FOREST

Benefit sharing in community
forests in Myanmar:
A REDD+ perspective

Benefit sharing in community forests in Myanmar: A REDD+ perspective

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Key Messages

- Benefit sharing system or Incentive Allocation System (IAS) is a mechanism that a country can use to incentivize stakeholders to adopt behaviours aligned with the national REDD+ objectives.

- There is no UNFCCC guidance or requirement for countries to design and implement an approach for allocation of incentives.

- The IAS should be effective, efficient and equitable.

- Traditional and customary laws can be helpful while designing benefit-sharing mechanisms.

- Benefit sharing in community forestry in Myanmar serves as a good example for REDD+ benefit sharing mechanism.

1. Introduction

Forests play an important role in stabilizing the global climate and greenhouse gas emissions caused by human activities such as deforestation and industrial activities. Recent global conventions such as the Paris Agreement and initiatives such as Reducing Emissions from Deforestation and Forest Degradation (REDD+) seek to address the problem of climate change. REDD+ was originally started to address the problem of climate change by reducing deforestation and forest degradation at the national and sub-national level in developing countries (Myers et al., 2018). What distinguishes REDD+ from traditional development assistance grants and soft loans is the results-based payment. REDD+ differs in scale from traditional "payments for ecosystem services" (PES) schemes as it seeks to monetize services at the global level. REDD+ mechanisms provide incentives for climate change mitigation and reducing emissions.

REDD+ countries are motivated to plan and implement benefit-sharing mechanisms as part of their national REDD+ strategy. Based on past and current experience, various countries have put forward different approaches to tackle their issues. The field dialogues conducted during this study capture the lessons learned in four REDD+ countries (TFD, 2014).

This document discusses many benefit sharing mechanisms and identifies bottlenecks that increase costs and risks related to natural resources. It shows how the vulnerable and rural poor can access resources to develop innovative ways of sharing the benefits of REDD+ mechanisms. The study underscores the importance of equitable benefit sharing within the natural resources/forestry sector and analyses existing benefit-sharing mechanisms, particularly in community forestry in Myanmar. It seeks to capture lessons and experiences in REDD+ and make specific recommendations on the design and implementation of national benefit sharing mechanisms for REDD+ in Myanmar.

2. Objectives

The specific objectives of this study were:

a) To study the cash and non-cash benefits generated from community forestry, which was initiated in Myanmar in 1995 in different agro-ecological zones

b) To observe and assess the current mechanism of benefit sharing in community forestry

c) To recommend possible benefit distribution systems in REDD+ based on experiences in community forestry as well as prevailing laws and regulations

3. Concept of benefit sharing

[UN REDD Modules] Benefit Sharing Systems (BSS) or Benefit Distribution Systems (BDS) are also known as known as Incentive Allocation System (IAS).

According to Peskett 2011, Benefit Sharing Systems (BSS) have been developed across the natural resources (NR) sector and are relatively common for resources such as oil, gas, water and forests. The Benefit Distribution System (BDS) is a legal procedure that allows for the dispersal of benefits derived from REDD+ project activities to stakeholders in these activities (The REDD desk). The Incentive Allocation System (IAS) is defined as an intermediate component of REDD+ and involves the transfer of monetary or non-monetary incentives to motivate people to implement activities that result in emission reductions or removals (Costenbader et al.,, 2015).

A country can use all of these structures to incentivize stakeholders to adopt behaviours aligned with the national REDD+ objectives. According to the UN-REDD Programme, using the term "IAS" might be most appropriate to avoid confusion with "multiple benefits," which is a very different issue, and to avoid giving the impression that it is a project-based approach.. Also, the term "benefits" implies a reward for actions already undertaken, whereas an alternative approach is to provide investments for future action. Hence, the term "incentives" captures both views.

3.1.   Incentives

In the case of REDD+, incentives are Policies and Measures (PAMs) that are designed to encourage specific actions from stakeholders. There are different types of incentives:

- Direct incentives – e.g., cash transfer, participatory management, etc.
- Policy and governance incentives – e.g., tenure clarification, agricultural intensification, etc.

Incentives can be considered investments in order to get emission reductions (ER), or can take the form of redistribution of Results-Based Finance (RBF) gained from measured ER.

During the Conference of Parties (COP) held in Cancun, decision relating to an allocation of incentives (UNFCCC, 2011) was stated in this manner:

1/CP.16, Appendix 1, para 2(e)

> "… actions referred to in paragraph 70 of this decision [i.e., the 5 REDD+ activities] are not used for the conversion of natural forests, but are instead used to incentivize the protection and conservation of natural forests and their ecosystem services, and to enhance other social and environmental benefits"

Not all Policies and Measures (PAMs) need to be associated with incentives for stakeholders. In fact, some PAMs may be effective by eliminating "perverse incentives" or direct subsidies that promote forest destruction.

3.2.   Characteristics of an IAS for REDD+

Costenbader (2011) wrote that a system for benefit sharing or IAS for REDD+ should be based on:

Effectiveness: the incentives/benefits serve to implement clear rules and actions to distribute the benefits under performance based systems.

Efficiency: the incentives/benefits reduce emissions (and promote removals) in such a way as to minimize costs and maximize outputs (while being consistent with a rights-based approach).

Equity: the incentives/benefits are shared in a manner that is fair and equitable, particularly for the benefit of most stakeholders.

3.2.1.   Effectiveness

The incentives should be made available at the optimal time, in the optimal amount and in a correct form to effectively promote the desired actions and ensure sustainability of the results as well as to give continuity to the desired actions. All three – optional time, amount and form – need to be clearly defined and understood by both recipients of incentives and those providing incentives, and should be negotiated and agreed upon by both parties. This consultation and negotiation process is similar to the process required for Free, Prior and Informed Consent (FPIC).

Box 1: **Explanation of optimal time, amount and form for incentives**

Optimal time

Some incentives can be provided before results are obtained, as an investment, and to establish goodwill. Others can be viewed as rewards for successful actions. Since results-based finance comes only after results have been verified, some initial investment is required – subsequently this can be reimbursed from results-based finance. Some bilateral agreements, such as Germany's REDD+ Early Movers programme (REM) also pay for past results.

Optimal amount

The incentives need to be adequate to stimulate and give continuity to the desired actions. Considering the opportunity costs may be useful, but the amount of the incentive should not be determined through a simple arithmetic exercise. In-kind incentives are complementary to financial incentives. Finally, some incentives can be non-financial and adequate; for example, improved access to extension services, or improved tenure security.

Optimal form

The form of the incentive needs to be clearly defined and understood by both recipients of incentives and those providing incentives. It might be decided based on negotiation and agreement between parties. Stakeholders will have preferences, and if the incentive is provided in a form that does not meet their preferences, it will hamper the effectiveness of the initiative. For example, in Vietnam a survey of stakeholders in Lam Dong province revealed that there was a preference for non-cash incentives. In such a scenario, providing a mix of cash and in-kind incentives might be key.

As a contribution to countries addressing and respecting the COP safeguards, the benefit distribution system or IAS for REDD+ should also:

Ensure the full and effective participation of all relevant stakeholders (Decision 1/CP.16, Appendix 1, paragraph 2[d]);

Empower transparent and effective national forest governance structures (Decision 1/CP.16, Appendix 1, paragraph 2[b]);

Engender respect for the knowledge and rights of indigenous peoples and members of local communities (Decision 1/CP.16, Appendix 1, paragraph 2[b]).

3.2.2. Efficiency

Certain operational elements of a national REDD+ programme, such as the National Forest Monitoring System and the Safeguards Information System, carry recurring costs. These costs are essentially "fixed" as they are independent of the volume of emission reductions and may need to be covered by results-based finance. This will limit the amount of results-based finance available for the provision of incentives, so a system for allocating incentives needs to be financially efficient. Financial efficiency can be promoted by using financial institutions as service providers. For example, the Amazon Fund uses the Brazilian Development Bank (BNDES) to administer the incentive system.

Administration costs can be reduced by avoiding the need for funds to transit through several institutions before reaching their final destination (a "cascade" of funds from the national, to state/provincial, to district/local level, for example). This however also increases risks of corruption. The system therefore needs to be institutionally efficient, especially to provide linkage between reporting, decision making and delivery. If a report indicates that a milestone has been reached, which triggers the delivery of an incentive, the concerned stakeholders need to receive that incentive promptly in order to remain engaged and committed.

3.2.3. Equity

The system needs to incentivize fairly. Those undertaking similar interventions and achieving comparable results should receive similar incentives, irrespective of social position, ethnicity, gender, or any other social parameters. Without strong equity, social tensions will increase and stakeholders will cease to be engaged. Transparency is hence important – incentives that have been negotiated with different stakeholder groups and finalized should be public knowledge.

> **Box 1: Explanation of equitability**
>
> Equitability can be defined in different ways:
> - On the basis of "rights" (but right to what?);
> - On the basis of costs incurred while implementing policies and measures;
> - On the basis of results achieved (but difficult and costly to measure at a scale that is relevant to allocation of incentives).

As both women and men use forests and engage in different economic activities, it is important to take gender into consideration while defining and sharing REDD+ benefits. However, women are often disadvantaged or marginalized in traditional or formal processes, particularly relating to land tenure, and as a result they either have unequal access to information and legal processes, or are excluded from decision-making processes on benefit sharing mechanisms and structures. In some cases, women may also lack access to REDD+ benefits simply because they do not have a bank account.

3.2.4. Types of benefits

The definition of REDD+ benefits is essential for communication on REDD+ benefit sharing. Incentive structures must be aligned with the interests of relevant stakeholders and clearly articulated and understood. Differentiated benefits, incentives and compensation structures are required because different stakeholders have different perceptions of REDD+ benefits (TFD, 2014). When discussing the benefits of REDD+ during field interviews, some stakeholders mainly referred to non-monetary benefits while others spoke largely in monetary terms (Table 1).

Table 1: **Perceptions of REDD+ benefits, by stakeholder group (TFD, 2014)**

Incentives	Indigenous people/community	Government	Private sector
Cash benefits	Income from protecting natural resources: fees, royalties and gate proceeds; income derived from the use of natural resources: non-timber forest products, timber, etc.; access to credit; salaries from jobs	Taxes on income (from timber, tourism, non-timber forest products and agriculture); penal- ties; rent on land; royalties; donor grants	Capacity building; rural infrastructure; tax breaks; access to finance/markets (including carbon and rural markets); reduced risk—guaranteed off-take; diversified cash flow; access to insurance, etc.; employment; higher-quality products; multiplier effect
Either cash or non-cash benefits	Provision of alternative livelihoods	Capacity building; livelihoods; biodiversity	Technical support (e.g., know-how of silviculture); provision of alternative livelihoods; carbon neutrality; research and development; reduction in illegal activities; fair trade and transparency; ecosystem services
Non-cash benefits	Capacity building; infrastructure; ecosystem services; biodiversity (existence value); access to resources for subsistence; cultural values; supply of inputs (seeds, fertilizers); access to information	Better education for people; medicinal/ nutritional values; improved forest governance; forest security/improved agricultural productivity; ecosystem services; biodiversity (existence value); cultural value	Nested approach; 30 projects relevant to REDD+ under preparation; social conflicts over land rights

3.2.5. Design of benefit distribution system or IAS

Benefit distribution system or IAS can be designed based on prevailing policies, legislations and procedures. Based on the principles presented above, the design of an IAS should address seven important issues, which are listed in Box 3 in accordance with the UN REDD Programme.

Figure 1: **Example of an IAS structure**
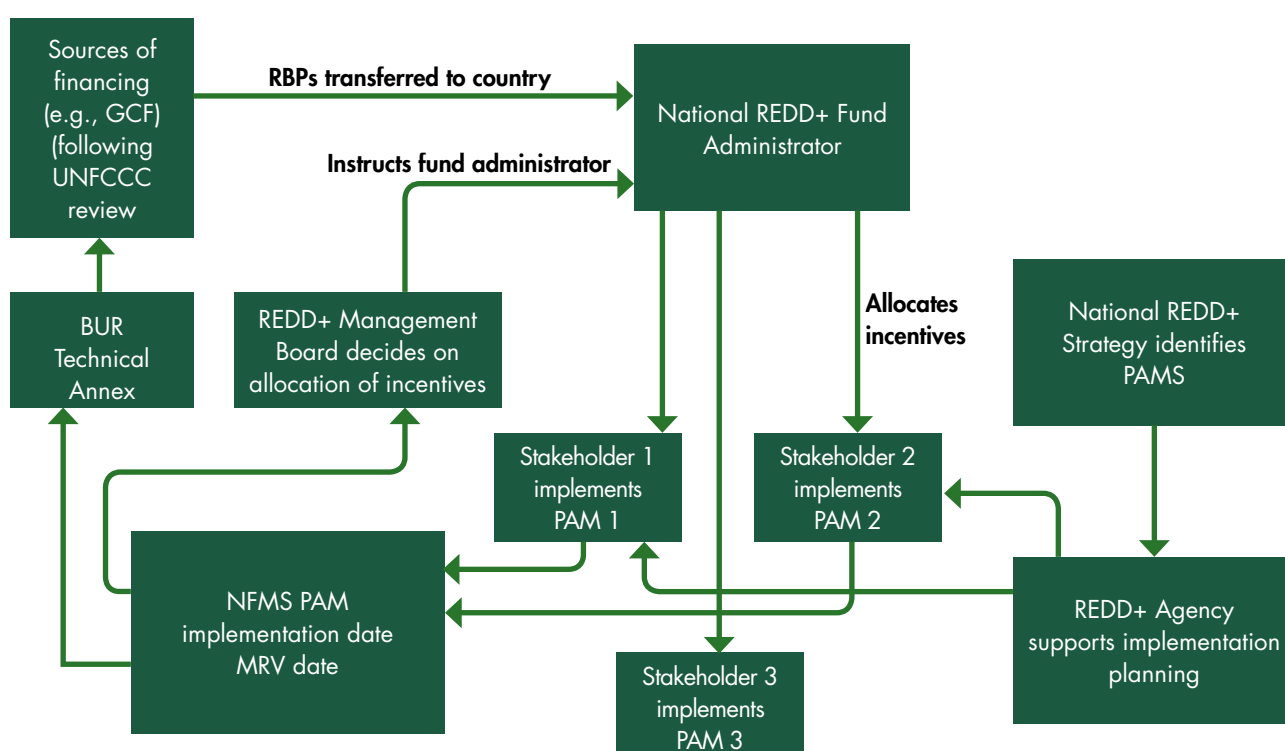
Source: UN-REDD Programme

Box 1: **Considerations for designing benefit distribution system or IAS**

Issue 1: Who is eligible for incentives?

To answer this question, it is necessary to properly address the issue of equity among those who incur costs, those who have rights to the forest and those who deliver results. If eligibility is based on rights, it is important to understand that the UNFCCC does not require the definition of carbon rights, since reporting on emission reductions is at the national level and the responsibility of the country.

In Vietnam, there are seven categories of forest "owners." All are considered eligible for incentives except for the Armed Forces.

Issue 2: On what basis should decisions on allocation of incentives be made?

In theory, this could be based on performance in terms of emission reductions/removal and enhancements. However, it would be very expensive to measure emission reductions/removals at a scale relevant for allocation of incentives – the costs would probably exceed results-based payments received. Therefore an alternative measure of performance is needed. A measure based on inputs in order to achieve REDD+ outputs will be easier to assess.

Issue 3: How will the data for decisions (either input-based or output-based) be collected, analysed, and shared?

To promote efficiency, costs of data collection, analysis and results dissemination should be kept low. The role of participatory data collection should be considered. For some types of data collection, self-reporting with spot checks may be most efficient. For example, communities may self-report areas where trees have been planted on bare land, or person-hours of forest patrolling, but forest authorities may be responsible for checking the accuracy of reported data.

Issue 4: Who will make decisions based on collected and analysed data?

In order to ensure transparency and prevent corruption, decisions cannot be made by stakeholders who are potentially eligible for incentives. Therefore it would be advisable to have some type of committee or board for making decisions. Those who become members of this committee or board (and the organizations they may represent) should not be eligible for incentives.

Issue 5: How will the type of incentive (monetary or various types of non-monetary) be decided?

In order to promote effectiveness, stakeholders should be able to indicate the type of incentive they prefer, since they will respond more positively to incentives that match their wishes. Type of incentive should be consistent among similar stakeholders. A registry may be required to maintain a record of incentives to be provided (and conditions to be met in order for them to be provided). This registry should be available for inspection and verification.

Issue 6: How will the incentives be delivered?

This of course depends on the nature of the incentives. In order to promote efficiency, existing mechanisms may be available for delivering monetary incentives – for example, many countries have carried out conditional cash transfers in the health and education sectors. Stand-alone REDD+ "funds" should not be the default choice.

Other types of incentives will require different mechanisms. Technical support incentives (for example, agricultural intensification and alternative livelihood options) may be delivered through specialist governmental or non-governmental agencies.

Issue 7: How will the system be monitored?

Monitoring performance, based on which incentives are delivered is one of the roles of the NFMS (addressed in module 5). Variables used to assess the performance of eligible recipients of incentives should be integrated into the NFMS. Monitoring of the delivery of incentives (in accordance with conditions recorded in the registry) should be the role of the REDD+ management agency.

Box 4: **Seven principles of IAS and possible approaches**

Principle	How it is addressed in the example
1. Who is eligible for incentives?	Implementation plan supported by the REDD+ Agency identifies stakeholders to be involved in implementing specific PAMs.
2. On what basis should decisions on allocation of incentives be made?	NFMS data is submitted to the REDD+ Management Board.
3. How will the data for decisions (either input-based or output-based) be collected, analysed, and shared?	Responsibility of the agency(ies) responsible for the NFMS
4. Who will make decisions based on collected and analysed data?	REDD+ Management Board
5. How will the type of incentive (monetary; various types of non-monetary) be decided?	Implementation plan supported by the REDD+ Agency
6. How will the incentives be delivered?	The National REDD+ Fund Administrator disburses funding to entities that have been assigned to deliver incentives in the implementation plan
7. How will the system be monitored?	Through reports of the REDD+ Agency, REDD+ Management Board, and National REDD+ Fund Administrator

3.2.6. Participatory design for REDD+ incentive delivery systems

Designing effective, efficient and equitable incentive allocation systems that satisfy the seven principles is a complex process. It involves consultation and communication with a broad range of stakeholders. TFD (2014) provided the methodology for designing IAS (Figure 2) that outlines the process for ensuring that the design process is adequately participatory. The process begins when programme implementers recognize that different stakeholder groups have different perceptions and that it is important to understand these differences in order to develop a common vision through training, awareness raising, and the establishment of platforms for regular consultation.

Figure 2: **A methodology for designing incentives**
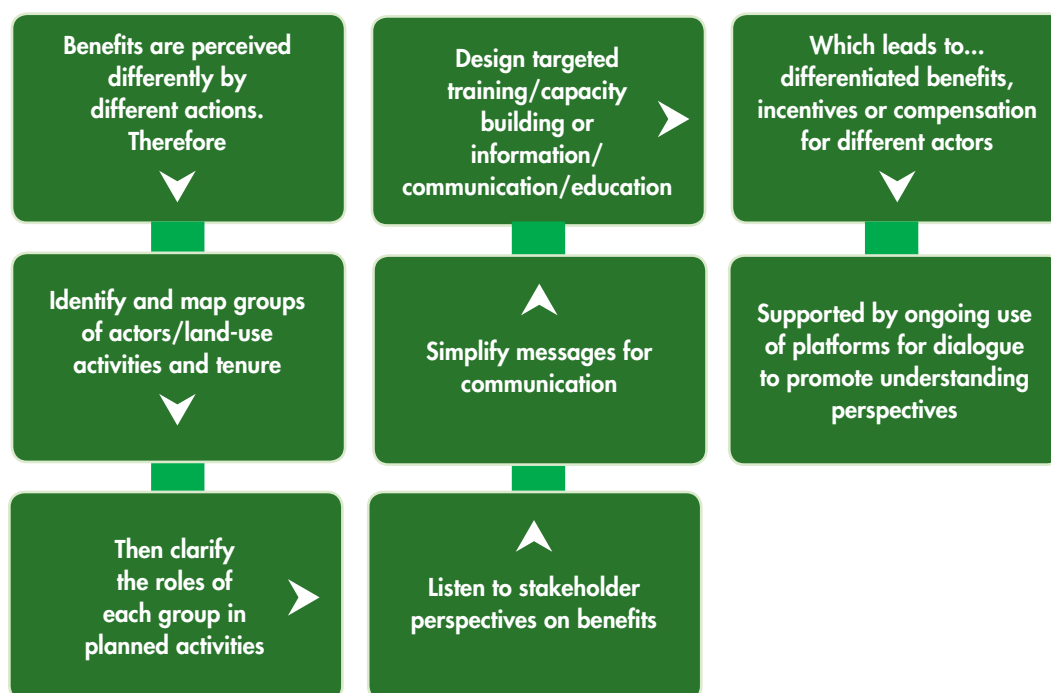
Source: The Forest Dialogue (TFD): Country Options for REDD+ Benefit Sharing; Insights from TFD's Multi-Stakeholder Dialogue Initiative (2014)

3.2.7 Existing systems for delivering REDD+ incentives

Despite a lot of debate, examples of REDD+ incentive allocation systems are few and far between, even in voluntary market projects. There are, however, many examples of relevant systems in the Payments for Ecosystem Services (PES) and Sustainable Forest Management (SFM) programmes. Many of the examples are lacking in one or more of the seven key issues described previously. For example:
- Participatory identification of the nature of incentives is rare – often the incentives are defined by the government (and are often cash-based).
- Monitoring of performance may be weak or absent.
- Equity is poorly defined and applied.
- Decision-making is opaque.

4. Benefit sharing in the future

Many REDD+ countries are interested in receiving cash payments from donors to support their national activities on REDD+. To receive such payments, countries will be evaluated on their performance in reducing emissions from deforestation and forest degradation. At the sub-national level, however, both performance-based and input-based approaches can be used to share cash and non-cash benefits to incentivize positive land-use change. National governments can set frameworks, employ safeguards, and provide a menu of options for sharing benefits, but the types of benefits shared and the basis on which such sharing takes place must be tailored to local circumstances depending upon the several land entitlement categories recognized by the Government of Myanmar. The incentives must be customized to suit the corresponding land entitlement categories.

Traditional and customary laws can be helpful when designing benefit-sharing mechanisms (TRD, 2014). For example, some communities may prefer an equal share of benefits among all participating households instead of differentiated payments based on performance because it prevents conflict among community members. Different stages of REDD+ also call for different payment criteria: in the early stages of REDD+, benefits are shared mostly based on inputs (e.g., field dialogue participants in Vietnam observed the input-based model operating at the sub-national level), while performance-based payments may become more relevant in the later stages. Benefits shared in the early stages of REDD+ can be designed to create lasting impacts and to incentivize sustainable land-use behaviour that will lead to further emission reductions.

Where local capacity is weak, capacity building could be perceived as an interim benefit of REDD+ processes if it empowers local communities, women and indigenous peoples to play a greater and sustained role in decision-making through multi-stakeholder forums. Ultimately, such forums will help ensure long-term societal outcomes, such as increasing rural incomes, while reducing emissions for the long term.

5. Case studies on benefit sharing in community forestry in Myanmar

5.1. Introduction (Benefit sharing mechanism in CF to REDD+)

Benefit sharing is critical for the effectiveness, equitability, sustainability, and acceptability of initiatives such as Reducing Emission from Deforestation and Forest Degradation (REDD+) and community forestry (CF). Such initiatives cannot succeed without a suitable benefit sharing system (Campese J, 2012; Blomley et al., 2009). Therefore there has been emphasis on benefit sharing in REDD+ implementing countries.

Recent studies have shown that benefit-sharing mechanisms in community forestry have been applied to REDD+. CF encompasses all kinds of activities geared towards sustainable forest management in which local people are involved. The term covers small-scale forestry to commercial scale forestation that seeks to create job opportunities and income; to produce fodder; to stabilize the ecosystem and to improve the environment (MONREC, 2016). Benefit sharing mechanisms in CF programmes are well established. Such initiatives generate and distribute co-benefits beyond carbon and can thus provide relevant lessons for REDD+ (Nawir et al., 2015; Rana, 2016). In Nepal, CF has been placed at the centre of the REDD+ strategy (West, 2012). Therefore, it is the right time to evaluate benefit sharing in CF in Myanmar with the aim to support benefit sharing in the country.

5.2.   Community forestry in Myanmar

In Myanmar, the community forestry programme started with the community forestry instruction in 1995. The duration of land lease for CFs is 30 years, and it can be extended after the initial 30-year period.

The main objectives of CFs are:
a. To address the basic needs of timber and non-timber products for local people
b. To create job opportunities and income and help reduce poverty
c. To increase forest area and ensure continued supply of forest products in a sustainable manner
d. To promote participatory forest management, and
e. To enhance environmental services that support climate change mitigation and adaptation and prevent deforestation and forest degradation.

CFs have been formed across the country to address the needs of local communities as well as to promote conservation. Community forests (CFs) can be divided into five broad categories depending on their objectives: production forest; protection forest; conservation forest; religious forest; and traditional forest.

Production CFs are established with the main goal of supporting local people by producing timber, poles, posts, fuel wood and non-timber forest products while enhancing local people's participation in forest conservation and reducing degraded areas by establishing plantations. Protection CFs are established for the protection of rare fauna and flora, natural beauty, and areas of special environmental, scientific or cultural importance. Conservation CFs are mainly aimed at conserving forests, soil, water and natural resources with the involvement of local people while also supporting the livelihood of local people by providing them fuel wood and non-timber forest products. Religious CFs are established to conserve and utilize forests of religious significance. Traditional CFs enable local people to conserve forests and to use forest products in a sustainable manner for their livelihood and community development.

5.3. Site selection and data collection

The following five case study sites were selected: Kachin state, Shan state, Mandalay division, Magway division, and Ayeyarwaddy division, ranging from the upper to lower Myanmar. A total of 25 community managed forests were surveyed for this study including six community based forests in Kachin state, four in Mandalay division, four in Magway division, six in Ayeyarwaddy division, and five in Shan state. The CFs in the study sites were categorized based on their objective. The forest types covered by the survey included production, protection, conservation and religious community forests. The locations of the study sites are shown in Figure 3.

Figure 3: **Location of the study areas**
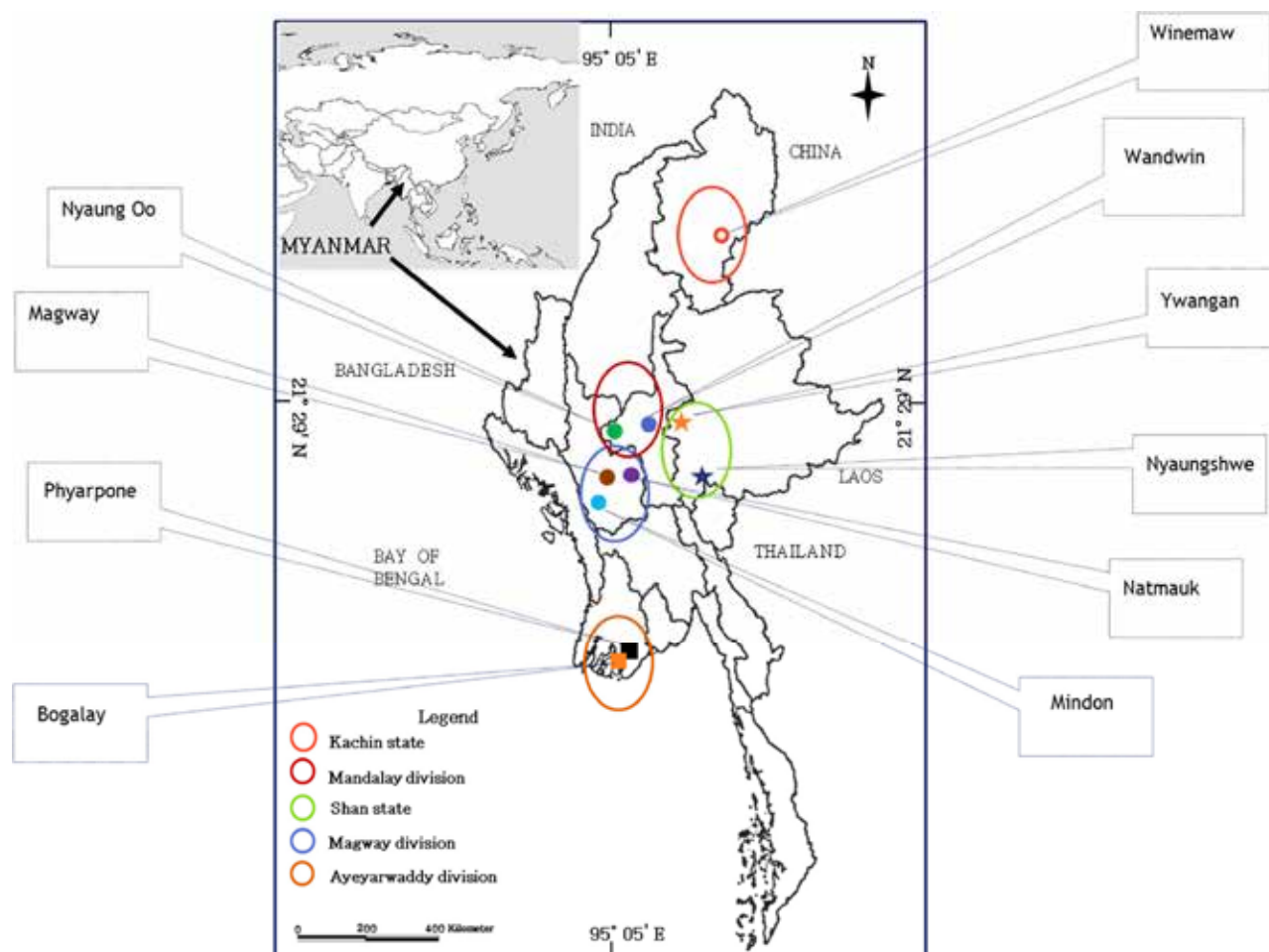
Desk reviews of existing data on CF such as geographic information, management plan and regular progress report were conducted to identify the types of CF. Background information on the village and CF was used as secondary data for the study. Group discussions with CF members and field observation in CFs were conducted to know the situation on the ground.

After completing the above steps, the benefit sharing mechanism of CF was observed through face-to-face interviews and focus group discussions with CF members. At least 10 members of each community-

managed forest were selected for the interviews. The focus group discussions were aimed at assessing the overall effectiveness of the CF benefit sharing system..

The questionnaire had six sections – background information on the CF; status of the village; types of benefits obtained from the CF; benefits distribution among community members; management of the CF; and the CF benefit sharing system/mechanism. Focus group discussions sought to assess the challenges in the establishment and management of the CF, the types of distribution among community members and the benefit sharing system/mechanism in each community-managed forest.

Clarification of the terminology used in the survey form is provided below:

S/N	Description	Characteristics
1.	Beneficiaries	CF community members
2.	Types of benefits	Tangible and intangible (monetary and non-monetary) benefits
3.	Management	Management system applied in CF by community members
4.	Monitoring	Involve all community members
5.	Revolving fund	Managed by the CF committee.

General information on the CFs in the study areas is provided in Table 2.

Table 2: **General information on the CFs in the study areas**

S/N	Village	Township	State/Division	Year of establishment	Areas (Acre)	User group members	CF type	Remarks
1.	La-ban	Winemaw	Kachin state	2007	759	263	Production CF	
2.	La-ban	Winemaw	Kachin state	2007	400	263	Conservation CF	
3.	Woo-yan	Winemaw	Kachin state	2008	600	222	Production CF	
4.	Woo-yan	Winemaw	Kachin state	2008	300	222	Conservation CF	
5.	Woo-yan	Winemaw	Kachin state	2008	300	222	Protection CF	
6.	La-myan	Winemaw	Kachin state	2016	35	23	Production CF	
7.	Yo-sone	Wandwin	Mandalay division	2004	540	122	Production CF	
8.	Yo-sone	Wandwin	Mandalay division	2004	10	122	Conservation CF	
9.	Myay-thin-twin	Nyaung Oo	Mandalay division	2015	53.08	165	Conservation CF	
10.	Zi-O-thit-hla	Nyaung Oo	Mandalay division	2008/2018	40	165	Religious CF	
11.	Kan-thar-lay	Magway	Magway division	1996	50	1071	Production CF	
12.	Aung-myay-kone	Magway	Magway division	2006	75	43	Conservation CF	
13.	Nga-laing-san	Mintone	Magway division	2002	482	144	Conservation CF	
14.	Padauk-ngoke	Natmauk	Magway division	2005	128	30	Production CF	
15.	Wah-kone	Phyarpone	Ayeyarwaddy division	2001	350	54	Production CF	
16.	Kywe-te	Phyarpone	Ayeyarwaddy division	2001	653	36	Production CF	
17.	2-Bawathit	Phyarpone	Ayeyarwaddy division	2017	800	150	Production CF	
18.	Phoe-ba-kone	Phyarpone	Ayeyarwaddy division	2017	807.24	43	Production CF	
19.	Shwe-pyi-thar	Bogalae	Ayeyarwaddy division	2012	50	144	Production CF	
20.	Mingalar-yae-kyaw	Bogalae	Ayeyarwaddy division	2017	20	30	Conservation CF	
21.	Mine-thout	Nyaungshwe	Shan state	2001	1250	95	Conservation CF	
22.	Lwe-nyeint	Nyaungshwe	Shan state	2000	600	120	Conservation CF	
23.	Lwe-khaung	Nyaungshwe	Shan state	2016	198	85	Production CF	
24.	Alaechaung	Nyaungshwe	Shan state	1996	405	280	Production CF	
25.	Yagyi	Nyaungshwe	Shan state	1950	673	380	Conservation CF	

5.4. Results and discussion

5.4.1. Status of the villages

In all the study areas, a majority of the households were poor. The villagers classified only a handful of households as non-poor. With respect to physical assets, most of the villages have no electricity, health clinics, good road access, or adequate drinking water resources. In terms of education (the human asset), primary schools and branches of middle school were found. Despite the low ratio of educated persons to the village population, we found local people who have passed the matriculation exam and hold degrees.

5.4.2. Types of benefits and their distribution to community members

Both monetary and non-monetary benefits were obtained from CF. Fuelwood, posts, poles, and non-wood forest products are the main CF products in all study areas. In Ayeyarwaddy region, Dani (*Nepa fruitica*), mangrove fruits and crabs are also included as main CF products. Plums are obtained from the dry zone (Nyaung Oo) and bamboo and mushroom from Magway division. Locals use these products to meet their subsistence needs and sometimes sell them or offer them to their relatives and neighbours. Local communities including CF members and non-CF members earn their living by collecting medicinal plants and fruits. CF members allow non-CF members to gather fruits freely and sometimes they can collect dry fuelwood in some villages but they have to follow internal rules formulated by the CF committee and members. Some of the rules include not cutting the trees for fuelwood and abstaining from climbing trees to pick fruits.

As a win-win benefit, non-members provide the CF owner community with information on the current situation of the CF (e.g., who all steal/cut trees, where, when), though sometimes issues arise when non-members violate the rules. Some communities earn a lot of income by selling non-wood forest products, while others only make a small amount. In some areas of the CF, people practice agroforestry by planting sea sesame, rice and groundnut in line with the CF management plan. Some local communities earn money from nature-based ecotourism and community-based tourism, especially in Shan state.

The CF members received non-monetary benefits in the form of capacity building trainings and workshops on environmental and watershed conservation. Monetary and non-monetary benefits of the CF in different regions are shown in Table 3.

Table 3: **Benefits obtained from CF in different regions**

Sr. no	Township	Village	Benifits	
			Tangible	Intangible
1.	Wine Maw	Laban	Fuelwood, poles, posts, agricultural crops, fruits	Environmental conservation training (domestic)
2.		Wooyan	Fuelwood, poles, posts, agricultural crops, bamboo shoots, medicinal plants	Environmental conservation training (domestic, international)
3.		Lamyan	Fuelwood, poles, posts, agricultural crops	Environmental conservation training (domestic)
4.	Wandwin	Yo-sone	Gum, seeds	Environmental conservation training (domestic, international)
5.	Nyaung Oo	Myaythintwin	Fuelwood, poles, posts, plums	Watershed conservation, training (domestic)
6.	Magway	Kantharlay	Fuelwood, poles, posts	Watershed conservation, training (domestic)
7.	Magway	Aungmyaykone	Fuelwood, poles, posts	Watershed conservation training (domestic)
8.	Mindon	Naglaingsan	Fuelwood, poles, posts, bamboo	Environmental conservation training (domestic)
9.	Natmauk	Padaukngoke	Fuelwood, poles, posts, mushroom	Environmental conservation training (domestic)
10.	Phyarpone	Wahkone	Fuelwood, poles, posts, Dani, crab	Environmental conservation training (domestic, international)
11.	Phyarpone	Kywete	Fuelwood, poles, posts, Dani, crab	Environmental conservation training (domestic)
12.	Phyarpone	2-Bawathin	Fuelwood, poles, posts, Dani, crab	Environmental conservation training (domestic)
13.	Phyarpone	Phoebakone	Fuelwood, poles, posts, Dani, crab	Environmental conservation training (domestic)
14.	Bogalay	Shwepyithar	Fuelwood, poles, posts, Dani, crab	Environmental conservation training (domestic)
15.	Bogalay	Mingalaryae	Fuelwood, poles, posts, Dani, crab	Environmental conservation training (domestic)
16.	Nyaung Shwe	Minethout	Coffee, bamboo, other	Watershed conservation training (domestic, international)
17.	Nyaung Shwe	Lwenyeint	Fuelwood, poles, posts, medicinal plants	Watershed conservation training (domestic)
18.	Nyaung Shwe	Lwekhaung	Coffee, poles, bamboo shoot, bamboo	Watershed conservation training (domestic)
19.	Ywangan	Alaechaung	Fuelwood, poles, posts	Watershed conservation training (domestic)
20.	Ywangan	Yagyi	Fuelwood, poles, posts	Watershed conservation training (domestic)

5.4.3. CF management and major challenge

Some villages have a poor understanding of the CF formation process as they lack knowledge about the concept of CF. Inclusiveness and equity was another major issue. In cases where only a few households in the community control the CF land, conflicts arose between CF members and non-members. In order to prevent conflicts between different communities, there should be systematic allocation of tasks and gains among the community members. .

Members carry out CF management activities according to the management plan. Meetings are held every month where the committee discusses monthly activities of members. If there is no space left for plantation, some communities carry out pruning and branching and enrichment planting/gap planting in the CF. Others carry out enrichment planting/gap planting, slashing, weeding, fire line protection, and nursery practices while maintaining and protecting existing forests.

5.4.4. Benefit sharing system in CF

In community forestry, benefit sharing is generally carried out according to a management plan, following specific rules. The benefit sharing systems used in the study areas are slightly different from those used in traditional CFs. CFs in Shwepyithar and Mingalaryaekyaw have individual ownership and no definite benefit-sharing mechanism. The owners of these CFs use forest products (fuelwood, poles, trees, etc) themselves and sell the excess to the other villages. CF members also have individual, household-level ownership, and maintain and protect their forests themselves, taking all the benefits afforded by the CF they maintain. Members who have collective ownership conserve their forests to reduce the risk of natural disasters. They donate fuelwood obtained from pruning and branching to the monastery and use the surplus to meet their subsistence needs. In successful CFs, land and benefits in individually- and collectively-owned CFs are equitably allocated among CF members. Additionally, input-based benefit sharing was found in all study sites.

CF benefit sharing systems do not vary significantly across regions but they do among different types of CFs (Table 4).

Table 4: **Benefit sharing systems in different types of CFs**

Items	Production	Conservation	Protection	Religious
Forest conservation activities	19% (4–35%)	33% (25–50%)	32%	60%
Community development activities	17% (2–40%)	26% (5–50%)	60%	30%
Revolving fund	11% (1–40%)	18% (10–25%)	-	
CF Committee	8% (5–10%)	15% (15%)	8%	
CF members	71% (40–99%)	51% (25–90%)		
Saving money	5% (2–10%)	5 % (5%)		
Miscellaneous Things	5% (5%)	15% (5–20%)		10%
Total	100%	100%	100%	100%

In the production type, benefits obtained from the CF are shared for purposes like forest conservation, community development activities, revolving fund, CF committee, CF members, saving money and miscellaneous things. An average of 71% of benefits are shared among CF members – 19% for forest conservation, 17% for community development activities, 11% for revolving fund, 8% for the CF committee, and 5% each for saving money and miscellaneous things (Table 4). In the conservation type, 51% of total benefits are shared among CF members – 33% is for forest conservation and 26% for community development activities; the remaining percentage is used for the revolving fund, the CF committee, saving money and other miscellaneous things. In the protection and religious types, monetary benefits are much less than in the production and conservation types, and 90% of those benefits are used for forest conservation and community development activities. Benefit sharing systems in different types of CF are shown in Table 4. Benefit sharing in the different regions is shown in detail in Tables 5–9.

Table 5: Benefit sharing systems of CFs in Kachin state

Items	Laban Prd. (individual ownership)	Laban Con. (collective ownership)	Wooyan Prd. (individual ownership)	Wooyan Con. (collective ownership)	Wooyan Pro. (collective ownership)	Lamyan Prd. (individual ownership)
Forest conservation activities	5%	35%	4%	30%	32%	10%
Community development activities	5%	-	2%	-	60%	2%
Revolving fund	5%	-	2%	-		-
CF committee	-	-	-	-	8%	5%
CF members	75%	50%	90%	55%	-	80%
Saving money	5%	-	2%		-	3%
Miscellaneous things	5%	15%	-	15%	-	-
Total	100%	100%	100%	100%	100%	100%

Prd. = production type, Con. = conservation type, Pro. = protection type, Rel. = religious type.

Table 6: Benefit sharing systems of CFs in Mandalay region

Items	Yo-sone Prd. (individual ownership)	Yo-sone Con. (collective ownership)	Myaythintwin Con. (collective ownership)	Zi-O-Thithla Rel. (collective ownership)
Forest conservation activities	-	30%	35%	60%
Community development activities	-	50%	5%	30%
Revolving fund	1%	-	-	-
CF committee	-	-	15%	-
CF members	99% (+ maintenance)	-	35%	-
Saving money	-	-	5%	-
Miscellaneous things	-	20%	5%	10%
Total	100%	100%	100%	100%

Prd. = production type, Con. = conservation type, Pro. = protection type, Rel. = religious type.

Table 7: Benefit sharing systems of CFs in Magway region

Items	Kantharlay Prd. (collective ownership)	Aungmyaykone Con. (collective ownership)	Ngalaingsan Con. (collective ownership)	Padaukngoke Prd. (collective ownership)
Forest conservation activities	25% (tentative)	25%	-	-
Community development activities	25% (tentative)	25%	-	-
Revolving fund	-	-	10%	10%
CF committee	-	-	-	-
CF members	50% (tentative)	50%	90% (+ forest conservation)	90% (+ forest conservation)
Saving money	-	-	-	-
Miscellaneous things	-	-	-	-
Total	100%	100%	100%	100%

Prd. = production type, Con. = conservation type, Pro. = protection type, Rel. = religious type.

Table 8: **Benefit sharing systems of CFs in Shan state**

Items	Minethout Con. (collective ownership)	Lwenyeint Con. (collective ownership)	Lwekhaung Prd. (collective ownership)	Alaechaung Prd. (collective ownership)	Yagyi Con. (collective ownership)
Forest conservation activities	50%	30%	20%	20%	25%
Community development activities	-	-	40%	-	25%
Revolving fund	-	-	-	-	25%
CF committee			-	-	
CF members	50% (+community development)	50%	40%	80%	25%
Saving money	-		-	-	
Miscellaneous things	-	20% (+ community development)	-	-	-
Total	100%	100%	100%	100%	100%

Prd. = production type, Con. = conservation type, Pro. = protection type, Rel. = religious type.

Table 9: **Benefit sharing systems of CFs in Ayeyarwaddy region**

Items	Wakone Prd. (individual ownership)	Kywete Prd. (individual ownership)	2-Bawathin Prd. (individual/collective ownership)	Phoebakone Prd. (individual ownership)	Shwepyithar Prd. (individual ownership)	Mingalar-yaekyaw Con. (individual ownership)
Forest conservation activities	35%	30%	-	25%	All activities (100%)	All activities (100%)
Community development activities	-	20%	-	25%		
Revolving fund	-	40%	10%	-		
CF committee	10%	10%	-	-		
CF members	40%		90%	50%		
Saving money	10%		-	-		
Miscellaneous things	5%					
Total	100%	100%	100%	100%	100%	100%

Prd. = production type, Con. = conservation type, Pro. = protection type, Rel. = religious type.

# 6. Possible benefit sharing mechanism of REDD+ in Myanmar

The UN-REDD Programme identified seven principles of a benefit distribution system or IAS and also provided possible ways to address these principles, as shown in Box 4. A benefit distribution system or IAS can be designed on the basis of existing policies, legislations and traditional customs. Benefits for communities could be in the form of cash or kind or both.

Equitable benefit sharing can help overcome the challenges of implementing REDD+ and CF activities (Rana, 2016; Neupane & Shrestha, 2012). The case studies corroborate this. They also highlight that an input-based benefit sharing system is suitable for community-based forest management. Therefore, input-based benefit sharing systems that build upon the existing benefit sharing system of community-based forest management should be recommended in REDD+ readiness phases. It is important that these benefits are distributed up front among stakeholders so that they provide enabling conditions for the implementation of REDD+ activities.

Based on findings from the case studies and the review of REDD+ activities, we recommend sharing REDD+ benefits in the following manner: 20% of total benefits for forest conservation; 20% for community development; 55 % for community members; and 5% for the revolving fund. However, each benefit sharing mechanism must be customized according to the purpose and objective of the forest management system of the CF it corresponds to.

The most important fact is that REDD+ is a results-based payment at the national level and therefore an appropriate mechanism for sharing benefits at the project level and sub-national level. .

Figure 4: **Possible benefit sharing mechanism of REDD+ in Myanmar**

- community members
- forest conservation
- community development
- revolving fund
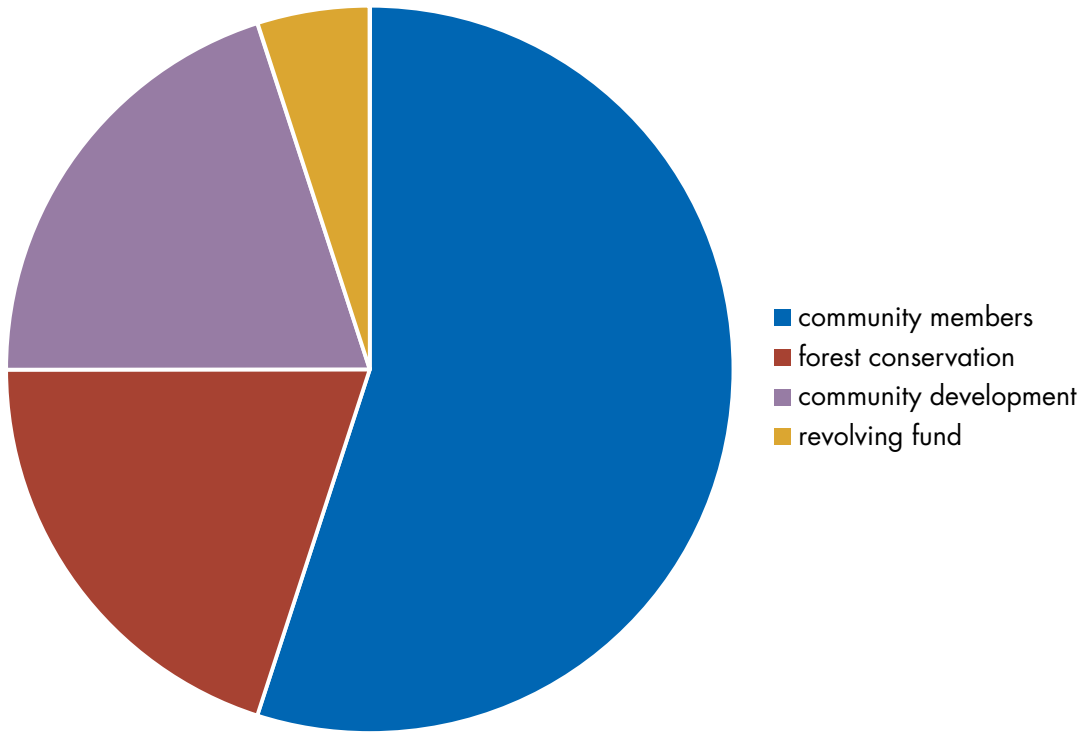
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