

The Sustainable Livelihood Challenge of REDD+ Implementation in the Philippines

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Abstract

The forestry sector in the developing world has been continuously challenged by the unsustainability of forest resources and the threat of climate change. Reducing Emissions from Forest Degradation and Deforestation (REDD+) was launched to address the problem, and the Philippines accepted the challenge by undergoing the 10-year phased process. Using the sustainable livelihoods framework, this paper examines the challenges of REDD+ implementation in the Philippines using the case of Southern Leyte REDD+ pilot area and highlights the co-benefits and trade-offs of pilot project activities on the five (5) capital assets. Our findings suggest greater impacts of CBFM on the key indicators of change than REDD+. There is very high association of the natural and financial capital assets with REDD+ pilot project activities, yet financial benefit is short-lived. Local people highly regarded the contribution of assisted natural regeneration and reforestation activities in sequestering carbon, while agroforestry is perceived to sustain agricultural production in the future. The major drawback of REDD+ pilot project activities is that it perpetuates the failures of CBFM initiatives giving little attention to sustainable livelihood objectives. Forest conservation policy like REDD+ as a mechanism for addressing climate change can still be adopted by local communities if livelihood capital assets will be further enhanced.

Keywords: CBFM, co-benefit, perpetuate, project mentality, REDD+, sustainable livelihoods, trade-off

1. Introduction

Pursuing the goal of sustainable development poses great challenge to most developing countries, especially in the context of climate change. Tropical deforestation and forest degradation in combination with rural poverty have likewise added to the continuing threat to forest sustainability and vulnerability to climate change impacts. Solutions to combat the impacts of climate change were made through incentivizing developing countries in managing and protecting their forests through REDD+ (otherwise known as reducing emission from deforestation and forest degradation) primarily to contribute to carbon emission reduction in the forestry sector.

REDD+ is also envisaged to provide multiple benefits to local communities (Gunilla, Olsson, & Quattara, 2013). These benefits are also referred to as “co-benefits” or other benefits derived out of the REDD+ project in addition to reduced emission. Among the REDD+ co-benefits are forest (biodiversity) conservation and the provision of more sustained income source for local communities once carbon trading progresses (Angelsen, 2009). Another benefit is the improvement of forest governance system, especially in developing countries known to have an overall poor governance index (Wertz-Kanounnikoff & Metta Kongphan-apirak, 2009). These potential positive (co-benefits) impacts have been enumerated by the supporters of REDD+ while critics highlight the potential negative impacts (trade-offs) to the marginalized local communities, including the indigenous peoples. Potential co-benefits include increases in employment through entrepreneurship development, diversification of income sources and access to markets, food crop production, and provision of

ecosystem services as a result of ecosystem conservation and sustainable management. The adverse side effects, on the other hand, include employment decline as less labor intensive technologies in agriculture intensify, increased income concentration, declining local food production due to large-scale monocultures of non-food crops, and rise of land use competition (IPCC, 2014).

Many scholars believe that REDD+ will have considerable implications on the livelihoods of local communities such as deprivation in resource requirement, displacement of traditional goat herders, risking existence of blacksmiths with tightened wood supply (Poudel, Thwaites, Race, & Dahal, 2015); benefit sharing framework of uneven distribution (Howson & Kindon, 2015); and reducing contribution to poverty alleviation by marginalizing and criminalizing the artisanal and small-scale mining sector (Hirons, 2011). On the contrary, parallel studies involving participatory forest management (PFM) such as community forestry (CF) and community-based forest management (CBFM) saw the direct link between resource conservation incentives and/or benefits to household's livelihoods (Karki, 2013; Nath & Inoue, 2010; Mohammed et al., 2016). Some went to suggest the small and medium forest enterprises (SMFEs) to further promote sustainable use and conservation of forests (Tomaselli & Hajjar, 2011). However, few studies link the different forest conservation activities such as REDD+ pilot demonstration project activities to sustainable livelihoods. In 2014, IPCC assessed the different potential co-benefits and adverse side effects of the different mitigation measures in the AFOLU sector on the economic, social, environmental and institutional objectives. Moreover, Le, Smith and Herbohn (2013) noted sustainable livelihoods as one of the key drivers to a successful reforestation project in the Philippines.

Countries participating in REDD+ are expected to shift from high-carbon emission development pathways to forest carbon stocks enhancement actions for multiple benefits, including biodiversity, livelihood enhancement, water, climate change adaptation, and development (Minang & Noordwijk, 2014). The Philippines accepted the challenge of REDD+ implementation. Even with only 0.32% share in the 2012 global greenhouse gas (GHG) emissions, the country has committed to 70% GHG emissions reduction by 2030 as reflected in its recent submission of Intended Nationally Determined Contributions (INDC) to the UNFCCC (Philippines INDC, 2015).

In 2010, even without support access to multilateral REDD+ mechanism, the Philippine National REDD Plus Strategy (PNRPS) was developed and affirmed. (ADB, 2010). At the heart of PNRPS is the empowerment of forest managers especially indigenous peoples (IPs) in managing forestlands and ancestral domains sustainably and equitably with enhanced carbon stock and reduced green house gas (GHG) emission. REDD+ implementation in the Philippines is a three-phased approach spread in a span of 10 years (2010-2020). This involves readiness, scaling-up and engagement phases. Currently, the country is still at the readiness stage which runs for 3-5 years. This comprises the majority of the strategies and activities identified in the PNRPS. Readiness phase capacitates the country before actual implementation or engagement of REDD+ schemes at the national level. Among the major activities are a) development of the PNRPS; b) capacity-building, consultation, communication, integration and reform; c) national level bodies and carbon accounting establishment; d) pilot/demonstration sites, provinces and regions establishment; e) implementation of the National REDD Plus Strategy (NRPS) Readiness Strategies; f) Scale up from site-level to provincial and regional levels; and g) establishment of new sites.

REDD+ pilot/demonstration establishment is one of the major activities of the readiness phase. At present, the three pilot demonstration sites established in the provinces of Quezon, Palawan and Southern Leyte have been completed. The Deutsche Gesellschaft für Internationale Zusammenarbeit (GIZ) GmbH, the major funding agency for the 3-year (2009-2013) Southern Leyte REDD+ pilot project, is moving towards other REDD+ pilot areas in the provinces of Davao Oriental, Eastern Samar and Albay. Hence, with the completion of the REDD+ pilot demonstration project in Southern Leyte, it is appropriate to determine the major contribution of the Young Innovators for Social and Environmental Development Association (YISED), the CBFM-People's Organization (PO), in the achievement of sustainable livelihoods attributed to REDD+ pilot project activities. Specific project activities implemented at the pilot site differ depending on the funding support. The degree of participation of PO members to REDD+ pilot activities is vital to sustain the effort as well as achieve the goal of forest carbon stock enhancement and reducing deforestation and forest degradation.

Sustainable livelihood principle is central in REDD+ and a major objective in the implementation of CBFM in the country. It is promoted by Amartya Sen and used by many scholars to assess the impacts of forestry development initiatives such as CBFM to the livelihoods of the poor (DFID, 1992). Many REDD+ scholars acknowledged the importance of sustainable livelihoods in assessing the impacts of REDD+ (Jagger, Atiadia, Pattanayak, Sills, & Sunderlain, 2009; Angelsen et al., 2009; Caplow, Jagger, Lawlor, & Sills, 2011; Karki, 2013). As development pushes further to cover remote rural areas in the countryside through the promotion of sustainable development and inclusive growth, the forestry sector has long been putting forward all efforts

towards sustainable forest management. Forestry initiatives' contribution to the general well-being of the communities is very much sought so that good experiences and lessons can be replicated while challenges and problems can be addressed.

REDD+ intends to learn from the implementation of past participatory forest management (PFM)/CBFM projects (Agrawal & Angelsen, 2009; Peras et al., 2015). In the Philippines, the three (3) decade-long of CBFM implementation is considered ineffective resulting to limited impacts due to unstable policy, complex procedures and requirements, project mentality view of CBFM (rather than as an approach that replaced the traditional commercial large-scale forestry), and weak institutional support system (Pulhin, Inoue, & Enters, 2007). The same pattern leading to the failures of CBFM in most REDD+ sites emerges. Hence, we argue that REDD+ implementation has the tendency to repeat the mistakes of forestry-related development initiatives, such as CBFM, in its pilot demonstration areas. Furthermore, REDD+ may reproduce these failures.

This paper analyzes the sustainable livelihood challenge of REDD+ implementation in the pilot demonstration area based on the perception of CBFM members by addressing the questions: How do CBFM members associate REDD+ pilot project activities to sustainable livelihoods? Can the current REDD+ pilot project activities improve capital assets of the poor? Will the failures of CBFM be reproduced in a REDD+ area?

2. Research Method

2.1 The Study Site

The study selected the REDD+ Readiness Pilot Demonstration Project implemented by the CBFM PO-YISEDA in Bgy. Lunas, Maasin City, Southern Leyte (Figure 1), with a funding support of PhP 2.64 million from GIZ. This project is part of the GIZ Southern Leyte "Climate-Relevant Modernization of Forest Policy and Piloting of REDD in the Philippines" covering 31 848 ha. Focused on forest policy reforms, the REDD Plus pilot activities served as source of information for REDD Plus implementation in the country. YISEDA is one of the CBFM-POs under this REDD+ readiness project from October 2009-March 2013 covering 150 ha intended for reforesting denuded areas and rehabilitating degraded forests, as well as promote conservation, sustainable management of forests and enhancement of carbon stocks. YISEDA was awarded the 2012 Best Performing PO in Region 8 during the 2012 First Community-Based Forest Management People Organizations (CBFM-PO) Congress. It was assessed to have a profound capability to implement forestry development projects based on its timely, effective and efficient accomplishment of previous projects, with dynamic leader and PO members highly committed to greening the environment.

2.2 Data Collection and Analysis

Data was gathered using a combination of qualitative and quantitative approach which includes a household survey, focus group discussions (FGDs) and key informant interview (KII). These were complemented by actual observations in the conduct of boundary/peripheral reconnaissance survey of the CBFM area.

A total of 51.85% of the 108 YISEDA members was randomly interviewed using a semi-structured interview schedule. For purposes of this study, the respondents were selected based on their availability during the duration of the survey and their active membership status (in terms of regular attendance to meetings and activities of the organization). The household survey provides information on the current household livelihood capital assets which are associated with the present socio-demographic and economic characteristics of the respondent's household. Respondent's knowledge and participation to the different REDD+ pilot activities were also gathered. The level of participation to these activities was assessed using a 5- interval Likert scale: where 1 is very low, 2- low, 3- moderate, 4- high, 5- very high. Lastly, respondent's perception on the associated impacts of REDD+ readiness pilot activities, either positive (co-benefits) or negative (trade-offs), on the livelihood capital assets were determined. Descriptive statistics was used to analyze the household livelihood capital asset characteristics and used to support the information obtained from the FGD.

Impacts of CBFM and REDD+ were also gathered using the household survey. The impacts between the three (3) periods -- before CBFM (1999), during CBFM (2000-2010) and with REDD+ (2009-2013) -- were assessed by the respondents using the ladder diagram. Pomeroy, Pollnac, Katon & Predo (1997) describes the ladder diagram as a visual, self-anchoring technique in making finer ordinal judgements. Each period is compared with another period using a two-tailed t-test to determine the degree of variation of scores given by the respondents. Just like a ladder with 10 steps, each indicator per period is scored based on the existing condition of the period, taking careful consideration of the development initiative at each period, i.e. with CBFM and REDD+. Highest score of 10 is given if there was perceived great improvement while lower score means little or no improvement during the period.

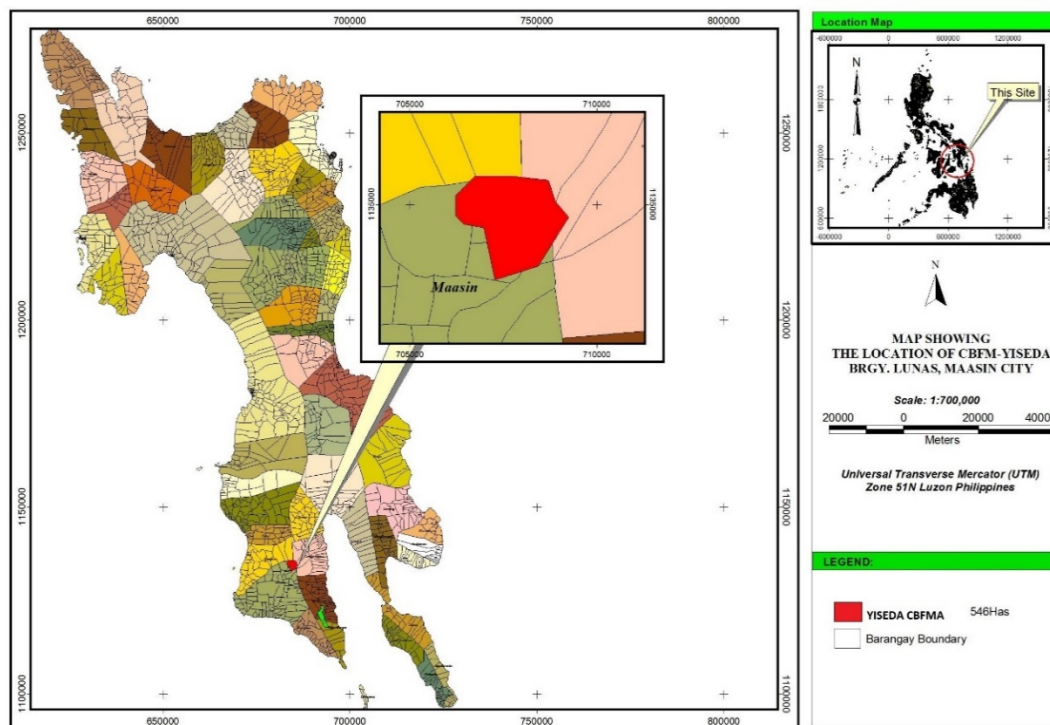


Figure 1. Location map of the REDD+ Pilot Demonstration Activities managed by YISEDA in So. Canlugoc, Bgy. Lunas, Maasin City, Southern Leyte, Philippines

Focus group discussions (FGD) were conducted to have a collective understanding on the impacts of the REDD+ pilot demonstration project on sustainable livelihoods objective as well as on the issues and challenges for future full blown REDD+ implementation. The associated impacts of the REDD+ pilot activities on sustainable livelihoods were derived from the two FGDs conducted: YISEDA (participated by 12 members) and local institutions/organizations working with CBFM and REDD+ (with 10 representatives from the local government units, Department of Environment and Natural Resources (DENR), and GIZ field staff).

Also, a total of nine (9) key informant interviews (KII) were conducted, comprising key officials of YISEDA, GIZ field personnel, DENR and LGU (province, municipal and barangay) field staff. This was undertaken to solicit the perspectives of key individuals knowledgeable on the impacts of CBFM and REDD+ implementation to sustainable livelihoods. This method provided key insights leading to a comprehensive analysis of the future challenges of REDD+ implementation.

Finally, a peripheral reconnaissance survey of the CBFM area was made to supplement the above-mentioned data gathering activities. Actual observations focused on the condition of the CBFM area and in verifying the most recent activities administered by individual members and YISEDA, the current challenges, threats (illegal forestry-related activities), and opportunities for sustainable livelihood generation.

3. Results

3.1 The Pilot Site-Level Context of REDD+ (Readiness and its Pilot Demonstration Project Activities)

The Southern Leyte REDD+ pilot/demonstration site is funded by the GIZ together with the Department of Environment and Natural Resources (DENR) – Community Environment and Natural Resources Office (CENRO) of Maasin City as the lead executing agency. The project intends to reduce GHG emissions by improving climate-related forest policy and conserve biodiversity. More specifically, the project: 1) modernized forest policies and develop specific incentives for reducing emissions from deforestation and forest degradation (REDD); 2) forged conservation/co-management agreements among stakeholders; 3) implemented REDD pilot activities as innovative measures to avoid deforestation and rehabilitate degraded forests in and around selected protected areas in the Philippines; and, 4) enhanced the capacities of DENR, local government units and local population for planning and implementation of climate relevant forest measures, conflict mitigation, securing land use rights and improving local livelihoods.

At the pilot sites, GIZ forged a financing agreement with the CBFM-POs in the implementation of reforestation, agroforestry and conservation activities. The REDD+ pilot site implementing CBFM-POs were the Young Innovators for Social and Environmental Development Association (YISEDA), Maasin, Southern Leyte; Anahaw Multi-Purpose Cooperative (AMPCO), Bontoc, Southern Leyte; Kahupian Upland Farmers' Association (KUFA), Sogod, Southern Leyte; Tomas Oppus Forest Developers Farmers' Association Inc. (TOFDA), Tomas Oppus, Southern Leyte; and Tomas Oppus-Malitbog Farmers' Association Inc. (TOMFA), Tomas Oppus, Southern Leyte (Quitoriano, 2013).

This study only highlights the experience of YISEDA-CBFM in its REDD+ pilot project implementation. Among the activities financed by GIZ are reforestation, agroforestry and assisted natural regeneration (ANR). Reforestation strategy or multi-purpose tree plantation aimed at the establishment of 77 hectares production forest for lumber and fuelwood production as well as for the protection of forest areas needing rehabilitation. This strategy targeted open and denuded areas. The farms of 63 members who availed of the project were planted with mahogany (*Swietenia macrophylla*), narra (*Pterocarpus indicus*), molave (*Vitex parviflora*) and indigenous species. Agroforestry was promoted to provide livelihood and income to YISEDA members and increase forest cover. About 25 hectares of agroforestry production had been established within the farms of 50 members. Assorted grafted fruit trees like jackfruit (*Artocarpus heterophyllus*), lanzones (*Lansium domesticum*), rambutan (*Nephelium lappaceum*), durian (*Durio zibethinus*), banana suckers, or coconut or native coffee were planted while pineapple was encouraged (optional) for areas not suitable for vegetables/corn (*Zea mays*), peanuts (*Arachis hypogaea*), ginger (*Zingiber officinale*), sweet potato (*Ipomoea batatas*), gabi (*Colocasia esculenta*) and other root crops. Areas targeted are those within existing agricultural production areas, with soil and water conservation measures, or in newly established plantation. ANR was established under patches of remnant secondary growth forest and emerging pioneer vegetation in previously forested areas. It is located within the farms of 63 household beneficiaries that participated in the project. While project management is handled by YISEDA, stakeholders were enjoined to undertake collaborative maintenance. Under protection forest category, the ANR species include mixed dipterocarps and fast growing species that can assist naturally growing trees to rehabilitate and expand their vegetative cover (YISEDA REDD+ Project Document, undated).

3.2 Impacts of CBFM and REDD+

The impacts of the three (3) decades of CBFM implementation and the recent completion of the REDD+ pilot project call for an assessment in order to determine whether the challenges and failures of CBFM will persist in REDD+ particularly when carbon trading commences. The impact areas of CBFM and REDD+ were determined using key variables such as over-all condition of the resources (forest, land, water, etc.), general well-being of the household, local income, access to resources, control over resources, participation in community affairs, compliance with resource management and amount of traditionally harvested resources. For change to be attributed to development programs implemented in the area, the use of a ladder diagram in scoring the indicators was done by the respondents. This scoring is made quick and easy and less demanding on respondent's memory such as in tracing back the amount of income derived in the 3 time periods.

Table 1. Result of the two-tailed t-test comparing the three (3) periods with selected key indicators of change

Key variables of change	Before and during CBFM				With CBFM and REDD+				Before CBFM and REDD+			
	T1	T2	Obs.	Sig.	T2	T3	Obs.	Sig.	T1	T3	Obs.	Sig.
over-all condition of the resources	2.35	6.81	52	**	6.81	7.06	52	ns	2.35	7.06	52	**
general well-being of the household	4.76	5.71	51	*	5.71	5.43	49	ns	4.86	5.43	49	ns
local income	5.98	5.37	51	ns	5.37	5.08	51	ns	5.98	5.08	51	*
access to resources	7.00	4.18	49	**	4.18	3.88	49	*	7.00	3.88	49	**
control over resources	5.70	3.50	50	**	3.50	3.40	50	ns	5.70	3.40	50	**
participation in community affairs	4.40	6.29	42	**	6.29	6.60	42	*	4.40	6.60	42	**
compliance with resource management	3.66	6.82	50	**	6.82	6.90	50	ns	3.66	6.90	50	**

Legend: T1 – before CBFM; T2 - CBFM; T3 - REDD+.

** highly significant at 0.01 level, * significant at 0.05 level, n.s.- not significant.

Table 1 presents the result of two-tailed t-test comparing the variation of means on the score per indicator for the 3 periods. The variation is very evident between the period before CBFM (T1) and during CBFM (T2), with high to very high significance level of variation. The same is true between before CBFM (T1) and REDD+ (T3).

However, majority of the scores on indicators slightly declined between CBFM and REDD+, but the variation is not significant.

At a close range, the result indicates that local income is perceived to have declined during CBFM implementation, but the variation is not significant. This decline is attributed to a reduction in the size of farmland, where previously it was all a kaingin area (ISF/CBFM) until it was converted to other purposes such as for reforestation, rehabilitation, assisted natural regeneration (ANR) and agroforestry areas (Mohammed et al., 2016). The decline in income also coincides with the “bunchy top” infestation of abaca farmlands. REDD+

3.2.1 Over-All Condition of the Resources

The condition of the available forest, land, and water resources reflects the type of management implemented in the study site. YISEDA members candidly revealed the past practices in utilizing these resources. Majority of members were into kaingin making, timber poaching, and charcoal making. But the devastating impacts of forest fires during the 1982 El Nino, together with their destructive forest activities, made them realize the ramifications to their income and livelihood sources. The forest areas were denuded before CBFM implementation, hence, given an average rating of 2.35. The awarding of CBFM Agreement (CBFMA) to YISEDA paved the way for the implementation of forest conservation activities such as reforestation and rehabilitation of denuded forest areas. The transition from a denuded state to forest vegetation was evident during the CBFM implementation, hence, on the average it was rated by members at 6.81. Meanwhile, the 2 years implementation of REDD+ somewhat improved the resource’s condition, with a rating of 7.06; but the variation is not significant.

3.2.2 General Well-Being of the Household

The household’s general well-being refers to overall satisfaction in life which includes food, furnishings and shelter, health, education, employment opportunities, and gender equity. There is a slight improvement in the score between before and during CBFM time periods, from 4.76 to 5.71. Members believed that life was supposed to be in good condition before CBFM due to continuous income they enjoyed from abaca sale. But only few families were able to send their children to school located at the center of the barangay, about 1-2 hours walk, depending on the weather condition, from their homes in Sitio Canlugoc. The same is true for the visit to the health center which is seldom made by members and their families due to the rough road system. When illness strikes, the members relied heavily on “faith healers or “albularyo” and herbal medicines. CBFM implementation contributed some degree of improvement to this indicator. Although indirectly associated with CBFM implementation, the frequent visits of foreign nationals, representatives of national agencies, and LGU officials to the project site triggered the improvement of some infrastructures in the area, such as the road system, education and health facilities. The sorry state of these facilities prompted the LGUs to push for their development, owing to the popularity of the project. LGUs were quick to counter that infrastructure development in the site has long been planned since the priority fell on remote areas of the province where most CBFM projects are located.

However with REDD+ implementation, the score slipped to 5.43. This could be attributed to the difficulty of finding food for the family and lack of employment opportunities, despite the employment of majority of members to the different project activities of REDD+.

3.2.3 Local Income

The local economy is normally based on the amount of available money circulating in an area. The higher the paid employment opportunities, the more income can be generated, and more money will circulate in the area. However, during times of bad weather, local income is greatly affected. Local income before CBFM was perceived to be on the average, at 5.98. Some members claimed that before CBFM was the period when they enjoyed higher income from sale of abaca and illegal logging activities/ poaching. During CBFM, the farmlands of members became the project area which have to be utilized for reforestation and rehabilitation activities. The once cultivated areas have been planted with mahogany (*Swietenia macrophylla*), narra (*Pterocarpus indicus*), falcata (*Albizia falcataria*), gmelina (*Gmelina arborea*) and others. Although the denuded landscape was transformed into forest (Mohammed et al., 2016) income of members gradually declined, hence, the average score is 5.37. The negative impact of the natural capital transformation on farming and income was later realized when agricultural crops no longer survived under the canopy of growing trees. During CBFM, alternative livelihood sources were introduced to augment the meager income derived from farming. These income sources include livestock production and dispersal (goat, duck, and chicken) and vegetable farming. However, these initiatives were short-lived, not sustained after project termination; hence, CBFM investment was wasted.

Meanwhile, income during REDD+ pilot project implementation somehow declined, although the variation is not significant. Some claimed that the lower income from farming is attributed to the use of farmlands for reforestation and ANR activities. Others doubted this because they claimed that members were compensated for the services rendered during plantation establishment, though admittedly they considered this compensation as temporary or good until the project lasted. In addition, REDD+ implementation coincided with 3 major project/activities, i.e., the first harvesting operation of YISEDA, implementation of Comprehensive Agrarian Reform Program (CARP) and the National Greening Program (NGP). Although YISEDA did not earn much from their timber harvesting operation, they invested in physical assets such as the multi-purpose hall, saw mill and stock yard (Peras et al., 2015). The numerous projects YISEDA ventured in provided the organization ample savings which was used to sustain previous activities especially site monitoring. But with changes in the organizational leadership (Note 1), along with absence of new externally-funded development projects, funds of the organization drained fast.

3.2.4 Access to Resources

This indicator pertains to the freedom to utilize the resources within the CBFM area. This freedom diminished with CBFM and eventually with REDD+ implementation. Before CBFM is rated at 7.00 as resources were generally accessible. Even for illegal logging purposes, timber was easily sourced in the area. With CBFM, the numerous trainings/seminars on forest conservation informed members that access to resources have to be case-specific. Extraction of timber needed for household construction and repair is allowed but with appropriate permission from the organization specifying the number of trees that need to be cut. Extraction of timber without permit from the organization and DENR is considered illegal, especially if intended for commercial purposes. With REDD+, the same restriction on access is carried out as with CBFM implementation. The members are apprehensive of more stringent rules on resource access once REDD+ is in full swing. REDD+ entails “forest enclosure,” a phenomenon that will constrain future access to forest resources (Peras et al., 2015).

3.2.5 Control over Resources

This indicator pertains to the overall management of the resources found within the CBFMA. The power of the national government agency such as DENR in securing State ownership over forest lands is a good example of control. More specifically, CBFMA enhanced government’s control over local communities by limiting devolution to responsibilities on forest development and protection (Pulhin *et. al.*, 2007). Individual farmer’s control over their farmlands located inside CBFM areas diminished when they subjected their area under DENR control in the guise of CBFM-PO management. This is consistent with the decline of score for this indicator from 5.70 before CBFM to 3.50 and 3.40 with CBFM and REDD+, respectively. Before CBFM, individual farmers had sole and full control over their farmlands in forest areas. DENR’s visibility in forest lands was obscure until the launching of people-oriented forestry projects such as ISFP in 1982 and later on the CBFM in 1995. While CBFM purports to develop people organizations as forest stewards and partners in forest development, over all control over the CBFM area seemingly lies with the DENR. In many instances, CBFM-POs generally remained dependent on DENR-initiated projects.

3.2.6 Participation in Community Affairs

One of the most improved indicator of CBFM implementation is the ability of members to participate in community affairs such as assemblies, community meetings, trainings, seminars, workshops and other activities. The improvement in this indicator is attributed to the continued conduct of trainings, seminars, and IEC (information, education campaign) intended to capacitate members to become forest stewards. Participation in different community endeavors eventually improved with REDD+ as member’s knowledge base widened with the inclusion of topics on carbon/ carbon trading, climate change, adaptation and mitigation.

3.2.7 Compliance with Resource Management

The over-all management of the forest resources demands compliance by local stakeholders, most especially forest- dependent communities. Before CBFM, majority did not comply with the existing forest policies. Some attributed this complacency to the non-visibility of DENR officials to monitor their area and ignorance of the law. But these changed with CBFM due to numerous trainings/seminars on environmental protection and reminders on punishment for illegal forest activities. Fear of imprisonment is evident among YISEDA members. YISEDA’s compliance to sustainable forest management is reflected in the numerous awards they received such as the Best Performing CBFM-PO in 2012. However, YISEDA’s faithfulness was tested with the 3 cases of illegal timber harvesting activities discovered in 2015.

3.3 Participation to the REDD+ pilot project activities

Forestry-related activities that members knew and participated in the CBFM project include forest rehabilitation, reforestation, agroforestry, forest protection, non-forest-based livelihood opportunities, biodiversity conservation, sustainable livelihoods generation and forest policing/ governance (Table 2). The top 3 forestry activities that the members mentioned are reforestation (67.86%), agroforestry (48.21%) and forest rehabilitation (46.43%). Only few respondents mentioned participation in forest protection, non-forest based livelihood opportunities, biodiversity conservation, sustainable livelihood generation and forest governance. Almost all forestry-activities provided financial incentives depending on the degree of services rendered by members. Respondents also associate these activities as part of the REDD+ pilot project in their area.

Table 2. Participation of YISEDA members to forestry-related project activities.

Forestry Activities	Freq.	Percent
Reforestation	38	67.86
Agroforestry	27	48.21
Forest rehabilitation	26	46.43
Forest protection (foot patrol)	14	25.00
Non forest-based livelihood opportunities	14	25.00
Biodiversity conservation	7	12.50
Sustainable livelihoods generation	5	8.93
Forest governance/ Policing	5	8.93

The pilot project activities of REDD+ are the common project activities implemented in the previous projects related to CBFM implementation, i.e. assisted natural regeneration which is associated with forest rehabilitation in strict protection zones within the CBFM Agreement (CBFMA) area, reforestation, agroforestry, and forest protection. Figure 2 provides a graphical presentation on the percentage of member-respondents participating in the REDD+ pilot project activities as well as the degree of their participation. Majority of the respondents participated in reforestation activity (73.08%) followed by agroforestry (59.62%), assisted natural regeneration (53.85%) and forest protection (25.00%). The labor services rendered by members in these activities were paid at P150.00 (\$3.26) a day, much lower than the existing wage for hired labor at P200.00 (\$4.35) (as the difference goes to YISEDA savings or general fund to be used for other development activities). Even women members were able to participate especially in the production of seedlings that supply the requirement of the GIZ-REDD+ project. Seedling production was very useful for the succeeding DENR-NGP project of YISEDA. Seedlings were also sold to other CBFM organizations in the province. In addition, women also participated in planting in reforestation areas. For ANR, only male members participated in this activity due to the steepness and ruggedness of the site. The same male pattern of participation was also observed in forest protection activity as this entails foot patrol across the entire CBFMA area and along the periphery to locate the boundary marker of the CBFMA.

Participation in the REDD+ readiness pilot project activities was also gauged in terms of determining the degree of participation of members (Figure 2). Majority of the respondents rated their participation to the REDD+ readiness pilot project activity as moderate to high. The implementation of the project coincides with other developmental projects such as the DENR's National Greening Program (NGP), Comprehensive Agrarian Reform Program (CARP), and preparation associated with the harvesting of the 25- year old Mahogany plantation (Block 1). Hence, members were very busy with all project activities of the organization, including the GIZ-REDD+ project. Meanwhile, the highly active male members gave high rating for forest protection. Those who gave very low to low rating were the aged and the sick who were physically deprived to join the activities. Households with sick or aged YISEDA members were replaced by their young members (or youth) to access gainful employment from the project activities.

The findings of Loaiza et al (2015) pointed out that interest to participate in REDD+ pilot project through deforestation avoidance relies on deforestation rates, cash-related forest dependency and off-farm income. In the context of YISEDA, this PO had been pre-selected by the DENR and GIZ as among the 5 CBFM-POs in the province to constitute the REDD+ pilot project site. Also, YISEDA's willingness to undertake the REDD+ pilot demonstration project is in accordance with the goals of CBFM implementation. Hence, all members were expected to participate in the simultaneous implementation of the REDD+ pilot project and the 3 other forestry development projects mentioned. To suffice the needed labor requirement of the different projects, outsiders or

non-YISEDA members were also hired to complete the project activities as scheduled. Also, member's active participation in all the projects as well as the organization's activities promises future dividends once income from all economic endeavors materializes. Although the traditional forest-related cash income activities of members such as logging (illegal), charcoal making and kaingin making cannot be totally stopped, REDD+ project activities at the site reduced the intensity of these activities (Carandang et al., 2013).

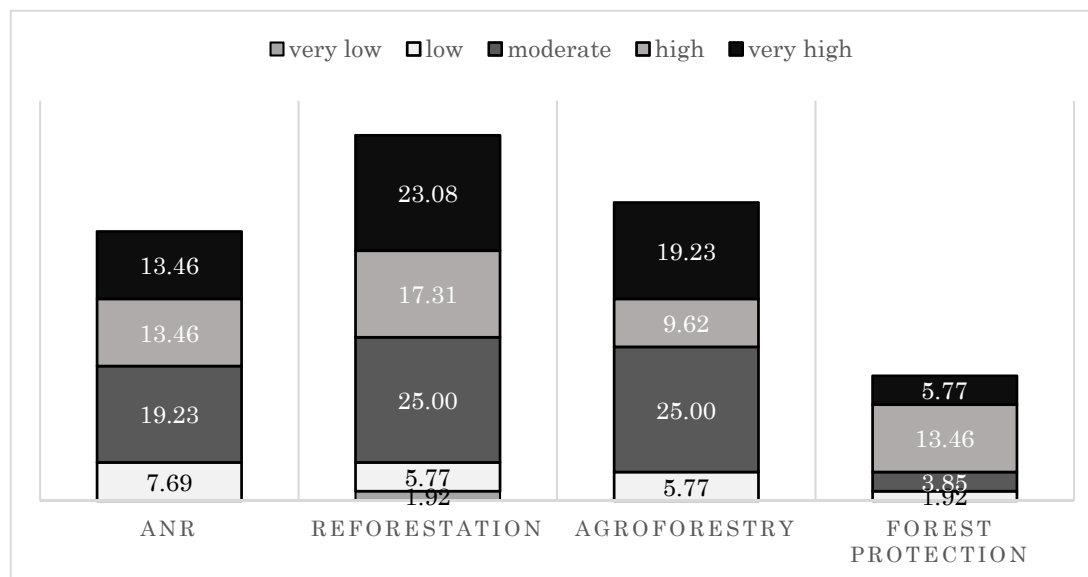


Figure 2. Level of participation of respondents on the REDD+ readiness pilot project activities (%)

3.4 REDD+ Pilot Demonstration Project Activities and Sustainable Livelihoods

Sustainable livelihood is taken by many scholars as a co-benefit of REDD+ (IPCC, 2014; Poudel et al. 2015; Howson & Kinson, 2015; Hirons, 2011; Angelsen, 2009). However, Visseren-Hamakers et al. (2012) interpreted this together with biodiversity conservation and equity as preconditions to the legitimacy and effectiveness of REDD+. The PNRPS Team also promotes sustainable livelihood strategy for successful implementation of REDD+ (PNRPS, 2010). The 3 REDD+ pilot demonstration areas in the country have devised different livelihood activities implemented at the site level. The Quezon and Palawan pilot areas are being managed by indigenous people (IPs) --, the Dumagat-Remontado tribe and Tagbanua, respectively. The REDD+ pilot activities among these IPs are mostly concentrated on enhancing their livelihood strategies such as bee production/farming for Dumagat-Remontado while non-timber forest products (rattan, bamboo) for the Tagbanua tribe. This is quite different from the Southern Leyte site being managed by different CBFM-POs like YISEDA, where activities are focused on forest carbon stock enhancement and protection. All of these REDD+ pilot initiatives have embedded forest protection activities to address the drivers of deforestation and forest degradation.

Table 3 below summarizes the positive (co-benefits) and negative (trade-offs) association of REDD+ pilot activities to livelihood capitals. In general, the different REDD+ pilot activities have both positive (+) and negative (-) impacts on the livelihood capital assets. The positive impacts refer to co-benefits derived out of REDD+ implementation, such as income from pilot activities and during carbon trading. However, negative impacts pertain to trade-offs under REDD+ such as "forest enclosures" that restrict timber utilization.

Only a small number of respondents (58%) answered the question on the impacts of REDD+ readiness pilot project activities on the livelihood capital assets, but their analysis of the impacts provided insights on how to successfully implement of REDD+ at the site level. About more than half of the total respondents associated the activities' impacts on the livelihood capital assets to the natural and financial capitals of reforestation activity. About 20% of the respondents had knowledge on the link of the activities to other capital assets.

The link of the ANR, reforestation, agroforestry and forest protection activities was cited by almost 20% of the respondents to be as high as the human capital asset. This is attributed to the many seminars and workshops brought by GIZ and other NGOs at the local level to capacitate the community and equip them with information

related with climate change, global warming and REDD+. Although a smaller number of respondents (5.77%) related human capital with forest protection, it is still worth mentioning that efforts toward stricter forest protection activities reduced the occurrence of illegal forest activities.

The contribution of reforestation to increasing the natural capital asset of the resources in general and the forest in particular is regarded by majority to be high to very high. This means that planting in degraded landscape is key to greening the environment, which is the main lesson learned from most seminars/trainings. Discussions in these trainings focused on the importance of forest and the resources found therein. Some even mentioned the considerable impacts of climate change on people and forests, that is, they saw the urgent need for this kind of activity in their area. Some also narrated the impacts of the 1982 El Nino and the corresponding strong typhoon that followed which left their resource and food grounds highly devastated.

There is a high to very high contribution of the activities, especially reforestation, on the financial capital assets as perceived by the majority of the respondents. This is attributed to the income derived from activities during project implementation. Only a few of the respondents related the activities to be high with physical capital assets. Available cash income allowed households to buy appliances and motorbikes as a means of transportation for the family and for hire. Social capital contribution is high to very high as well due to a more unified and strong organization espoused by GIZ as part of its organizational strengthening.

Some negative impressions were also raised while associating the different REDD+ activities to livelihood capitals. Agroforestry and reforestation activities were rated very low for natural and social capital assets, respectively. The little contribution of agroforestry to improving the natural capital is attributed to smaller diversity and area of species planted that may have little contribution to emissions reduction. However, this is contrary to results of studies showing the higher potentials of agroforestry systems as well as species in reducing carbon emissions (Lasco, Mallari, Pulhin, Florece, Rico, Baliton & Urquiola, 2013). Trade-offs exist in terms of the opportunity cost (income lost) or foregone benefits when farms are converted to reforestation and agroforestry areas, thereby replacing the monocropped agricultural fields.

Table 3. Summary of associated sustainable livelihoods co-benefits and trade-offs of REDD+ pilot project activities

REDD+ pilot activities / Capital assets	ANR	Reforestation	Agroforestry	Forest protection
Human	-/+	-/+	-/+	+/-
Natural	+	+	+	+
Financial	-	-	+/-	-
Physical	-	+/-	+	-
Social	+/-	+/-	+/-	+/-

4. Discussion

4.1 Implications to Sustainable Livelihoods

The livelihood capital asset of YISEDAs households typifies a family living below the poverty line (83.93% has an annual income that is less than P100 000.00 or \$2 173.91). Members are no longer solely dependent on farming for it cannot provide the needed food and cash requirement of a family. Majority derived income from other sources such as occasional off-farm work as hired labor in the wealthy farmer's lot and in construction works. The only regular income source, aside from employment in the government, is the buy and sell business of agricultural crops derived weekly by female headed households. Annual income averages to P58 492.85 (\$1 271.58) which is way below the annual per capita poverty threshold level of the province at P19 431.00 (\$422.41) (PSA Region 8, 2016) for 5-member households in YISEDAs with an average dependency rate of 146%. Despite this condition, respondents still did not seek help aside from the employment and assistance that YISEDAs provided to them. Hence, employment in YISEDAs projects is vital in obtaining short-term additional income for most of its members.

Future REDD+ is believed by many members to uplift them out of poverty, the same feeling they had with CBFM during its establishment in the area. The current REDD+ pilot activities at the site do not seem to address the issue of sustainable livelihoods. The activities are still concentrated on enhancing the forest carbon stocks, giving more emphasis on the natural capital assets while leaving very little (or no) room for enhancing other capital assets.

REDD+ future success would be dependent on ensuring sustainable financing schemes either from a) donor financing, b) market-based financing, and c) fund-based financing. The inclusion of sustainable financing as a component strategy of PNRPS is considered a cross cutting strategy involving sustainable and long-term financing scheme that will drive REDD+ initiatives in producing its expected outcomes of reduced emissions, poverty alleviation and social justice for forest dependent communities, biodiversity conservation, and improved environmental services (PNRPS, 2010). Part of the long-term plan is investing in self-sustaining local-level programs that will benefit forest-dependent communities. Hence, assured income maybe feasible during REDD+ engagement phase.

At the households, REDD+ pilot activities are evidently enhancing the natural capitals by incorporating the planting of indigenous species in the farms. It has likewise increased the natural capital at the site level. The activities may not have directly improved the present human capitals of the households, but the knowledge system acquired from the different activities helped them to venture into other form of livelihood sources like seedling production. However, seedling production is again short-lived, good until project termination. It was not seen as an enterprise that can be sustained unlike the smallholder nursery of Falcata in the Caraga region.

Other issues emerged. An important concern was raised by some members on training fatigue, with the series of environmental conservation trainings/seminars conducted in the area in the last 10 years as different projects were implemented. YISEDA's diligence and known capability to complete the scheduled tasks even with little financial resources made it a most sought-after PO among funding agencies. This was largely due to high volunteerism exhibited by members. While YISEDA's high dependence on volunteerism paid off, through time, volunteerism subsided and replaced by "project mentality;" that means, members expect financial incentives for every service rendered. This perspective evolved from the last five years of continued paid labor services to members engaged in the different forestry development projects. In recent years, when projects ended and the financial resources of YISEDA dried up, members were no longer willing to do any volunteer work, leaving YISEDA's officials to do the work themselves.

In the long run, pilot activities of ANR, reforestation and forest protection cannot provide the financial asset of the household as demand for labor services is high during the establishment phase only. Moreover, once timber trees mature, agricultural crops can no longer compete for growth. Only agroforestry is financially feasible in both the short and long terms, if farmlands were managed properly.

The different REDD+ pilot activities also limit timber utilization for house construction and repair, where previously members enjoyed the freedom to extract timber for house construction. Another concern is the accessibility of the CBFM area where a road system traverses the plantation area. With the tightening of financial benefits and imposed restrictions on timber access, securing the CBFM area will continue to pose challenges to YISEDA's REDD+ pilot activities.

The REDD+ activities have positive association to the social capital assets. Different institutions/organizations involved in REDD+ activities also serve as the support system of the households. However, these institutions may not continue to enjoy for long the patronage of members, especially the DENR, since the members have become very critical of the continuing illegal activities happening in the area.

4.2 Challenges and Insights on REDD+ Implementation

4.2.1 Too much Focus on Carbon Stock Enhancement

It is very evident that in the promotion of REDD+ pilot projects, the concern is on enhancing the forest carbon stocks (Lasco, Pulhin, Bugayong, & Mendoza, 2011) concentrating on the natural capital asset formation while leaving very little (or no) room for enhancing other capital assets. Also, with the conversion of farmlands/cultivated lands in steep slopes into either reforestation/rehabilitation or ANR sites that led to a reduction in agricultural crop harvest and farm income, majority of the members were wary of the limited or lack of livelihood sources. The meager income has pushed some members to go back to their old illegal forest activities.

Many scholars reiterate the importance of livelihood in participatory forest management (PFM)/CBFM areas (Mohammed & Inoue, 2013). REDD+ also recognizes this as an important element to realize its goal. However, at the pilot project, aside from the project-based income generation activities which are short-lived in nature, there is no other income source alternative that could sustain income generation for households. Additionally, the REDD+ readiness phase improved the human capital asset by instilling forest conservation and protection through the conduct of different trainings/seminars. But for some members, training fatigue set in with the continued infusion of basic concepts of forest ecology, conservation, and climate change.

4.2.2 Importance of Local Implementers

YISEDA, LGU and DENR perspectives on REDD+ pilot demonstration areas are vital to better understand important conditions that necessitate successful REDD+ implementation at the site level. YISEDA believed there was similarity of goals when it comes to the improvement of sustainable livelihood of the community. However, at the site level, CBFM's livelihood options commonly termed "alternative livelihoods" such as livestock (chicken, ducks, goats) raising, sari-sari store operation, etc. are short-lived while REDD+ pilot activities did not directly address this concern.

The continuing poverty and the lack of available sources of income from PO projects led to the declining participation of members to PO activities. Ever since the development projects were promoted in the organization, members looked forward to participate in the activities. Hence, participation is dependent on project funds. Pulhin et al. (2007) refers to this condition as "project mentality" developed from CBFM implementation due to over dependence on income generated from project activities. This is the major drawback of externally funded projects observed in the past, which exists until today. Volunteer work or the "*bayanihan* system" that once defined YISEDA's success is replaced by the "food for work" slogan. This strategy is commonly used by LGUs in soliciting local communities' participation in collective activities such as clean-up drive in the river, coastal area, etc. and other environmental activities. In return, participants to these activities receive 5 kilos of rice.

Likewise, POs with excellent past performance such as YISEDA (recipient of the 2012 Good Performing CBFM-PO Award) is now being challenged with organizational stability and sustainability. The draining financial resources placed the PO's organizational capability uncertain. Monitoring the REDD+ demonstration pilot project site is then constrained by the non-availability of financial resources. Even with only a few members (mostly PO officials) who are willing to do volunteer work, their visibility in forest protection activities should be continued to discourage illegal loggers from entering the project area.

4.2.3 Sustained Forest Protection Activities

Minang & Noordwijk (2014) and Robiglio *et al* (2014) found limited evidence that the national level emission reduction targets will be implemented on the ground. Hence, they recommended the need for REDD+ Readiness to focus on addressing drivers of deforestation and forest degradation. The case of YISEDA reflects the intention to contribute to emission reduction (Note 2). But current REDD+ pilot activities do not directly address drivers of deforestation and forest degradation on the ground, like illegal tree cutting, kaingin making, and charcoal making. Although the reforestation and ANR REDD+ pilot project activities have an embedded forest protection activities, there is no guarantee that the newly rehabilitated forest cover would continue to exist.

4.2.4 The Need for a Committed LGU Partnership

The Philippines cannot deny that forest degradation and deforestation problems still happen in the uplands, most especially in CBFM areas. This is where the local government units (LGUs) and local NGOs can provide the needed partnership towards forest conservation and protection. A corresponding governance system is very important in the implementation of forestry policies, more than engendering participation in tree growing. The local government units as the frontliner in REDD+ implementation face the challenge on sustaining the Provincial Technical Working Group (PTWG) set up by GIZ for REDD+ purposes. This PTWG is composed of representatives from all stakeholders with environmental concern either NGOs, LGUs, CBFM-POs, academe, etc. working in the province. In the national REDD+ strategy, this PTWG is at the base of the proposed organizational structure (PNRPS, 2011). The group met monthly to quarterly, spearheaded by the GIZ, but in recent years, the meetings became infrequent, from twice a year to once a year. This is due to financial resources needed to conduct a TWG assembly/ meeting which cast burden on the host LGU's budget.

4.2.5 Timber for Illegal Logging is Still more Attractive than the Carbon Market

The ultimate challenge of REDD+ in the future is how to convince local implementers (PO members) to maintain REDD+ areas. Mature harvestable timber attracts opportunistic buyers, illegal loggers as well as CBFM members to harvest even without the appropriate permit issued by the DENR. An opportunistic leader of CBFM may find a way to lead the organization into illegal timber harvesting (without permit to harvest). This is already happening in the CBFM area recently. YISEDA members have been accused by the DENR-CENRO to have allegedly committed 3 cases of illegal timber harvesting. Buyers allegedly transacted business with some members, providing them chainsaws to fast track harvesting of mature timber. Some members attributed their eagerness to do illegal harvesting to poverty and lack of livelihood sources in the community. Also, the presence of speculators and buyers of logs are tempting some members to do illegal activities.

4.2.6 The Core of REDD+ Implementation should be Enhancing Sustainable Livelihoods

Too much attention to enhancing the natural capital assets is opposed by some PO members. Enhancing the 5 capital assets of communities in REDD+ areas would likely provide favorable outcome/success. The case of General Nakar, Quezon REDD+ pilot demonstration site allows indigenous peoples (IPs) to know REDD+ by enhancing community livelihoods like honeybee production from collection, processing and marketing. The main idea is to sustain IP's livelihood source to keep them away from timber cutting and other forms of forest degradation and deforestation in the area. Nearby, the Anahao Movement for Productive Community Organization (AMPCO), a neighboring CBFM of YISEDA also with REDD+ project, devised an enterprise that sustains income of the PO. AMPCO adopts the trading post enterprise locally termed as "bagsakan" system, where locally produced copra (coconut) products of PO members are bought by the PO and sold in bulk in the market. This enables AMPCO to generate income for the organization and help members and non-members alike in facilitating the transport and marketing of their products.

4.2.7 REDD+ may Perpetuate the Failures of CBFM

The three decades of CBFM implementation in the country is regarded by many as a failure in the forestry sector (Pulhin et al., 2007). This is because the initiative failed to accomplish the rehabilitation of the targeted 5.97 Million hectares of denuded forest lands (Pulhin et al., 2007), but instead managed to rehabilitate only 600 000+ hectares (or 6.7%). The indicator of CBFM success in the past, from the DENR's perspective, is the physical accomplishments of the program such as the number of trees planted as well as the area (size) of forest plantations. The program failed to include the needs of the local communities in terms of livelihood generation. Although CBFM policies and strategies have been revised to suit the existing condition, somehow its failures can be traced to the absence of sustained income of local communities. Basically, all the challenges mentioned above are also the issues confronting CBFM implementation until now. These challenges and failures may perpetuate with REDD+ if left unheeded.

5. Conclusion

The paper highlights the assessment made by YISEDA members on the impacts of REDD+ readiness activities on pilot demonstration areas using sustainable livelihoods highlighting co-benefits and trade-offs. Findings revealed that the natural capital asset is continuously improving with REDD+ readiness initiative. Local people highly regarded the assisted natural regeneration and reforestation activities' effectiveness in reducing carbon emissions. However, REDD+ activities could only cater to short-lived improvement in the financial capital of members, while indirectly benefiting human, physical and social capital assets.

The 3 year span of REDD+ readiness may not have brought much impacts on maintaining the balance between environmental and economic sustainability. Promises and potentials soon to be achieved with REDD+ may be too overwhelming for local stakeholders which have brought REDD+ at the forefront. However, local participation in REDD+ is project-based, short-lived, hence, livelihood capital assets sustainability is a major concern. This has considerable implications on addressing the illegal forest activities even if there were positive impressions on achieving the REDD+ goals, because income and its sources remained unsustainable. Moreover, the major drawback of REDD+ pilot activities is that it perpetuates the failures of CBFM initiatives, giving little attention to sustainable livelihood objectives. Forest conservation policy like REDD+ may still be embraced fully by local communities if livelihood capital assets were enhanced.

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Notes

Note 1. Change in organizational leadership gave equal opportunities for members to lead the organization especially those who criticize the organization the most.

Note 2. Philippines commitment to a 70% emissions reduction by 2030

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