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**Prospects of Multifunctionality in Nepalese
Agriculture: The Agritourism Perspectives**

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Article

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Abstract

Multifunctionality of agriculture in the developed countries is employed as a means of rural revitalization and economic circulation. Although farm diversification in the developing countries is much more crucial, in most of the rural areas of the developing countries, it is not performed, and it is delayed. In this regard, the main objective of this study is to explore the possibilities of the multifunctionality of agriculture for the sustainable rural development for the implementation of the sustainable development goals (SDGs) in the developing countries. The empirical study was conducted in two of the rural districts of Nepal called Nuwakot and Rasuwa. The author intentionally chose these districts because it is one separate area north of the capital city Kathmandu and bordering to China. Further, even though the location is nearby the capital city, and the rural villages have excessive potentials for tourism activities, the farmers are still focusing on subsistence farming without getting benefits from tourism. Based on the macro data of Nepal government and field visit, the author conducted a case study. This study explored that most of the household heads are working in the agricultural sector, which can be one of the opportunities to launch multifunctionality of agriculture. However, due to their weak educational background, they are expecting external

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supports in terms of knowledge, technology, and more importantly, supportive policy. The federal and central government should give subsidy to the farmers so that they can start multifunctionality in their farms, which lead to sustainable rural development.

Introduction

Multifunctionality of agriculture is one of the hot issues for rural development, and many of the industrial countries practiced it (Ohe, 2001; Ciani et al., 2012, Ragkos et al., 2015). Recently, European Union (EU) developed the concept of territory development through the multifunctionality of agriculture (Todorova & Ikova, 2014; Lehman et al., 2009) which means not the only locality of the rural areas but also the areas of cities will prioritize where agriculture is the main occupation. Indeed, the small farmers of not only in the developing countries but also in the developed countries are facing many problems like selling their products and the low price even if they could sell the products and which ultimately pushes them towards poverty. Therefore, the farm diversification to generate additional income for the farmers is necessary both in developed countries and developing countries.

The poverty level of farmers in developing countries is more serious than in developed countries; 78% of the total poor population are living in the rural areas of developing countries and relying on farming (World Bank, 2014). It is because due to no or very low government support to the farmers (Yu et al., 2019), lack of adequate infrastructures and subsidies on the agricultural inputs, traditional farming system, conventional types of seeds used in the farms. These problems are causing low agricultural products and low farm income for the farmers. However, these problems of the farmers of developing countries can be taken as the identity of that particular destination and can be used as an opportunity to start tourism activities. The conventional farming system is more attractive for the tourists than the modern farming system because Ciolic et al. (2019) mentioned that traditional activities either in farms or households make the tourist participate actively or passively. Thus, if the multifunctional of agriculture is promoted properly, different tourism projects can be started. Due to the tourism activities in the locality, the additional income for the farmers will be generated, which leads towards the implementation of territory development.

In this regard, this study aims to explore the possibility of multifunctionality as a pillar for the economic diversification and economic circulation in the developing countries. For this purpose, the author decided to conduct a case study in Nepal because it is one of the developing countries, and this country can almost represent the characteristics of the developing countries. Furthermore, the farm diversification in Nepal is more necessary and possible because Nepal recently received the new constitution and got a stable government through the election (Bhatta & Ohe,

2019; Bhatta, Itagaki, & Ohe, 2019). The authors explored that farmers are willing to establish agritourism in the rural village where agritourism does not exist. The elected central government declared “Visit Nepal Year 2020” to double the current number of foreign tourist arrivals the country and the total number of visitors is expected to cross 2 million in the year 2020 (Tourism Vision 2020). At this moment, exploring the multifunctional activities in the country, first of all, help to diversify the farm income and economic circulations in the rural areas, secondly, it provides the additional tourism destinations for the visitors. Ultimately, the author believes that the multifunctionality of agriculture leads to poverty alleviation and SDGs implementation in developing countries.

Literature review

The concept of multifunctional agriculture emerged in the last decade of the twentieth century in developed countries where the economic importance of agriculture was negligible, and the community was increasingly concerned with the quality of consumed food and the surrounding environment (Todorova & Ikova, 2014). In the meantime, several policies to support the multifunctionality of agriculture, e.g., agri-environmental schemes started to be implemented in Europe (Lehman et al., 2009). Multifunctionality or multifunctional agriculture are terms used to indicate that agriculture can produce various non-commodity outputs in addition to food, for instance, rubber, latex, tobacco, drugs, etc. It is associated with particular characteristics of the agricultural production process and its outputs:

- the existence of multiple commodities and non-commodity outputs that are jointly produced by agriculture; and that
- some of the non-commodity outputs may exhibit the characteristics of externalities or public goods, such that markets for these goods function poorly or are non-existent. (OECD, 2003)

Multifunctional agriculture generates relatively high employment per additional unit of output; that is, the employment/production rate is higher in the multifunctional agriculture than in the primary agriculture (Heringa et al., 2013). Multifunctional activities in many rural areas are providing positive benefits to the farmers (Ohe, 2007). For instance, pluriactivities in the hamlets of rural Japan helped to prevent the farmland from being abandoned (Ohe, 2001); rural tourism activities by retirees could realize efficient and sustainable resource utilization of the farm and therefore enhance multifunctionality of agriculture (Ohe, 2008). Multifunctionality in Cyprus affected a range of social, economic, and environmental aspects of life on the island (Ragkos et al., 2015). Further, the total value of agricultural multifunctionality in Yangtze River Delta in China had increased by 23.2%, which was mainly attributed to a significant increase in food provision and cultural leisure values (Yu et al., 2019).

Based on these facts, the authors can say that multifunctionality is important for rural areas.

Due to the importance of multifunctional agriculture, in many countries, the multifunctionality of agriculture has been promoted (Ohe, 2001; Ragkos et al., 2015; Yu et al., 2019). The Antica Volcej system in Italy is a territorial system, and it has emerged a great propensity at diversification activities. Indeed, almost 70% of the firms had at least one added activity to the classic production in this system (Borrelli, 2016). Due to the multifunctionality of agriculture contributes positively to the farmers, the Thai citizens were willing to pay for changes toward multifunctional agriculture (Sangkapitux et al., 2017). Among the different attributes, Thai citizens suggested for the agri-environmental practices for being promoted, “organic agriculture in combination with agrobiodiversity conservation,” “organic farming as single practice” and “good agricultural practice combined with agrobiodiversity conservation” (Sangkapitux et al., 2017), which means that agritourism is very crucial for the farmers.

As the importance of the multifunctional agriculture is understood, Yu et al. (2019) suggested that the future land use policy should focus on both urban control and promoting agricultural multifunctionality to foster the sustainable development of agriculture in metropolitan agglomerations in China. Ongoing transformation practices, such as land consolidation, should aim to improve the biophysical and socio-economic functions of farmland (Yu et al., 2019).

To date, the majority of studies in multifunctionality of agriculture has been conducted focusing on the developing countries. Despite its importance, there is no such research conducted in the case of Nepal as many researchers agree that the multifunctionality of agriculture should be promoted in the farms (Ohe, 2001, 2006; Ragkos et al., 2015; Yu et al., 2019). The concept of multifunctional agriculture in Nepal should also be promoted in Nepal. Thus, the author investigates the prospects of multifunctional agriculture in Nepal.

Material and methods

Study area

As the main objective of this study is to explore the prospects of multifunctionality of agriculture in the rural areas to diversify the economic activities in the developing countries. The author chose Nepal because it is one of the developing countries, more than 2/3 of the total population are working in the agricultural sector however this sector is contributing less than 27% in the national GDP (MOF, 2018). Thus, the farm income for the Nepalese farmers should be increased, and diversifying farm activities is one of the ways of income generation for the farmers.

This study mainly focused on two districts of Nepal called Nuwakot and Rasuwa; these districts are located on the north of the capital city Kathmandu and becoming a separate area. Nuwakot is the neighboring district of the capital city, and Rasuwa has a border with China, and these two districts are crossed by the Pasang Lhamu highway, and one more highway which connects Raswagadi to Thori (under construction) which is proposed as the parts of OBOR (One-Belt-One-Road) initiatives of China government (Bhatta & Ohe, 2019). Similarly, Nuwakot district is connected by Pushpalal Lok Marga (a highway, which connects east and west of the country focusing on the hilly regions). A proposed inter-country railway also goes from these districts. Thus, shortly, this area is going to be a transportation hub.

Further, these districts are famous not only for nature as well as adventure tourism of Langtang National Park and Singla trekking trails but also famous for the religious attractions like holy lake Gosaikunda, and other 107 sacred lakes located in Rasuwa district and Bhairabi Temple, Devighat Temple, Dupcheswor, and others in Nuwakot district are the representative examples of religious sites (CBS, 2017a, 2017b). There are many more popular religious as well as cultural and historical places in these districts. Also, the habitat for the red panda in Langtang National Park attracts the visitor's attraction. These attractions and accessibilities can be the potential sources of tourists in the diversified farm activities after its establishment in the rural villages of both districts.

Data and analytical methodology

For the completion of this study, two types of data were administered. The table survey was conducted, and the secondary data was collected from the different websites of Nepal Government's authorized bodies such as the central bureau of statistics (CBS), Ministry of Finance (MOF), census reports of Nuwakot and Rasuwa, household survey of both districts, and Nepal Rastra Bank publications. The micro-level data were collected directly from the field survey in August 2017. A questionnaire interview to the farmers in one of the villages of Nuwakot called Phikuri was conducted. Phikuri is VDC in the previous administrative system of Nepal. The author first contacted the representatives of each ward of Phikuri VDC to help during the survey and requested to invite the farmers in a particular place for the survey purpose. Before the data collection, a presentation was given on the pros and cons of agritourism development in the village. In the beginning, there were around 80 farmers; however, some of them did not participate in the full process of the survey. A total of 64 farmers fully involved in the survey, which is the sample size of primary data. The Phikuri village is the combination of five ethnic groups, Brahman, Tamang, Chhetri, Damai, and Kami (Census, 2011). However, the majority of them are Brahmin and Tamang. Thus, data collection also focused on these communities.

As this study is mainly qualitative in nature, the author applied mostly the descriptive analysis, specifically tabulation and calculation of means in the appropriate places. Further, a case study was conducted based on primary and secondary data collection.

Results and discussion

Both Nuwakot and Rasuwa districts have a significant number of people working in the agricultural sector. In Nuwakot, 97% of the household's primary source of income is agriculture, whereas, in Rasuwa, it is around 91% (Table 1). This data clarifies that most of the people of both districts are somehow depending on agriculture, and their income level is not good enough. As they are farmers, they focus more on farming, and the study was not their priority, which resulted in the lower literacy rate in both districts. Around 40% of the people are illiterate, and those who are literate also have some primary level of education. Female educational level is much lower compared to the male in both districts. Similarly, the number of female-headed households is only around one-fifth in both districts.

The role of the household head plays is essential for the multifunctional activity in agriculture. More than 95% of the household head of both districts are farmers, and their main source of income is farming. Thus, it can be assumed that the farmers are willing to develop the multifunctionality of agriculture to increase their income. Based on the result of the previous study conducted by Bhatta and Ohe (2019) and Bhatta et al. (2019), to explore the farmer's willingness to start agritourism, I can say that the farmers of the rural areas will be willing for the multifunctionality of agriculture. The scholars explored that farmers of rural Nepal, where agritourism does not exist were also willing to establish agritourism in their conventional farms.

Table 1: Statistics on the two districts

Item	Nuwakot	Rasuwa
Total farming population	264498 (person) 95.32% (percent) 53984 (holdings)	43798 (person) 87.30% (percent) 8504 (holdings)
Household whose main income is from agriculture	97.1%	91.30%
Literacy rate	59.8% (M=68.0%, F=52.4%)	59.80% (M=67.95, F=52.41)
Female-headed household	21%	22%
Household head is a farmer	51821 (95.98%)	8168 (96.04%)
Agricultural land area	32992 Hectare	4557 Hectare

Item	Nuwakot	Rasuwa
Total forest	43%	31.4%
Evergreen snow area	-	16.6%

Source: Nepal government, Household survey 2014.

Both districts have plenty of natural attractions, especially mountains and jungles. These jungles can be utilized for the major attractions for the tourism development in the villages. The buffer zone of Chitwan National Park is used for the jungle safari, Tharu cultural trail to the local communities is developed which increased the numbers of tourists in the nearby villages (Poudel, 2014) and Tharu culture is becoming an important attraction in Koshi (Aryal & Maharjan, 2018). Similarly, the jungles and buffer zone of Lang Tang National Park can be used as a complementary tourist attraction for the tourists.

This survey showed that at least one person from 45.3% household are either working in foreign countries currently or had worked in those countries for more than one year as a temporary worker (Table 2). The experience of the migrant returnee can be employed for the multifunctionality purpose because a study conducted by Bhatta and Ohe (2019) statistically proved that those who worked in the foreign countries more than one year are more likely to start agritourism in their home village. Working as a tourist supporter was also an additional supportive attribute for the diversification of the farm activities as the survey shows that 87.5% of the farmers have experience working as a tourist's supporter. That means the farmers are already aware of the tourism environment, and they also know the pros and cons of tourism. Only 54% of the farmers said they have enough farm products to sustain their life. Which means the remaining 46% of the farmers need some extra income to run their daily life.

Table 2: Attributes of farmers

Item	Percentage	Sample size
At least one person worked in a foreign country	45.3%	64
Experience working as a tourist supporter	87.5%	64
Sufficiency of farm products	54.0%	64
Interested into new jobs	50.0%	64
*Regular student	41.6%	334
Handicrafts	50.0%	64

Source: Field survey Aug 2017.

*includes the information of the family members of the respondents and sample size only for this variable is 334.

On the other hand, 50% of farmers said that they want to challenge new job, farmers those who are willing to move towards new jobs can be employed in the multifunctionality of the farms. As a supplementary product of the farm, 50% of the respondents said that they are still producing some kinds of handicrafts in their homes. If we can monetize them, the young generation will also be attracted and contribute to sustainable development. Moreover, currently, 41.6% of the total sample are regular students. Based on this data, we can expect that if the farms start generating money, the new generation (youth) will also be attracted to farm activities.

Based on these presented information and field visit reports, the author conducted a SWOT analysis for that multifunctionality of agriculture in the two rural districts and presented in Table 3. The strengths and opportunities are the positive factors, whereas weaknesses and threats are the negative elements for the multifunctionality of agriculture. Therefore, the plus factors should be maximized, and the minus elements should be minimized for the sustainable tourism development in these districts.

Table 3: SWOT analysis for the possibility of multifunctionality in the northern block

<p><u>Strengths</u></p> <ul style="list-style-type: none"> ● Plenty of attraction (natural, cultural, historical and religious) ● Significant numbers of farmers are in agriculture ● Some areas are performing specialized farming like rainbow trout fish farming, goat, yak farming and so on ● Forest area and evergreen snow-covered landscape, Lang Tang National Park, evergreen snow-covered mountain range views 	<p><u>Weaknesses</u></p> <ul style="list-style-type: none"> ● Poor infrastructure ● Small landholdings ● Lack of coordination between the government bodies ● The lower educational level of the farmers
<p><u>Opportunities</u></p> <ul style="list-style-type: none"> ● Connected to China and the capital city ● Crossed by the national highway and proposed train league between Nepal and China (Kerung) ● 3rd popular tourist destination in Nepal including two popular trekking trails and one cultural trekking trail ● Good geography (from the plain land to the mountain 7270m) ● Ongoing transportation network development projects 	<p><u>Threats</u></p> <ul style="list-style-type: none"> ● Young people do not like to work in agriculture ● Easy to go to foreign countries especially for the temporary job and payment is comparatively high ● Fear of losing local culture and tradition

Source: Author's elaborations based on data analysis.

Conclusion

In this study, the author first defined why multifunctionality of agriculture is necessary for developing countries, and later on, the author presented how to farm diversification is possible in one of the separate rural areas of Nepal. The author presented a case study based on both primary and secondary data and explored that the rural villages have the potential for multifunctional agriculture. Also, the author defined SWOT for the multifunctionality of farms in the villages and its possibilities.

This study explored that the rural area of Nepal has possibilities of multifunctionality of agriculture. The results show that most of the household heads are working in the agricultural sector, which can be one of the opportunities to launch multifunctionality of agriculture. However, due to their weak educational background, they are expecting external supports in terms of knowledge, technology, and more importantly, supportive policy. Farmers those who are willing to challenge and to start new works can be another opportunity. Similarly, the available attraction (natural, religious, cultural, historical) supports the additional activities in and around the territory should be promoted from the tourism point of view.

Based on this study, the author suggests the following implications for the policymakers. For the multifunctionality of agriculture, the adequate infrastructure development, capacity building of the farmers should be done as early as possible. For instance, just the development of view towers in different destinations increase the numbers of visitors in the rural areas. The additional supportive activities can be developed in the nearby jungles, and the trekking and hiking in the snow-covered areas can be employed. The different villages can be connected in a single trail, and the agritourism trail can be developed where tourist can enjoy many different culture and traditions of the different communities. For instance, the red panda trail, agritourism trekking trails, the multi-ethnic cultural trail can be developed by joining multiple villages in the single package according to their interest.

This study deals only the macro data, the micro-level survey of a village, and the capacity of the farmers on hosting tourist and implementing multifunctionality should be the next step of the study.

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