

## 学位論文全文に代わる要約 Extended Summary in Lieu of Dissertation

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学位論文題目： Study on Change of Agricultural Livelihood and Its Contemporary Problems in Eastern Bhutan  
Title of Dissertation (東ブータンの農業を中心とした生業変化と農村問題に関する研究)

学位論文要約：  
Dissertation Summary

### 1. GENERAL INTRODUCTION

In the Himalayas, various conditions of nature environment, ethnic groups and economy exist and it is said that these conditions has led to the evolution of diverse and unique livelihood and society, which facilitates to sustain people in harsh mountain environment. Most of these researches based on empirical study have been conducted in Nepal and other regions of the Western Himalaya. Bhutan is the country located in Eastern Himalaya and livelihood of this country has not known well due to strict entry restriction for foreign researchers and lack of studies on east part of Bhutan. Bhutan is a multiracial country and dominant ethnic group, called Tshangla, live in the Eastern Bhutan has considerable difference between the ethnic groups live in western part of Bhutan. Nevertheless, little attention for livelihood has been given to the region of Eastern Bhutan and Tshangla ethnic group due to remoteness and less ethnical rarity among ethnic groups live in Bhutan. Furthermore, from the preliminary survey in Eastern Bhutan, it was found that rapid change of their livelihood has occurred and huge abandoned lands and vacant houses also observed. Actually, many researchers have mentioned about the rapid change of society, livelihood and economic situation in Bhutan since last two decades. Despite this fact, few speculations have taken place to the change of livelihood at rural villages. Traditional livelihood and knowledge, which ensure their life in mountain environment, are going to disappear without any documents, and current serious out-migration in rural villages will surely cause severe problems in future. The objective of this study is to look into the change of agricultural livelihood in rural village of Eastern Bhutan and clarify the current situation of rural livelihood and contemporary problems.

### 2. STUDY AREAS

The preliminary and primary surveys were conducted in December 2011 at the villages of Khaling administrative block of Trashigang district and then main three natural villages, Shumar, Jiri and Dawzor, were selected for additional survey (Figure 1). These selected three villages consist of Tshangla ethnic group, also known as

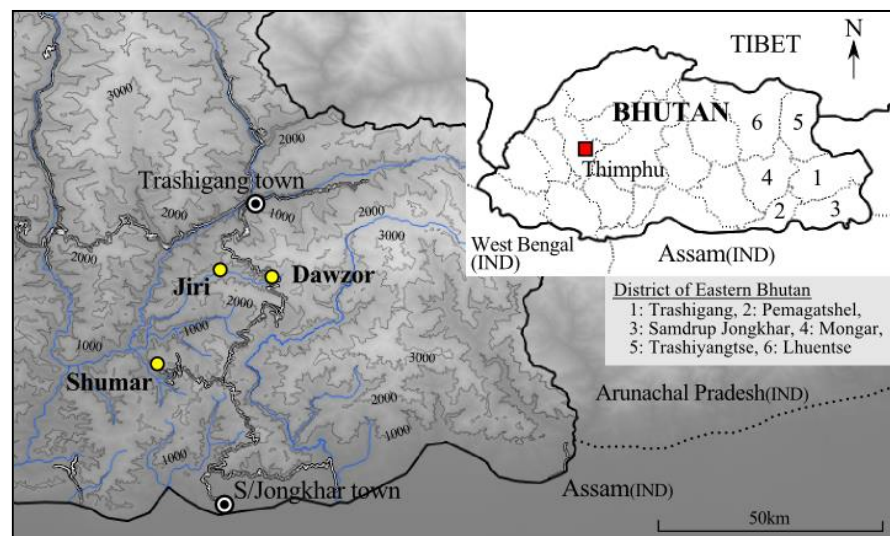


Figure 1 Location of Eastern Bhutan and Study villages

Sharchokpa or Sharchops. Tshangla is a dominant ethnic group in Eastern Bhutan, especially Trashigang, Pemagatshel and Mongar district and the third biggest ethnic group in Bhutan. Although majority of Tshangla people settle in Eastern Bhutan, distribution of Tshangla ethnic group are extended to western part of Arunachal Pradesh of India and Southeast Tibet. Shumar village is located in Pemagatshel district which is one of the remotest districts in the country and influence of modernization began comparatively late in Bhutan. A few villages in Pemagatshel still practice shifting cultivation even though the form of cultivation has much influence by modernization. Jiri and Dawzor village is under Khaling block of Trashigang district and both villages are located along with Jiri River. National Highway run close to Dawzor and the village has been affected modernization in 1960s. On the other hand, Jiri village is located about two hours on foot away from National Highway and less affected by modernization compared with Dawzor. Additional survey was carried out during July 2011 to November 2013.

### 3.1. PREVIOUS LIVELIHOOD ANTEDATING RAPID CHANGE: A CASE STUDY OF SHUMAR VILLAGE

Among Tshangla people, shifting cultivation, called *chema* or *chema-zame* was popular agricultural method in foothill regions of Eastern Bhutan. Shumar is located on the mountainside and different varieties of crops and cropping rotation were applied for different altitude of slopes. Maize was cultivated as a staple food on upper slope approximately above 1500 m and slope was fallowed after one-time cultivation. Millets and cotton was cultivated two-year rotation on lower slope. Fallow period in upper and lower slope was in general about more than ten years and fallow lands were cavorted with secondary forests. Shifting cultivation involving grassland fallow was also practiced near residential area and upland rice and bean was cultivated. Fallow period of grassland was five to six years. In addition to various cultivation techniques, they had remarkable customary laws and systems related to landholding and site selection for shifting cultivation.

Although shifting cultivation was definitely main food production system in the village, people were also engaged in various other subsistence activities. Upland fields surrounding residences were tilled with use of bullocks and intensive farming with manure was carried out. Cattle and pig was common domestic animal in the village. Some households held more than 15 numbers of cattle and cattle herds were seasonally grazed in dry pine forest and floodplain which does not suitable for shifting cultivation. Widespread trade activity was also vigorous. Vegetables, dairy products, farming gadgetry and local processed foods were traded seasonally in inter-regionally. Dry winter season was the time of extra-regional trade, and people went to Indian market nearby southern border area of Bhutan. Villager brought cistus fruits harvested in their homestead to Indian bazar and exchanged for groceries. Some important materials for livelihood activities were obtained from different ethnic groups through extra-regional trade. Eggs of silkworm were obtained from Indian bazar and silk cultivation was practiced in the village during spring season. Stud bulls were brought through old Tibet-India trade root by other ethnic group live in Arunachal Pradesh or north-eastern part of Trashigang district and strong hybrid bullocks for plowing were produced. Cross-border trade between the village and India during winter season also played another role to obtain coins and materials for tax obligation to pay central government.

It was clarified that accumulated agricultural knowledge and multi-subsistence activities enabled them to utilize different natural environment surrounding the village and widespread network improved and compensated livelihood in the village.

### 3.2. DEMISE OF SHIFTING CULTIVATION AND CHANGE OF LIVELIHOOD: A CASE STUDY OF JIRI VILLAGE

Shifting cultivation was common and important practice to produce staple foods on the Himalayan foothills in Bhutan. In recent years, however, this contextually rational and traditional practice is hardly found in Eastern

Bhutan. As with other Asian and African countries, Bhutan government also has devised policies and regulations seeking to eradicate shifting cultivation in the name of nature conservation and land development. Total ban of shifting cultivation was authorized by the National Assembly of Bhutan in 1995. However, many of this traditional land-use method for produce staple foods in Eastern Bhutan seem to lose its vitality in 1980s. In the study village Jiri, three types of agriculture, i.e., shifting cultivation, permanent dryland cultivation and wetland cultivation had been practiced until 1980s and shifting cultivation had taken the central role in food production. Through the study, it was found that multiple factors had led shifting cultivation to the demise in Jiri village. First, development of modern legislations after 1960s restricted shifting cultivation directly or indirectly. The Forest Act implemented in 1969 regulated practice of shifting cultivation in the vicinity of National Highway and banned newly clearance of forests for shifting cultivation. Although this act would not much inactivate shifting cultivation in the village because most slopes for shifting cultivation was located away from the highway, legislations and policies would ratchet up pressure on shifting cultivation. The Forest Policy in 1974 pays ad-hoc attention to forest conservation and states that the country maintain a minimum of 60 % of the total land under forest cover for all times to come, and shifting cultivation has therefore to be abolished if forests have to be conserved. Fifth five-year plan (1981-86) for development in Bhutan shows government effort to contain and phase out shifting cultivation through conversion from shifting cultivation to permanent upland cultivation. Villagers also mentioned difficult social situation for practicing shifting cultivation due to restriction of shifting cultivation itself or fire setting in the forest. Second reason for demise of shifting cultivation was increase of yield from permanent upland cultivation. Introduction of modern technologies such as chemical fertilizer and availability of intensive labour force to permanent field led dramatic improvement of crop yield. According to villagers, in-kind taxes and labour obligations imposed by the government until the end of 1970s was burdened for Jiri villagers and it disturbed to input of intensive labour force to farming. Third reason was creation of religious and social stigma against shifting cultivation. With improvement of road network, non-killing precept which is one of the five commandments of Buddhism spread into villager level by preaching of monks and setting fire for preparing cultivation land were being recognized as sinful process because fire kills many small insects. Change of policy, technology and religious stigma had eradicated shifting cultivation.

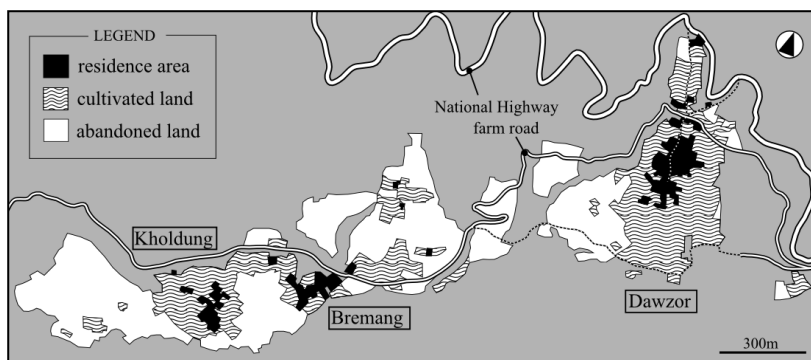
With transition of main agricultural place from mountain slope to permanent upland field near the residence, cultivated crops have also been changed over the years. Maize has been still distinguished and dominant summer crop since the era of shifting cultivation because of its versatile utilization. However, the importance of maize as a staple food has been shrunk due to inflow of imported cheap rice and change of food habit and maize has recognized as a food of poor people in recent years. Some other cereal crops such as millets, barley, amaranths and buckwheat have being disappeared or reduced the cultivated acreage. On the other hand, valuable crops for earning cash such as groundnut and chili in summer and red bean and common bean in winter have gradually increased its presence. Cultivation of groundnut was began nearly a decade ago in the village and sold to drivers and passengers in roadside of highway. Chili and some vegetables were brought to neighbor villages located in high altitude. The most part of beans cultivated in winter season were carried to roadside shop and exchanged for imported rice or cash. A few new crops for self-consumption such as upland rice and sorghum were also found in small acreage as a trial. However, variety of cultivated crops include has tended to decrease as a whole and agricultural schedule has been simplified compared with the era of shifting cultivation.

Connection with economy of foreign market has made easy to obtain cheaper and convenient foods and industrial alternatives and importance of money has increased day by day. Diminishing the food production for self-consumption, increasing the production of cash crop and expansion of fallow land in dry season to engage in wage labour indicated the shift of livelihood center from food production to food consumption society in the village.

### 3.3. CURRENT LIVELIHOOD AND CONTEMPORARY PROBLEMS: CASE STUDY OF DAWZOR AND NEIGHBOR TWO VILLAGES

Dawzor and neighbor two villages are located on upstream of Jiri village apart from 10 km. The National Highway constructed in 1960s run close to the villages and local bazar along with highway is thriving. Therefore influence of modernization to the villages has begun in relatively early period. Shifting cultivation practiced in the village was led to disappear about five decade ago and permanent upland field surrounding residence area was expanded with losing vitality of shifting cultivation. Potato was cultivated in small acreage and exchanged for salt and commodities in Indian bazar twice or thrice a year before highway construction. After highway construction, potato became absolutely essential cash crop for live a life in the village with improvement of accessibility to market and pervasion of money economy. Almost of all part of cash income account for 40% of agricultural product derived from potato sale. Although some amount of potato is sold in local market, most of potato is brought to auction market in Samdrup Jongkhar town and export to India in summer season. Another major crop is maize and its importance as a staple has shrunk. In recent years, however, processed maize food, called *tengma*, has begun to produce with machine donated by NGO and sold in local markets. Some vegetables such as cauliflower, cabbage and radish also started to cultivate by community groups and sell to local schools for school meals. On the other hand, cereal crops such as millets, amaranth, buckwheat, barley and oil vegetable were already disappeared from agriculture schedule and fallow land in winter season reached to more than 95 %. Villagers, especially male, have engaged in temporal wage labour during winter season.

In the three villages, large abandoned lands were found and rate of abandoned land owned by farmers live in the villages were 34.2 %. Cultivated lands were basically confined in the vicinity of residential area and the lands located away from residence were left as abandoned (Figure 2).



In what follows, three factors of appearance are presented as causes of abandoned land.

(1) Labour shortage: Migration of population has been frequently observed in the process of modernization in the world and rapid migration from rural to urban area has been reported by the government and international institutes in Bhutan. According to the census of Bhutan in 2005, Trashigang district had the highest number of out-migration in the country and net-migration numbering around 16,700. In the study villages, 53.7 % of registered population among interviewed household was live in out of the villages. About 30 % of people live in the villages were student and educated young people migrate to urban area for seeking job opportunities. Loss of young labour force directly affect agricultural work due to most part of agriculture works depended on manpower and mutual-aid in community.

(2) Conflict of nature and human lives: Restriction of hunting and contiguity of habitat of wild animals is causing severe wild animal damage for agricultural crops. The family member have to stay in a small hut built in cultivated land whole day to protect from wild animals such as monkey in the daytime and wild boar and deer in the night time at least for a month before harvest. Villager had no labour to protect all own isolated farm land from animals and lands located away from the residence were left as abandoned lands.

(3) Change from regional self-sufficiency to global market economy: Children who migrate into urban after graduation of school and take on a job send some money to the parents live in the village. 31 out

of 45 households in three villages received remittances from their children or close relatives and it accounted for 19.1 % of total annual income in the villages. In recent years, villagers prefer to eat rice as staple and importance of maize and other cereals cultivated in dry land are decreasing. However, arable land for wet paddy cultivation in the village was all abandoned in 2013. Cheap rice imported from India enabled to purchase in local market and if farmer have a way to earn the money, there was no necessarily to cultivate rice with putting extra labour force. Farmers in the village were able to purchase the rice by money earned from potato sale, seasonal wage labour and remittance.

Behind of progress of out-migration and abandoned land, the study villages show signs of depopulation. In the three villages, 19 vacant houses were found and 7 out of 26 households in Dawzor consisted of only aged parents. Although many parents recognized as labour shortage, they hoped their children to gain white-collar job in civilized and comfortable urban area. The farmers recognized agriculture as tough and tiresome work and a young farmer mentioned that he does not want to keep their children in the village. Children move to capital to go looking for job opportunity after graduation from school and aged parents live in village are took in or move to urban area to babysit their grandchildren. Though aged parents have no thought to leave home permanently, getting older over the course of staying in urban for babysitting and cannot go back to the village. Some of aged parents expected their son or daughter come back to the village to take care of them and properties. On the other hand, some mentioned that children will not come back to the village even if parents asked because children have their own family, job and life in out of the village.

#### 4. GENERAL CONCLUSION

Through this research, the change of agricultural livelihood over the last half-century in Eastern Bhutan was clarified and contemporary problems which may overshadow the future of Bhutan in terms of food security and preservation of traditional culture were found. Shifting cultivation practiced in villages was a source of self-subsistence economy and it was a complex of custom and experiential techniques to maximize the yield and the utilization of surrounding various environments. However, this traditional land-use method which was suitable for mountainous slope was led to the end by the government efforts to conserve forest and villager's own choice through socio-religious-economic changes. Proliferation of money economy with the change of social system and food habit has pushed commercial farming. However, domestic market size is limited due to small population and Bhutan is compelled to strongly rely on its economy and trade for a certain country. Replacement of crops for domestic consumption to cash crops for export to certain countries and moving away from agriculture will derive serious food security problem in Bhutan. Furthermore, depopulation problem following rapid out-migration have observed in many villages and reconsideration of significance of existence of rural villages in the country and new development paradigm which not only enhance material and economic development but encourage the evaluation of rural life itself are required.

(注) 要約の文量は、学位論文の文量の約10分の1として下さい。図表や写真を含めても構いません。

(Note) The Summary should be about 10% of the entire dissertation and may include illustrations