole part to which it originally belongs. The very small parcel may bring the problem of land management that is there may not have enough space for making road, drainage, open space etc. When the parcel is small, area becomes smaller and it may cause increase in land disputes. Land fragmentation happens due to the division of land properties among heirs due to the inheritance law, People have right to sell and buy private land hence parcel fragmentation has been carried out due to the continuous land transaction and also due to infrastructural development such as road, drains, canals etc through the private land. Land is an essential natural resource, both for the survival and prosperity of humanity, and for the maintenance of all global ecosystems. The main purpose of cadastral mapping is to make the cadastral map by separating the individual parcel boundaries and to calculate the total areas of these parcels to collect the revenue from the land owner. Land use policy has been formed by the government but it has been difficult to apply as a result of fragmented parcel. This study may gives the following benefits; as it may explore the status of parcel fragmentation in Nepal, condition of land use change and types of land disputes on the fragmented parcels, proper land management through the land consolidation, land pooling etc and may also helps to the government to make proper polices related to the land. The method applied to conduct the study is mixed method. The data will be collected based on the documentary analysis, interaction, interview, open & closed questionnaires and focus group discussion. The data will be analyzed based on simple statistical tools.

Keywords: Parcel Fragmentation, Cadastral Map, Land Consolidation, Land Management

Introduction

Fragmentation derives from the word 'fragment'. According to the Oxford Dictionary it refers to a small or incomplete part or piece broken off, it means separated from the whole part to which it originally belongs. Parcel fragmentation is the scattering or division of parcel in

which a single farm consists of numerous spatially separated parcels (Demetriou, 2014). People have right to sell and buy private land in any part of the Nepal. There is not any type of obstacle in the land transaction. Due to the land transaction the parcel fragmentation is happened. Parcel fragmentation has made the parcel smaller and smaller. The very small parcel may bring the problem of land management that is there may not have enough space for making road, drainage, open space etc. When the parcel is small, area becomes smaller and it may cause increase in land disputes. Different people plant different crops in small area and the production decreases. In the small area modern farming method cannot be applied. Recently, land use policy has been formed by the government of Nepal but it may have been difficult to apply as a result of fragmented parcel. In the context of Nepal, the private land of the people is breaking down in smaller divisions than the previous i.e. the parcel of the private land is fragmenting day by day. When a single parcel is divided into two or more parcels then there happens parcel fragmentation. Due to the fragmentation the number of parcels is increased but the area of such formed parcels is decreased. Land fragmentation happens due to the division of land properties among the family members by selling part of parcel and also due to infrastructural development such as road, drains etc. The smaller parcel may cause the problems on infrastructure development such as road, airport, hydropower etc. As the population is increasing day by day but the area of land is fixed so land to man ratio is decreasing. The Parcel fragmentation may affects in land use change and similarly land disputes and reduces agricultural productivity. Land fragmentation may also bring problem on proper land management as land use. Land use policy has been formed by the government of Nepal but it may has been difficult to apply as a result of parcel fragmentation

Statement of the Problem

Parcel fragmentation seems to be influenced by the reduction of the total size of the parcel and has affected on increasing the total number of landowners(Karki, 2009).He further mentioned that land to man ratio has been decreased creating disputes and reduction of productivity. The statement of the problem of the research is as: to what extent the parcel fragmentation has affected on land use change, land disputes and reduction of productivity?

Objectives of the Study

The specific objectives of the study are:

1. To explore the status of parcel fragmentation of land in Nepal.

2. To examine the land use change and land disputes on the fragmented parcel.
3. To identify the problems of parcel fragmentation and suggest corrective measures for socio economic promotion.

Research questions

The research questions for the fulfillment of the objectives have been devised as:

1. What is the present status of parcel fragmentation in Nepal?
2. How is the change in land use after the parcel fragmentation?
3. Why do people involve in dispute after parcel fragmentation?
4. What are the problems of parcel fragmentation?
5. What are the corrective measures to improve socio economic condition after parcel fragmentation?

Hypothesis

The hypothesis of the study has been proposed as:

1. Productivity of the land has been decreased by parcel fragmentation.
2. Land disputes have been increased as a result of parcel fragmentation.
3. Land use change has been increased.
4. Cadastral re-survey is needed to make large scale cadastral map by new digital technology.

Methodology

For this research, both qualitative and quantitative methods will be used for the required data collection. It will be exploratory cum descriptive research study. Research has been carried out in academic arena to find out logical answers of certain problems and it demands systematic process. The study has adopted the general political science research approach or methods. The entire process of research is based on the research philosophies, principles and mechanisms of research. Researcher attempts to solve problems or searchers answers of the questions based on research philosophies. Research philosophy is concerned with the nature of reality (ontology), the way of knowing the reality (epistemology) and the method through which the reality could be known (Creswell, 2009). A research needs to be well planned and

well designed before doing it .It has been noted that some writers use the term methodology and method interchangeably (Hussey & Hussey, 1997).

The primary concern of this will be to investigate the contribution of socio economic reform over the parcel fragmentation practice of land in the society. This research focuses on how the socio economic development of people to participate in the mainstream economic reform and drive for new land use movement. In this research, researcher will use mixed methods (qualitative dominant quantitative) research design. The survey questionnaires, Interviews and observations and secondary sources will be used to collect the data and information. The secondary data will be collected directly from books, journals, and websites.

Generally mixed methods mean use of both the quantitative and qualitative data to answer a particular question or set of questions. This combination of methods involves the collection, analysis, and integration of quantitative and qualitative data in a single or multiphase study (Hanson, Plano Clark, Petska,& Creswell,2005). The term "Multi methods" refers to the mixing of methods by combining two or more qualitative methods in a single research study (such as in-depth inter-viewing and participant observation) or by using two or more quantitative methods. Thus it is more than simply collecting and analyzing both kinds of data; it also involves the use of both approaches in cycle, so that the overall strength of a study is greater than either qualitative or quantitative research (Creswell & Plano Clark, 2007).

Selection of the Sample

Socio economic activities are scattered in the different parts of the country. But for the research purpose I will consider three types of respondents: one from development field, second from parcel fragmentation activists and third from land owners and land concerned people.

The research site will be 10 districts, 2 from each developmental regions of Nepal. Research mainly focuses on commercial and other land use areas. These places have been affected due to uncontrolled parcel fragmentation movement. Research will be carried out from categories of people from different profession and socio economic status. And sample size will be minimum 385 people from different category as, Land owners, Staffs of Survey offices & Land revenue offices, Land brokers & Lekhapadhi, Housing Company, Real states, Land experts and Land planners. The sample size will be taken according to the following formula;

Formula for determining sample size

$$s = X^2 NP(1 - P) + d^2(N - 1) + X^2 P(1 - P)$$

s = required sample size.

X^2 = the table value of chi-square for 1 degree of freedom at the desired confidence level (3.841).

N = the population size.

P = the population proportion (assumed to be .50 since this would provide the maximum sample size).

d = the degree of accuracy expressed as a proportion (.05).

Source: Krejcie & Morgan, 1970

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Sampling Estimation

Development Region	District	Population HH (N)	Sample (n)
Eastern Development Region	Ilam	64,502	29
	Siraha	117,962	52
Central Development Region (Kathmandu Valley)	Lalitpur	109,797	49
	Dhading	73,851	33
Western Development Region	Nawalparasi	128,793	57
	Lamjung	42,079	20
Mid Western Development Region	Birdiya	83,176	37
	Salyan	46,556	23
Far Western Development Region	Kailali	142,480	63
	Baitadi	45,191	22
Total		854,387	385

FGD, interaction, interview, questionnaire will be the tools for data collection. Data analysis will be carried out through statistical tools, tests, frequency and graphical presentation. Qualitative data will be transcribed through coding and decoding Reliability and

Validity will be controlled through multiple sources of data, pretest and post test of tools, representative methodological validity will be applied.

Significance of the Study

This research may explore the status of parcel fragmentation in Nepal, land use change in the fragmented parcel, frequency and intensity of disputes in the fragmented parcel. This study may explore land management practice including the open space, road and drainage management, space for play ground and so on. This study may have benefit for modernization in farming. It may help to generate knowledge for reduction of accident, traffic regulation and public procession. This study may also give the following benefits;

- This research may explore the status of parcel fragmentation in Nepal.
- Land use change and types of land disputes may examine.
- It may helps in proper land management.
- It may also helps to the government to make proper polices related to the land.

Conclusion

This study focuses on Land fragmentation happens due to the division of land properties among their heirs due to the inheritance law, People have right to sell and buy private land hence parcel fragmentation has been carried out due to the continuous land transaction and also due to infrastructural development such as road, drains, canals etc through the private land. The findings will suggest that the as it may explore the status of parcel fragmentation in Nepal, condition of land use change and types of land disputes on the fragmented parcels, proper land management through the land consolidation, land pooling etc and may also helps to the government to make proper polices related to the land. Therefore, it will be essential to create a system of targeted incentives to encourage the farmers to seek ways of consolidation, by entering into agreements with the neighbors to swap parcels to increase farm size or increase the average size of their parcels.

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