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Livelihood Diversification and Household Well being of Buffer Zone Area of Nepal: A Case of Chitwan National Park

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Abstract- This paper aims at analyzing livelihoods of people of buffer zone areas highlighting the case of Chitwan National Park, Nepal. The study has been based on primary data collected through open and close ended questionnaire method. A mixed method research design was employed in this study. Both quantitative and qualitative data were collected at household level. Of the 22 buffer zone users committees in Chitwan National Park, 4 buffer zone users committees were selected from random sampling. From these selected buffer zone user committees, 10% (845 households) of the total households were selected using random sampling. Responses to the close ended questions were analyzed through the SPSS (Statistical Package for the Social Sciences) and responses to the open-ended questions were analyzed inductively. People of this study area primarily rely on agriculture with livestock rearing for their livelihoods. Different varieties of food crops and cash crops were grown in this area. About one third of the respondents were food crop deficient condition. The food deficient respondents had different copping strategies such as selling labour and livestock, borrowing money from others, selling cash crops and other household assets etc.

Keywords: *livelihood, landholding, diversification, buffer zone, non-farm livelihood.*

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Livelihood Diversification and Household Well being of Buffer Zone Area of Nepal: A Case of Chitwan National Park

Keshav Raj Dhakal

Abstract- This paper aims at analyzing livelihoods of people of buffer zone areas highlighting the case of Chitwan National Park, Nepal. The study has been based on primary data collected through open and close ended questionnaire method. A mixed method research design was employed in this study. Both quantitative and qualitative data were collected at household level. Of the 22 buffer zone users committees in Chitwan National Park, 4 buffer zone users committees were selected from random sampling. From these selected buffer zone user committees, 10% (845 households) of the total households were selected using random sampling. Responses to the close ended questions were analyzed through the SPSS (Statistical Package for the Social Sciences) and responses to the open-ended questions were analyzed inductively. People of this study area primarily rely on agriculture with livestock rearing for their livelihoods. Different varieties of food crops and cash crops were grown in this area. About one third of the respondents were food crop deficient condition. The food deficient respondents had different copping strategies such as selling labour and livestock, borrowing money from others, selling cash crops and other household assets etc. Different tiers of government should implement income generation policy and program for the better livelihood strategies of people in the study area.

Keywords: livelihood, landholding, diversification, buffer zone, non-farm livelihood.

I. Introduction

Livelihood is a means of living, skills required, property/assets, and activities (Chambers & Conway, 1992; Carney, 1998). A livelihood comprises the different types of assets, activities and capabilities for means of living. Livelihoods are outcome of how and why people organize to transform the environment to meet their needs through technology, labor, power, knowledge and social relations (Hoeck, 2001). Rural livelihoods comprise one or more often several activities, which variously provide food, cash, and other goods to satisfy a wide variety of human needs (Chambers & Conway, 1992). People's access to different levels and combination of assets has probably the major influence on their choice of livelihood options. The availability of assets, socio-economic and ecological environments and people's choice are the primary determinants for livelihood diversity. Livelihood diversification exist within different geographic areas, across different sectors and over time.

A livelihood approach draws on this improved understanding of poverty, bringing together relevant concepts to allow poverty to be understood more holistically (Farrington et al., 1999). The livelihood approach or framework arose from the broad context of rural development theory (Schuit, 2011) and attempted to go beyond the conventional definitions and approaches to poverty eradication and the integrated rural development (Mbaiwa et al., 2008). Ellis (2000) describes household assets as stocks of capital that can be utilized directly or indirectly, to generate the means of survival of the households. According to Dhakal (2018) livelihood of the people used to depend upon crop farming, livestock farming, fishing, grass and wood cutting and selling, wage and household laboring etc. but the change in socio economic condition influenced by the tourism activities, commercial agriculture, remittance, service sector etc. are the form of livelihood change of adjacent to Chitwan National Park.

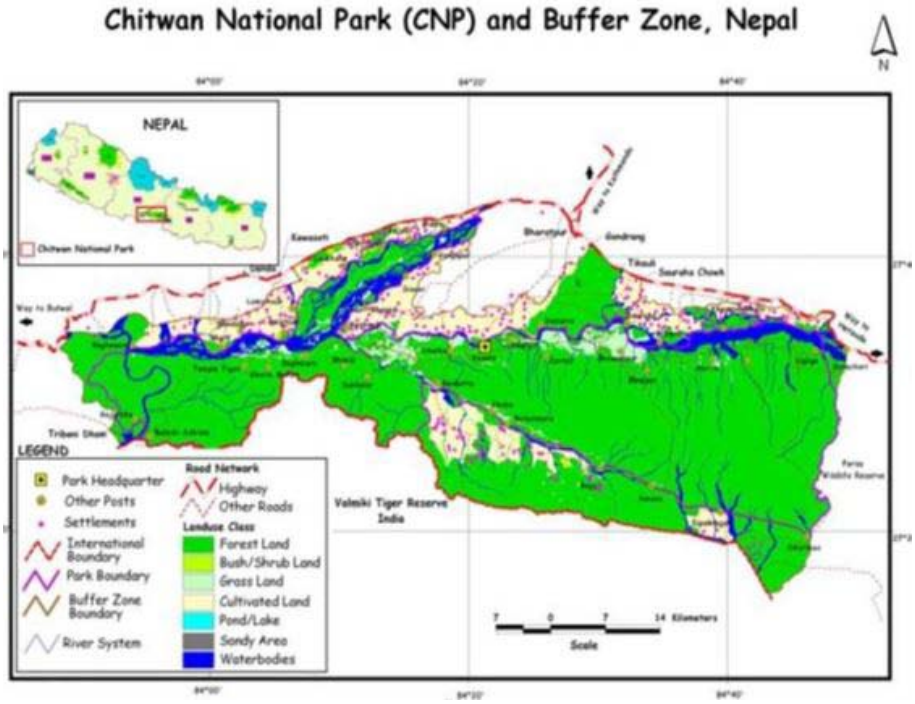
The household assets in livelihood approach appear backbone for adaptive and copping strategies from them. People require a range of assets to achieve positive livelihood outcomes. A brief description of the livelihood assets as defined by DFID are natural, physical, human, social and financial capital. In rural areas of developing countries, households combine diverse portfolios of activities in their pursuit of alleviating poverty and improving living standards (Ellis, 2000). Enormous diversities in livelihoods are realized by locality (Bishop 1990, Zoomers 1999, Dahal 2001, Subedi and Pandey 2002, Sulivan et al. 2004) across sectors and households. Livelihood diversification is a process by which rural households construct a diverse portfolio of activities and social support capabilities in their struggle for survival and improvement in their standards of living (Ellis, 2005) and the means of gaining a living Chambers, 1995). The objective of the study was to analyze the diversity of livelihood and household wellbeing of buffer zone area of Chitwan National Park, Nepal.

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II. Methods and Materials

The Buffer zone area of Chitwan National Park was chosen as the study area. A mixed method research design was employed in this study. Mixed methods research has become increasingly recognized as an approach capable of uniting quantitative and qualitative approaches through the creation of a third paradigm (Johnson et al., 2007). Both quantitative and qualitative data were collected at household level. Of the 22 buffer zone users committees in Chitwan National Park, 4 buffer zone users committees were selected from random sampling. From these selected buffer zone user committees, 10% (845 households) of the total households were selected using random sampling. The lists of households were achieved from the register of respective buffer zone users committee. The household in the buffer zone user committee was considered as sampling frame. Primary data were collected through household survey including open and closed ended questions. This method of data collection is quite popular, particularly in the case of big research studies. Both statistical and non-statistical tools will be applied for data analysis. Responses to the close ended questions were analyzed through the SPSS (Statistical Package for the Social Sciences). Responses to the open-ended questions were analyzed inductively. Along with various diagrams were used as non-statistical tools to draw a clear picture of the study.



III. Result and Discussions

a) *Livelihoods diversification*

Livelihood diversification refers to a key strategy taking place at different levels of the economy, which are usually, but not always directly linked (Start, 2001). Livelihood diversification is one of the most remarkable characteristics of livelihoods. Diversity and diversification in livelihoods is used to include growing, multiplying sources of revenue. Diversity refers to the existence at one time of multiple sources of income (Scoones, 2009); whereas diversification refers to the growth of diversity as the dynamic economic and social process of the farm household (Ellis, 2000).Nepal has an agrarian economy with over 80% of the population in rural areas, the majority adopting subsistence agriculture as themain stay of their livelihoods (CBS, 2012).In the study areas, households depended on diverse sources of activities for generating their income but agriculture was the primary source of income practiced by all interviewed households.

Table 1: Livelihood diversification

S. N.	Livelihood diversification	No. of respondents	Percentage
1.	Agriculture/livestock	338	40.00
2.	Service	137	16.21
3.	Wage Labor	222	26.27
4.	Business	127	15.02
5.	Remittance	85	10.06
6.	Social securities	16	1.89
7.	Others	101	11.95

Source: Field survey, 2018

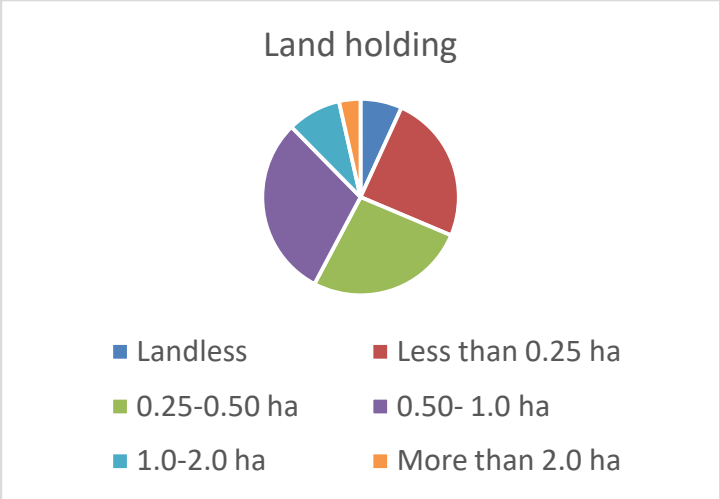
People of this study area primarily rely on agriculture for their livelihoods. Agriculture is a source of livelihood for about 40% of citizens. Rearing livestock is an integral part of agriculture along with crop farming in

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this area. Agriculture has strong linkages with the non-farm sector through agro-processing, urban markets and export trade. In sub-Saharan African countries, agriculture as the primary source of income has not secured adequate livelihood for most farming households (Babatunde, 2013). Farm households engage and pursue diverse non-farm livelihood activities to cope with diverse challenges and risks such as drought (Gebru & Beyene, 2012; Alobo, 2015; Kassie & Aye, 2017). Non-farm activities have the potential to help households reduce poverty by offering them with a form of insurance against the threats of farming and minimizing reliance on natural resources. Previous empirical study by (Haggblade, et al., 2010) reports that rural residents across the developing world earn 35–50% of their income from non-farm. In this study 68.77 % of the HHs were dependent on agriculture related occupation, including livestock rearing, while few HHs respondents (15.02 %) were involved in business sectors.

b) Land holding

Land is an important natural capital of the local people as agriculture is the main source of subsistence of the people in study area. Farmland plays a significant role in livelihoods, as it is the source of food for people and livestock, fuel wood, timber and cash income. The landholding size has colossal impact on types of occupation in the villages under study where major sources of household income is from agriculture. Land holding system in any area implies a system according to which land is held by an individual or the actual tiller of the land. Land holding system determines his/her rights and responsibility in connection with his/her holding.



Source: Field survey, 2018

In the study area 95.4 percent of the respondents had their own land. Few people are landless and very few have landholding more than 2 ha. The landless people are 6.86 percent and people more than 2 ha are 3.55 percent. The greatest number of people, 29.94%, have landholding of 0.50 – 1.0 ha while 26.50% of the people have landholding 0.25- 0.5 ha. The study area is mainly dominated by marginal and small farmers.

c) Food crop produced

Involvement in agricultural sector is one of the important strategies for rural people's livelihood. Though people perform a number of activities for their livelihoods, agriculture is the main activity in terms of people's employment as well as contribution on household income. Varieties of crops are grown in this area. Among them rice, maize and wheat are considered as major crops in terms of both area occupied and total production. Cash crops as mustard, lentil and vegetables were the most common type of crops that were grown in the study area. In this area the combination of food crops and cash crops were the most prominent. These are illustrated on table 3 below.

Table 2: Types of food crops produced

S. N.	Food crops	Number of respondents	Percentage
1.	Rice	67	7.92
2.	Wheat	48	5.68
3.	Maize	35	4.14
4.	Rice + Wheat	189	22.36
5.	Wheat + Maize	95	11.24
6.	Rice + Maize	159	18.81
7.	others	252	29.82

Source: Field survey, 2018

d) Livestock products

Livestock rearing is an integral part of the agriculture, and it is one of the sources of the household income in the study area. It is one of the financial assets, which supports livelihoods in many ways supplying

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different products such as milk, meat, wool, hides and manure for crop cultivation. Besides, it is used for drought power and as a means of transporting goods. Cattle, buffalo, goat, sheep and chicken are the major types of the livestock reared in this area. The people raise livestock either as stall-feeding or as grazing animals.

Table 3: livestock products

S.N.	Livestock products	No. of respondents	Percentage
1	Milk	99	11.71
2	Meat	45	5.32
3.	Egg	91	10.76
4.	Milk + Meat	120	14.20
5.	Milk + Butter	70	8.28
6.	Milk + Egg	105	12.42
7.	Meat + Egg	89	10.53
8.	Milk + Meat + Butter	78	9.23
9.	Others	103	12.89
10	None	45	5.32

Source: Field survey, 2018

The average livestock unit per household was found to be 1.73 LSU (livestock unit). The most common types of livestock reared were cow, goat, buffalo, ox, sheep and Poultry. 5.32% of the respondents didn't produce any type of livestock products while among those who produced livestock produced; milk was the most common. Other types of livestock products that were produced in the study areas included meat, eggs and butter. These types of livestock products provided households with an alternative source of income for the poor.

e) Status of sufficiency of food crops and coping strategies

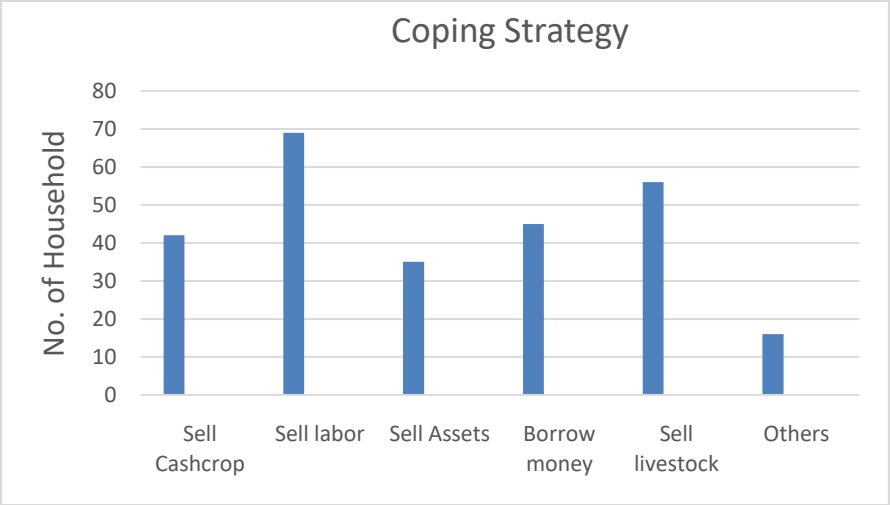
About 31.24% of the respondents were food crop deficient condition. This is understandable due to the fact that very few respondents grow these types of food crops and depend upon buying and bartering to fulfill their needs. It may be due to a number of factors as larger family size, lack of land, shifting pattern from agriculture towards business and services and shifting pattern in crop production from food crops towards cash crops and pulses.

Table 4: Status of sufficiency of food crops

S. N.	Food crops	Number of respondents	Percentage
1.	Sufficient	105	12.42
2.	Balanced	477	56.44
3.	Deficient	263	31.24
4.	Deficit period <3 months	87	10.29
5	Deficit period 3-6 months	105	12.42
6	Deficit period > 6 months	71	8.40

Source: Field survey, 2018

Majority of the respondents 31.24% of the respondents were food crop deficient, 10.29% of them were deficient for a period of 1-3 months while nearly 12.42% were deficient for 3-6 months and 8.40% of the respondents were deficient for a period of more than 6 months up to 1 year.



Source: Field survey, 2018

The respondents who were deficient in food crop, they had different copping strategies to sell food crop for survival. These copping strategies were selling labor (8.16 %), selling livestock (6.62%), borrow money from others (5.32%), selling cash crop (4.97%) and selling other household assets (4.14%) etc.

IV. Conclusion

The diversification of livelihood strategy in the study area was changed from agriculture based to non-agriculture. Land was a major household asset and crop production (maize, mustard, paddy, wheat etc.) was the means of subsistence. However, agriculture

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even in the past was not sufficient for them rather they had to dependent other activities besides agriculture. For the period in which agriculture was insufficient, they worked to collect forest resources, off farm labor work and the wage labor in the city. Besides they also worked in the field of different sector for manual work. Now they have no option other than modifying their traditional agriculture towards commercialization of agriculture and adoption of non-agricultural activities. Increasing access in urban employment, expansion of the market for their agriculture are the opportunities created by urbanization. Foreign employments as recently emerged livelihood strategies and due to the proximity to the market the influence of the urbanization is more apparent in the study area. Most of the households follow the multiple occupations besides agriculture and the role of agricultural activities in their life is only substantial. Although a few households sell their crops and vegetable. They are only able to harvest food for some months from their own production. Government of different level also formulated different type of income generation policy and program for the surrounding people. Different types of income generation policy and program makes the better livelihood strategies of people in the study area.

Author Contribution: Keshav Raj Dhakal – Conceptuali zation, methodology, investigation, data analysis, original draft preparation, editing and final paper preparation.

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Conflict of Interest: The author declares no conflict of interest.

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