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Participation of User Group members in Community Forest-based Coffee Plantations Initiated by External Organizations: Case study in Myanmar

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စာတမ်းအကျဉ်း

ဒေသခံပြည်သူအစုအဖွဲ့ပိုင်သစ်တောမှ ထွက်ရှိသည့် သစ်တောထွက်ပစ္စည်းများအား စီးပွားဖြစ်ထုတ်လုပ်ရောင်းချနိုင်ရန် ရည်ရွယ်လျက် ဒေသခံပြည်သူအစုအဖွဲ့ပိုင်သစ်တောအခြေခံသည့် စီးပွားရေးလုပ်ငန်းများ အကောင်အထည်ဖော် ဆောင်ရွက်ခြင်းသည် ၂၀၁၆ခုနှစ်တွင် ပြင်ဆင်ရေးဆွဲခဲ့သည့် ဒေသခံပြည်သူအစုအဖွဲ့ပိုင်သစ်တော ညွှန်ကြားချက်များတွင် အဓိက ကျသည့် မူဝါဒပိုင်းဆိုင်ရာ ပြုပြင်ပြောင်းလဲမှုတစ်ခု ဖြစ်ပါသည်။ အဆိုပါ မူဝါဒပိုင်းဆိုင်ရာ ပြုပြင်ပြောင်းလဲမှုနှင့်အတူ ရှမ်းပြည်နယ် (တောင်ပိုင်း)၊ တောင်ကြီးခရိုင်၊ ရွာငံမြို့နယ်တွင် ပုဂ္ဂလိက ကုမ္ပဏီ (သို့မဟုတ်) အစိုးရမဟုတ်သော အဖွဲ့အစည်း (NGO) တို့၏ အထောက်အပံ့ဖြင့် ဒေသခံပြည်သူအစုအဖွဲ့ပိုင်သစ်တောအခြေခံသည့် ကော်ဖီစိုက်ခင်းများ စတင်အကောင်အထည် ဖော်ဆောင်ရွက်ခဲ့ပါသည်။ စာတမ်း၏ ရည်ရွယ်ချက်များမှာ (၁) ဒေသခံပြည်သူအစုအဖွဲ့ပိုင်သစ်တောအခြေခံသည့် ကော်ဖီစိုက်ခင်းလုပ်ငန်းများ ထိရောက်စွာ အကောင်အထည်ဖော်ဆောင်ရွက်နိုင်ရန် ကုမ္ပဏီနှင့် NGO တို့၏ မတူညီသော စီမံကိန်း/ လုပ်ငန်းအကောင်အထည်ဖော်ဆောင်ရွက်မှုအား လေ့လာဆန်းစစ်ရန်၊ (၂) ကုမ္ပဏီနှင့် NGO တို့မှ ဆောင်ရွက်လျက်ရှိသည့် ဒေသခံပြည်သူ အစုအဖွဲ့ပိုင်သစ်တောအခြေခံသည့် ကော်ဖီစိုက်ခင်းလုပ်ငန်းတွင် ဒေသခံပြည်သူတို့၏ ပူးပေါင်းပါဝင်မှုအား နှိုင်းယှဉ်လေ့လာရန်၊ (၃) ဒေသခံပြည်သူတို့၏ လူမှုဘဝအခြေအနေသည် ၎င်းတို့၏ ပူးပေါင်းပါဝင်မှုအပေါ် လွှမ်းမိုးသက်ရောက်မှုရှိ/ မရှိအား လေ့လာဆန်းစစ်ရန်တို့ ဖြစ်ပါသည်။ သုတေသနစာတမ်းအတွက် သစ်တောဦးစီးဌာနမှ သက်ဆိုင်ရာ ဝန်ထမ်းများ၊ ကုမ္ပဏီနှင့် NGO တို့မှ ဝန်ထမ်းများနှင့် တွေ့ဆုံမေးမြန်းခြင်း (Key Informant Interview)၊ သုတေသနကျေးရွာများတွင် ဒေသခံပြည်သူအစုအဖွဲ့ပိုင်သစ်တောအဖွဲ့ ဥက္ကဋ္ဌ၊ အဖွဲ့ဝင်၊ ကျေးရွာရပ်မိရပ်ဖများနှင့် တွေ့ဆုံဆွေးနွေးခြင်း (Focus Group Discussion) နှင့် နမူနာအိမ်ထောင်စုများတွင် သုတေသနဆိုင်ရာ မေးခွန်းမေးမြန်းခြင်းများ ဆောင်ရွက်ခဲ့ပါသည်။ သုတေသနတွေ့ရှိချက်များအရ လုံလောက်သောငွေကြေးရင်းနှီးမြှုပ်နှံမှု၊ နည်းပညာပံ့ပိုးမှုနှင့် အနီးကပ်ကြီးကြပ်ကွပ်ကဲမှုတို့နှင့်အတူ ကုမ္ပဏီနှင့် ဒေသခံပြည်သူ ပူးပေါင်းအကောင်အထည်ဖော်ဆောင်ရွက်မှုသည် ဒေသခံပြည်သူအစုအဖွဲ့ပိုင်သစ်တော အခြေခံသည့် ကော်ဖီစိုက်ခင်းများ အောင်မြင်ထိရောက်စွာ ဆောင်ရွက်နိုင်ရန် အလားအလာကောင်းများရှိသည်ကို တွေ့ရှိရပါသည်။ ထို့ပြင် ကုမ္ပဏီနှင့် ဒေသခံပြည်သူ ပူးပေါင်းဆောင်ရွက်မှုနည်းလမ်းအောက်တွင် ကော်ဖီစိုက်ခင်းများ စိုက်ပျိုးရာ၌ ဒေသခံပြည်သူများအတွက် အလုပ်အကိုင်၊ ဝင်ငွေအခွင့်အလမ်းများရရှိခြင်း၊ ကော်ဖီစိုက်ခင်းများမှ မျှော်မှန်းစီးပွားရေး အကျိုးအမြတ်ကောင်းများနှင့် ကုမ္ပဏီမှ အနီးကပ်ပံ့မှုန် ကြီးကြပ်ကွပ်ကဲမှုများသည် ဒေသခံများ တက်ကြွစွာပူးပေါင်းပါဝင်စေရန် တွန်းအားဖြစ်စေသည်ကို တွေ့ရှိပါသည်။ သို့သော် ကုမ္ပဏီနှင့် NGOတို့၏ ထောက်ပံ့မှုဖြင့် ဆောင်ရွက်သည့် ဒေသခံပြည်သူအစုအဖွဲ့ပိုင်သစ်တောအခြေခံသည့်ကော်ဖီစိုက်ခင်းများအကောင်အထည်ဖော်မှုနည်းလမ်း

(၂) မျိုးစလုံးတွင် အထက်မှ အောက် ဆုံးဖြတ်ချက်ချမှတ် ဆောင်ရွက်ခြင်း (top–down decision making) နှင့် တန်းတူညီမျှမှု မရှိသော (သို့) ထိရောက်မှုမရှိသော လုပ်ငန်းဆောင်ရွက်မှု ပုံစံများသည် ဒေသခံပြည်သူများ တက်ကြွစွာပူးပေါင်းပါဝင်မှုအတွက် အဟန့်အတားများ ဖြစ်စေကြောင်းဆန်းစစ်တွေ့ရှိရပါသည်။ Binary Logistic Regression အသုံးပြု၍ ဒေသခံပြည်သူများ၏ မတူညီသော လူမှုဘဝအခြေအနေအပေါ် မူတည်၍ ၎င်းတို့၏ ပူးပေါင်းပါဝင်မှုအားဆန်းစစ်ရာ ရေလှကျေးရွာတွင် ဒေသခံပြည်သူ အစုအဖွဲ့ပိုင်သစ်တော စီမံခန့်ခွဲမှု ကော်မတီအဖွဲ့ဝင်များ (သို့) စီမံကိန်း ကော်မတီအဖွဲ့ဝင်ဖြစ်သူ များသည် အဆိုပါကော်မတီအဖွဲ့ဝင် မဟုတ်သူများထက်ဒေသခံပြည်သူအစုအဖွဲ့ပိုင်သစ်တောအခြေခံသည့် ကော်ဖီစိုက်ခင်းများတွင် ပူးပေါင်းပါဝင်ဆောင်ရွက်မှုကောင်းသည်ကို တွေ့ရှိရပါသည်။ အလယ်ချောင်ကျေးရွာတွင် မိသားစု ဦးရေများခြင်းနှင့် အိမ်ထောင်စုတစ်ခုတွင် ကျားဦးရေ ပမာဏများပါက ဒေသခံပြည်သူ အစုအဖွဲ့ပိုင်သစ်တောအခြေခံသည့် ကော်ဖီစိုက်ခင်းများတွင် ပူးပေါင်းပါဝင်ဆောင်ရွက်နိုင်မှု အလားအလာပိုများသည်ကို ဆန်းစစ်တွေ့ရှိရပါသည်။ လေးရွာ ကျေးရွာတွင်မူ အိမ်ထောင်ဦးစီး၏ အသက်နှင့် ပညာအရည်အချင်း၊ အိမ်ထောင်စုတစ်ခု၏ ကျားနှင့် မ ဦးရေ အချိုးအစားနှင့် စီမံခန့်ခွဲမှု ကော်မတီအဖွဲ့ဝင် (သို့) စီမံကိန်းကော်မတီအဖွဲ့ဝင်ဖြစ်ခြင်းတို့သည် ၎င်းတို့၏ ပူးပေါင်းပါဝင်ဆောင်ရွက်မှုနှင့် ဆက်နွယ်မှုရှိသည်ကို တွေ့ရှိရပါသည်။ သို့ဖြစ်ပါ၍ ဒေသခံပြည်သူ အစုအဖွဲ့ပိုင်သစ်တောသစ်တောအခြေခံသည့် စီးပွားရေးလုပ်ငန်းများ အောင်မြင်စွာ အကောင်အထည်ဖော်ဆောင်ရွက်နိုင်ရန် ဆောင်ရွက်သည့် အဖွဲ့အစည်းများမှ ပြည်သူလူထုပူးပေါင်းပါဝင်သည့် ကောင်းမွန်သော စီးပွားရေးနည်းဗျူဟာ တို့အား လေ့လာဆန်းစစ်ရန် လိုအပ်သကဲ့သို့ စီမံကိန်းများ ရေးဆွဲရာတွင်လည်း ဒေသခံပြည်သူများ၏ မတူကွဲပြားသော လူမှုဘဝအခြေအနေတို့ကို လည်းထည့်သွင်းစဉ်းစားသင့်ပါကြောင်းအကြံပြုတင်ပြအပ်ပါသည်။

Participation of User Group members in Community Forest-based Coffee Plantations Initiated by External Organizations: Case study in Myanmar

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Abstract

The establishment of Community Forest Enterprises (CFEs) was a key point of the legal amendment of Community Forestry Instructions (CFIs) in Myanmar in 2016 to make marketable forest and farm products from CF in addition to provide basic needs. These political conditions encouraged the initiation of CF-based coffee plantations (CFCP) with the supports of the NGO or the company in Ywangan Township, Taungyi District, Southern Shan State. The specific objectives of this study were to 1) identify the different implementation approaches by the company and the NGO for effective management of CFCP; 2) study the extent of people participation in four stages of CFCP (i.e., (i) planning/decision-making, (ii) implementation (iii) benefit-sharing, and (iv) monitoring and evaluation) and 3) explore the influential socio-demographic factors on CFUG members' participation in CFCP. Key Informant Interview with the officials of the Forest Department, staff of the NGO and the company was conducted. Focus group discussion, semi-structured questionnaire survey and field observation were carried out in three villages in Ywangan township, Taungyi district, Southern Shan State. The findings showed that the implementation approach under the company-community collaboration contributed to the effective management of CFCP along with the secure financial investment, technical assistance, and regular monitoring and evaluation. However, top-down decision making, and the unbalance or ineffective duty-taking in implementation were challenges to the people participation in both CFCP initiatives. In terms of benefits, immediate incentives of wages and predictable economic returns gave impetus to the active participation under the company-community collaboration. Frequent inspection and interaction of company's personnel made the CFCP-participants highly motivated and accountable for effective CFCP management rather than limited inspection by NGO. The result of the binary logistic regression showed that being Executive Committee (EC) or Project Committee (PC) members was found to have influence on participation in village A. Size of family members, and proportion of male to female in a household was positively correlated with participation in village B. Age, and education of the household head, proportion of male to female, and being EC or PC members were found as the most influential factors on participation in village C. Therefore, it is important to find out the way of effective business strategies by the initiated organizations as well as consider the heterogeneous socio-demographic characteristics of the local people in designing those strategies for successful CFEs implementation with much of their participation.

Key words: Community Forest Enterprises, external organizations, internal characteristics, implementation approaches, people participation.

Introduction

Decentralized forest polices have been accommodated all over the world to engage the local communities' involvement in sustainable forest management (Edmunds and Wollenberg 2003). Since the late 1970s, with the realization of deforestation and forest degradation due to conventional or industrial forestry, the participation of the local community in forest management had been emphasized in South and Southeast Asian countries (Balooni and Inoue 2007). Since that time, decentralized forest management programs, so-called social forestry, community forestry, participatory forest management, collective forest management, joint forest management have been initiated in those countries.

In Myanmar, 42.9% of the total country area is covered by the forest in 2015 (FAO, 2015) while 57.9 % in 1990. The average annual deforestation rate is increased gradually from 0.5 % (1990-2010) to 1.7 % (2010-2015), and Myanmar stands at the third highest deforested country all over the world (FAO, 2015). The main cause of deforestation has been land-use change due to overexploitation of timber and non-timber forest products legally and illegally (Tint et al., 2011). Moreover, 70% of the country's populations who live in rural areas depend on timber and non-timber forest products for their daily lives. Many studies in Myanmar stated that the extraction of firewood and charcoal had an impact on deforestation (James, 2003; Kelso, 1991; Mon et al., 2012; Webb et al., 2014; Leimgruber et al., 2005).

It became apparent that unless fulfilling the basic requirements, especially firewood for the forest-dependent local people, it would be unsure of achieving sustainable forest management (Tint et al., 2011). In Myanmar, as a recognition of local people's participation in forest management and protection to meet both conservation and development goals (Muhammed et al., 2011), Community Forestry (CF) program began with the enactment of Community Forestry Instructions (CFIs) in 1995. Under the CF program, the Government, namely Forest Department (FD), gives the use and management right to CF User Groups (CFUG) which are formed with local communities to conserve the forests with their participation as well as to fulfill their subsistence needs of forest products. However, CFIs (1995) articulate that CF is not intended for the commercialization of forest products.

Since 2001, 900,000 ha of CF were targeted to be established by 2030 at the country-wide during 30-years of forestry Master Plan in Myanmar (Ministry of Forestry, 2001). According to the FD, the data as of January 2019 showed that 248,711 hectares CF had been officially handed over to 4,707 CFUG at the country level. This achievement, however, is relatively low compared to the target prescribed in the Master Plan. Among the main causes for staying behind the target, less incentive other than basic needs from CF had been challenging for developing CF with the participation of local people and supporting their livelihoods (Greijmans M. et al., 2018).

Through a series of national CF National Working Group (CFNWG) meetings during 2014 and 2016, CFIs had been revised in August 2016 to open the opportunity for the CFUG to make marketable and free trade of CF products through the establishment of CF-based Enterprises (CFEs). CFEs can best be explained as enterprises that are operated by forest-farmers through cooperative action for adding value, production, and making marketable of forest and farm products (Tint et al., 2012).

Although FD plays a role in legal permission and assistance, CFIs (2016) articulates the role and intervention of local and international NGOs and private enterprises in CFEs' implementation. NGOs play important roles in facilitation and capacity building to mobilize the local communities and to implement the support activities such as financially and technically assistance for enterprise development. Private sector involvement is also crucial in supporting capital, expertise, and market access to participants (Shackleton et al. 2002). These political conditions of revised CFIs (2016) encouraged the initiation of small CF-based forest or farm products enterprises in some CFs by the assistance of the NGOs or the private sector. On the other hand, the objectives and implementation approach of those external actors were different as they see differently over

the CFEs establishment. Often, the local communities have to adjust to the purposes and views of NGOs (McDaniel, 2002) or private sector, and functioning of CFEs was different based on different approaches and objectives of those external actors. As well, the participation of user group members in CF or CFEs management may vary with the socio-economic background of each member and biophysical features (Musyoki et al., 2012). Maskey et al. (2003) investigated that age, gender, and household income had a significant effect on participation in community forest management.

Chowdhury (2004) argued that the improper functioning of external actors and diverse socio-economic factors of the local people affected in ensuring people's participation. Pascaline et al. (2011) conceptualized that both the internal and external factors were likely to impact the motive and willingness of local people participation in forest management. Buchy and Hoverman (2000) stated that local people's participation was subject to the control of the external actors over the resources.

However, most of the previous studies on participatory issue (e.g., Musyoki et.al., 2012; Maskey et al., 2003; Agrawal and Chhatre, 2006) failed to recognize the nature of local people participation in connection with both the external actors' intervention (Benneker, 2008) and internal community's characteristics in functioning of CFEs management. To respond to the research questions, this study identified the extent of people's participation in CFEs in relation to both external actors' intervention (company and NGO), and the internal community's characteristics. Therefore, in order to contribute to the study of CFEs, the objectives are set up as follows.

Objectives

The objectives of this study are to:

1) identify the different implementation approaches by the company and the NGO for effective management of CF-based coffee plantations (CFCP);
2) study the extent of CFUG members' participation in four stages of CFCP (i.e., (i) planning/decision-making, (ii) implementation (iii) benefit-sharing, and (iv) monitoring and evaluation) under the initiation of the company and the NGO;
3) explore the influential socio-demographic factors on CFUG members' participation in CFCP.

Materials and Methods

Study Area

For this study, the three villages in Ywangan township, namely Alechaung (Village A), Lay Ywar (Village B) and Yay Hla (Village C) were purposely selected. These three study sites are located in Ywangan township, Taungyi District, Southern Shan State, Myanmar. Ywangan township extends an area of 2,652 square kilometers (km^2) with an average elevation of 960 meters and has a 31.1 population density per km^2 (Department of Population, 2015). It is one of the Danu self-administered zones according to the 2008 constitution of Myanmar. It is renowned for good quality coffee, and small-scale farmers have been cultivating coffee to substitute the poppies since the early 1980s (Inter American Coffee, 2017).

Village A consists of 107 households, and the total population is about 550 persons. Village B comprises of 290 households and 1,400 populations. Village C has 205 total households and 878 total populations.

The major livelihood of the three villages is agriculture. The major crops cultivated in village A include paddy rice, cash crops such as soybean, split pea, wheat, and perennial crops such as avocado and coffee. Approximately 30 households (28.0% of the total households) in village A cultivated coffee in small-scale. In village B, their main income came from the home garden of the mixed cropping such as tea leaves, coffee, avocado, dog fruit, and all households have small-scale coffee plantations. Besides, they also cultivated taungya rice and cash crops such

as chayote, mustard, and ginger. In village C, the major crops cultivated include taungya rice, cash crops such as chili, cabbage, cauliflower, mustard, and perennial crops such as coffee, avocado, and dog fruits. Approximately 150 households (73.2% of the total households) in village C cultivated coffee in small-scale. In all villages, some households with no or less agricultural land do off-farm activities such as daily wage labor in agricultural activities, such as crop cultivation works, picking the coffee bean and tea leaves or log carrier. The exchange labor system among the households for picking coffee bean and tea leaves is also common in village B.

Research Methodology

Field research was conducted from June to August 2018 and from February to April 2019. Focus group discussion with the CF chairman, Executive Committee (EC) members, and village's head of household units was conducted to collect the information of demographic information and villagers' livelihoods. Key informant interview was carried out with officials of Forest Department, staffs of NGO and company. The individual household interview was done for thirty households, including both members and non-members of CFCP in each village by using the semi-structured questionnaire to collect both qualitative and quantitative information. Binary logistic regression was used to assess the correlation of CFUG's socio-demographic characteristics, and their participation in CFCP implementation.

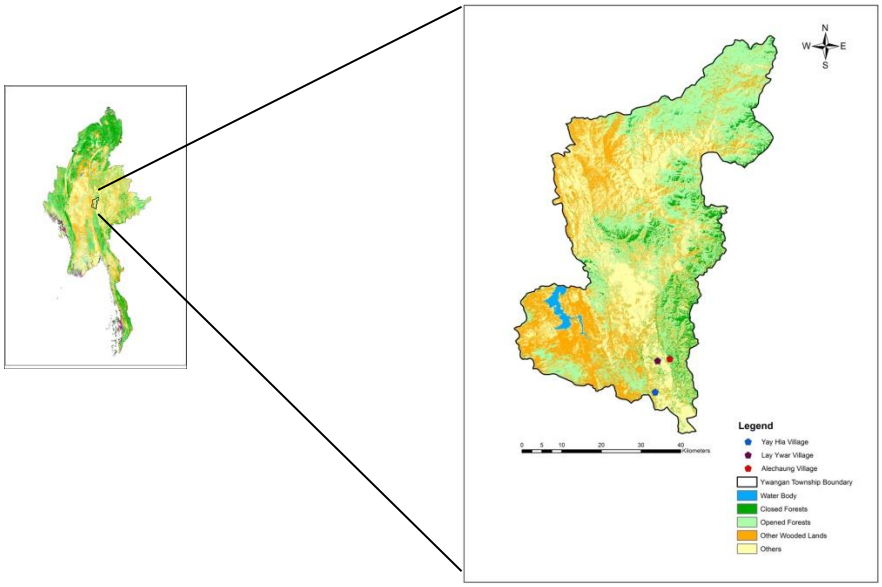

Fig-1: Location map of the surveyed villages in Ywangan Township, Taungyi District, Southern Shan State, Myanmar.

Source: Myanmar Information Management Unit (MIMU)

Results

The System of CF-based Coffee Plantations Initiated by the Company and the NGO

1) The System of Company-initiated CF-based coffee plantation

CFCP was implemented under the contractual agreement between the company and CFCP-participants in village A since March 2018, and the total contract period is for eight years. The company offered village A to introduce the coffee plantations inside the CF as a first pilot project so as to contribute the bilateral profits for both the company and CFCP-participants. The reasons for introducing coffee inside CF were that the company could cultivate the coffee on the extensive land of CF, and raw coffee materials were available from the CFCP during the designated years of the contract. The benefit for the CFCP-participants was intended for receiving employment and income from CFCP.

Under the contractual collaboration, the company was responsible for the investment of

budget covering expenses of seedlings, fertilizers, and wage labor fees, providing the planting techniques, regular monitoring, and evaluation. On the other hand, the CFCP-participants offered their CF-land to the company for the cultivation of coffee and provided their men power and time for CFCP.

According to the contract of 2018, 12,000 seedlings were planted in 4.8 hectares of the coffee plantations (calculated based on the spacing used- 2.4m x 1.2 m) inside the CF. The species of cultivated coffee is *Catuai* highland shade-grown coffee (*Coffea Arabica*), "a hybrid of highly productive *Mundo Novo* and compact *Caturra* varieties" (Coffee research.org., 2015). *Catuai* is a high-yield coffee species but needs adequate fertilizer and care. It is also easy to be harvested because of its short of stature (Coffee research.org., 2015). The villagers already introduced this species in their private small-scale plantations with their traditional way of cultivation (direct sowing) in all three surveyed villages. For CFCP establishment, however, the excellent quality *Catuai* seedlings had been bought from the company for better growth and higher productivity.

The contractual agreement clearly stated the obligations and regulations that the CFCP-participants must pay back at most 30% of the invested money to the company for five years from the start year of harvesting. Raw coffee beans must be sold to the company at the market price during the next 15 years after paying back the loan. Also, the CFCP-participants must take responsibility for the survival and growth of coffee seedlings. In case of violating the rules of the contract (e.g., fail to pay back the invested money or loss of coffee plantations, etc.), there will be the prosecution or compensation for the losses.

2) The system of NGO-initiated CF-based coffee plantation

In village B and village C, CFCPs were initiated by the local NGO with the funding from a Chinese NGO (Global Environmental Initiative). The name of the project was "Ecosystem Conservation and Community Development in Ywangan Township," and it was implemented between February 2017 and January 2018. According to the interview with the personnel from the local NGO, the project sites were selected based on the easy accessibility and convenience of collaboration between the NGO and CFUG for the project implementation. The project was implemented with the integration of the Community Conservation Concession Agreement (CCCA) mechanism to balance the conservation work and community development.

The purpose of this project was to enhance the livelihoods of the local people as well as environmental conservation. The project activities include the distribution of livestock (pigs), the initiation of the coffee and bamboo plantations inside the CF, distribution of efficient cooking stoves and solar cells for climate change problems. Training on bamboo planting and bamboo handicrafts making, financial management, solar cells, and efficient cooking stoves handling were conducted during the project.

Under the project-approach, the NGO supported a portion of the budget for the initiating of CFCP in village B and village C. The CFCP-participants had to contribute their labor and time voluntarily for implementing CFCP. But, the training for coffee plantation and on-site monitoring at the time of planting was not provided by the NGO because the local communities were thought to be familiar with the coffee cultivation by their traditional knowledge. NGO's staff did three times scheduled monitoring and evaluation during and at the end of the project period.

5,200 seedlings were cultivated in 1 hectare of coffee plantation (calculated based on spacing used by different groups: 1.2m x 1.5m or 1.5m x 1.8m) in village B. 4,000 seedlings were cultivated in 1.2 hectares of coffee plantation (calculated based on the spacing used- 2.4 m x 1.2 m) in village C. The species cultivated was the same as that of the company- *Catuai* high land shade-grown coffee. In both village B and village C, the coffee seedlings were bought from the coffee-farmers in their villages and nearby villages at a reasonable price. According to the field observation in 2019, the quality of coffee seedlings was relatively low in comparison to seedlings bought from the company in village A.

As a requirement of project activities, CCCA was applied for the commitment of the CFUG

to protect the coffee and bamboo plantations as well as the CF area in a sustainable way for 30 years. However, CCCA contract mentioned neither strict regulations to take responsibility for the survival of coffee and bamboo plantations even if there was mortality nor strong punishments if breaks the rules of the contract.

Participation in the Planning/ Decision-Making

1) Company-initiated Coffee Plantation

In the planning stage, the decisions for the contract configuration of the CFCP were executed with the negotiation and agreement between the company and all CFUG members through about three to four times meetings. The information about introducing the coffee plantations inside the CF through the contractual agreement was disseminated to all villagers via the meetings. The respondents of FGD stated that one person from each household at the village participated in the meetings although few households did not.

All CFUG members in village A were given the decision-power for voluntarily participating in the CFCP. Among all CFUG members, 14 households proposed to participate in the CFCP, and they were divided into three groups based on their preference on the group (Group1: 6 participants, Group 2: 2 participants and Group 3: 6 participants). After that, the area of coffee was shared based on the negotiation among the groups (Group1: 1.4 hectares; Group 2: 1.8 hectares; and Group 3: 1.6 hectares). The area of coffee plantations was demarcated inside CF that was also near the CFCP-participants' agricultural workplaces so as to easily and effectively manage.

Under the contractual agreement, the technical decision for coffee plantation was supported by the company, but the decision for participant selection and management in the internal community institution were devolved to the local communities. The budget invested by the company for CFCP implementation was managed by the CF-chairman, and the chairman shared the budget to each group. A large proportion (58.3%) of the CFCP-participants satisfied with the decision-making for the budget management. However, 33.3% of CFCP-participants showed dissatisfaction with the financial decision-making by CF-chairman (Fig-2). They claimed that the CF-chairman controlled all the budgets invested by the company and did not share the budget that was equivalent to the area of coffee plantations assigned for each group. They also complained that the CF-chairman never made the clarification of the financial statement, and in turn, other members did not receive clear information until the project ended. Accordingly, those CFCP-participants showed their distrust on the CF-chairman's performance, and as a result, it negatively impacted on their continued participation in the subsequent contract implementation of CFCP.

2) NGO-initiated coffee plantations

Before the project started, a one-day inception workshop was conducted with the forest officer of District Forest Office, village tract authority, village project committee members and NGO's project staffs to distribute the information of the project's objectives, activities, and about the CCCA contract. The village project management committee was formed with the project committee chairman (CF-chairman or other village elder person), and a few CF-EC members to guide and monitor in executing all the project activities.

In village B, the project information was disseminated via the head of ten-households' unit to each villager, and offered the opportunity of decision to participate in CFCP. All CFUG members could decide voluntarily participation in CFCP. Among all 290 CFUG members, only 114 households participated. And they were divided into three groups based on the geographical location of the village (Group 1: 60 members; Group 2: 22 members; Group 3: 32 members).

In village C, although the information dissemination system was the same as village B, participant selection system was different. Mandatory participant selection system (at least one person from each household should participate whether they interest or not) was applied in 2017 at the beginning year of the project. Accordingly, approximate 130 households among 205 total

households participated collectively in CFCP. At the end of the project in 2018, since there was remaining small amount of budget, the CF chairman made individual management system by intentionally selecting three poor households for CFCP.

The managerial decisions in terms of the planting style was decided by CF chairman and/or CFCP group leader, but the project fund management was decided by the chairman of the project management committee in both village B and village C. Although a large proportion of CFCP-participants (64.7%) in village B satisfied with the decision-making, 23.5% of the CFCP-participants complained about the top-down decision making on the planting techniques, and low transparency of financial decision making in village B (Fig- 2). 33.3% of the CFCP-participants in village C disagreed with the participant selection system and maintenance of CFCP although 42.0% in village C satisfied with it (Fig-2).

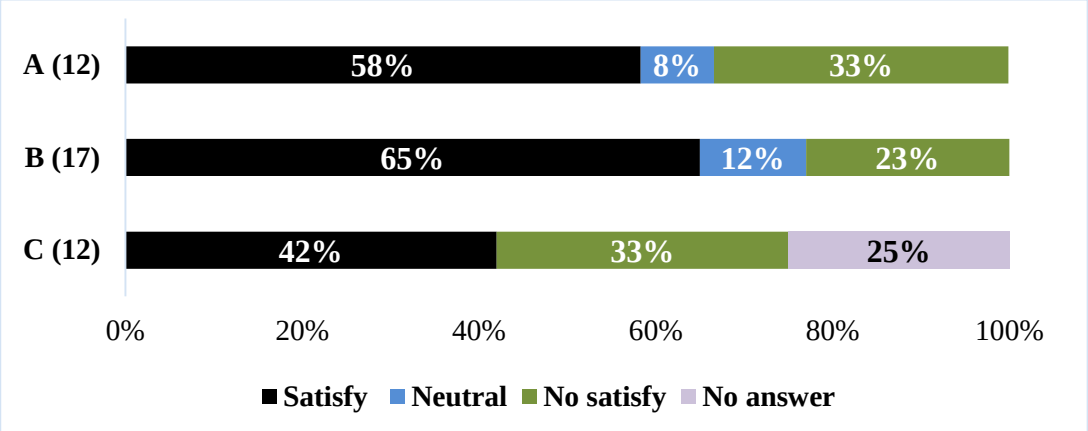

Fig-2: Satisfaction on decision-making system in three surveyed villages
Source: Field Survey (2019)

Participation in the Implementation

1) Company-initiated coffee plantations

The field activities of CFCP including slashing, digging, staking, planting, feeding fertilizer, and weeding were carried out by each CFCP-group under the supervision of the company. The tasks were shared among group members. All CFCP-participants were aware of the responsibilities to take care of coffee plantation for survival and better growth as well as the penalties of breaking regulations described in the agreement. In turn, the obligations and strict regulations under the contract make them active in implementing CFCP.

Regarding the task sharing among group members, a large proportion of CFCP-participants (91.6%) satisfied with their groups in terms of unity and equity. They also appreciated the excellent leadership of their group leaders who actively involved in all field works, and it contributed to the active participation of the group members in carrying out the field works.

On the other hand, a small proportion of participants (8.3%) did not satisfied with the performance of the group leader as he did not fully take the responsibilities in carrying out the field works (Fig-3). Those dissatisfied participants replied that they got burden to do overwork to finish the field works timely. Due to the unbalance duty-taking, those participants had lack of eagerness to participate in implementing field activities and management. They also responded that they were lacking desire to continue participation in next year's CFCP implementation.

2) NGO-initiated coffee plantations

The field activities of CFCP were done by each CFCP group, and the tasks were shared by large group with more than 20 participants in village B. In village C, all CFCP-participants

(approx. 130 people) collectively carried out the field works in CFCP in 2017, and it was done by three poor households individually in 2018. In both villages, all field activities were executed by the villagers themselves based on their traditional knowledge as the NGO personnel could not make close supervision even at the time of planting.

17.6% and 16.6% of the CFCP-participants in B and C replied that collective action with a large group caused the difficulty in task allocation effectively at the time of implementing activities (Fig-3). As well, the sense of common property made CFCP-participants less motivated, and poor accountable for taking care of the CFCP.

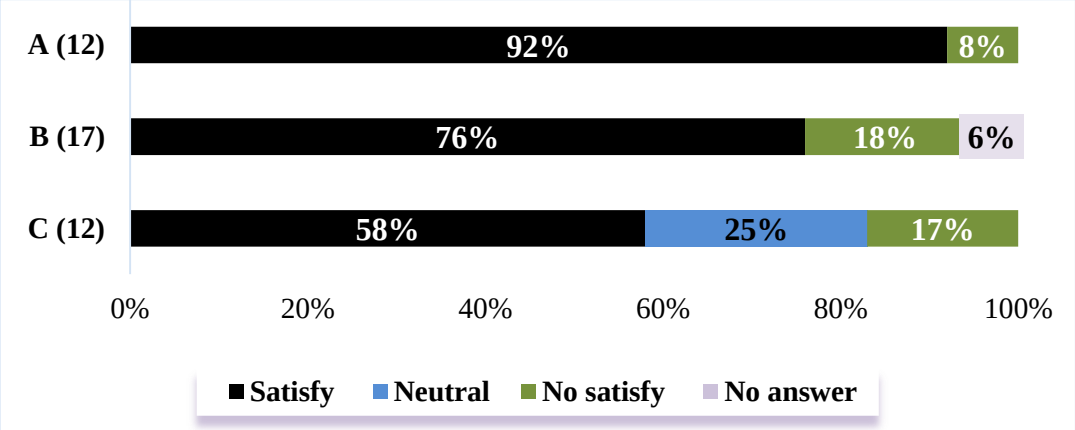

Fig-3: Satisfaction on duty-taking system in three surveyed villages
Source: Field Survey (2019)

Participation in the Benefit-Sharing

1) Company-initiated coffee plantations

The CFCP-participants have not received the products from coffee-plantations yet, because the first production can be done at least after three years of cultivation. However, one of the important drivers for active participation was the immediate income of the wage-labor fee. CFCP-participants got wage labor fee when they carried out the field works because the company provided the costs for all filed works. And if labor force was not enough for the activities, they employed non CFCP-participants. There were totally 20 days on average for carrying out all field works, and rate of wages was calculated based on the daily-basis. Both CFCP-participants and hired labors could receive daily wage labor fees of 3.3 US Dollars (USD) for male and 2.6 USD for female per person. Each CFCP-participant who involved in all activities of field works for total 20 days during one year project got 65.9 USD on average that contributed substantially to their income.

Furthermore, CFCP-participant has 0.34 ha (850 coffee trees/ person) on average (Table-1), and they will receive the monetary benefit from their CFCP after harvesting starts. The allocation of benefit-sharing was determined by the CFCP-participants themselves without intervention of the company. The rate of benefit-sharing was assigned as 97% for CFCP-participants who contributed their time and labor and 3% for CF-fund and village development. The monetary benefit will be shared proportionately for each participant in their respective groups**.**

2) NGO-initiated coffee plantations

Like village A, CFCP-participants have not received the benefits in both village B and village C. However, one significant different thing from the village A is that the CFCP-participants in both village B and village C contributed their men power and time voluntarily for field works without wage labor fee.

Furthermore, the average area of CFCP for each participant is very small in both village B and village C with less than 0.1ha (310 coffee trees/person) for individual or 0.01ha for group (42 coffee tress/ person) and collective (24 coffee trees/ person) (Table-1). In terms of the rate of benefit-sharing for future harvesting, the CFCP-participants could get benefit 70% and 85% in village B and village C respectively. Remaining benefit would be used for CF-fund and village development.

Table-1: Area of CFCP in three surveyed villages

	Villages			
	A	B	C	
	Group	Group	Collective	Individual
Area of CFCP/ total (ha)	4.8	1	0.89	0.29
Area of CFCP/ participant (ha)	0.34	0.008	0.007	0.09

Participation in the Monitoring and Evaluation

1) Company-initiated coffee plantations

The Company was responsible for the regular monitoring about three times per month for the maintenance of CFCP during the contract period. Accordingly, CFCP-participants noted that the company personnel's regular inspection and suggestions were satisfactory for the success of their coffee plantations. In line with this, the study found that due to the frequent inspection of the company's personnel, high accountability existed in the CFCP-participants to regularly monitor and evaluate their coffee plantations. At the time of field survey in 2019, the survival rate of the coffee plantation was 95%. The growth rate of about 10-months old coffee plants was 0.5-0.7m in height. That might be due to the good quality of coffee seedlings cultivated in CFCP, and also due to care and well-maintenance by CFCP participants (Fig-4).

Fig-4: CF-based coffee plantation initiated by the company in village A

Source: Field Survey (2019)

2) NGO-initiated coffee plantations

The NGO carried out the monitoring about three times and checking the survival rate of coffee plantations during the project period. But, these activities were finished after the project terminated. Due to limited inspection by the NGO's personnel, CFCP-participants did not much satisfy about this. After the project termination, we found that the coffee plants were mixed with the weed plants inside the CF (Fig-5 and Fig-6). It showed that less accountability remained in the mindset of the CFCP-participants for the maintenance of the coffee plantations accordance with the termination of the inspection by NGO's personnel.

One of the reasons for weak participation of CFCP-participants in the monitoring and evaluation was also related to the very few amounts of anticipated monetary benefits or uncertainty of getting benefit from their coffee plantations. It was observed that the CFCP-participants in these two villages could not give attention to the maintenance of coffee plantations compared to their major livelihood activities. In village B, the survival rate and growth rate of 1 and half years-old coffee plants was 80-90%. Further, in village C, the survival rate of coffee was 66.7% in collective system and less than 50% in individual system respectively. The growth rate of those coffee plants in both villages was 0.2-0.5m in average height. In village C, 2 of 3 CFCP-participants in individual system replied that they could not go to the CFCP area frequently, because the daily needs of their lives is important than the coffee maintenance activities. Due to their lack of monitoring, about half of the coffee seedlings had been burned out by the forest fire.

Fig-5: CF-based coffee plantation initiated by the NGO in village B

Source: Field Survey (2019)

Fig-6: CF-based coffee plantation initiated by the NGO in village C

Source: Field Survey (2019)

Socio-demographic factors influencing CFUG members' participation

Table- 2: Description of variables, label and unit of measurement

Variables	Label	Type of variable	Unit of Measurement	Literatures
Age of the household head (in years)	HH_AGE	Continuous	Years	The older people were less willing to participate because of their traditional agricultural occupation. (Zhang et al., 2011) Older people were more willing to participate as they are more knowledgeable about the forests. (Ratsimbazafy et al., 2012) Younger people have more willingness to participate in labor-intensive activities. (Shan, 2012**)**
Education of the household head	HH_EDU	Discrete	Illiterate=1 Monastery education=2 Primary=3 secondary=4 High=5 Graduate and above=6	The more educated, the more they are knowledgeable and have the willingness to participate. (Matsumura, 1997; Beard, 2005; Jumbe and Angelsen, 2007; Zhang et al., 2011; Tadesse et al., 2017)

Number of family members in a household	FAM_SIZE	Continuous	Number of family members	Households hold large family size with the availability of family labor were more likely to participate in participatory forest management to access their needs of forest products. (Musyoki et.al., 2012; Chhetri, 2005; Dolisca et.al., 2006; Coulibaly-Lingani et.al., 2011; Jatana and Paulos, 2017)
The ratio of male to female in a household	RAT M_F	Continuous	The proportion of male to female	The households with a high proportion of females have lower participation due to their personal and cultural constraints (Coulibaly-Lingani et al., 2011).
Size of agricultural land (hectares)	AGS	Continuous	Hectares of agricultural land	The household with no or less agricultural land had positive altitude to participate because agriculture is not their main source of income (Zhang et al., 2011; Kerse, 2012; Chhetri, 2005) The households with large landholdings were more likely to participate with less opportunity cost of participation. (Maskey, 2003; Jatana and Paulos, 2017)
Executive or Project Committee members	EC/PCM	Binary	Executive or Project Committee members=1 Otherwise=0	Households holding the position of EC or PC members were more likely to participate than that of non-members. (Kerse,2016; Chhetri et al., 2013)

Table-3: Results of regression analysis showing factors affecting participation in CFCP

	Overall			Village A			Village B			Village C		
Independent Variables	Coef.	Sig.	Odds ratio	Coef.	Sig.	Odds ratio	Coef.	Sig.	Odds ratio	Coef.	Sig.	Odds ratio
Constant	-4.603	.043**	.010	-4.517	.290	.011	-2.992	.521	.050	-17.186	.050**	.000
HH_AGE	-.014	.588	.986	.020	.719	1.020	-.082	.158	.921	.142	.076*	1.153
HH_EDU	.725	.086*	2.064	.709	.319	2.033	.417	.613	1.518	2.744	.085*	15.550
FAM_SIZE	.204	.268	1.226	.087	.766	1.091	.761	.094*	2.140	-.061	.897	.941
RAT M_F	.692	.021**	1.997	-.673	.424	.510	1.330	.043**	3.780	1.927	.030**	6.866
AGS	.268	.102*	1.308	.393	.193	1.481	.036	.917	1.037	-1.019	.126	.361
EC_PCM	2.163	.003**	8.696	3.038	.024**	20.868	21.487	.999	2145818296.938	2.971	.055**	19.520
	N=90			N=30			N=30			N=30		

Nagelkerke R Square (overall): 0.382

Percentage of correction (overall): 72.2%

Percentage of correction (village A, village B, and village C): 83.3%, 76.7%, and 86.7%

*, **, *** indicates variables significant at 10% (<0.1), 5% (<0.05), and 1% (<0.01) probability level

Discussion

The findings outlined the different implementation approach by the different external organizations. The approach of the company-community partnership was the profit-oriented investment covering the budget for planting and maintenance of CFCP and regular inspection by the company's personnel. The mutual rights and responsibilities for both the company and community were also clearly stated under the contractual agreement, and both partners were aware of it.

However, CFCP-participants have a certain risk of compensation and prosecution in case of CFCP failure even due to unforeseen causalities such as heavy rain or insect attack. The raw coffee materials must be sold only to the contracted company for 15 years after a payback loan. In that situation, Mayers (2000) also argued that the prices may be fixed, and all of the productions may be rigorously controlled by the company. It means the limitation of the market even when another company can buy the coffee products with a higher price than contracted company. Also, under the initial stage of implementation, it is very difficult for the poor people to join this program because of the burden of the substantial amount of invested money that must be paid back to the company.

In case of NGO- initiated project-approach, all of the local people, including the poorest ones, have opportunities to join the CFCP. On the other hand, the supportive situations in terms of technological inputs, frequency of monitoring and maintenance were limited. Ezzine de Blas et al. (2009) stated that either sufficient assistance or no assistance at all would be better than short-term and insufficient external assistance. In addition, due to the limited project period, the project activities were not sustainable. The findings showed that this caused low motivation for CFCP-participants

The findings also showed the extent of people's participation under the different implementation approaches of the initiated external organizations. The contractual agreement made high motivation and accountability for CFCP participants than that of NGO-initiated project-approach. However, top-down decision-making in the planning stage was a major challenge for people's participation in both initiatives. About one-third of participants in village A disagreed with the financial decision-making by CF-chairman due to inadequate transparency. In village B, about one-fourth of the participants felt disagreement on the top-down managerial decisions, including the planting techniques and, financial decisions with less transparency. Similarly, about one-third of the participants in village C complained about the managerial decisions, particularly the top-down participant selection system and weak maintenance of CFCP. Buchy and Hoverman (2000) also argued that decision-making power as a motive for people's participation in forest management. Our results indicated that the top-down decision-making process discouraged the local people's motivation and participation in CFCP. The motivation of the CFCP-participants declined because they did not have decision-making power.

In the implementation stage, the findings pointed out the extent of people's participation under different duty-taking systems employed in both company and NGO-initiated CFCP. In village A, a large proportion of participants felt satisfactory in taking duties by their small groups. The result is supported by the finding of Olson (1965) that small groups that are quantitatively and qualitatively different from the large groups could reduce the free-rider problem and was effective in implementing activities. However, the imbalance duty-taking problem among those small group members still persisted. In village B and village C, some CFCP-participants disagreed on the collective action with large participants in implementing CFCP. The collective action by working together could reduce the time consumed for carrying out many tasks, but at the same time, it might lead to the inactive collective action or non-participation problem. Olson, 1965 stated that the individual of a group wishes to free-ride whether they participate or not in a program's activities and our finding agrees with this statement. Also, our result agrees with the

arguments of previous studies that the success of collective action correlated negatively with the group size (Tuan, 2007; Baland and Platteau, 1996).

Furthermore, in terms of benefits, the finding also revealed that wage labor fee was one of the incentives to motivate CFCP-participants in village A. Although the amount of this wage labor fee was limited, it was the significant factors for active participation in company-community collaboration. Similarly, the result of this study agrees with the earlier studies of Kerse (2016) and Kamnap (2003) that the people's participation at the implementation stage was relatively high due to the employment opportunities and wages availability. Islam et al. (2013) also confirmed that employment, together with the incentive of wages, encouraged the participants to fully utilize their productive assets. In addition, the amount of anticipated monetary benefit for each CFCP-participant in village A was reasonable to motivate them. In contrast, in village B and village C, the size of coffee area in relation to each participant to get benefit was dreadfully low and consequently hindered their motivation.

Regarding the monitoring and evaluation, the noticeable difference between the company and the NGO was the frequency of inspection for CFCP. When the company made on-site monitoring on a regular basis, the NGO did the limited monitoring during one-year project. The findings indicated that close monitoring and frequent communication made the CFCP-participants to have high accountability for the well-maintenance of CFCP in village A, whereas, the less responsibility existed in the CFCP-participants of village B and village C due to limited inspection by the NGO. Further, due to a few amounts of anticipated monetary benefits, CFCP-participants in village B and village C had low motivation to participate in the monitoring and evaluation stage of CFCP. Islam et al. (2013) argued that the failure of people's participation in the stage of monitoring and evaluation directed to collapse of the program implementation.

The result of binary logistic regression analysis showed the most influential socio-demographic factors influencing on the participation at each village and overall. Age was positively correlated with participation at the 10% probability level, particularly in village C. This implied that older people were more willing to participate in CFCP. In other words, as the age of the households' head increased by a year, the probability of participation in project activities increased by 1.15 units. The result was supported that 75.0% of CFCP-participants in village C belonged to the age class 41-60 years. Kerse (2016) found out that older people had more willingness to participate in the planning stage of the project as they had more free time than younger people to participate in the meeting's discussion. Our finding is also similar to the earlier studies of Ratsimbazafy et al. (2012) and Maskey et al. (2003) that the older people were more interested in participating in community forest programs as they have much traditional knowledge about the forest conservation, and they want to share it with the younger people. However, this finding is in contrast to another study that showed older people had less desire to participate because of their traditional agricultural occupation (Zhang et al., 2011). On the other hand, the negative linkage of participation with age was found in village B and overall results, but the result did not show the significance.

The level of education had been found positively and significantly correlated at the 10% probability level with participation in village C and overall. The linkage of participation with education was also positive in another two villages although there was not significant. The result indicated that the more educated household head who is more knowledgeable had a higher probability of participation than less educated ones in the CFCP program. The odds ratio in village C revealed that the probability of participation increased by 15.5 units when a unit increased in the level of education. The result showed that 16.7% and 8.3% of the CFCP-participants in village C had secondary/middle school and high school education levels respectively. However, only 5.6% of the non-CFCP-participants had middle school education while there was no one completing the high school education level. The result is consistent with the findings of Matsumura (1997), Beard (2005), Jumbe and Angelsen (2007), Zhang et al. (2011) and Tadesse et al. (2017).

The size of household members was found positively correlated with participation at a 10% probability level in village B, implying that the households with large family members had high potential to participate in the project activities' implementation. The result of the odds ratio showed that a unit increase in the family size resulted in an increase in participation by 2.14 units. The findings revealed that most of the CFCP-participants (41.2%) in village B had relatively huge household members (6 to 9 members) with high potential for labor availability. The finding agrees with the earlier studies that found large family size with availability of family labor were more likely to participate in participatory forest management than small family size (Musyoki et.al., 2012; Chhetri, 2005; Dolisca et.al., 2006; Coulibaly-Lingani et.al., 2011; Jatana and Paulos, 2017).

Households with a high proportion of males had a higher probability of participation in the project implementation in village B, C, and overall result. It indicated that there was male domination, and the participation of female was hindered due to social and cultural norms, and also due to their daily household activities. The finding is similar to another study that observed the households with a high proportion of females have lower participation due to their personal, and cultural constraints (Coulibaly-Lingani et al., 2011). On the other hand, the linkage of participation with the proportion of male to female was negative in village A, although the result did not significant.

The size of agricultural land had a significant positive effect on participation at a 10% probability level in overall finding. This implied that the households which have large agricultural land had more probability to participate with less opportunity cost of participation. This result is consistent with that of Maskey (2003) and Jatana and Paulos (2017) although it is in contrast to other studies that found the household with no or less agricultural land had positive altitude to participate because agriculture is not their main source of income (Zhang et al., 2011; Kerse, 2012). However, the negative linkage between the size of agricultural land and participation was found in village C, and positive linkage was found in village A and village B although no significance was shown.

Being the Executive or Project Committee Member was positively correlated with the participation at a 5% probability level in village A, village C, and overall. The result revealed that the heads of households holding the position of EC or PC members had higher willingness to participate than that of non-EC or PC members in different stages of CFCP. The result of odds ratio showed that the probability of EC or PC members participated in the project activities was 0.02 times in village A, 0.55 times in village B, and 0.003 times in overall higher than that of non-EC or PC members. This finding agrees with the findings of Kerse (2016), and Chhetri et al. (2013).

Our findings indicated that community-private sector partnership has high potential for effective CFEs implementations through secure investment, guaranteed market and active people participation under the contractual agreement although there are few limitations. According to our results, different socio-demographic factors of local people also play influential role in their participation for successful CFCP implementation in there surveyed villages.

Conclusion and policy implications

To date, there is little evidence of the successful CFEs lessons, and community-private sector partnership in Myanmar (Greijmans M. et al., 2018). This study could show that the implementation approach under the company-community partnership has a high potential for effective CFEs implementation under the contractual agreement along with the assured investment, proper technical assistance, and regular supervision.

Regarding the people participation, however, the challenges of top-down decision making in the planning and unbalance or ineffective duty taking were found as a threat to the active participation. Thus, the trust and transparency of the decision making management activities are

revealed to be the main necessity (Nawir et al., 2007). All participants must be conscious of the outcome of their contribution to CFCP implementation and need to be satisfied with it (Tropenbos International, 2005). The equitable task sharing in the groups is important to increase the feeling of accountability in each participant. The effective duty-taking system should be taken into account in the local context for further CFEs implementation.

Participation was triggered by immediate benefits and the predictable economic return. Thus, the acceptable rate of benefit in relation to each participant is likewise to be considered to achieve their active participation. In addition, the frequent inspection by the initiated actor gave an impulse to the participants to be obligated and motivated in monitoring CFCP.

This study had also attempted to identify the most influential socio-demographic factors on the participation of CFUG members in CFCP. The overall results revealed that, among the hypothesized variables, the education level of the household head, size of agricultural land, the ratio of male to female numbers in a household, and being EC or PC members had been positively and significantly correlated with the participation. In village A, being EC or PC members was found as the most influential factor in participation in CFCP. In village B, the size of agricultural land, and the proportion of male in a household had influenced the participation in CFCP. In village C, age and education of the household head, proportion of male in a household, and being the EC or PC members were found as the primary factors influencing the participation in CFCP. Based on the results, it can be concluded that household socio-demographic factors play an important role in enhancing or hindering people's participation in effective CFEs implementation.

Therefore, finding the way of effective business approaches with people's participation was primary for effective CFEs implementation. So, the dialogues among the government, private sector, NGOs, and local people should be constructed, and capacity building programs should be carried out more to raise the awareness of the local people about the opportunities of CFEs for their socio-economic development. Accordingly, the project designer or policymakers of concerned organizations need to take into account these heterogeneous socio-demographic characteristics of the local people that have an impact on their participation for further CFEs implementation. Moreover, there is a need to consider enhancing the participation of women in the CF or CFEs implementation through designing effective strategies.

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