

Do the livelihood strategies affect encroachment in a state-owned  
reserved forest in Myanmar?

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## Thesis Summary

Encroachment is the process of the conversion of forest land into other form of land use, which is mainly caused by the agrarian forest fringe communities. Land is the ultimate resources for the agrarian community. Thus, access to land and securing tenure right on land is the crucial for their livelihood. Effective control over land in the rural settings is crucial to sustainable livelihood and poverty reduction as the significant portion of the income of rural poor contributed from farming (Borras et. al., 2007). Meanwhile, forests play a vital role which provide a variety of products that supplement and complement to the products obtained from farm. Those who has no access to land heavily rely on the forests for their livelihood. Therefore, restrictions imposed on the use of land and natural resources, which were under laissez-fair access for generations, significantly affects the livelihood of rural community. As a consequence, conflicts over the access to the forest land and products were the major challenges to the forest management especially for the developing countries where rural people heavily relied on the forest resources such as Myanmar, Indonesia, Nepal, India, Thailand etc., (Bryant, 1997; Rimal et al., 2017; Wadley, 2003, Chantraporn et al., 2019).

Permanent forest estate (PFE) is a tool to secure the country's forest resources sustainably managed. Constitution of PFE restricts the use of forest products and land which forest communities accessed openly for generations. Nevertheless, the increasing demand for land to feed the rising population and the weak enforcement trigger the forest encroachment in PFE. Therefore, Myanmar government initiated the land reform policy in 2013 to deal with the encroachment problem in PFE with the favor of the rural development harmonized with the sustainable forest land management. However, current forest land reform policy still lacks in consideration of landless forest settlements. The demand of the land by those land less people are

latent until they found the alternatives for their livelihood. Therefore, understanding how the forest communities construct their livelihood is crucial in forest land management.

In this regard, the study aims to assess the encroachment in PFE by the forest communities with respect to the livelihood strategy they construct by adapting the restrictions. I addressed the following three research questions; (1) Does the forest encroachment reduce after the implementation of land reform policy in 2013? (2) Can livelihood diversification reduce forest encroachment? and (3) How the livelihood strategies affect the forest encroachment in the study area?

## **Methodology**

The study was conducted in southern Shan state, eastern hilly regions of Myanmar. Purposive sampling method was use in selecting the PaungLaung reserved forest (RF) as the study area, and the four villages based on the different transportation facilities because the distance to city and the highly deforested areas has significant impacts on the land use change of the forests. Form each village, 30 households were randomly selected to administered the questionnaire survey. Mixed method (both qualitatively and quantitatively) is applied in this study.

## **Results and Discussion**

Q1. Does the forest encroachment reduce after the implementation of land reform policy in 2013?

Implementing the land reform policy cannot reduce the rate of encroachment significantly, and the encroachment is mainly caused by the land-less people. It has been nine years the land reform policy was implemented in the study areas. This policy aimed to control the deforestation due to the expansion of settlements and agricultural land, by recognizing their land use right and

providing tenure security which is an important for the food security and livelihood development. Insecure tenure has a great impact on the land use transitions and the rural livelihood (Long et al., 2021) and it is the major driver of deforestation (Lwin et al., 2020; Tun et al., 2021). However, the current results and encroachment pattern revealed that the securing land tenure alone to the land users was not effective to halt the encroachment. Consideration of the interest of landless people should be consider in the reservation process and land reform policy.

Q2. Can livelihood diversification reduce forest encroachment?

Livelihood diversification cannot reduce forest encroachment. It was found positively related to the forest encroachment rate. Because the local people diversified the farm activities, so that they need more land to plant a variety of crops to sustain their livelihoods. Kassie et al. (2017) stated that livelihood diversification is a strategy for sustainable land management practices and poverty reduction, this study provided the evident that the livelihood diversification did not contribute to the sustainable land management, it needs more focus on their livelihood orientation. Caviglia-Harris and Sills (2005) found the diversification may reduce the deforestation because it can provide the financial support for agricultural intensification, however, household sometimes diversified activities that need more land. Moreover, the better access to the urban area and the in-migration faster the encroachment (Sharma et al.,2020), but the results of the current study showed that encroachment rate had no relationship with accessibility to urban areas and the in-migrations. Population growth, insufficient land allocation at the time of reservation and the farm income were the factors that affects the encroachment rate in the study area. Considering the livelihood of the existing local people when forests were reserved, investigating potential encroachment areas around the forest settlement to be set aside should be taken into account to secure the livelihood of the forest communities.

Q 3. How the livelihood strategies affect the forest encroachment in the study area?

Two major strategy was observed; livelihood diversification (both farm and non-farm) and agricultural intensification.

The lowest encroachment rate was observed under the non-farm-oriented diversification strategy; however, it did not secure to improve income level. The current situation of non-farm diversification did not contribute to the high-income level; however, non-timber forest products (NTFP) were the major income sources among non-farm activities in the study areas, securing the market for the NTFP will be helpful to improve the livelihood of the local people and the reducing encroachment.

In case of the farm-oriented diversification, the encroachment rate varies with the types of crops and the mode of diversification. Farm diversification itself is an efficient use of land that is benefited from the technology and market development (Caviglia\_Harris & Sills, 2005). The results also indicated that mixing annual crops, perennial crops and the orchards on the small parcel of land have positive impacts on the encroachment compared to the extensive cultivation of the annual crops. However, the encroachment rate was the highest with farm diversification under extensive agriculture.

Agricultural intensification focuses on increasing production of agricultural products. Moreover, market security changed the shifting cultivation into perennial crop plantation. Phyu (2018) found that the livelihood transitions from shifting cultivation to permanent cultivation caused the complete disappearance of the forest. Land use transitions studies accept the certain phases of land use transitions in which the shift from the extensive agriculture to the intensive agriculture is the sign for the start of forest transitions (Grainger, 1995; Long & Qu. 2017). The fact that the



encroachment was lower compare to the farm diversification because local land management system controlled the encroachment. Therefore, effective control over land by the rural community is crucial in land management and the livelihood development (Borras et al., 2007).

## **Conclusions**

The encroachment was mainly caused by the land less households, insufficient land allocation and the heavy reliance on the farm activities. Regarding livelihood development, promoting non-farm-oriented diversification and securing the market for NTFP were the best approach for the forest communities. Agricultural intensification with local control played a crucial to control forest encroachment. Therefore, allocating adequate land for the forest communities should be considered and transferring the management right to the local communities will be the better consideration for the forest land management.

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