

Forest Management and Bio-Energy Markets to Promote
Environmental Sustainability and to Reduce Greenhouse Gas
Emissions in Cambodia



CF Business Plan Impact Assessment



Prepared for:

The Regional Community Forestry Training Center for Asia and the Pacific
RECOFTC

November 20, 2015
Phnom Penh, Cambodia
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Executive Summary

The report aims to present the experience of implementing the community-based forest livelihoods. Strengthening the marketing of fuel woods is one of the important activities among the Community Forestry (CF) and Community Protected Area (CPA). The project intends to come up with enterprise development plans in the target forest communities. The enterprises that the communities identified include fuelwood, bamboos, mushrooms, wild fruits and vegetables, medicinal plants among others. Some communities plan to engage on ecotourism. The evaluation was conducted to analyze the outcome of the SFM in terms of improving the income of target forest communities from CF enterprises based on sustainable management of the forest resources in target communities. Specifically, the evaluation focused on the progress of the CFs and CPAs in implementing on the business plans and improvement of the income of the beneficiaries of the project.

30 Management Plans (30CFMP) and 11 CPAMP including business plans were final stage and submitted to the Forestry Administration (FA) and General Department of Administration for Nature Conservation and Protection (GDANCP) for approval. Trainings were provided to the community on the management of the enterprises. All the 30 CFs and 11 CPAs have completed their CF Management Plans and CPA Management Plans and submitted to the FA Cantonments (FACs) for approval. The CFs and the CPAs have completed developing their business/enterprise development plans and are in various stages of implementation (i.e. the utilization like thinning, harvesting and marketing). Three types of CF or CPA business plans were developed depending on the condition of the CF and CPA. These include: (1) CF/CPA harvesting plans: for CFs/CPAs which have resources for business; (2) CF/CPA investment plans for CF/CPAs that lack of resources develop a CF/CPA business plan; and (3) CF/CPA service plans for CF/CPA that have potential for eco-tourism.

The result of the assessment indicate that the project has brought important changes in some communities in terms of resource management and access to resources. The project has also helped in strengthening the role of the women in managing the community forests. There are approximately 251 entrepreneurs and 1,906 collectors identified in the CFs and CPAs. There are approximately 2,652 household who benefited by the enterprises in terms of efficient and sustainable use of the forest resources, access to capital, knowledge in financial management among others. Despite the effective management of the CF the result of the assessment indicate that the CF/CPA enterprises like the bamboo collection and charcoal production, operate on and off. There are more to be done to improve the record keeping and financial book keeping of the CFs/CPAs like recording the profit and loss, the production and sales, production plan and market prospects. In some sites, the income has not yet started since the community is still in the establishment stage. The data indicate that the number of people who depend on forests for livelihood has increased from 25.2% to 28.7%. The result of the assessment indicate that the project has resulted to an improvement on the income of target beneficiaries particularly among the non-HH head. The income of female respondents who are non-HH income is higher (\$94.58/month) compared to the project target of \$74/month. There are indications however that the current income of female HH Head differs from the target. Some of those who indicated that their income has decreased cited reasons such as erratic climate, declining condition of resources and market fluctuation.

The project has contributed significantly to the improvement of the skills of target beneficiaries particularly on the sustainable management of the forest resources. The business plan has provided greater opportunities for the sustainable management of the forest resources. However, efforts are needed to make the enterprises profitable. It was recommended that the business model need to be restructured. The profitability of the enterprise should be looked at the CF or CPA level instead of the subgroup level. The pooling of revenues from all income generating activities was recommended.

LIST OF ACRONYMS

CBFM	Community-based Forest Management
CF	Community Forestry
CFDF	CF Development Fund
CFMC	CF Management Committee
CFMP	CF Management Plan
CPA	Community Protected Areas
CPAMP	CPA Management Plan
ELC	Economic Land Concessions
FA	Forestry Administration
FAC	FA Cantonment
ForInfo	
MFI	Microfinance Institution
NCML	Northern Cardamom Mountain Landscape
NGO	Non-Government Organization
NTFP	Non-Timber Forestry Products
SFM	Sustainable Forest Management

1. INTRODUCTION

1.1 Background and Context

The Northern Cardamom Mountain Landscape (NCML) covers the provinces of Battambang, Kampong Chhnang, Kampong Speu and Pursat and the globally important Cardamom Mountain Rain Forest and major carbon reserves. The mountain range is a host to endangered flora and fauna that are being the focus of research and conservation by the government and conservation NGOs. The mountain range also regulate surface runoff that carry silts towards the Great Lake. This landscape is subjected to incompatible land uses led to deforestation and degradation and undermines its protective values. Among the many drivers of deforestation identified in SFM Project Document is the prevalence of poverty in the NCML. Local communities need to maintain household incomes to bail them out from poverty. The project endeavors to address poverty in the uplands through sustainable use of the forest resources.

The Regional Community Forestry Training Center for Asia and the Pacific (RECOFTC) has implemented two technical outcomes under the Sustainable Forest Management (SFM) project funded by the Global Environment Facility (GEF) of the United Nations Development Programme (UNDP). The project has 3 main components:

- Component 1 capacity building and policy development
- Component 2 CF and CPA and selected CLUP integrating CF and CPA
- Component 3 wood energy efficiency promoted by improved stoves and kilns.

The two technical outcomes are referred to in this report as SFM1. The Implementing Partner for SFM1 is the Forestry Administration (FA) of the Ministry of Agriculture, Forestry and Fisheries (MAFF). The project offers an opportunity to minimize deforestation through sustainable management of the forest and alleviating poverty in target communities living in and around NCML. One of the deliverable of the Project is to develop the forest management plans and business plans for the 30 CF sites and 10¹ CPA communities in 4 provinces. The Community Forestry Management Plans (CFMPs) and CF Business Plans are reviewed by the CFMP consultation committee at the national FA. The collaborating agencies are the General Department of Administration for Nature Conservation and Protection (GDANCP) of the Ministry of Environment (MOE) for the development of the Community Protected Areas (CPA) and the Ministry of Land Management, Urban Planning and Construction (MLMUPC) for the development of the 4 Commune Land Use Plans (CLUP).

1.2 Goals, Outcome and Indicators of the Project

The objectives of the SFM project are "to strengthen sustainable forest management (SFM) through decentralized forest management integrating SFM in Community Forestry (CFs) and Community Protected Areas (CPA) and promoting a landscape based approach". The project aims to increase communities' income from decentralized forest management and feed into policy, planning, and ongoing implementation and investment frameworks and also create the basis for sustainable wood-energy efficiency technologies, which reduce CO₂ emissions.

¹ The SFM project initially planned to support 10 CPAs; however during the workshop on project orientation and planning for supporting CPA development on 7 October 2014, the SFM project agreed to support 11 CPAs following a proposal by the Department of Environment (DOE) and GDANCP.

The SFM Project also aims to address the barriers of limited capacities and incomplete regulatory framework to support SFM, make local communities able to realize potential benefits from forests, and therefore have motivation and/or means for sustainable management and conservation, and improve dissemination of available energy efficient technologies for the use of fuel wood and woody biomass. The project is designed to strengthen national SFM policy, integrate community-based sustainable forest management into policy planning and investment frameworks and create markets for sustainable bio-energy technologies that reduce CO₂ emissions. The barriers to this long term solution are: (i) Limited capacities and incomplete regulatory framework to support SFM; (ii) Local communities are not able to realize potential benefits from forests, and therefore have limited motivation and/or means for their sustainable management and conservation; and (iii) limited dissemination of available energy-efficient technologies for the use of fuel wood and woody biomass.

The main outcome of the project is for the community-based sustainable forest management being implemented effectively within a context of cantonment, province, district and commune level planning delivering concrete benefits to local communities" (Outcome 2). This outcome area was achieved by the completion and approval of management and business plans for community forests and protected areas implemented activities that generate products and incomes for the communities. The service provider, RECOFTC and its government and community partners have been working primarily at site level with authorities at the respective commune, district and provincial governments and in corresponding sectoral agencies. It is anticipated that reliable, forest-based enterprises that provide benefits will encourage sustainable management by these custodians of the forests, who are now being given effective use rights and management responsibility.

A key theme of the SFM project is to create incentives for forest conservation through the development of income streams for local communities from sustainable utilization of the forest products. It was noted that several CF sites are in degraded forest, where there are fewer surplus resources for sale and, thus, more limited opportunities for enterprises and benefit generation.

There are two main outputs that are relevant to the enterprise developments namely:

1. CFs and CPAs develop management plans that provide environmental and financial sustainability, including opportunities for business development (Output 2.1); and
2. Average income of households, and of women, from profitable enterprises based on the sustainable management of forest resources increases in target communities (Output 2.4)

Under the Revised Strategic Results Framework (SRF), the development of the business enterprise is related to Output 2.4 (Average income of households, and of women, from profitable enterprises based on the sustainable management of forest resources increases in target communities). It has two indicators:

1. % increase in average annual income from SFM of households in target forest communities; and
2. % increase in average annual income from SFM of women in target forest communities

2. THE EVALUATION

2.1 Purpose of the Assessment

The evaluation was conducted to analyze the outcome of the SFM in terms of improving the income of target forest communities from CF enterprises based on sustainable management of the forest resources in target communities. Specifically, the evaluation focused on the progress of the CFs and CPAs in implementing on the business plans and improvement of the income of the beneficiaries of the project.

2.2 Preparation of the Report

The assessment employed a mix of methodologies. Among the methodologies that was used are the key informant interview of the CFMC chief, interview of entrepreneurs, Key Informant Interview (KII) of the Project Staff. Reports such as the quarterly reports, baseline study, project document and MTR were also consulted. Key informants from the CFs were interviewed representing different products and services. Due to difficulty in tracing back the respondents in the baseline study, a recall approach was used in determining the past incomes and other information. These are also counterchecked with the data from the baseline study.



Figure 1. Group interview with the CF members in Kampong Chnnang

3. FINDINGS

3.1 Overview

Strengthening the marketing of fuel woods is one of the important activities among the 30 CFs and 11 CPAs in the target site. Currently, most of the products in the CFs and CPAs are marketed in raw form with limited value adding made at the community. Developing the skills of the community on processing provide an opportunity of increasing the household income. The project intends to come up with enterprise development plans in the target forest communities. The enterprise development plans are closely linked to the CFMP and CPAMP of the CBFM sites to ensure sustainable utilization of forest products. The development of a sound community forest management plan therefore is an important requisite in enterprise plan development especially if the enterprise has strong resource utilization component such as fuelwood and timber extraction. The development of community forest management plans is envisioned to ensure the sustainable supply of forest products and sustain socioeconomic development. The identification of the enterprises were based on the outcome of the resource assessment in the area. This was further adjusted after conducting the CF and CPA Management Planning. The CFMPs and CPAMPs determined the status and condition of the forest resources in the areas as well as the potential for commercialization of a particular product. The enterprises of the communities vary from site to site. The enterprises that the communities identified include fuelwood, bamboos, mushrooms, wild fruits and vegetables, medicinal plants among others. Some communities plan to engage on ecotourism. To implement the business plan, a modest grant was provided to the community through the CFDF (Source: KII CFMC). The implementation of the business plan include production of the charcoal kiln, trading of bamboos, mushrooms and other forest products.

3.2 Achievement at the Output Level

Eleven (11) CPA Management Plans and 30 CFMP and business plans were final drafted and submitted to the FA and GDANCP for approval (28 CFMP approved by FAC and 11 CPAMP are progressing approval in GDANCP). The CF/CPAMP and Business Plans were implemented through CF/CPADF and with additional fund from UNDP and (ForInfo). The project assisted target CF and CPA members in the formulation and implementation of the CF and CPA enterprises. This serves as a strategy to attain financial viability of the CF and CPA enterprises. The project mobilized the FAC/DOE/WS and local authorities to provide support to the CFs and CPAs in the development of the CF/CPAMP and in developing the enterprises. The SFM staff helped the community in selecting the products based on the condition of their resources. A resource assessment was conducted to determine the potential products in the area. The selection of the products was also linked based on the abundance and availability of the resources during the CF and CPA Management Planning. While RECOFTC deployed an expert on livelihood, the decision of the product to produce was made by the community through consultation.

After the community decided on the enterprise, a grant was provided to the community to support their enterprises through the CFDF (Source: KII Provincial Coordinators). The project also capacitated the CFs/CPAs to source alternative funding from other NGOs for any investments that may be needed to run their enterprises. Trainings were provided to the community on the management of the enterprises and ensure success of managing their enterprises. GERES also provide a specific training on silviculture and operation of the

charcoal kiln² including the training on financial management of the charcoal production enterprises. The charcoal kiln was put up by Geres to pilot the Yushimura kiln technology. The Technology aims to produce good quality charcoal. The charcoal kiln was funded by UNDP under a separate component. The establishment of the Yushimura kiln was made through consultation with the community members. The arrangement was that after the phase out of the project, the community will continue operating the kiln and maintain it under using the income from charcoal. The selection of the site for the establishment of charcoal kiln was based on the spatial study and preliminary biomass study conducted by Geres.

Following the necessary preparation for CFMP and Business Planning, all the 30 CFs and 11 CPAs have completed their CF Management Plans and CPA Management Plans respectively. All the 30 CFMPs were submitted to the respective FACs for approval. They have completed developing their business/enterprise development plans and are in various stages of implementation (i.e. the utilization like thinning, harvesting and marketing). During the workshop conducted on business planning, 3 types of CF or CPA business plans were developed depending on the condition of the CF and CPA. These include:

- CF/CPA harvesting plans: for CFs/CPAs which have resources for business (for 27 CFs and 10 CPAs)
- CF/CPA investment plans: for CF/ CPAs lack of resources for conduct CF/CPA business plan (2 CFs)
- CF/CPA service plans: for CF/CPA which have potential for eco-tourism. (1 CF and 1 CPA)

All the target 30 CFs and 11 CPAs³ have completed the Phase 1 of Business Plan implementation (Identification of business ideas and entrepreneurs). The project has completed 100% of the total target (30 CFs and 11 CPAs) in value chain analysis (Annx 1). All the CFs has completed Phase 3 of enterprises development (writing the CF enterprises business plan)

The implementation of the community enterprise vary. There are some sites that have no resources so they resorted to developing the investment plan. Some implemented a service-type of enterprises (e.g. ecotourism). Those that have resources proceed in the harvesting of forest products. There are 2 CFs that have completed their investment plans and start implementation (1 CF used CFDF for CF credit to get interest for fuel wood business plan and other one CF started used CFDP to planting Bamboo to support bamboo business plan). It is expected that the restoration and protection activities will lead to the recovery of the forest resources and will be ready for harvest for the next 5 years. Thirty three (34) CFs and CPAs (28 CF and 6 CPAs are in progress of implementing their respective enterprises/business plans. There are only 7 CFs/CPAs (2 CF and 5 CPA) that have not yet started their enterprises. Accordingly, CPA just fined business plan by end of December 2015 and 1 CFs ecotourism did not get services from outsider to support and 1CF pole harvest did not implementation on time. Aside from showing the progress of implementing the business plan,

Source: Progress Report

² GERES and RECOFTC are two Service Providers commissioned by the Forestry Administration to provide assistance to the CFs. GERES focused on woodlot development for charcoal production using the Yushimura charcoal kiln. In some CFs, there are overlaps in terms of the management by the two Service Providers. The two harmonized their management plans in these CFs.

³ Based on revised target. The target for CPA was raised from 10 to 12.

3.3 Achievements at the Outcome Level

The project has brought important socioeconomic changes in some communities. In Kampong Chhnang, the community members are more aware on the importance of CF Management for the sustainability of their forest resources. The project helped in strengthening the role of the women in managing the community forests. More than 50% of the women are involved in running CF enterprise (Source: Result of the HH interview). The result of PRA identified the following products in the different sites listed in Table 1 below. The most common products that are identified by the CFs are firewood, bamboos, mushroom and resin.

Table 1: Identified forest-based enterprises in the CFs and CPAs

Enterprises	CBFM Site	Battambang	Kampong Chhnang	Kampong Speu	Pursat	Total
1. Bamboo	CF	1		4		5
	CPA		1	2		3
2. Bamboo shoot	CF		1		2	3
	CPA					0
3. Ecotourism	CF			1		1
	CPA				1	1
4. Firewood	CF	1	5		3	9
	CPA		1			1
5. Mushroom	CF	1			2	3
6. Pdao Som (Rattan Worm)	CPA	2				2
7. Phkar Ankeasel	CPA		1			1
8. Poles	CF			1		1
9. Red Ants	CF			3		3
10. Rose wood seedling	CF			1		1
11. Hard Resin	CPA			1	2	3
12. Traditional medicines	CF			1	1	2
13. Wild vegetable (Prich vegetable)	CF	2				2
Total CFs		5	6	11	8	30
Total CPAs		2	3	2	4	11
Total		7	9	14	11	41

Source: HH Survey

There are approximately 248 entrepreneurs and 1846 collectors identified in the CFs and CPAs (Annex 2). Out of these, there are approximately 2652 who benefited by the enterprises. The women participated in various aspects of management planning and enterprise development. The women play important role in the trading of forest products, mostly NTFPs (source: FGD and Key Informant Interviews).

Table 2 Roles of Women in the CFMP and Business Planning

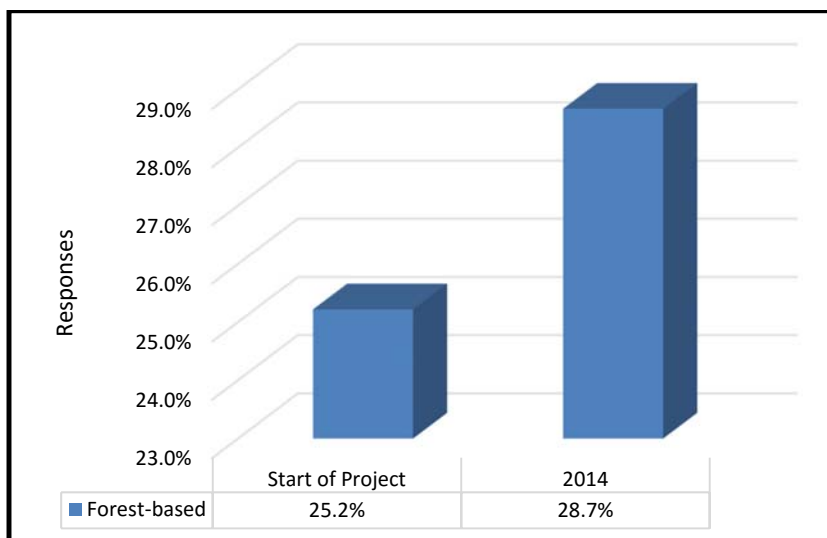
Community Activity	%
CFMP Implementation	15.6%
Disseminating Information	11.1%
Enterprise Planning	11.1%
Record Keeping	10.0%
Patrolling and Protection	8.9%
Harvesting/ Collection of Forest Products	7.8%
Resource Assessment	7.8%
Enterprise Mgt.	5.6%
Pruning and Thinning	5.6%
Seedling Production	5.6%
Financial Mgt.	3.3%
Cash Disbursement	2.2%
Management Planning	2.2%
CF Development	1.1%
CFMP Establishment	1.1%
Community Enterprise Planning and Management of the CFDF	1.1%

Source: HH Survey

Despite the effective management of the CF, it is still difficult to ascertain the profitability of the CF/CPA enterprises. The CF/CPA enterprises operate on and off and there is little mention on their profitability. As observed by the Microfinance Institutions (MFI) who investigated the feasibility of extending loan to the CF/CPA they could hardly determine the profitability of the CFs/CPAs due to poor record keeping and financial book keeping. In some sites, the income-generation has not yet started since the community is still in the establishment stage. But the members of the community are already collecting forest products. The proceeds of the collected forest products accrue to individual collectors. The CF do not get any share from the forest products collected by the members of the CF/CPA.

3.4 Achievement at the Impact Level

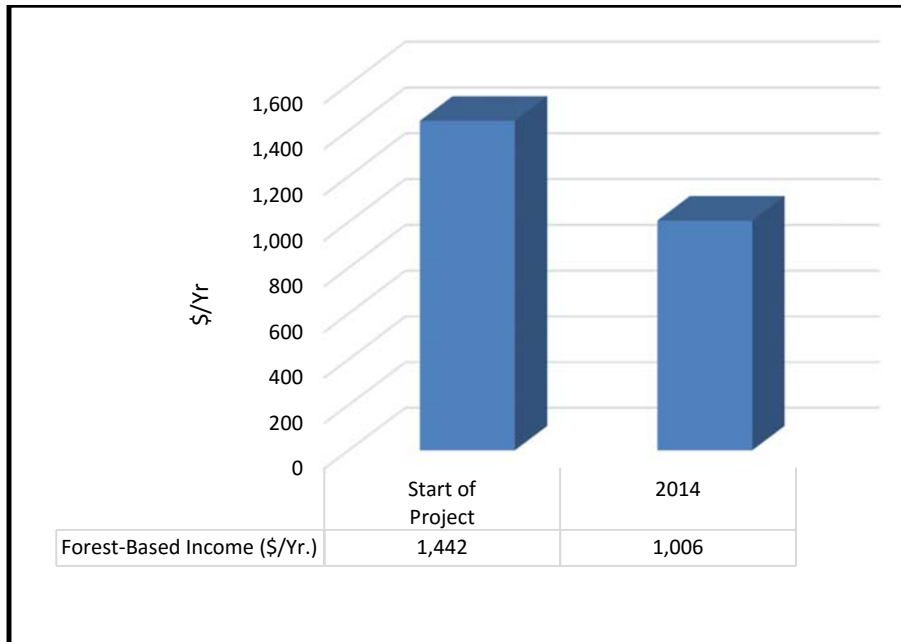
Despite the limited commercialization, the project has provided benefits to the community. The data indicate that the number of people who depend on forests for livelihood has increased from 25.2% to 28.7% (Figure 1).



Source: HH Survey

Figure 2. Trend of the number of respondents who depend on forest based income

However, the average forest-based income of the respondents in 2014 has decreased compared from the start of the project (Figure 2). The decline could be attributed to the increase of the number of people who compete in the collection of forest products. The regulation in the collection of forest products may also contributed to the reduction of forest-based income



Source: HH Survey

Figure 3. Annual Forest-based income (\$/HH/yr.)

The decrease in income is more pronounced on fuel wood trading, timber trading and wild vegetable production (Table 3). For non-forest-based livelihoods, the reduction are more pronounced in livestock raising. The result of the survey indicate that the handicraft provide

one of the most important source of income among the respondents. The firewood and timber trading also provide a very important source. However, as in the baseline, the baseline, the responses indicated that the non-forest-based income remain the major source of income.

Table 3. Change of household income (\$/HH/Yr.)

Income Source	Start of Project	2014	Changes
FOREST-BASED			
▪ Handicrafts	25,000	30,000	5,000
▪ Tree seed trading		300	300
▪ Trading (Forest-based)	200	400	200
▪ Bamboo Trading	69	110	42
▪ Mushroom Collection	205	230	25
▪ Bamboo Collection	26	45	19
▪ Red Ants Collection	75	75	0
▪ Medicinal Plant Trading	16	13	-4
▪ Rattan Trading	150	100	-50
▪ Wild Fruit	160	110	-50
▪ Mushroom Trading	146	36	-110
▪ Resin	300	150	-150
▪ Charcoal Production	400	240	-160
▪ Wild Vegetable (Pirch)	700	500	-200
▪ Timber Trading	5,000	3,000	-2,000
▪ Fuelwood Trading	3,938	1,088	-2,850
Average	1,442	1,005	
NON-FOREST BASED			
▪ Employment/Wages	1,273	2,160	887
▪ Trading (Non forest based)	1,832	2,391	559
▪ Farming	708	968	260
▪ Livestock Raising	1,191	790	-401
Average	1,199	1,460	

Source: HH Survey

Among the reasons cited for the increase in income is due to the improvement on the condition of the resources, improved technical knowhow and improved productivity (Table 4).

Table 4. Causes of the Increase in Income of forest-based Livelihoods

Causes of Income Change	Responses
Improved Condition of Resources	34.4%
Experience and Technical Know-how	31.3%
Improved Production	12.5%
Improved Qlty Planting Materials	9.4%
Increasing Number of Traders	6.3%
Access to Resources	3.1%
Availability of Time for Productive Activities	3.1%
Better Control of Resources from Outsiders	3.1%
CF Management	3.1%
Technology - charcoal kiln	3.1%

Source: HH Survey

Among the causes of decrease in income cited by the respondents are due to erratic climate, declining condition of resources and market fluctuation (Table 5). The responses indicate that the trend of the condition of the forest resources in the CBFM areas vary. There are CFs/CPAs that have improved the forest condition while some have deteriorated.

Table 5. Causes of the decrease of forest-based income

Causes of Income Change	Responses
Drought and Erratic Climate	50.0%
Declining Condition of Resources	40.0%
Fluctuating Market	40.0%
Decline in Animal Production	10.0%
Limited Employment Opportunities	10.0%
Pests and Diseases	10.0%

Source: HH Survey

Compared to the baseline, the data shows that on the average, the income of the female HH head differs from the baseline (Table 7). The SFM project target a 20% increase of HH head income or at least an income of \$67.2/month. The result of the HH survey indicate that the current income is only \$11.12/month. The disparity of the income could be due to sampling methodology. During the baseline, the respondents were selected at large, regardless whether they are target beneficiaries or not. But during the evaluation, the respondents were focused on the target members of the enterprises (purposive sampling). The result would indicate that there are greater variability among the socioeconomic condition among the households in the site. However, it can be noticed that for the female non-HH heads, the income is higher (\$94.58) compared to the target of \$74/month. The interview indicate that the female HH head have difficulty looking for economic activities considering that they are saddled with household works. It is very common that the female HH heads are responsible for the household chores thereby that constrained them to engage in economic activities. But the female non-HH head can devote their time looking for gainful employment or income generating activities.

Table 6. Average Forest-based Income (\$/HH/month)

	Baseline	Target (20% increase)	Outcome
Female HH Head	56	67.2	11.12
Female Non-HH Head	62	74.4	94.58
Average (HH Head and Non-HH Head)	60.5	70.8	52.84

Source: HH Survey

While the project has only provided modest achievements in terms of income, it provided the community access to resources (Box 1). Ultimately, as the condition of the forest resources improve, it is expected that the increase in income will follow.

Box 1. Impacts of CF

Mrs. Pum On is 56 years old resident in Ou Srav village in Prongil commune and member of the OU Srav CF. She is a member of the Ou Srav CF since 1999. She has 5 children and has been collecting

bamboo. Before the establishment of CF, everyone has been collecting bamboo. After the establishment of CF is much easier for the members to collect bamboos since the competition from outsiders has reduced. The establishment of the Community forestry has improved the condition of the bamboos in their community.

In Chros Svay, the establishment of the Community Forestry has helped in reducing their vulnerability to hunger. During lean period, the community members can collect bamboos to supplement their income.



Some changes in the management of the CF/CPA are also noted. The respondents cited the following changes: (1) active participation of the community members; (2) increased capacity of the committee; (3) reduced utilization of the fuel woods (Table 8).

Table 7. Most significant change in the CFs/CPAs

Most Significant Change in the Community	Response
Active Participation of Community Members	67.3%
Increased Capacity of Committee	8.2%
Reduced fuel wood Utilization	8.2%
Strengthened Financial Resources	6.1%
Access to Forest Products	4.1%
Establishment of Charcoal Kiln	2.0%
Improved Knowledge on Mgt. Planning	2.0%
Reduced Illegal Cutting	2.0%

Source: HH Survey

Although on the average, there was a decrease in household income, there are households who reported experienced improvement in household income. They mentioned that these are due to technical support provided by the project (Table 9). The project provided training in the formulation of the CF management plan resulting to the better management of the forest resources.

Table 8. Role of the project in improving the household income

Role of the Project	Response
Financial and Logistical Support	61.0%
Technical Support (mentoring/advice on running the project)	16.9%
Capacity Building (training on financial management, resource utilization, resource inventory, etc.)	10.2%
Livelihood (access to resources)	10.2%
Facilitation in CBFM Development	1.7%

Source: HH Survey

There is little evidence that the project has contributed to the improvement of the livelihoods of women. While the project capacitate the women to take part in the CBFM activities as well as in decision making, there are indications that the women, especially the household heads, are burdened of balancing household chores and responsibilities in the community activities. The role of the project in improving the lives of the communities is loosely connected. As pointed out in the project risks, the degraded condition of the forests may be the limiting factor of advancing livelihood improvement. The enterprises has just started in 2013-2014. The fact that the seed grants were not released immediately to the CFs/CPAs, it is difficult to establish causality of project livelihood interventions and improvement in household income. The benefits from charcoal production using Yushimura kiln is not conclusive either. The field interview revealed of an on-and-off operations of charcoal kiln due to limited availability of wood fuel from community forests. Accordingly, the cost of extraction is very high even with the use of sulky technology. The high cost could be due to the limited volume that can be extracted per unit area. As conceptualized, the community will get wood supply from the thinning and pruning operation only. Because of this limited volume extraction, the unit cost of extraction increases. Therefore, it appears that the major contribution of the project in terms of livelihood development is confined only to providing security of tenure, initiating enterprises (CF/CPA Management Planning, and business plan development) and providing entrepreneurial skills.

3.5 Relevance of Results

Despite the modest benefits generated by the project, it has meaningfully contributed to the building of the capacity of the communities to develop the business plans. The economic empowerment of the target communities supports the government's thrust of addressing poverty and sustainable management of the forest. According to the design, the project aims to improve the lives of the target communities. While the enterprise development has not yet produced tangible result, the CF Management Planning that was conducted by the project will expectedly pave the way towards sustainable management of the forest and ultimately lead towards improving the lives of the CBFM members. The project therefore is very relevant in the context and setting in the NCML and has appropriately targeted the beneficiaries. The communities who are living in the NCML should be given priority since they will directly affected in the management of the resources.

3.6 Sustainability of Results

The forest-based enterprise may sustain the operation of the CBFMs. But based on the assessment by one Microfinance Institution, they noticed poor record keeping, unclear accounting of the costs/expenses, and unstable supply of raw products from the forest. This situation makes the viability of community-based enterprises uncertain (Source: Personal communication with an MFI Staff). The observation of the MFI conforms to the observation in the field that forest-based income are only for stop-gap measures. These are not meant to provide sustainable and reliable income stream to the households. The responses revealed

that the major source of income comes from non-forest-based livelihoods. There are some CFs/CPAs, however, that have established benefit sharing mechanism. The collectors and the Enterprise Group in these area set aside shares to the CFs/CPAs. In the case of Chros Svay CF, the bamboo Enterprise Group provide share to the CF from the proceeds of the bamboo enterprise (Box 2).

Box 2. Sharing of the proceeds from Bamboo Enterprise

In Chros Svay CF, the community has succeeded in managing the bamboo resources. Bamboos are used as scaffoldings in building constructions and as low cost fencing materials. Under the SFM project, the CF was organized into collectors and entrepreneurs. A buyer contracted the group to purchase the bamboos that were collected from the CF.

The CF enterprise group used the proceeds of the sale of bamboos in paying the family collectors. The bamboo enterprise group gave share to the CF from the processes. The proceeds from bamboos are distributed as follows:

- CFDF = 30%
- Capital = 40%
- Social = 10%
- Benefit for Community = 20%. These will go to the CFMC and CF enterprise.
-

Source: HH Survey



Figure 4. Bamboos piled in Kampong Speu

3.7 Implementation Challenges and Ways of Overcoming

The Implementation of the project is beset with problems at the initial implementation. It took time for the project to thresh-out the working arrangement with MoE resulting to delays in the implementation. Organizational issues were resolved before the MoE made commitment of support that led to successful implementation of CPA. Operationally, significant challenges of implementing the project include the following:

1. The cost of extraction and transport of forest products for fuel wood
2. Difficulty of completing the formalization steps in CFs that are in conflicts with the ELCs
3. Degraded condition of the forest. Some of the forests are severely degraded that it hardly support livelihoods of the communities.
4. Making the enterprise profitable is still a big challenge.

The operational cost of extracting fuel woods from woodlots remain expensive. High thinning must be applied to overcome the problem on economics of harvesting. At present the FA allows thinning (release cutting) for the inferior trees (Source: KII Project Staff). This means that the trees that are bigger, regardless of the species (i.e. whether premium or not) must be harvested for fuelwood purposes if the area is delineated at woodlot. In addition, there is a need to influence consumer preferences on charcoal. There is a need to raise the awareness of the consumers on the quality of charcoal produced using the Yushimura kiln compared to the woods produced from traditional method.

3.8 Success Factors

3.8.1 Sustainable Management of the Forest

Linking the enterprise with the CFMP and CPAMP ensures sustainability of the enterprise. Among the important contribution of the project is the effective management of the forest resources. The CF Management Plan and the CPA Management Plan achieve the goal of effective management of the forest resources. By adhering to the sustainable management of the forest resources, the long term development and sustainable supply of raw materials will be assured.

3.8.2 Support: Funding and Capacity Building

The project provide support to the CF/CPA through trainings, particularly in the management of the forest resources, and financial management. But aside from capacity building the project also provide \$500/CF financial assistance through CFDF. The CBFM need initial funding to start the operation of the community enterprise. However, it was noticed that grants were released to CFs and CPAs only recently. This could be attributed to the delay of the completion of the CF and CPA Management Plans where the business planning is based. This could be the reason why some enterprises was not able to produce significant results during the evaluation.

3.8.3 Appropriateness of Design

The project properly identified the target beneficiaries by selecting CFs that has reached step 7 (have CF Agreement with the FAC) or almost completed the formalization process. This minimized the risks and CF and CPA management can be completed within the project lifetime. One of the requirement before the CFMP can proceed is that the CFs/CPAs have signed agreement with the FAC or the MoE.

A grant of 500\$ per CF, was provided to the communities to start a community-based enterprises. But it was noted that some CFs did not utilized the funds as envisioned by the project document. Some of the CFs reinvest the grant by lending it o its members instead of starting a forest-based enterprises. There seems to have different interpretation on what enterprise development means. The management should therefore clarify whether earning interest from relending is within the ambit of enterprises development as envisioned in the SFM document.

It was noticed that the charcoal enterprise has provided limited benefits. In the case of Damrey Chak Thlork, reported losses from their operation. The CF members indicated that the cost of extraction outweighs benefits. There is a need to revisit the woodlot management plan. There appears a mixing up of the objective of sawtimber and wood fuel production. In its present design, the woodlot management plan intends to extract timber for subsistence purposes (i.e. from thinning and pruning only). Logically, the extraction will be higher.

The design of the enterprise structure needs to be revisited. Most CFs and CPAs created a sub-group (i.e. Enterprise Group) under the CFMC. Presently, there is a separate cash flow for each enterprise instead of having a consolidated cash flow (i.e. combining cash flows from all enterprises). Due to the seasonality of a particular product, the cash flow becomes intermittent. Under this model, it becomes difficult to determine the profitability of the CF operations. The individual enterprise could not present a financially viable operation.

The extraction regime that was set in the management plan need to be reexamined. Setting the extraction level appears to be arbitrary. The CFs start to conduct "sustainable harvesting for fuelwood (thinning). However, the level of thinning is not backed by a growth and yield study to ensure that the growth increment can replenish the quantity of timber extracted. It was noticed that the implementation of the enterprise development was delayed significantly. This is because off the current guideline that the CFs can only start CF Management Planning after the community completed step 7 (or has achieved full legalization). By examining the sub-activities of CFMP, CF Management Planning can proceed while the CFs are completing its formalization. By implementing the CFMP earlier instead of doing sequentially, the enterprise development could have started earlier and more visible results could have been observed.

The inventory remain one of the contentious issues of the CF Management Planning. The use of large plots has resulted to errors during inventory. According to the field staff, when the sampling plot is big, they have difficulty determining the boundary of the plots and sometimes unsure whether the trees are inside the plot or not. The error in inclusion or exclusion of trees in the sampling plot could result to estimation errors of the standing stock. The use of smaller plots can overcome this issue. Unfortunately, the use of smaller plots was not tested since the FAC are reluctant to test the method since it has no legal basis. To minimize the cost, the use of UTM grid coordinates as a standard coordinates in locating the plots will make establishment of plots more cost-effective. The current sampling method uses the archaic approach of looking for land mark in the CF and used as reference point in establishing grids for sampling. The use of the predefined distance between grids using UTM coordinates can overcome the issue related to costly sampling method.

3.8.4 Good Practices

The project conducted regular monitoring on the progress of implementation and use of funds. There was regular meeting where the Project Management was updated on the progress of the implementation. The project adopted a system for financial monitoring. The community follow a financial reporting protocol set by the Service Provider. The expenditure was also regularly monitored by the facilitation staff to ensure transparency and

accountability of financial resources. The monitoring and recording ensures that the grant will be properly spent.

The identification of the product for enterprises followed a systematic process. The project used MA&D tool developed by FAO in the identification of products. There are approximately four phases in the selection and implementation of enterprises using the MA&D process:

1. Phase 1. Identification of Business Ideas and Entrepreneurs
2. Phase 2. Value chain analysis.
3. Phase 3. Writing the CF and CPA Business Plan
4. Phase 4. Starting the business enterprises

How the MA & D fits to the overall development of the CF business/enterprises is shown in Annex 3. One of the important features of the MA&D process is the participatory identification of potential products in the community and linking to the status of resources, market demand, community capacity. The project sought participation to different stakeholders especially the local authority in implementing the project. The local authority has provided support to the CFMP, CLUP and Partnership Forestry (Box 3). The local authority has facilitated the formalization of the CFs and CPAs, resolving conflicts among the CFs and CPA members, and inclusion of the CF/CPA development in the Commune Investment Plans (CIP).

Box 3. Collaboration of the Local Authority

Kbal Tuek Commune is the first commune to develop the CLUP. The commune council decided to establish the CPA in their commune with the help of development NGOs. They integrated the CPA activities in their CIP. During the SFM implementation, they gain knowledge on the management of the CPA like conducting PRA and dividing their CPA to management blocks for conservation, bamboo and timber. Through the SFM project, they knew how to conduct forest inventory. What they know before is that the CPAs are only intended for protection and they are not allowed to utilize the forest products from the CPA. But with the SFM they realized they can get financial benefits through on a sustainable manner and start an enterprise. They can use the money to protect the forest.

4.0 LESSONS FROM PROJECT IMPLEMENTATION

Among the lessons that can be drawn from the project implementation include the following:

1. In deciding the products, determining the sufficiency of the raw materials to support the enterprises is very important. The products should be sufficient enough to allow for the sustainable production.
2. The enterprise development plan is a useful guide in commercialization of potential products in the community. It provides a systematic way of ensuring that the enterprise will succeed.
3. The CFMP are an indispensable part in planning the enterprises. The CFMP/CPAMP have defined the potential forest resources and determines the limits of resource extraction that will not impair the condition of the forest resources.

4. The efficiency of extraction is needed for the fuelwood enterprise to be viable. The experience of the woodlot for charcoal production have shown to be uneconomical. The discussion with the CF members indicate that they did not get much from charcoal production due to high extraction cost.
5. CF business/enterprise development provide an important skills to the CF members, particularly the women, to start their business and supplement their household income;
6. Under the current situation in the CFs, no "one-fits-all" business model can be applied. At least in the CFs that SFM has worked on, there three modalities that can be applied: (1) Conducting harvest plan for CF that have resources for business; (2) Conduct CF investment plan for CF that lacks resources for CF business plan; and (3) Conducting CF service plan for CF which has potential for ecotourism establishment.

5. CONCLUSION

The result of the assessment indicate that the project has resulted to modest improvement on the income of target beneficiaries. However, the project has contributed significantly to the improvement of the skills of target beneficiaries particularly on the sustainable management of the forest resources. The business plan has provided greater opportunities for the sustainable management of the forest resources. However, efforts are needed to make the enterprises profitable.

6. RECOMMENDATIONS

Based from the foregoing findings, the following recommendations are drawn:

1. The project should also reflect on alternative business model where the profitability of the enterprise will be looked at the CF or CPA level. In this model, all revenues and expenses from all income-generating activities will be pooled to form aggregated cash flow. This will make the management of financial resources more coherent and examining the viability of the CF enterprises easier. This model will be compared with the existing model where the entrepreneurs are the subgroups.
2. Explore the potential of sourcing alternative funding from MFIs for the expansion of the community livelihoods. Based on the discussion, the community indicates that they need for funding to develop their livelihoods. Waiting for another grant to be given to the community is not certain. This will make the resources from the community forest idle.
3. Revisit the management scheme for woodlots. High thinning should be considered if the management objective is for wood fuel production. Commercial extraction should be the primary consideration for woodlots instead of silvicultural treatment to improve the growing stock. Silvicultural treatment should applied for forest blocks where the management objective is for sawtimber production. In woodlots, the option of planting fast growing species should be part of the development activities.
4. In conjunction of the third recommendation, the project need to develop a robust calculation of the viability of the enterprises. The enterprise should be subjected to basic financial analysis using financial viability indicators (Net Present Value, Internal Rate of Return, Payback Period, Breakeven Cost, Liquidity Ratios, Debt to Equity Ratios, Acid Tests, etc.). The assumptions in coming up with the Financial Analysis should be clearly stated. If in the enterprise plan (part of the business plan) no profit

is foreseen, the potential entrepreneur should be informed to come up with alternative decisions or come up with courses of action on how to make the enterprise viable and find an alternative investments that will have positive return.

5. Seek partnership with potential private investors. An investment forum may help in motivating the financial institutions (e.g. MFIs, banks, wood developers, even donors) to invest on CF enterprises. Several investors can be invited during the forum that include among others Grandis Timber (for timber production), ELCs (for the production of Eucalyptus and Acacia), companies engaged in the trading of Agarwood, and some who trade wild honey.
6. Institutionalize the MA&D process. After building the capacity of the subnational FA, DoE and local authority, they will be enjoined to apply the MA and D tool in enterprise development. This approach should be embedded in the Exit Strategy. The approach should complement the VCA that is widely used in the many community enterprises in Cambodia today.
7. There is a need to reflect in the priority of relending the grants provided to the CFs/CPAs whether this is the interest of the grant as envisioned in the Project Document.

Case 1. The Experience of 185 K and Trapeang Chan CF in Kampong Chhnang

Description of the CF

185 K and Trapeang Chan CF in Kampong Chhnang identified charcoal as their primary products. The CF established a Charcoal Kiln Committee. The community forest is a source of NTFPs and fuel wood for the community members for household use or for livelihoods. There are several products that they get from their community forests such as mushroom and medicinal plants. These are used however for consumption not for business. The only product that has potential for enterprises are charcoal. The CF operate a charcoal kiln (Yushimura type) that was put up by Geres. They usually produce charcoal 3 times a month. They operate the charcoal kiln only in times when they are not busy in their farms. The women play an important role in operating the charcoal business, The women mostly manage the finances of the CF.

Role of SFM project

The SFM project has helped strengthened the community forestry. Before the SFM, the CFMC rarely hold meetings. The SFM project also provided training on CF Management Planning, forest inventory, and Business Planning. After undergoing training on CF Management Planning, the community members are aware how much are the harvestable volume that will not impair the regenerative capacity of the forest. To make the extraction and utilization of the forest products sustainable, the community subdivided their community forest to management blocks. The CF members are concerned that they only have few forests and occasional encroachment. When the CF received a small grant (\$12,000), they give priority for tree planting and boundary demarcation. They completed their planting activities and also installed 30 demarcation poles in the boundary of their CF. They regularly conducted patrolling and monitor the seedlings they planted. They conducted tree planting in the reforestation block using acacia. The species are suitable in the area and can supply wood for their charcoal kiln. According to the Key informant, the small diameter charcoal are acceptable to the buyers.

Financial Viability of the CF Entrepreneurs

The CF record the revenues and expenses from the charcoal kiln. The financial records of the CF indicate that the CF enterprises can earn \$6 per 1 stere if they sell as fuelwood. But the earnings will increase to \$17/stere if they will process their fuelwood for charcoal. The CF need funding to stabilize the operation of their enterprise. They still need approximately \$5,000 to fund some of their activities. They are planning to engage in planting of bamboos. Aside from directly selling the bamboo as poles, the species can be used for charcoal production. They believe that if there is an MFI who is willing to provide them a loan, they are capable of paying back. However, they did not access loan from the bank or MFI since it is difficult to borrow money from the formal institutions without collateral.

Organizational Maturity of the CF

The participation of the CF members during the preparation of CFMP is very important. The CF is improving the management of their CF. They are still reorganizing their CF structure following the problems they experienced in managing their finances and conflicts that happened between the CFMC and the Charcoal Kiln Committee that resulted to the financial loss of their enterprise.

Case 2. Experience of Anlong Svay CPA in Kampong Chhnang, Kbal Tuek Commune

General Condition of the CPA

Anlong Svay CPA is located in Kbal Tuek commune. The site has natural attractions and has a potential for ecotourism. People visit the site during new year or during Phchum Benh. Aside from esthetic value, the forest NTFPs, wild vegetables and fruits abound in the area which can be sold to the visitors. Because of its potential, the community decided to conserve the forest. Currently, the CPA have developed their business plan for bamboos. Bamboos are abundant in Anlong Svay CPA which are very important to the communities. The people come to collect bamboos for sale. Before deciding on the enterprises, the CPA evaluated the products in the forest. The commune council provide support to the CPA activities in terms of facilitating the meeting and resolution of conflicts, formalization of the CPA, and inclusion of the developments in the Commune Investment Plan. The CPA Management plan has also been integrated in the Commune Investment Program (CIP). The commune council also provided modest financial activities to support some CPA activities. In addition, the CC helps the CPA in sourcing for alternative funding.

Role of Women

The project has contributed in empowering the women particularly in running the project (e.g. financial management, information dissemination, organizing meetings, etc.). The women actively participated in many meetings as well as in decision making.

Description of the Management of CPA

The CPA members effectively patrolled the area and preventing encroachment of outsiders to collect the bamboos. The CFMC also plan to visit other successful CPAs. But at present, the CPA do not earn income from the forest. The benefits directly accrue to individual NTFP collectors who are members of e CPA. Among the products collected by the members are honey, mushrooms and other NTFPs. The CPAMC admitted that they still have limited knowledge of generating livelihoods from the forest products for the CPA. The CPAMC do not collect money from the individual collectors of NTFPs. The CPAMC still have no idea on how to operationalize the benefit sharing. In the CPA Management Plan, the community plans to do the collection. Once the CPA will be effectively managed, the CPA can generate jobs that can generate income instead of cutting the forest. For example, the CPA site has remaining forest located in the nearby waterfall. This will enhance the esthetics of the area that could attract visitors.

Role of SFM project

The SFM Project helped build up the skills of the community in the sustainable management to the forest resources of the CPA. The CPA were assisted in subdividing the area to management blocks for conservation, sustainable fuel wood harvesting and bamboo harvesting. The community has allocated areas for annual utilization of timber and NTFPs. In their CPA Management Plan, the different enterprises are sub-component of the CPAMP.

Problems

The CPA is still beset with problems like illegal cutting. Most of the illegal cutting are perpetrated during seasons for rice farming. The CPA members often go to the farm and nobody patrol and monitor the illegal activities. The CPA have some difficulty of involving the other members since the villages are far from the CPA. The CPA coves 4 villages and the villages are far from each other. No material for patrolling to be used in the CPA. The CPA members still have limited knowledge related to managing the forest.

Case 3. Role of Forest on Livelihoods: Case in Ou Srav CF in Kampong Chhnang

Description of the Product

The community forest is an important source of livelihoods of the CF members. The community identified the mushroom as their enterprise due to its high value. People collect mushroom inside and outside the community forests. Most of the people collect mushrooms during the months of April-May. They usually collect the mushroom "pompang". This mushroom command a high price in the market usually fetching 30,000 - 40,000 riel per kg. On September - October, the community collect another type of mushroom called "ketchieu". This species is cheaper than "pompang", selling around 10,000-15,000 riels per kg. Mostly, pompang are all sold while ketchiev is used for food and for sale. There is a high demand for mushroom. The mushroom can contribute approximately \$625/HH/year. Both men and women and children go to collect the mushroom. The mushroom and sold to the Trader outside the village. The prices however is dictated by the trader.

Role of SFM project

The project has contributed to the knowledge to the community in terms of resource management through trainings and mentoring. Several trainings on resource management and inventory was provided by the project to the CFMC. Most of the community members do not have the idea how to manage the mushrooms. While there is a zoning of the area for timber production, there was none made for mushroom. The community have no regulation on the harvesting of mushrooms in their community forests. There is no benefit sharing for mushroom in the community. The community can freely collect the mushroom from the forest and can get the benefits.

Aside from capacity building the SFM project also provided financial assistance to the community to start up an enterprise. The community have not received fund from CF Development Fund. The CFMC is planning to put up a capital for the trading of mushrooms once they will receive funding. The CFMC plans to act as consolidator by buying the mushrooms from the collectors and will sell the mushrooms to the market in bulk. The money will be used in paying the collectors. By doing away from the middlemen, they expect to get better price.

Sustainability of the Livelihood

Mr. Touch Chanthly, who is a member of Ou Srav CF since 1999, has been collecting mushroom before he became a member in 1999. He observed that mushrooms have declined compared to 1999. He attributed to the decline to the degradation of the community forests. The condition of the forest will be a major factor for the sustainable supply of mushroom.

Case 4. Bamboo Enterprise in Chros Svay CF

In Chros Svay CF covers 5 villages (Tava, Poey Tatung, Chros Svay, Chrey Chaort, and Rolous Krang Po Village) who engaged in bamboo enterprise. The community collect bamboo poles and bamboo shoots. In Chros Svay, there are about 447 persons who collect bamboos and 149 of these are women. The women are usually involved in cutting and collecting of bamboos. The bamboo poles are used as construction scaffolding, fencing and trellis for vegetables.

The CF chose bamboo as their enterprise due to its high demand and the households are familiar with the enterprise. It involves a crude process. The shoots are collected and are processed by slicing and washing. Bamboos naturally grows along the stream or some parts of the forests that are partially shaded and needs minimum maintenance. The period of growing usually take 7 months. Approximately the total production of bamboos is 1,500 kgs. /year. In 2014, the bamboo users group in Chros Svay harvested about 8,470 bundles of bamboos. The CF deliver the collected bamboos to the local traders who advance them money. The estimated income per household is approximately \$112 per year. The prices are usually set by the trader who advance the money. There are 3 standards that are bought by the buyer:

3 meters = 1,300 riels per bundle. They collected about 1,200 bundles.

4 meters are bought at 2,600 riels bundle. They collected about 2,500 bundles.

5 meters are sold at 4,500 riels/bundles. They collected about 4,000 bundles.

Currently, the bamboo resources are not sufficient because the production is seasonal and depends largely on the onset of rain. During rainy season, the community members spent their time in their farms. The CF Management Plan also provides a limit on the quantity to be harvest. The CF Management Plan specifies that the community members can harvest bamboos only 15 10,000 bundles per 3 months. The community also have to depend on fluctuating price of the product. During peak season, the price usually drops.

According to the Chief of the Enterprise Group, the success of the bamboo enterprise is their link to the trader. The community is planning to plant more bamboos as indicated in their CFMP. In Chros Svay, the community set aside about 124 hectares out their 427 hectares for the production of bamboos. The community is planning to engage in the process of bamboos to novelty items (carvings, baskets, other souvenir items). At present, the community admitted that they still have no skills in processing bamboos.

Annex 1. Revised Strategic Results Framework on Business

Strategy	Indicator	Baseline	Target	Outcome of Final Evaluation	Means of Verification, Risks and Remarks
Community-based sustainable forest management is being implemented effectively within a context of cantonment, province, and district and commune level planning delivering concrete benefits to local communities.	No. of CFs with activities in management and business plans being implemented.	0 CFs implementing benefit activities.	34 CFs (including 30 CFs and 4 ACFMs) implementing MP/BP activities and providing benefit opportunities by EoP.	<ul style="list-style-type: none"> All the target CFs and CPAs has completed the Phase I of the business planning. 98% of the CFs and CPAs Only the 30 CFs (88%) has implemented the management and business planning. The ACFM are still in the formalization stage In CF business development plan process, 30 completed CF business plan writing and 19 started implementing the business 3 ACFM progress in step 8.2 (participatory resources assessment). 19 out of 30 CF are progressing in implementation CFMP by using CFDFs. 	Risks: <ul style="list-style-type: none"> Approval of CF and CPA management plans delayed, allowing insufficient time for full implementation before EoP. Remarks: <ul style="list-style-type: none"> Completed 100% in terms of business planning. The project has lagged behind in mobilizing the community to start implementing their enterprises. Some CFs have not yet received their CFDF grants. There are those who received the CFDF grant but instead deposited in the banks or relent it to their members. The latter condition was also validated by the comments of an MFI who asked the potential of the CFs/CPAs. Their observation is that the CFs played like an MFI by providing loans to its members. This practice seems contrary to the intent and purpose of the CFDF, i.e. to provide value adding to the resources.
	No. of CPAs with activities in management and business plans being implemented.	0 CPAs implementing benefit activities.	10 CPAs implementing MP/BP activities and providing benefit opportunities by EoP.	<ul style="list-style-type: none"> The 10 CPAs (100%) have completed the development of the business plans. 11 CPAs selected, 11 CPAs conducted CPAMC institutional strengthening field training, 11 CPAs completed document gathering and checking, 10 CPAs conducted boundary checking and record keeping. 11 CPAs progressing in CPA MP (completed CPA collection data on demand of resources use of CPA member, CPA management blocks, CPA inventory) 	
Outputs					
Output 2.1: CFs and CPAs develop	No. of CFs with management and business	0 CFs	34 CFs (30 CFs and 4 ACFMs) have passed the	Drafted 30 CFMPs in progress review by national	Risks: <ul style="list-style-type: none"> Limited productive options

Strategy	Indicator	Baseline	Target	Outcome of Final Evaluation	Means of Verification, Risks and Remarks
management plans that provide environmental and financial sustainability, including opportunities for business development	plans that have passed final stage of approval process. No. of CPAs with management plans and business plans in Aural and Samkos Wildlife Sanctuaries that have passed final stage of approval process.	0 CPAs	final stage of approval process by EoP ⁴ 10 CPAs have passed the final stage of approval process by EoP ⁵	CFMP consultation team.	in target forests <ul style="list-style-type: none"> Limited commitment among community members to organization and entrepreneurship Internal rules for benefit sharing violated Limited commitment among private sector and CBOs to develop relationships Time required from MAFF/MoE to approve the plans outside the project responsibility. Remarks: <ul style="list-style-type: none"> All the 30 CFs now reached step 7 of the 8-step CFMP planning process. Draft of CFMPs are being written for FAC approval. All 30 CFs are now at stage 2 of the 4-stage CFBP planning process (value chain analysis).
Output 2.4: Average income of households, and of women, from profitable enterprises based on the sustainable management of forest resources increases in target communities	% increase in average annual income from SFM of households in target forest communities	<ul style="list-style-type: none"> Income derived from SFM by target households before implementation of the business plan (source: VCA). The average income of HHs from forest-based livelihood is US\$106/ month/HHs 	Increase in average annual income by 20% from the baseline level by EoP.	Based on CF business plan started implementation, 2652 households in 33 CFs/CPAs CF earned income generation through collected CF/CPA resources in CF sites including fuel wood, Bamboo, mushrooms, wild vegetables, red ants and traditional medicine.	Risks: <ul style="list-style-type: none"> This Indicator provides another measure of the increase in income from forest-based enterprises that is expected from project interventions. It should be noted that the focus for action on income increases will be households that were already engaged in forest-related resource use at the start of the project. Condition of forests is too degraded to allow
	% increase in average annual income from SFM of women in target forest communities	Income derived from SFM by target households before implementation of the business plan. Source of Comprehensive Baseline study the average forest base	Increase in average annual income by 20% from the baseline level by EoP.	Income of Women (\$/month): Baseline: <ul style="list-style-type: none"> HH Head: \$56 Non HH Head: \$62 Average: \$60.5 Target (20%Increase):	

⁴ In Kampong Speu, Kampong Chhnang, Battambang and Pursat provinces, CFs covering 6,000ha.

⁵ Management plans of 10 CPAs in Aural and Samkos Wildlife Sanctuaries, covering 7,500 ha., reflect regional considerations and provisions of overall PA management plans

Strategy	Indicator	Baseline	Target	Outcome of Final Evaluation	Means of Verification, Risks and Remarks
		income of women is US\$ 56/mo. and US\$ 62/mo. for non-HH head and HH head respectively.		<ul style="list-style-type: none"> ▪ HH Head: \$67.2 ▪ Non HH Head: \$74.4 ▪ Average: \$70.8 Outcome: <ul style="list-style-type: none"> ▪ HH Head: \$11.12 ▪ Non HH Head: \$94.58 ▪ Average: \$52.85 	<p>significant benefit generation</p> <p>Comments:</p> <ul style="list-style-type: none"> ▪ The result is inconsistent for the final evaluation and the baseline. The inconsistency of the result could be attributed to the sampling error. It should be noted that the final evaluation did not revisit the respondents of the baseline. ▪ As noted in the Risks, the forests are too degraded to allow for a significant change of HH income. ▪ There are only few CFs that has started their enterprises. The CFDF was only released recently. ▪ In all the 30 CFs, stage 1 of the 4-stage process of business/ enterprise development has been completed (surveys of potential forest products and of markets), with current work focusing on stage 2, a value chain analysis for the selected products. \\\\\\\\\\\\\\\\\\\\ ▪ No households have, as yet, experienced increased income from forest resource enterprises, but the business planning process is expected to deliver this result for participating households, who were already engaged in forest resource use at the start of the project

Annex 2. Status of implementation of the CF business/enterprises

Prov	CF/CPA Name	Identification Business Idea entrepreneur	Phase 2 Value Chain Analysis (VCA)	Phase 3 Writing CF enterprise business plan	Phase 4 Starting up CF enterprise Implement	Total Beneficiary of CF Business Development Plan				
						Women	Total	Total Income generation per CF/CPA		
								Riel	USD	Person /year
BTB	CF Prey Tralach	Fire wood	Completed	Completed	Progress	7	25	2,114,000	528.50	42.28
BTB	CF Kirisiela Keo	Wild vegetable (Prich vegetable)	Completed	Completed	Progress	60	60	8,000,000	2,000.00	66.67
BTB	CF Pheak Kdey	Wild vegetable (Prich vegetable)	Completed	Completed	Progress	50	50	6,400,000	1,600.00	64.00
BTB	CF Phum Kandal	Bamboo	Completed	Completed	Investment plan (satrted but did not get income)	0	0	-	-	-
BTB	CF Phum Thmei	Mushroom	Completed	Completed	Progress	430	550	2,600,000	650.00	2.36
KCH	CF Chamkar Prey Sne Kanhchong	Firewood	Completed	Completed	progress	5	18	420,000	105.00	11.67
KCH	CF 185K Thida Chambak Thom	Firewood	Completed	Completed	progress	18	29	2,775,500	693.88	47.85
KCH	CF Trapeang Chan	Firewood	Completed	Completed	progress	16	17	2,776,000	694.00	81.65

Prov	CF/CPA Name	Identification Business Idea entrepreneur	Phase 2 Value Chain Analysis (VCA)	Phase 3 Writing CF enterprise business plan	Phase 4 Starting up CF enterprise Implement	Total Beneficiary of CF Business Development Plan				
						Women	Total	Total Income generation per CF/CPA		
								Riel	USD	Person /year
KCH	CF Chamkar Prey Sne Svay Bakav	Firewood	Completed	Completed	progress	25	61	1,410,000	352.50	11.56
KCH	CF Boeung Kak	Bamboo shoot	Completed	Completed	progress	50	77	60,000	15.00	0.39
KCH	CF Chearov	firewood	Completed	Completed	Investment plan (Used CFDF fund for credit for getting interest to support firewood activities)	8	15	150,800	37.70	5.03
KSP	CF Chros Dambong	Bamboo	Completed	Completed	progress	40	60	300,000	75.00	2.50
KSP	CF Chros Pong Ror	Bamboo	Completed	Completed	Progress	15	64	5,750,000	1,437.50	44.92
KSP	CF Chros Svay	Bamboo	Completed	Completed	progress	25	92	10,173,800	2,543.45	55.29
KSP	CF Rang Pen	red ants	Completed	Completed	Progress	16	19	3,024,000	756.00	79.58
KSP	CF Svay Rumpea	Bamboo	Completed	Completed	Progress	27	90	-	-	-
KSP	CF Torp Mean	Traditional medicines	Completed	Completed	Progress	0	1	560,000	140.00	280.00

Prov	CF/CPA Name	Identification Business Idea entrepreneur	Phase 2 Value Chain Analysis (VCA)	Phase 3 Writing CF enterprise business plan	Phase 4 Starting up CF enterprise Implement	Total Beneficiary of CF Business Development Plan				
						Women	Total	Total Income generation per CF/CPA		
								Riel	USD	Person /year
KSP	CF Damrey Chak Thlork	Red ants	Completed	Completed	Progress	36	40	1,080,000	270.00	13.50
KSP	CF Kiri Raksmei Deydoh	Poles	Completed	Completed	Not yet start	0	0	-	-	-
KSP	CF Peam Lvea	Ecotourism	Completed	Completed	Not yet start	0	0	-	-	-
KSP	CF Pich Antong	red ants	Completed	Completed	Progress	35	40	8,400,000	2,100.00	105.00
KSP	CF Leap Kuy	Rose wood seedling	Completed	Completed	Progress	0	14	2,000,000	500.00	71.43
PUR	CF Krang Thom	Traditional medicines	Completed	Completed	Progress	3	23	900,000	225.00	19.57
PUR	CF O' Bak Tra	Firewood collection	Completed	Completed	Progress	11	29	680,000	170.00	11.72
PUR	CF Bangkok Khmum	Firewood for charcoal kiln	Completed	Completed	Progress	28	70	1,920,000	480.00	13.71
PUR	CF Chheu Teal	Firewood for charcoal kiln	Completed	Completed	Progress	10	36	940,000	235.00	13.06
PUR	CF Kam Peng	Mushroom	Completed	Completed	Progress	195	250	570,000,000	142,500.00	1,140.00

Prov	CF/CPA Name	Identification Business Idea entrepreneur	Phase 2 Value Chain Analysis (VCA)	Phase 3 Writing CF enterprise business plan	Phase 4 Starting up CF enterprise Implement	Total Beneficiary of CF Business Development Plan				
						Women	Total	Total Income generation per CF/CPA		
								Riel	USD	Person /year
PUR	CF Krabei Sar	Bamboo shoot	Completed	Completed	Progress	15	25	2,100,000	525.00	42.00
PUR	CF Ou Srav	Bamboo shoot	Completed	Completed	Progress	12	16	2,050,000	512.50	64.06
PUR	CF Svay Pak	Mushroom	Completed	Completed	Progress	233	300	570,000,000	142,500.00	950.00
BTB	CPA O Choam	pdao som	Completed	Completed	Progress	5	139	60,000,000	15,000.00	215.83
BTB	CPA Tatok O krouch	pdao som	Completed	Completed	Progress	23	110	88,000,000	22,000.00	400.00
KCH	CPA Phnom Anlongsvay	Bamboo	Completed	Completed	Not yet start	0	0	-	-	-
KCH	CPA Phnom Chuengleang	Firewood	Completed	Completed	Not yet start	0	0	-	-	-
KCH	CPA Phum Sleng	Phkar Ankeasel	Completed	Completed	Not yet start	0	0	-	-	-
PUR	CPA Sre Paing	Hard resin	Completed	Completed	Progress	10	47	10,500,000	2,625.00	111.70
PUR	CPA Stung Thmey	Hard resin	Completed	Completed	Progress	17	60	12,000,000	3,000.00	100.00

Prov	CF/CPA Name	Identification Business Idea entrepreneur	Phase 2 Value Chain Analysis (VCA)	Phase 3 Writing CF enterprise business plan	Phase 4 Starting up CF enterprise Implement	Total Beneficiary of CF Business Development Plan				
						Women	Total	Total Income generation per CF/CPA		
								Riel	USD	Person /year
PUR	CPA Raing Kwav	Hard resin	Completed	Completed	Progress	25	75	9,000,000	2,250.00	60.00
PUR	CPA Chrok Laeang	Ecotourism	Completed	Completed	Progress	70	150	90,600,000	22,650.00	302.00
KSP	CPA Kordontey	Bamboo	Completed	Completed	Not yet start	0	0	0	-	-
KSP	CPA Traing Chambork	Bamboo	Completed	Completed	Not yet start	0	0	0	-	-
	Total	100% completed	100% completed	100% completed		1520	2652	1,476,684,100	369,171.03	278.41

Annex 3. Framework linking the CFMP and business/enterprise using the MA&D framework

Relationship between Community Forestry Management Plan (CFMP) and CF Enterprise/Business Development (CFBD) Processes

