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COMMUNITY FORESTRY DEVELOPMENT IN CAMBODIA

Cambodia Institute of Forest and Wildlife Research and Development

Yunnan Academy of Forestry and Grassland



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ACRONYM

APFNet	:	Asia Pacific Network for Sustainable Forest Management and Rehabilitation
CF	:	Community Forestry
NGOs	:	Non-Governmental Organization
RGC	:	Royal Government of Cambodia
RUA	:	Royal University of Agriculture
MAFF	:	Ministry of Agriculture, Forestry, and Fisheries
MoE	:	Ministry of Environment
GDANCP	:	General Department of Administration for Nature Conservation and Protection
UNDP	:	United Nation Development Program
FAO	:	Food and Agriculture Organization
GHG	:	Greenhouse Gas
REDD+	:	Reduce Emission from Deforestation and Degradation
FA	:	Forest Administration
SFMP	:	Strategic Forest Management Plan
NPCA	:	Nature Protection and Conservation Administration
NESAP	:	National Environment Strategy and Action Plan
ODC	:	Open Development Cambodia
CCCSP	:	Cambodia Climate Change Strategic Plan

EXECUTIVE SUMMARY

Community forest refers to the area of state forest subject to an agreement between the Cantonment of the Forest Administration (FA) and local communities or organized group of people to manage and utilize the forest in a sustainable manner. The forests were once managed by private corporations. Later, the Royal Government of Cambodia (RGC) implemented the Community Forestry as a forest management tool to improve the lives of the forest-dependent communities through effective management of the community forest following the experience of Community Forestry projects initiated by various international and national development NGOs and donor agencies.

The purpose of this book is to provide a comprehensive information on community forestry development in Cambodia and the experience of implementing the silviculture and forest rehabilitation techniques, agroforestry and home gardens. A chapter presented a case study highlighting the success story of CF implementation in Cambodia. The lessons learned, challenges, problem, shortcomings of community forestry development were drawn from the experience of CF as well as the opportunities of enhancing the implementation of the CF program. The book is divided into the following chapters:

Chapter I : Introduction to Forestry Sector in Cambodia

Chapter II: Cambodia Forestry Law and Regulations

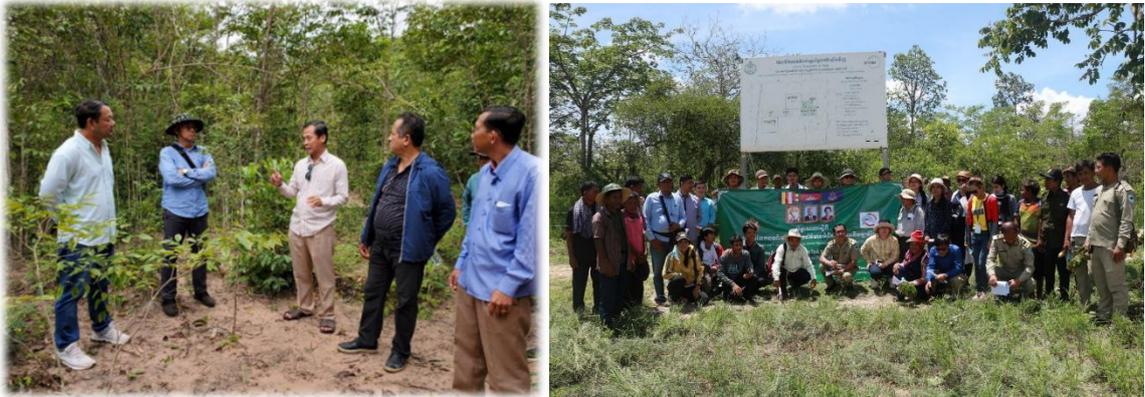
Chapter III: Current Status of Community Forestry in Cambodia

Chapter IV: Role of Community Forestry in Forest Management and Rehabilitation

Chapter V: Case Study of Community Forestry in Cambodia

Chapter VI: Lessons Learn and Recommendation to Improve Community Forestry

COMMUNITY FORESTRY DEVELOPMENT IN CAMBODIA



“Let’s nurture the nature so that we can have a better future”



“Love the nature as the nature love you”

CHAPTER I

Introduction to Forestry Sector in Cambodia

1.1 Forestry Sector in Cambodia

Cambodia is a tropical country and is considered as one of the country in Southeast Asia with rich natural resources, especially forestry and biodiversity. The total forest area of Cambodia was more than 9 million hectares in 2020 based on the estimation of the Food and Agriculture Organization (FAO, 2020; RGC, 2021). Cambodia's forest are managed by three government institutions: Forestry Administration (FA) and Fisheries Administration (FiA) under the Ministry of Agriculture, Forestry and Fisheries (MAFF), and by the General Department of Administration for Nature Conservation and Protection (GDANCP) of the Ministry of Environment (MoE). FA is responsible in managing forest and resources of the Permanent Forest Estate (PFE), comprising the naturally growing and planted state forest resource. The PFE is sub-divided into Permanent Forest Reserve (PFR) and Private Forest (PF). The PFR is composed of Production Forest, Protection Forest, and Conversion of Forest Land. Private Forests are maintained by private individuals who were granted the right to manage, develop and harvest, use, sell, and distribute the products therein in accordance to the 2002 Forestry Law (RGC, 2002a). The forest resources within the Protected Area (PA) are under the jurisdictional management and regulatory authority of the General Department of Administration for Nature Conservation and Protection (GDANCP) of the Ministry of Environment (MoE) under the 2008 Protected Area Law (RGC, 2008b). The inundated forests and mangrove areas outside of PAs are managed and regulated by the Fisheries Administration of Ministry of Agriculture, Forestry and Fisheries (RGC, 2006). The forests of Cambodia is currently divided into 11 classes for the purpose of land use/cover assessment. These are Evergreen Forest, Semi-Evergreen Forest, Deciduous Forest, Bamboo, Mangrove, Rear Mangrove, Flooded Forest, Forest Regrowth, Pine Tree, Pine plantation and Tree plantation.

Gender inequalities in the country has been recognized as a cause of low participation of women in decision-making processes and representation in forest management institutions. They also have limited access to information, education and training opportunities than men, especially on the utilization of natural resources and involvement on the conservation and protection of natural resources and environment (WOCAN, 2019).

Cambodian forests are linked to the sustainability and productivity of agriculture and in-land fisheries. Services provided by the forest ecosystems include regulation of local water-

circulation, mitigation of droughts and floods, and reduction of waterway sedimentation. Forests are, therefore, a key factor in national development, and their sustainable use provided considerable benefit to the country and the people. Opportunities are growing in international markets for processed and high-value forest products alongside potential markets for carbon sequestration. Novel, innovative forms of financing are emerging through payment for environmental services (PES) for conservation of forest resources and biodiversity.

While large areas of forests are protected under Cambodian laws and regulations, Cambodia needs to enhance law enforcement and protection of forest resources to reduce the forest loss and forest degradation. The Royal Government of Cambodia has approved a long vision for forestry sector governance by reducing GHG emissions from the forestry sector to zero percent by 2040 (RGC, 2021). To achieve this vision, some policies have taken place under the REDD+ mechanism. Besides, the participation of local communities, indigenous groups and the private sector in the implementation of REDD+ policies and measure are fundamental to promote sustainable activities in the AFOLU sector. UNDP has called for the urgent protection of the forests of Cambodia as it forecasted that the *“loss of productive forests, as well as biodiversity, will lead to loss of income or livelihood options for forest dependent communities”* (UNDP, 2011). The situation is further aggravated by the effects of climate change in the coming decades.

1.2 Forest and People in Cambodia

Many Cambodians depend on the forests for their livelihoods. According to the special report from Cambodia Development Resources Institutes (CDRI) and Wildlife Conservation Society (WCS), 41% of rural households in Cambodia sourced 20 to 50% of their total livelihoods from the forests and about 15% got more than half of their total livelihoods from forest use (McKenney et al., 2004). The people in Cambodia depends on the services from the forest: agricultural production, income, subsistence needs and cultural services (Nhem et al., 2018). For agricultural production, the forests provide water and nutrient cycling and protection. The forest products provided material benefits such as fuel, food, medicinal plant products. Trees in farms provide shade, windbreaks and soil erosion control while the trees or forests maintain soil fertility through nutrient cycling. Other material benefits include fodders, fibers for weaving baskets, wood materials for making ploughs and other farm implements, etc. Trees are important low-cost means of preventing site degradation and an inexpensive means of making the land productive (e.g. home gardens). Forest products help to diversify household income, stabilize periodic economic stress due to seasonality of farm income, and important safety nets during economic difficulties. They are particularly important where farm output and non-farm income

declines and provide coping mechanism that reduces vulnerability of households. Many forest products have the following characteristics: accessible, require low-capital and low-skills. The livelihoods from forest products are generally small-scale, usually household-based activities and generally have low returns; mainly produced for local markets. The community engaged livelihoods from forest products only on part-time, often to fill income gaps or needs. Although they have limited growth potential, they nonetheless play a very important coping mechanism for the poor, and particularly important to women. Some forest product that has high demands, however, provide a basis for full-time and higher-return activities usually associated with higher skill and capital entry. Subsistence and cultural services of the forests are integral part of the forest-dependent communities' social and cultural structure. The supply of material products from the community forests are not very substantial and declined after years of neglect although some uses (e.g. medicinal) persist. Despite the important role of the forests to human wellbeing, some policy, governance and resource development interventions in the country still needs strengthening for a more effective forest management (RGC, 2021).

1.3 History of Forest Decline in Cambodia

Cambodia is one of the world's forest-endowed country that is not heavily deforested. However, economic developments have caused massive deforestation threatening the forests and ecosystems. Deforestation has directly resulted from poorly managed commercial logging, fuel wood collection, agricultural encroachment and infrastructure and urban developments. Indirect pressures include rapid population growth, inequalities in land tenure, lack of agriculture technology and limited employment opportunities. The Cambodian government has played a major role in using the country's forests. An unusually large area of Cambodia has been designated as protected areas and biodiversity corridors accounting for over 38% (more than 7 million hectares) of the total land mass. Yet, many protection activities have been sidelined by concessions granted to both national and foreign companies for agro-industrial plantations and mining developments. Some concessions have encroached even to the national parks. Concerns were raised of the contradicting policies and general lack of enforcement of environmental laws to adopt sustainable forestry and address the conversion of many forest lands especially in the protected areas. The fate of Cambodia's forests largely affect local communities who rely on the forests for their livelihood. Around 80% of its population lives in rural areas.

According to Forest Administration, Cambodia used to have up to 73% forest cover of the total lands in 1970s (FA, 2008) and this has reduced to about 64% in 2004. The forest cover estimate, however, vary depending on the forest definition provided by major institutions such as FAO, REDD+, UNDP, or MRC, etc. FAOSTAT documented the trend of forest area in Cambodia from 1990 to 2020 and revealed that the forest declined from 11 million hectares in 1990 (Figure 1).

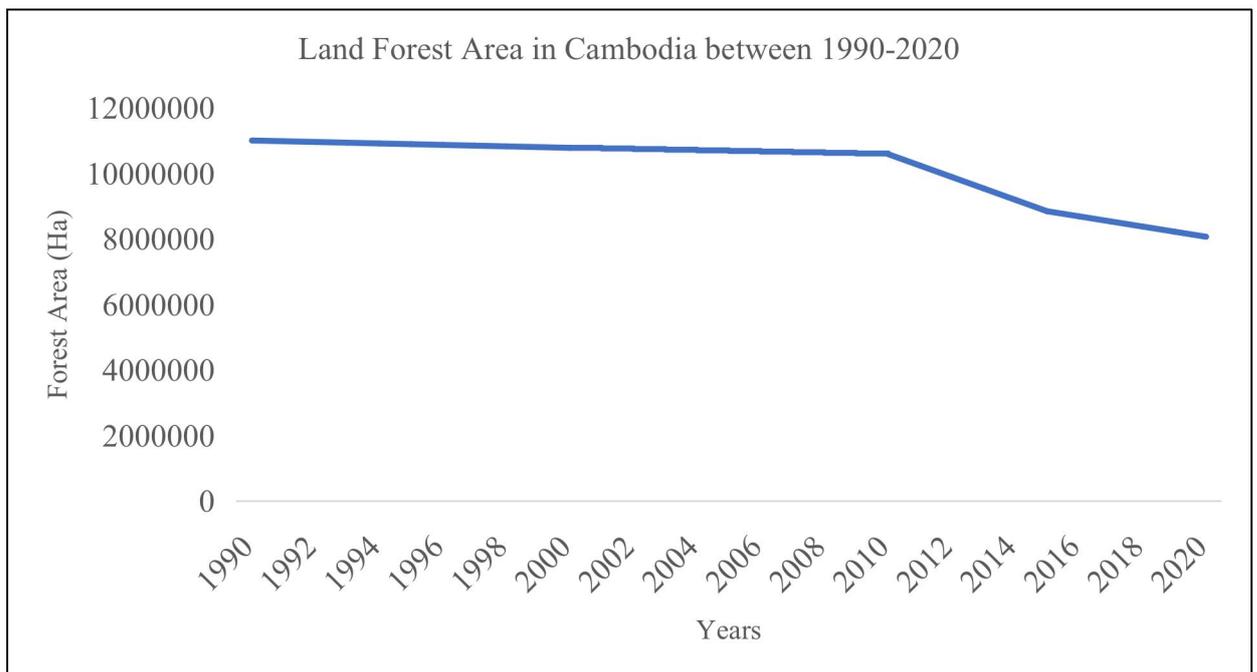


Figure 1. Land Forest Area in Cambodia between 1990-2020

Source: FAOSTAT (<http://www.fao.org/faostat/en/#data>)

The decline of the forest cover in Cambodia are attributed mainly to population growth, growing demand for agricultural lands, road developments, demand for wood for domestic and regional scale, lack of human resources in forest development, lack of financial support, and pressures from economic development.

Population growth. Cambodia’s population grow steadily. From around 3 million in 1980 it rises to around 16 million as of 2020. Of the 16 million people, 2-3 million live in cities while the rest are in rural areas and subsisting mainly on natural resources, especially forests and NTFPs for their day-to-day living. The population growth rate of about 2.5 percent remain unchanged for the last two to three decades. The high population growth rate contributed to

deforestation due to need for lands for settlement and agriculture. The increasing gap between the rich and the poor is also one of the driving forces of deforestation. The rich have accessed more lands in the productive agricultural zones, while the poor were forced to clear more forestlands for settlement and agriculture.

Demand for agricultural land. Being a highly agriculture-dependent country with accelerating population growth, more forest lands were cleared. One of the strategies to address the demand for more agricultural lands is to improve agricultural yield and increase the productivity of rice by applying intensive agriculture. Forests positively contribute to agriculture productivity by maintaining soil fertility, preventing floods, regulating temperature and rain.

Road development. Construction of roads facilitates the introduction of social services to places that were not developed before (Figure 2). Without the proper forest conservation interventions in place, newly developed roads has impacted the forests.



Figure 2: *Negative effect from road development on forest resource in Cambodia*

Demand for wood: domestic and regional scales. In addition to domestic demands for wood, the wood markets are growing, with the neighboring Thailand and Vietnam as the main market destinations. Cambodia have difficulty in developing and protecting its vast forests located in the remotes areas due to limited human and financial resources. Under the National Forest Programme (NFP), a study was conducted on the wood supply and demand at the provincial and national levels by the Forest Industry, Trade and Development Office of the FA. The objective of the study was to gain knowledge of forest supply capacity and increasing demand

based on harvesting policies for SFM. Cambodian timbers were exported to Malaysia, Thailand, and Vietnam during the 1990s and early 2000s. In 2002, the RGC suspended the export of all round and sawn timbers.

Human resources. Insufficient and unskilled staff has contributed to the poor management of the forests in Cambodia. Qualified personnel are needed to address the emerging issues in forestry and evolving demand for better management of the forests. There is a need for upgrading the skills of the resource managers due to the shift in the demand of managing the forests from solely for timber purposes to including the environmental services. Many policy studies on forest management and conservation in the country since the late 1990s and early 2000s were conducted by Technical Advisors, who mostly, have left the country. Moreover, most of the documents are written in non-native languages (i.e. using English or French). Human resource development is urgent for emerging forest management and conservation issues. Long-term management skills for SFM are needed for staff of both the FA and private sector. In 2000, many government staff have gradually taken up studies on policy developments for forestry management and conservation.

Financial support. Forestry management has been a big challenge in the forestry development sector of Cambodia aggravated by the lack of funding. For instance, the Tree Seed Conservation Project, Tiger Conservation Programme, and Tree Plantation Development projects were not sustained due to lack of national budget for its operation. Since the FA reform, the FA and the RGC planned to demarcate forest boundaries, which is a priority activity. But the implementation is constrained by the lack of funding. Nevertheless, with available national budget and financial aid from DANIDA, DFID, NZAid, FAO, etc., the FA have started demarcating the forest boundary in priority areas of the country.

Negative Effect from Economic Development. The negative impacts from economic development such as urbanization, establishment of economic development zone and forest concession have contributed to the decline of forest cover in Cambodia, particularly, by the economic land concession (ELC), a long-term lease that allows the beneficiary to clear lands for the development of industrial agriculture. To date, ELCs have established large-scale plantations, raising livestock and building factories for agro-processing (Figure 2). Also, there are concessions that has been granted rights for mining, fish ports and for tourism that contributed to forest loss. The concessions is becoming a concern as it caused serious impacts to livelihoods of rural communities who depend upon land and forest resources for their survival. Among the

commonly-cited issues raised against the ELCs are the encroachment to agriculture and grazing lands and loss of livelihoods; encroachment on forested areas and loss of access to non-timber forest products; impacts on areas of cultural and spiritual significance; displacement of communities; and environmental destruction.

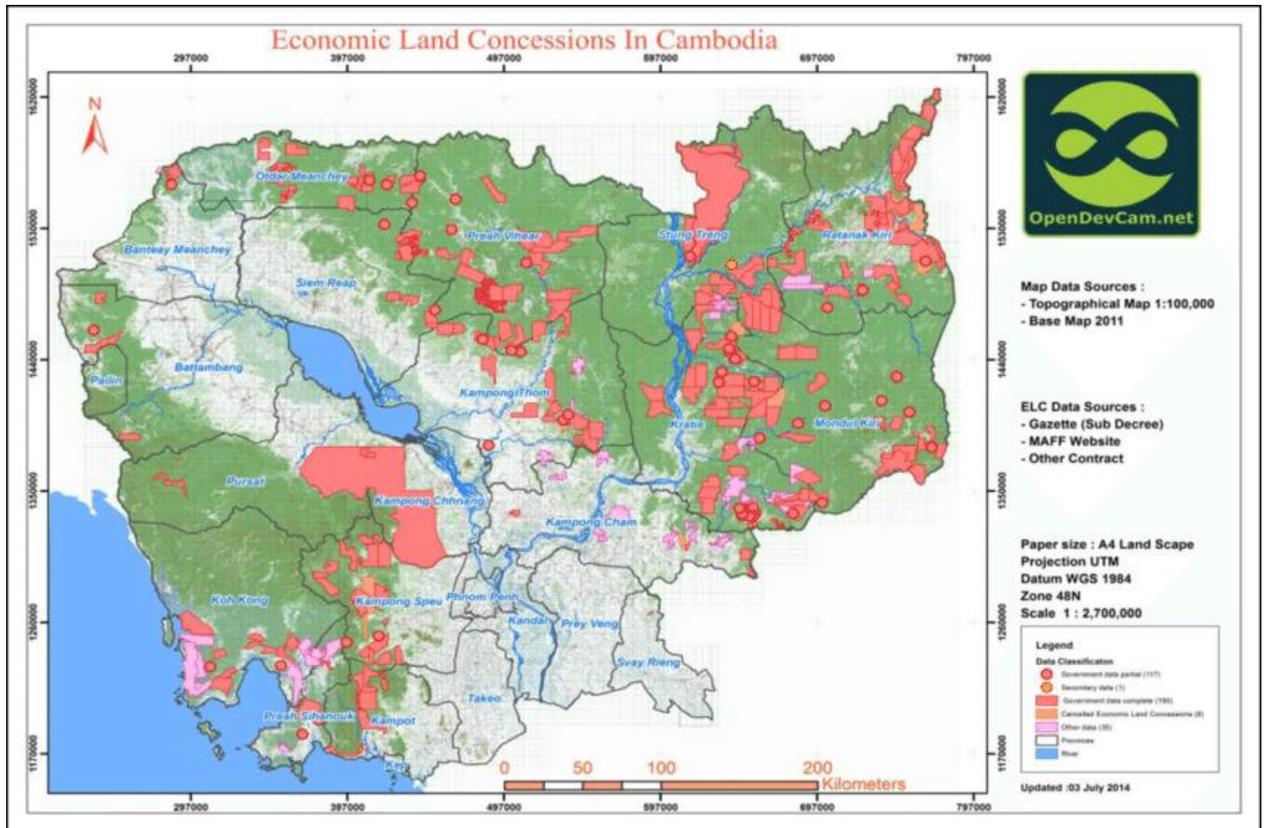


Figure 3 : Map of economic land concession in Cambodia

CHAPTER II

Cambodia Forestry Law & Regulation

2.1 Institutional Arrangement and Forest Governance

The forest governance in Cambodia has undergone through various regimes and administrative systems. The formal management systems of the forestry sector started in 1898 before the 36 years

(1863-1898) of French protectorate ruling in Indochina and Cambodia (FA, 2008). At that time, before the French management system was in effect, there was no formal system on the use of forests and non-forest products and was later replaced by a formal French system. The French's formal management of the forest in Cambodia, however, is in conflict with the traditional use of the forest. Later on, the system was relaxed, allowing the traditional uses of forests for local consumption. Although French protectorate in Cambodia ended in the 1950s (1954), the implementation of the French forest management system continued till early 1970s when civil war broke out. The French forest management system is characterized as a centralized governance where Phnom Penh, the seat of the government, made all decisions with regard to forest exploitation, rehabilitation, and or plantation. Since 1970s until the Khmer Rouge came to power, the natural resources, particularly the forests, had no proper or government control. During the Khmer Rouge regime (1975-1979), all public sectors were under absolute control of the leaders of Khmer Rouge and the forest management system became even more heavily centralized compared to previous forest managements in Cambodia. The People's Republic of Kampuchea, and later on the State of Cambodia (1979-1993), was a communist management regime where the Cambodian forests' annual timber harvesting plans were put under centralized decision-making. The technical recommendations of the Department of Forestry and Wildlife (DFW) and the MAFF have placed the forest products, mainly timbers, for exploitation in accordance to the central government plans. The centralized governance of forests is covered by annual or five-year plan system of forest management. The forest governance, however, was significantly changed in the 1990s. Beginning in 1993, a new forest management approach was introduced under the "forest concession management" system. With the decision of the central government, forest concession areas were implemented without community consultations. In 2001, with the restoration of more democratic rule in Cambodia, all forest concessionaires were required to develop a Strategic Forest Management Plan (SFMP) and at this time, there is greater participation of communities in the forest management process. The SFMPs prescribes different coupe levels, such as Compartmental and Annual, and Environmental and Social Impact Assessment (ESIA). The forest concession under SFMPs further required public disclosure

especially to all relevant stakeholders like the communes and civil society. The public disclosure of the forest concession SFMPs and ESIA is intended to make forest harvesting transparent and benefit sharing more equitable. In addition to the involvement of communities in forest management, they were given rights to establish their community forestry (CF) located near the communes or villages. In 2003, CF Sub-Decree was ratified and entered into force throughout the country. This is a step of decentralizing governance of forestry management system in the Kingdom of Cambodia.

The policy objectives of the forestry sector under Permanent Forest Estate (PFE) are embodied in an overarching strategic framework set out in the National Forest Programme 2010-2029, which defines the policy and implementation strategies for the sustainable management of the nation's forests through several programmes: (a) forest demarcation, classification and registration; (b) conservation and development of forest resources and biodiversity; (c) forest law enforcement and governance; (d) community forestry programme; (e) capacity and research development; and (f) sustainable forest financing.

Under the 2006 Fisheries Law, inundated forests and mangrove areas outside the Protected Areas (PA) will be managed and regulated by the Fisheries Administration (FiA) as set out in the Strategic Planning Framework for Fisheries 2010-2019.

Forest resources within Protected Areas (PA) are placed under the jurisdictional management and regulatory authority of the General Directorate of Administration for Nature Conservation and Protection (GDANCP) of the Ministry of Environment (MoE) under the 2008 Protected Areas Law. Cambodia has 65 protected areas and biodiversity conservation corridors covering about 7.2 million ha or 40% of total land area. The National Protected Areas Strategic Management Plan (NPASMP) 2016-2030 outlines the implementation framework for achieving its vision of effective, efficient and equitable management of the national protected area system in Cambodia.

Government policies related to climate change adaptation and mitigation include the National Climate Change Strategic Plan 2014-2023, National Strategic Plan on Green Growth Development 2013-2030, and the White Paper on Land Policy, enacted in 2015, that seeks to harmonize cross-sectoral land-use policy to ensure sustainability. In addition, a law on Environmental Impact Assessment and an Environmental Code was enacted. The National Council for Sustainable Development (NCSD) was formed to spearhead the harmonization of

Cambodia's sustainable development efforts. These efforts by RGC aim to mitigate emissions from the forestry sector by improving governance, inter-ministerial coordination and coherence of land use policy.

2.2 Cambodia Forestry Laws

Cambodia has enacted various laws related to the management of forest and natural resources.

- **Royal decree on Establishment of Natural Protected Areas in 1993** (ODC, 1993). This decree was signed by the King of Cambodia, Norodom Sihanouk and officially took effect on November 1, 1993. Under the decree, 23 natural protected areas were established under 4 types: national park, wildlife sanctuary, protected landscape and multi-purpose use area. The categories of the natural protected areas is based on their own characteristics and has a prescribed management scheme.
- **Environmental Protection and Natural Resources Management Law in 1996** (RGC, 1996). This law was enacted on November 18, 1996 with the following objectives: (i) to protect and upgrade the environment quality and public health by means of prevention, reduction and control of pollution, (ii) to make an assessment on impacts to environment, before issuance of decision by the Royal Government on all submitted proposed project, (iii) to ensure the rational and sustainable preservation, development, management and the use of the natural resources of the Kingdom of Cambodia, (iv) to encourage and encourage the public to participate in the protection of environment and the management of the natural resources, and (v) to suppress those acts which may affect to environment. Under this law, the natural resources in the Kingdom of Cambodia, especially forest, forest products and wildlife shall be preserved, developed, and managed its use in a rational and sustainable manner.
- **Forestry Law 2002** (RGC, 2002b). This law defines the framework for management, harvesting, use, development and conservation of the forests in the Kingdom of Cambodia. The objective of this law is to ensure the sustainable management of the Cambodian forests for their social, economic and environmental benefits, including conservation of biological diversity and cultural heritage. This law covers all types of forests, whether natural or planted. The management of forests is under the general jurisdiction of the Ministry of Agriculture, Forestry, and Fisheries. This law is implemented to ensure public participation in any government decision that have potential serious impacts to general public, livelihoods of local communities and forest resources of the Kingdom of Cambodia. Sustainable forest management is required consistent with the National Forest Sector Policy and the provisions of the Forestry Law.

- **Law on Fishery in 2006.** This law aims to ensure effective management of the fisheries and fishery resource, enhance aquaculture development, management of production and processing, and to promote the livelihood of people in local communities for their social-economic and environmental benefits, including the sustainability of the conservation of biodiversity and natural culture heritage in the Kingdom of Cambodia. The law requires that inundated protected lands in the fishing lots, the flooded forests and mangroves areas will be protected for conservation or reforestation to maintain the balance of the aquatic ecosystem. The following activities are prohibited by law: (i) expanding agriculture lands or using lands which are protected by the provision of the Fishery Law for other purposes other than development of fisheries in the inundated areas, (ii) issuance of land title in the protected inundated areas, (iii) cutting, reclaiming, digging out, clearing, burning or occupying inundated forests and mangroves, (iv) destroying, cutting down of inundated forest and mangroves or rooting up to collect trunks of inundated forests and mangroves, (v) commercial collection, transportation, and stocking of woods, firewood or charcoals of inundated forests and mangrove species, (vi) construction of kilns, handicraft places, processing places and all type of plants using raw materials of woods of inundated forests and mangrove species.
- **Law on Nature Protection 2008 (RGC, 2008a).** This law provides the framework for the management, conservation and development of protected areas. The objectives of this law are to ensure the management, conservation of biodiversity, and sustainable use of natural resources in protected areas. In Article 2, the management of protected areas are placed under the jurisdiction of the Ministry of Environment. The Ministry of Environment has the Nature Protection and Conservation Administration (NPCA) as its own secretariat to manage the protected areas pursuant to the policy of the Royal Government of Cambodia. The organization and functioning of the Nature Protection and Conservation Administration in each protected area is determined by a Prakas (Declaration) of the Ministry of Environment. The management of the protected area guarantees the rights of the local communities, indigenous ethnic minorities and the public to participate in the decision-making on the sustainable management and conservation of biodiversity.
- **Sub-decree No. 83 on Registration of Land of Indigenous Communities 2009 (FAO, 2009).** The purposes of this Sub-Decree is to determine the principles, procedures, and mechanisms for the registration of land of indigenous communities as collective title. The Sub-Decree also provide to the indigenous communities legal rights to ensure land tenure security; and protect collective ownership by preserving the identity, culture, good

custom and tradition of each indigenous community. The Sub-Decree applies to indigenous communities with established legal entity in the territory of the Kingdom of Cambodia. The registration of land of indigenous communities is the registration of all pieces of land of a community as collective title on a single cadastral map. The collective certificate of title issued to community need to specify the name and location of the community, reference number to the single cadastral map indicating the location, size, boundary, coordinates of the land plot collectively owned and certification of the type of land use and other notes. Communities with established legal entity (i.e. with registered statute and official recognition) can apply for land registration as collective title. Communities shall be officially established as legal entity if they have internal rules stipulating the management of collective land use according to land type, and established a mechanism of settling disputes at community level in case of conflicts over traditional land use.

2.3 Cambodia Forestry Plans and Strategies

- **Rectangular Strategy and National Strategic Development Plan 2014-2018 (RGC, 2014b).** Rectangular Strategy for Growth, Employment, Equity and Efficiency, more known as the Rectangular Strategy, lays out the political commitment to a sustainable socioeconomic development of the country and sustainable management of natural resources. The Phase III of the Strategy covers 2013-2018. One aspect of the Rectangular Strategy is the “Promotion of Agriculture Sector” while the other aspect is on the “Sustainable Management of Natural Resources”. The National Strategic Development Plan (NSDP) 2014-2018 is the national development plan of Cambodia. NSDP at Phase III that covers the period 2014 and 2018. The NSDP Phase III carries forward the agenda laid out in the Rectangular Strategy for Growth, Employment, Equity and Efficiency Phase III.
- **National Environment Strategy and Action Plan and Environmental Code (RGC, 2015).** National Environment Strategy and Action Plan (NESAP) covers the period between 2015 and 2023. NESAP identifies priority policy tools and financing options for sustainable natural resource management and environmental protection. It provides guidance to government ministries, private sector, civil society, and development organizations to mainstream environmental considerations into development policies, plans, and investments. The Environmental Code focuses on the establishment of a stronger legal framework for environmental policy and strategy. A draft of the code has already been developed.

- **National Protected Area Strategic System Management Framework.** The National Protected Area Strategic System Management Framework (NPASMF) aims to put forward long-term overarching guidance on ways and means to address the obstacles in the establishment of new protected areas and conservation areas; the current and future pressures from various threats on existing protected areas and conservation areas; and the constraints hindering the management of all protected areas.
- **Cambodia Climate Change Strategic Plan 2014-2023 (RGC, 2014a).** Cambodia Climate Change Strategic Plan (CCCSP) took into effect in October 2013 aligning to the planning cycle of NSDP. CCCSP is designed to ensure its strategic cohesion to address a wide range of climate change issues concerning adaptation, GHG mitigation, and low-carbon development. CCCSP has 8 strategic objectives and Strategic Objective No. 3 aims to “ensure climate resilience of critical ecosystems (Tonle Sap Lake, Mekong River, coastal ecosystems, highlands, etc.), biodiversity, protected areas and cultural heritage sites”. One of the four strategies to achieve this objective is to “Promote payment for ecosystem services including REDD+”. REDD+ is recognized as one of tools suitable for dealing climate change issues.

2.4 Cambodia National Forest Program 2010-2029

NFP is a plan for the forestry sector covering the period between 2010 and 2029 and approved by the Council of Ministers in October 2010. NFP consists six programs that include forest demarcation, classification and registration; conservation and development of forest resources and biodiversity; forest law enforcement and governance; community forestry; capacity and research development; and sustainable forest financing. The current national policy commitments under the NFP include increasing the country’s forest cover to 60%. One of the principal aims of the NFP is to support the establishment of community forests through the allocation of increased forestland to rural communities. Under the Forest Law, rights of local communities and the importance of decentralized management of natural resources are recognized. The NFP has 9 strategic objectives: (i) Maximize sustainable forest contribution to poverty alleviation, enhanced livelihoods and equitable economic growth, (ii) Adapt to climate change and mitigate its effects on forest based livelihoods, (iii) Macro land-use planning that allows for holistic planning across sectors, jurisdictions and local government borders, (iv) Forest governance, law and enforcement at all levels, (v) Develop a conflict management system, (vi) Raise awareness, capacity of institutions and quality of education to enable sustainable implementation of the National Forest Programme, (vii) Ensure environmental protection and

conservation of forest resources, (viii) Apply modern sustainable management models adaptive to changing context, and (ix) Develop sustainable financing systems.

2.5 Sub-Decree on Community Forestry Management

This Sub-Decree sets the rules for the establishment, management and use of community forests throughout the Kingdom of Cambodia. The objectives of the Sub-Decree are: (i) To implement the Forestry Law and other legislation regarding Local Community management of forest resources; (ii) To define the rights, roles and duties of the Forestry Administration Responsible Authorities, CF Communities and other stakeholders involved in Community Forestry management; (iii) To establish procedures to enable Communities to manage, use and benefit from forest resources, to preserve their culture, tradition and improve their livelihoods; (iv) To ensure user rights for a CF Community under a Community Forest Agreement; (v) To support the Royal Government of Cambodia's policies of poverty alleviation and decentralization; (vi) To provide an effective means for a CF Community to participate in the reforestation, rehabilitation and conservation of natural resources, forest and Wildlife; (vii) To enable citizens to understand clearly and recognize the benefit and importance of forest resources through the direct involvement in forest resources management and protection; and; (viii) To provide a legal framework to assist Cambodian citizens, living in rural areas, in establishing CF.

Article 3 of the Sub-Decree explicitly states that Community Forest is state public property (RGC, 2003). Forestry Administration has the rights to give official recognition of the demarcation of each community forest boundary. The power to lead and manage a community forestry is through the election of community members. A CF can be initiated and established by local communities or the Forestry Administration. In order to establish a CF, the local communities shall submit a written request to the Forestry Administration and the local Forestry Administration shall assess and analyze the requirements and problems faced by the Local Communities who requested to establish a CF with the involvement of local authorities or Commune Councils. The Minister in charge of the Council of Ministers, the Minister of Ministry of Agriculture, Forestry and Fisheries, the Minister of Ministry of Economy and Finance, the Minister of Ministry of Interior, all Ministers and State Secretaries of Ministries and institutions concerned and Governors of provincial cities are responsible for the implementation of the Sub-Decree.

CHAPTER III

Current Status of Community Forestry in Cambodia

3.1 Definition of Community Forestry

Community forestry refers to an agreement between the cantonment of the Forest Administration and local communities or an organized group of people to manage and utilize an area of state forest subject to sustainable manner. Community forestry is initiated and promoted by various international NGOs and donor agencies, national NGOs, civil society, and later by the Royal Government of Cambodia (Sunderlin, 2006). The community forests are state public property which cannot be sold or subjected to economic land concessions (ELCs). The Forestry Administration (FA) has the right to identify community forest boundaries. Community forestry is an evolving branch of forestry whereby the local community plays a significant role in forest management and land use decision making, and providing support to the government as change agents. It involves the participation and collaboration of various stakeholders including community, government and non-governmental organizations (NGOs). The level of involvement of each group is dependent on the specific community forest project, the management system in use and the region the CF is located (Ghimire & Lamichhane, 2020).

3.2 Specific Form of Community Forestry Practice in Cambodia

The potential for community forestry in Cambodia is extensive. Virtually, all rural people throughout Cambodia actively use forest resources, around their villages and sometimes significantly extending several kilometers from their villages. The use of the forest are anticipated to continue and intensify in the coming decades due to increasing population and subsequent increasing resource competition, migration of people to less-urbanized areas. The influx of people to the forests also increases with the construction of roads to previously

inaccessible forest areas. Three forms of community based natural resource management (CBNRM) are recognized in Cambodia:

- **Community Protected Areas (CPA):** Located within Protected Areas and under the control of the Ministry of Environment, is an arrangement where local communities may enter into an agreement with the MoE to manage particular zone of the conservation area for non-timber forest production. Commercialization of timber is not allowed.
- **Community Fishery (CFi).** Under this scheme, the fishing communities are granted to manage the flooded forests and mangrove areas and the fishery resources found therein. The Fishery Administration administers the Community Fisheries.
- **Community Forestry (CF).** The CF is governed by a CF agreement entered between the forest-dependent communities and the Forest Cantonment (now under the Office of the Governor). Attempts were made to test several modalities as a variation to the CF in effect: the **Community-Based Production Forest (CBPF)**, **Community Conservation Forestry (CCF)**, and **Partnership Forestry (PF)**. CBPF is a scheme that combine aspects of community forestry with responsible commercial forestry activities over large areas of forest with a longer time frame; **PF** is a system in which commune councils are the management body, rather than community forest management committees; and **CCF** is implemented in the Forestry Administration's Protection Forests, which are subject to conservation goals, pilot projects involve local communities in forest management with more limited use rights. The CBPF have not gained significant progress due to the limited capital and technical capability of the communities. Due to the directive to place all the protected forests to be under the Ministry of Environment, the CCF sites were subsequently converted to CPAs. Among the three, only the PF have been piloted with the signing of a PF Agreement with the Forestry Cantonment.

3.3 Status of Community Forestry in Cambodia

The previous chapter discussed the establishment of community forestry in Cambodia in 2003 based on a sub-decree on community forest management. For Cambodians who want to become members of the community, they need to meet the following criteria: (1) Living in the community as stated in point 9 in Article 5 of the sub-decree (community is a group of people living in one or more groups Villages in the Kingdom of Cambodia with common social, cultural and economic interests and sustainable use of natural resources in the area where they live or for the purpose of subsistence and livelihood improvement); and (ii) Khmer nationality aged 18 years or older. An individual may only be a member in one CF.

Communities under a Community Forest Agreement may harvest, process, transport and sell forest products and NTFPs subject to the following conditions: (i) Harvesting of forest products for selling or bartering shall not be allowed within the first 5 years of approval of the Community Forest Management Plan. If the Community Forestry has been operating with a Community Forest Management Plan prior to the passage of the Sub-Decree, the moratorium on harvesting forest products shall be considered from the date of approval on that Community Forest Management Plan; (ii) Payment of any required royalties or premiums on forest products and NTFPs as prescribed in Article 55 of Forestry Law (RGC, 2002b); and, (iii) Terms and conditions in an approved Community Forest Management Plan. Based on the Community Forest Agreement, a CF Community have the rights to plant, manage, harvest forest products and NTFPs and sell tree species as approved in a Community Forest Management Plan.

In Cambodia, each CF Community is led by a Community Forestry Management Committee. The Community Forestry Management Committee's members are selected from the CF members through election using secret ballots. The election should be free, fair and just and participated by at least 2/3 of the members of the CF members during a public meeting. A candidate who got more votes will be nominated as head of the Community Forestry Management Committee and the candidate who won the second highest votes shall be nominated as deputy head of the Community Forestry Management Committee. The local authority or commune councils and Forestry Administration Cantonment shall be invited to observe the election.

The national and international non-organization, development partners, relevant stakeholders, civil society, local community and local authorities (Provinces, Districts and Communes), and the Forestry Administration has recommended to the MAFF to issue a Prakas (Proclamation) on the establishment and management of community forestry areas. About 339 CF sites across the country was recognized by MAFF. These covered 336,209 hectares of the total forest in 2017 equivalent to approximately 4% of the total forest in Cambodia (Figure 4).

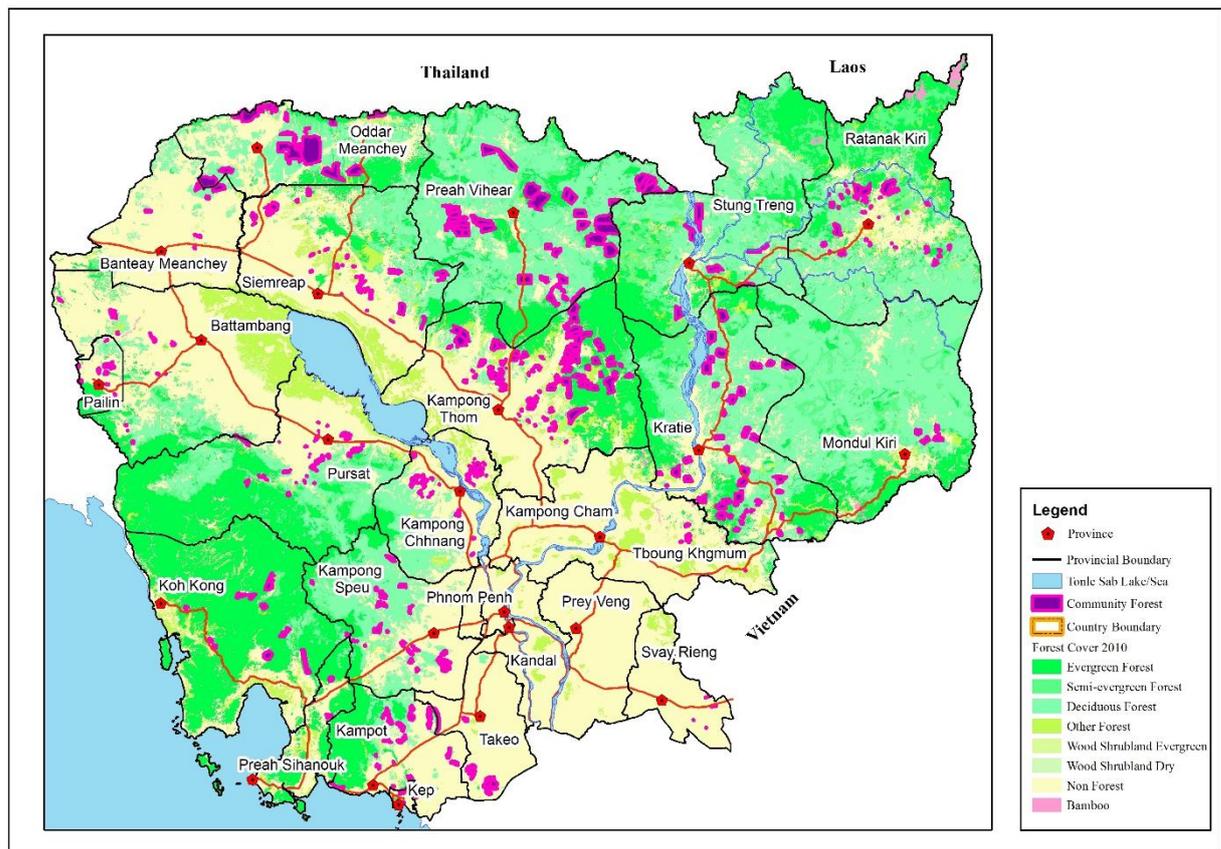


Figure 4: Map of Community Forestry in Cambodia (ODC, 2017)

3.4 Community Forestry Guideline

The CF guideline is intended to provide broad strategic and operational guidance to community forestry in Cambodia, in support of the policy direction expressed by the RGC to embrace and promote community forestry. Specific objectives of the guideline are: (i) To introduce key community forestry concepts and methods relevant to promoting community forestry in Cambodia; (ii) To provide a framework for participation by local communities in the sustainable management of forest resources, by conveying to communities the legal rights and responsibilities for managing, using, and benefiting from designated forest areas in which they have an active interest and dependency, (iii) To guide the mobilization and strengthening of community-based organizations for planning, implementation, monitoring and evaluation of community forestry, recognizing and respecting cultural traditions and knowledge in relation to forest use and management, and including the integration of women in decision-making; (iv) To assist in clarifying organizational roles and relationships and to promote coordination and cooperation among RGC agencies, development cooperation agencies, non-governmental organizations, and the private sector in the development of community forestry, (v) To accelerate

the introduction of new, locally appropriate techniques for improving forest production (such as agroforestry, improved swidden, seedling production, bamboo and rattan, propagation, forest intercropping and NTFP production, etc.); and (vi) To promote private investment in association with community forestry (such as commercial forest plantations, NTFP production and market development, private seedling production, and other market oriented enterprises which can complement and strengthen community forestry.

Local-level planning and mobilization of community forestry usually proceeds through a series of

progressive steps. The steps provided general recommendations and guidance regarding activities, procedures, and sequencing in local-level community forestry planning. However, the exact set and sequence of activities may vary. The steps may be followed by any group or agency that is involved in assisting communities that are developing management plans for their community forests and seeking government approval for them. Such agencies may also facilitate the process of community forestry designation and provide ongoing technical and other support. Steps in local level planning included: (i) Preparation, (ii) Local orientation, (iii) Community Organization, (iv) Information collection, (v) Formation of VFC/CFA, (vi) Designation of community forestry, (vii) Community forest management planning, (viii) Community forest implementation, conflict resolution, monitoring and evaluation, enforcement.

Chapter IV

Role of Cambodia Community Forestry in Forest management and Rehabilitation

4.1 Role of Community Forestry in Reducing Forest Dependence

This chapter presents the forest management and rehabilitation through community forestry. In community forestry, the forest user groups control and manage the local forest by their own. These people represent a significant resource that may play a role in the sustainable management of the forest resources and can be activated by establishing tenurial rights and appropriate management systems. The community forestry includes formalized customary and indigenous processes as well as government-led initiatives (Bock, 2012). In addition, community forestry covers social, economic and conservation dimensions in a range of activities including decentralized and devolved forest management, smallholder forestry schemes, small-scale forest based enterprises and indigenous management of sacred sites of cultural importance (FAO, 2006). The most important role of community forestry in Cambodia is to reduce the pressure on forest from the local people. To reduce the level of dependence on the forest, several interventions were introduced in the community forestry: agroforestry practices, home garden, and community saving group.

4.1.1 Agroforestry

Agroforestry is a collective name for land-use systems and technologies where woody perennials (trees, shrubs, palms, bamboos, etc.) are deliberately used on the same land-management units as agricultural crops and/or animals, in some form of spatial arrangement or temporal sequence. In agroforestry systems, there are both ecological and economical interactions between the different components¹. The benefit from agroforestry also include: generating multiple livelihood and environmental benefits, as it can help to mitigate climate change and help farmers adapt to extreme and variable weather (IPCC, 2019); supports tree-related ecosystem services, such as regulation of water and sediment flows; soil carbon and nutrient cycling; and providing habitats for biodiversity. Integrating trees in agricultural systems can help reduce the impacts of climate change on agriculture and, inversely, decrease agriculture's contribution to the phenomenon (FAO, 2015). Sourcing wood products from on-farm production decreases the need to cut down trees from the forests, thus reducing the rate of deforestation, which is one of the main factors contributing to climate change. Better management of soil nutrients reduces the use of fertilizers,

¹ Source: <http://www.fao.org/forestry/agroforestry/80338/en/>

another significant source of GHG emissions. Trees planted in agroforestry systems contribute to climate change mitigation through carbon sequestration. By using wood-fuel from agroforestry systems, people can meet their energy needs. Agroforestry also provide shade and cooler environment to sensitive crops or animals resulting to higher yields and increasing resilience of agriculture to climate change. The introduction of agroforestry in Cambodia is relatively new. Cambodia, through the IRD, other institutions of the government and NGOs recently tested several models. IRD piloted agroforestry models funded by Asia-Pacific Network for Sustainable Forest Management and Rehabilitation (APFNet) (Figure 5).



Figure 5: *Agroforestry study site in Darey Chakthlork community forestry, Kampong Spue province*

The project “Integrated Forest Ecosystem Management Planning and Demonstration Project in Greater Mekong Sub-region”, funded by APFNet has implemented agroforestry model in Damrey Chakthlork Community Forest to address the degradation in the agroecosystems. The agroforestry farm was planted with cashew, macadamia, pomelo, sweet bamboos and bananas as upperstory crops and vegetables (eggplant, pumpkins, gourd, cucumber, string beans) as understory crops. The monitoring indicates that soil erosion has gradually reduced. A combination of crops like sorghum and elephant grass, lemongrass, moringa and mango are reportedly effective to prevent soil runoff. The understory grasses are effective to cushion the impacts of raindrops to the soil surface. Denser land covers obviously provide better protection of the land to soil erosion during rainy season compared to relatively open space. In barren areas, the raindrops directly hit the surface of the ground causing a splash that increases the transport of soil particles and carried by surface runoff downhill and ultimately causing sedimentation of water tributaries. During dry season, the vegetation further provide protection by minimizing

surface evaporation. However, the economic return and soil nutrient improvements are the most important benefits from agroforestry as learned from the models tested. The agroforestry model was highly acceptable to local farmer as the technology is compatible to the local practices.

4.1.2 Home Garden

Home gardens can be described as a mixed cropping system that combines vegetables, fruits, crops, spices, herbs, ornamental and medicinal plants as well as livestock that can serve as a supplementary source of food and income (Figure 6). Home garden is introduced in the community forestry in Cambodia to provide alternate income for community members and reduce pressure to the forests.



Figure 6: *Home garden practice of farmer in Kraing Serey village, Kampong Speu.*

The home garden technology was tested in some households under the project “Scaling up home garden for food and nutrition in Cambodia”. The project integrated horticulture with aquaculture and poultry production. The farmers were supported with agricultural inputs and training in establishing home gardens. Farmers reported that because of the project, their families were able to eat more vegetables and fish. The benefits of the project include producing own foods and savings from marketing; seeds provided by the project, agricultural inputs; and the skills on chemical-free farming. Second, their income has improved by selling excess vegetable production. The production has increased two to three times compared to the past five years of farming. Farmers sold about half of the vegetables they produce, unlike before where their production is only enough for home consumption. A third impact of the project is the savings on health care costs as the family members are healthier due to the improved food availability. The home gardens have improved and diversify the diets of the farmers by consuming more nutritious foods like vegetables and fish.

4.1.3 Formulation of Community Saving Group

The community forestry in Cambodia generally have limited livelihoods due to lack of capital to start their income-generating activities. The CFs mostly comprise of poor farmers who do not have enough money to expand or start a livelihood project. Usually, they resort to illegal cutting and selling timber as alternate income-generating activities. Saving Groups are established in several CFs to help the famers access capital and be able to expand their livelihoods activities, rather than illegally cutting the timber for sell. The fund for the saving group is managed by elected committees. Regulation and loan contract were formulated as guarantee to the loans of the borrowing members. The general requirement of the saving group is to become a member of the group before the members can access the loan. The specific conditions of the loans depend on the internal rules agreed during the group establishment. Different saving group have different regulations. The sources of capital of the group comes from the monthly contributions of its members. Before receiving the loan, the borrowers need to sign or affix their thumbmarks on the loan contract.

In Bos Thom village of Cambodia, savings group (3 Saving Groups) were established providing loans to community forestry members to start a livelihood and reduce their dependence on the forest (Figure 7). The committee were provided a seed grant of USD 5,000 that can be lent to its 25 members. The maximum loanable amount that each member can borrow is limited to \$250 so that others can also avail the fund. Each group has a leader who is responsible in collecting the payments and the interests. The savings group usually impose 1.5% annual interests from the amount borrowed. The revenue generated from the interests generated is allocated to four: (i) 65% of intended for additional capitalization or for forest development; (ii) 25% for the committee; (iii) 5% for administration cost; and (iv) 5% for contribution to the commune.



Figure 7: *One of the communities saving group in Samaki Prechic, Koh Kong province.*

The households who benefited from the savings group planted some high economic value fruit tree seedlings (i.e. lemon, orange, mango) and short-term crops (i.e., long bean, eggplant, etc.) in their home garden. The plants produced support the food requirement of the family. But aside from food, the excess production was sold to support the household expenses.

Another scheme, Community Forestry Credit (CFC) scheme, was initiated by RECOFTC. The CFC started in 2015 with five communities in Cambodia's Prey Lang landscape, one of Asia's important wildlife hotspots. It has since expanded to 21 communities, and the scheme is growing. The program provided seed fund that the community members used to invest in their landscape. Community members make the decisions about where and how to invest the funds. For example, some CFs give priority to support patrolling activities to stop illegal logging. The credit scheme is a novel program in Cambodia that allows communities to finance forest management by themselves. The initiative is well supported to the women. More than 50 percent of the 742 members of the savings group are women. When women participate in the community forestry credit scheme, they were able to get involved in the CF management process because they get informed about what is happening in their organization and participated in deciding how the credit scheme funds will be used to best manage the forest. From the initiative, the CFs now have a budget to pay the patrol groups who are protecting the forests. This initiative has helped in improving the health of the forest and in generating income for the community.

4.2 Ecosystem rehabilitation and forest restoration

The community forestry plays important role in the rehabilitation of ecosystem and restoration of the forest restoration using silviculture techniques, Miyawaki method, traditional and

indigenous practices. Some of these restoration techniques were tested in Cambodia with promising results.

4.2.1 Silviculture Technology

Silviculture is the art and science of managing the growth, health and quality of forests to meet the different needs and values of landowners and society, such as wildlife habitat, water resources, timber, rehabilitation and recreation. Silviculture is one of the restoration approaches for forest restoration and management in some CFs. It involves different types of silvicultural treatments such as thinning, harvesting, planting, pruning, prescribed burning and site preparation. Thinning is designed to increase the growth, quality and composition of the stand. Selective harvesting using regenerative methods are applied to mature stands in order to establish a new age class of trees. Regeneration methods are either coppice, even-aged or uneven-aged.

Enrichment planting, a common silvicultural practice in Cambodia in improving and rehabilitating the forest. Enrichment planting generally consists of transplanting nursery-grown seedlings or wildlings in the natural forest openings, canopy gaps created by felled trees, or lines or strips opened specifically for enrichment planting. It is usually appropriate in some locations where natural regeneration of desired species is insufficient or irregularly distributed, or to favor particular species that do not regenerate easily. Successful enrichment planting requires the provision of adequate light conditions, proper supervision, and follow-up maintenance (specially to manage light conditions and reduce competition). Species suitable for enrichment planting are likely to: produce timbers of high value; have rapid growth, low crown diameter, regular flowering and fruiting, wide ecological ranges, tolerance to moisture stress and good natural stem form; and be free of significant pests.

Silviculture was applied in rehabilitating the forests of a project funded by APFNet in Damrey Chakthlork Community Forest of Dokpor village. The CF of Dokpor village is a tropical dry forest comprising of deciduous and evergreen tree species, such as *Dipterocarpus obtusifolius*, *Pterocarpus macrocarpus*, *Phyllanthus emblica*, *Antidesma ghaesembilla* in the tree/top layer, *Melienthes suavis*, *Diospyros ehretioides*, *Mesua ferrea*, *Memecylon edule*, *Catunaregam tomentosa*. Other herbaceous species also abound such as *Curcuma alismatifolia*, *Scoparia dulcis*, *Ludwigia adscendens*, *Costos speciosus*, *Morinda tomentosa*. Due to intensified harvesting during and after the civil war, there was a continuous conversion of the forest for rice production resulting to its degraded condition. There are some seedlings that regenerated but a big proportion of them sprouted from roots and are mostly deformed. The pilot restoration

project in Damrey Chakthlork CF funded under the Lancang-Mekong project, assessed the condition of the forest before applying the silvicultural treatments (Figure 8).

Figure 8: **Measuring the trees in pilot restoration plots in Siem Reap province**



The community forestry is mainly involved in the planting and maintenance of the trees. The head of community forestry led the CF members in planting and maintenance of the trees. The head of Damrey Chakthlork CF believes that silviculture will generate the following benefits: producing high value timbers; promote rapid growth of trees, improve the form of trees; and control pests and diseases. The experience in Malaysia in applying silvicultural treatments to forest stands indicates an increase in the quality of the stand and generates high economic benefits (Safa et al., 2004).

4.2.2 Miyawaki Method

A Miyawaki method of forest restoration takes into account ecological successions, and allows to immediately plant an advanced forest through the choice of the most adapted plant communities (Miyawaki, 2020). Miyawaki is a technique pioneered by Japanese botanist Akira Miyawaki, that helps build dense, native forests. The approach is supposed to ensure that plant growth is 10 times faster and the resulting plantation is 30 times denser than usual. It involves planting dozens of native species in the same area, and becomes maintenance-free after the first three years. In this method, several steps are applied in restoring the forest. The first tropical trials using the Miyawaki method started in 1991 in the Bintulu (Sarawak) Campus of Universiti Pertanian Malaysia (currently known as Universiti Putra Malaysia (UPM)). Eighteen years later, plots restored by the Miyawaki method showed better forest structure and the planted trees were taller, wider diameter at breast height (dbh) and greater basal area compared with those of adjacent naturally regenerating secondary forest (Heng et al., 2011). Recovery of the soil fauna is particularly rapid (Miyawaki, 1993). Experiments in northern Brazil, however, were less

successful: fast-growing economic pioneers were used in the species mix and these rapidly overtopped and suppressed the growth of the late-successional native species (Miyawaki & Abe, 2004). Although the high planting density rapidly results in a closed canopy, it can sometimes have undesirable effects. Competition among the closely planted trees can result in high initial mortality and low dbh (more than 70% of trees had a dbh of less than 10 cm when measured 18 years after planting) (Heng et al., 2011).

In Cambodia, the Miyawaki method was first applied in faculty of forestry of Royal University of Agriculture (RUA) in 2011 (Figure 9). Around 10,000 tree seedlings were planted with mixed species on the land area of 2,500 sqm. The purpose of adopting this method was to restore the ecology in the university and to set as a model for scaling up to other areas in Cambodia. There are two universities in Cambodia that adopted the method based on the experience of the RUA: Chea Sim University of Kamchaymear and Heng Samrin Thbong Khmum University. These two universities produced dense forest in the experimental watershed area.



Figure 9: *Experience of Miyawaki practice in Darey Chakthlork CF*

4.2.3 Traditional Culture and Religion

Traditionally, nearly 95% of total population in Cambodia are Buddhist, respecting the monks and avoid harming the things belonging to the monks. The reverence to the monks is a success factor of conserving the community forests like the Monks' Community Forest (MCF) in Oddar Meanchey. The MCF is an 18,261 ha stretch of evergreen forest in northwest Cambodia. MCF was created in response to threat to deforestation from economic concessions, illegal logging, and land encroachment. Initiated by Buddhist monk Venerable Sun Baluthhe, the monks of the Samraong Pagoda acquired legal protection of the forest in 2001, and have since established patrol teams, demarcated forest boundaries, raised environmental awareness among local communities, organized community patrol volunteers, developed co-management committees with local villagers, linked with government authorities and NGOs, established Cambodia's largest community forest, attracted external support for patrolling, and significantly reduced illegal logging activities. The MCF considered the traditional culture in Cambodia (i.e. belief and respect) as a foundation in restoring and conserving the forests. Bun Saluth quickly gained the support of volunteers from his pagoda and the local community to attain his vision. The people organized themselves into patrols groups to monitor the forest to reduce illegal activities. Soon after, the monks of the pagoda acquired legal protection of the forest and organized patrol teams made of volunteers. The CF identified the forest boundaries, developed co-management committees (which included local villagers), collaborated with government authorities and NGOs, attracted external funding, and raised awareness of the need for protection. The MCF became the country's largest community forest and forest crime were abated. Cloths from Monks' robe were wrapped around the tree to protect them from being cut since the Khmers respect the monk's cloth as representation of Buddha. The prevailing belief that disrespecting the said norms will result to misfortune such as suffering and death (Figure 10).



Figure 10: *Monks in Cambodia's Monks Participated trees plantation in Damrey Chakthlork*

4.2.4 Indigenous knowledge

The indigenous peoples and local communities in Cambodia are affected by global environmental change because they directly depend on the environment for livelihoods and basic needs. Safeguarding and restoring ecosystem is critical in ensuring food, health, well-being and resilience of forest-dependent communities. Traditionally, Cambodians plant trees around their houses, farms, and community for shelter. Very old trees were protected believing of the spirits that live in these trees.

The contribution of indigenous knowledge on the conservation of natural resources is highlighted by the Bunongs in Mondul Kiri province (Figure 11). The Bunongs traditionally depend on the forest as part of their culture. Their livelihood strategies are based on deep ecological knowledge of the native trees and plants, fish and other animals, rivers and land. They traditionally hunt, raise buffaloes, cows, pigs, chickens, fish in rivers and ponds, and collect various forest products and fish for food, construction and medicinal purposes. Despite the sedentary agriculture practiced by the Bunongs, the forest remain a significant source of foods especially during the periods of stress. Bunongs are animists and their practices are shaped by the need to provide access to, share and make the best use of natural resources. Social values such as empathy and mutual respect needs to be applied to human beings and human relations. These relationships are believed to be controlled by the spirits that inhabit the mountains, especially in forest places or trees, salt licks, waterfalls, or deep pools in rivers or ponds. Unfortunately, many indigenous practices in Cambodia are not well documented highlighting the need for ethnographic researches. Through time, however, these beliefs are slowly being eroded as many Bunongs became strongly linked in the market economy and increasingly practice unsustainable harvesting of natural resources brought by the increasing influence of commercial trading.



Figure 11: *Indigenous people contributing to forest conservation in Cambodia*

4.3 Rural Development

For many years, the people and forests in Cambodia have long interdependent relationships. The economy of Cambodia largely depends on the use of its natural resource, and is dominated by the agrarian sector (Un & So, 2009). Traditionally, the people in rural areas are involved in harvesting, processing and marketing of different forest products. Conserving the forest contributes to enhancing the welfare of the communities living close to the forest and contributes to poverty reduction in developing countries (Bhandari et al., 2019). Forest Act (1993) defined Community Forestry as an autonomous body that can develop, conserve, use and manage the forest and sell and distribute the forest products independently by fixing their prices according to operational plan (Bampton & Cammaert, 2006; Dhakal & Masuda, 2009). Majority of Cambodians use fuel-wood, charcoal, agricultural residues collected mostly from forest areas close to their villages as source of fuel. Under the Community Forestry guideline, the government granted the Community Forestry the right to collect products from the community forests or commercially utilize the forest products in the community forest in accordance with the CF Management Plan. The community forestry therefore can potentially support rural development and a source of income for villagers, provide foods and traditional medicine, increase resilience of community to climate change, and can provide jobs and business opportunities to the communities (Figure 12).



Figure 12: *Kroeng Indigenous group participated patrolling resin trees, Ratanakiri province.*

In Kang Meas Community Forestry, a community member earned a living by trading resins bought from the villagers. Resin is one of the main sources of income among villagers. Villagers or community members have traditional ownership of 100 to 1,000 resin trees that are located in the community forests. This informal ownership is founded on tradition and the “owners” enjoy the exclusive rights (instead of communal) to harvest resins from the resin trees. In turn, they also exercise responsibility of patrolling these resin trees. They claimed that they are more motivated to patrol and effectively protect their own resin trees from poachers.

4.4 Biodiversity Conservation

Biodiversity refers to the different life forms or varieties of life and the care and management of biological materials are called biodiversity conservation. Community forest management is one of the concrete demonstration of promoting the green economy in Cambodia. It was initiated in Cambodia to mitigate increasing deforestation and forest degradation and address the negative impacts on rural livelihoods. Different studies are conducted by researchers to assess the role of community forest on biodiversity conservation in Cambodia focusing on the analysis of biomass, carbon stock, biodiversity index, change in land uses and land cover, wild fauna. There is evidence that the community forestry management played a great role in biodiversity conservation. The improvement of the biomass, carbon stock, growing stock, soil organic carbon, forest cover, forest products and material benefits from forest are linked to effective community forestry management. The effective conservation of biodiversity, however, is also linked to the participation of the society (Figure 13).



Figure 13: *Community representative and local authorities to resolve community forestry issues, Kampong Speu province.*

Various studies have provided the community forestry a workable model for controlling deforestation and forest degradation. There are evidences showing the contribution of community forestry in successfully reducing resource degradation and conservation of biodiversity. The implementation of community forest management has improved the forest condition and biodiversity of many community forests in Cambodia. Community forestry has effectively protected and rehabilitated some forest habitats that encourages the survival of birds and animals. Operational plans are formulated that include prohibitions against hunting. The community members voluntarily gets involved in community meetings and participated in the fencing and planting in the community forests.

CHAPTER V

Case Study of Community Forestry in Cambodia

5.1 Experience of Damrey Chakthlork Community Forestry

This chapter presents the experience of Damrey Chakthlork Community Forestry on forest restoration. Damrey Chakthlork Community Forestry is located in Dokpor Village, Krangdeivay Commune, Phnom Srouch district covering a total area of 1,452 hectares. It was selected as the demonstration site for the restoration technologies and integrated management under the project “Integrated Forest Ecosystem Management Planning and Demonstration Project in Greater Mekong Sub-region” funded by Asia-Pacific Network for Sustainable Forest Management and Rehabilitation (APFNet). Aside from the forest restoration, an agroforestry farm development was also implemented in the CF.

The accounts of the community members revealed the positive contribution of the CF to their lives. One of the CF members shared his thoughts on the Damrey Chakthlork CF:

“In the past, my family depended on the forest near our home to find the food, and sometimes I cut timber for sell. We didn’t have other income, other than going to the forest. We cut timber and clear the forest for growing rice. We cleared the forest for planting cash crops and then move on to another area when the site is not productive. We are not concerned about the forests until the forest around our village were depleted. Then, we gradually experienced very hot temperature in the village including drought and strong winds. We realized that we had destroyed the forest that for a long time have protected our village. Now we deserve to suffer this unfavorable condition. Luckily, Damrey Chakthlork Community Forestry was established and I gladly joined the CF. The community forestry is supported by the IRD in demarcating the community boundary (Figure 14) and conducting patrol activities. I am also part of the patrol team. The interventions have reduced the illegal activities in the community forestry. The project encouraged the community members to engage in agricultural activities rather than depend only on the forest. I agreed with the project idea and the community action plan because engaging with agricultural activities may provide food sufficiency to my family and earn more income. Now, my family depend on the land area of about 1 hectare behind our home for cultivating crops. For these few years, my family and other villagers have lesser time spent in going to the forest because everyone are busy tending their farm. We only go to

the forest to patrol, looking for herb, vegetable, etc., instead of cutting timber. In addition, my family and other community members also participated in planting and restoring the forest inside Damrey Chakthlork Community Forestry. We believe that few years more, the forest in our community will return back to the same condition as in the past”.



Figure 14: Restoration and community protected sites in Damrey Chakthlork Community Forestry

Damrey Chakthlork Community Forestry also facing shortage of water during dry season. The APFNet project stabilized the dike of the community pond and a water tank was built equipped with a water pump (Figure 15). A water pipe was laid out connecting the main water line to the cluster of houses. The water pipe spans a total of 2 kilometers connecting 50 households. Five water user groups were set up to manage the water use. The community expressed gratefulness to the project for getting access to water during dry season. According to one of the community members,

“I never dreamed that my village would have a water system. Out of excitement, I couldn’t sleep a night before the water system came. With the installed water, I started planting new varieties of vegetables and raising chickens and ducks. I am really grateful to the community and the APFNet that supports our village.”

The project has developed one of the farms of the CF member for woodlot. Strips of the forest were thinned and planted with shade tolerant crops such as galangal and turmeric (Figure 15). The interplanting of cash crops in the woodlot aims to test the feasibility of producing cash

crops under the forest.



Figure 15: *Accessible to water system in Damrey Chakthlork Community Forestry*

CHAPTER VI

Lessons Learn and Recommendation to Improve Community Forestry Development

6.1 Key Issue for Community Forestry Development

Although the community forestry is important for forest conservation and restoration, few issues of community forestry were noted. The experience of the community forestry in Cambodia highlights several issues that need to be addressed. Too much emphasis on protection rather than sustainable use can put communities at a disadvantage and will have a negative impact on the poor. The other issues in the community forestry in Cambodia needing attentions include: (i) Livelihood, equity and gender issue, (ii) Governance, monitoring, and evaluation system, (iii) Subsistence versus commercialization, (iv) Policy and legal framework, (v) Community forestry management issue, (vi) delivery of support services, and (vii) technical support.

6.1.1 Livelihood, Equity and Gender Issue

Community forestry has a positive impact on forest resources. But with regard to its impact to the poor and disadvantaged, needs further assessment. Poverty alleviation, equity and livelihoods are required to mitigate the negative impacts of community forestry. However, very few studies were made that assess how the community forestry improved the livelihoods of the poorest sectors of society. Paudel (2014) noted that community forestry did not benefit the poorest of the poor due to weak relationship with the forest. Therefore, one important concern of community forestry is how to strengthen the linkages of community forest with the poorest of the poor. Economic developments and increasing market influence increases inequity in community forests. Many of the community forestry are in the process of securing registration, but registration of many CFs have “stalled” due to lack of support after the termination of the projects that initially supported their registration. This represents a lost opportunity and leaves the poor rural communities in a precarious position.

Community forestry in Cambodia increases the participation of women at the community level, but in some CFs, has made little contribution in addressing issues related to women’s health. Women should be provided with opportunities and means that directly provide them health benefits, improved nutrition and education e.g., training on smokeless stove, nutrition and childcare, primary health education, drinking water facility, scholarships to girls and low caste children, literacy classes etc.

6.1.2 Governance, Monitoring, and Evaluation System

Governance refers to elements such as: the foundation of state power, the organization of elections, the right to represent the rule of law, the transparency and accountability of finance and public services, and efficiency. Good governance increases the opportunity for sustainable forest management. Some CFs have limited capacity in terms of good governance. Some forest projects have developed their own monitoring and evaluation systems, mainly because forest users are responsible in implementing community forestry action plans. So far, there is no system of monitoring the progress of implementation of the CFs in Cambodia. Monitoring and evaluation is regarded as the weakest part of some of community forestry in Cambodia.

6.1.3 Delivery and Support Services

The number of forest users and areas under community forestry is growing in Cambodia providing benefits to thousands of people, mainly in the rural areas. The forest user groups still need institutional, financial and technical support from Forest Administration and forestry-related research institutions. The demand for these services has created considerable workload to the forestry staffs who are already saddled with protection and other responsibilities. Developing a mechanism for sustainable support to the forest user groups in community forestry is a relevant issue that needs attention.

6.1.4 Community Forestry Management Issue

While many community forestry are generally successful in their implementation, some are still beset with problems in the management and development of their CFs. FA (2006) identified the following outstanding issues confronting the CFs:

- Conflicting land uses
- Lack of knowledge on the process of formal recognition of CF development;
- Continued high dependence on forests by some CF members;
- A lack of confidence between the CF community and the forestry staffs;
- Lack of technical support to CF stakeholders in implementing the CFs;
- Inadequate extension program and poor communication;
- Poor identification of the CF members due to emigration and ethnic diversity; and
- Lack of nationwide coordination among the CF stakeholders

6.1.5 Financial Issue

Due to increasing awareness of the environment, international conventions and market globalization, most countries are becoming conscious to manage their forests on a sustainable

manner. However, progress is hindered by a lack of suitable financing. Cambodia currently takes an *ad hoc* approach to financing, using a small project grants and subsidies, that cover only few activities. Moreover, there is a continued reliance of CFs on government budgets and overseas development assistance instead of generating internal funds.

6.1.6 Technical Support

Lack of technical support is one of the major concerns for community forestry development. Most of community forestry are wanting in technical support in Cambodia. For instance, there is limited technical support in terms of monitoring the community forestry resources; development and implementation of laws and regulation; fund management; benefit sharing; and so on.

6.2 Recommendation to Improve Community Forestry Development

This part provides broad recommendations for community forestry in Cambodia. The recommendations are not specific to any institution or program, but are general and should apply to both public and non-governmental organizations.

1. Ensure that the potential benefits of community forestry will benefit the households by addressing the limited access to land and forest resources by disadvantaged groups. There is a need to focus supporting community forestry sites that have started the legal registration process. These CFs need to be given assistance to obtain full legal status;
2. Part of the forest user group's fund should be utilized in compensating women for the additional burden given to them by the community forestry;
3. Building effective governance of Community Forestry. In some cases, corruption still prevails at the community level on benefit sharing. Hence, generating income and revenue from community forestry have to be transparently recorded and communicated to the members of the CF;
4. Promote inclusiveness of community forestry especially to the poorest of the poor. In order to reduce the potential negative impacts of CF on poor and vulnerable households, and to maximize opportunities for their inclusion, the following measures should be taken into account: (i) identify and monitor impacts of CFs on the poor; (ii) during CF establishment, explore how the introduction of CF might displace or negatively affect the poor households and implement mitigation measures e.g. providing pro-poor livelihood interventions; creating rules and by-laws within the management plan that provide support to poor households (especially access rights, waiving of fees etc.); and helping poor groups to articulate their concerns to management / executive committee members.

There is a need to therefore identify and introduce specific measures within CF and implementation that increase benefits and reduce transaction costs to poor households;

5. Adding value to natural resources through sustainable commercialization measures. Since its inception, Community forestry in Cambodia has been strongly focused on meeting subsistence needs and the current legal framework provides a number of obstacles to commercialization (such as royalty fees, transport levies and the prohibition of commercial use until five years after the signing of CF agreements). Furthermore, markets for forest products tend to be poorly developed and in some cases dominated by few, powerful traders. NTFPs have been identified as an important income source and “safety net” for poor householder. For this case, there is a need to: (i) identify established CF sites with potential for forest product production and marketing and support the development of management plans for sustainable harvesting, and (ii) Scale up support to NTFP marketing at local, regional and national level, through initiatives such as the NTFP-EP and the NTFP Working Group; and
6. Look at ways to expand and diversify financing mechanisms and financial resources. At the same time, the contribution of forests to economic development, human welfare and the environment is increasingly recognized as important and must be enhanced.

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