Forest Investment Program
Cambodia's Investment Plan

DRAFT FOR REVIEW

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Abbreviations

ADB	Asian Development Bank
ASSDP	Agricultural Sector Strategic Development Plan
BCC	Biodiversity Conservation Corridors
CBD	Convention on Biological Diversity
CBR+	Community Based REDD+
CCCSP	Cambodia Climate Change Strategic Plan
CF	Community Forestry
CI	Community Fisheries
CITES	Convention on International Trade in Endangered Species of Wild Fauna and Flora
CPA	Community Protected Area
DoE	Department of Environment
DoWRaM	Department of Water Resources and Meteorology
EIRR	Economic Internal Rate of Return
ELC	Economic Land Concession
EMF	Environment Management Framework
FA	Forestry Administration
FAO	Food and Agriculture Organization of the United Nations
FCPF	Forest Carbon Partnership Facility
FIP	Forest Investment Program
FIRR	Financial Internal Rate of Return
FLEGT	Forest Law Enforcement Governance and Trade
FLR	Forest and Landscape Restoration
FNPV	Financial Net Present Value
ENPV	Economic Net Present Value
FRA	Forest Resource Assessment
FREL/FRL	Forest Reference Emission Level/Forest Reference Level
GDANCP	General Directorate of Administration for Nature Conservation and Protection
GDA	General Directorate of Agriculture
GDP	Gross Domestic Product
GERES	Groupe Energies Renouvelables, Environment et Solidarités
GHG	Greenhouse Gas
GHGI	Greenhouse Gas Inventory
IFC	International Finance Corporation
INDC	Intended Nationally Determined Contribution
IPCC	Intergovernmental Panel on Climate Change
JV	Joint Venture
JCM	Joint Crediting Mechanism
MAFF	Ministry of Agriculture, Forestry and Fisheries
NAMA	National Appropriate Mitigation Action
MEF	Ministry of Economy and Finance
M&E	Monitoring and Evaluation
MIME	Ministry of Industry, Mines and Energy
MLMUPC	Ministry of Land Management, Urban Planning and Construction
MoE	Ministry of the Environment
MoWRaM	Ministry of Water Resources and Meteorology
MOU	Memorandum Of Understanding
MME	Ministry of Mines and Energy
MRV	Measuring, Reporting and Verification
NC	National Communication to the UNFCCC
NDC	Nationally Determined Contribution

NFMS	National Forest Monitoring System
NPASMP	National Protected Areas Strategic Management Plan
NRS	National REDD+ Strategy
NSDP	National Strategic Development Plan
PA	Protected Area
RAMSAR	Convention on Wetlands
REDD+	Reducing Emissions from Deforestation and forest Degradation; and the role of conservation, sustainable management of forests and enhancement of forest carbon stocks.
RGC	Royal Government of Cambodia
SFM	Sustainable Forest Management
SLC	Social Land Concession
UNDP	United Nations Development Program
UNFCCC	United Nations Framework Convention on Climate Change
UNFF	United Nations Forum on Forests
UN-REDD	United Nations Collaborate Initiative on REDD+
USD	US dollars
WB	World Bank

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Executive Summary

Forest Investment Program Summary of Country Investment Plan Proposal		
Country/region:	Cambodia	
FIP Funding Request (in USD):	Loan:	Grant: USD 24 Millions
National FIP Focal Point:	Dr. Khorn Saret, Head of Department of Wildlife and Biodiversity Forestry Administration Ministry of Agriculture, Forestry and Fisheries	
National Implementation Agency:	General Directorate of Administration for Nature Conservation and Protection Ministry of Environment Forestry Administration Ministry of Agriculture, Forestry and Fisheries	
Involved MDBs	Asian Development Bank (ADB) and World Bank (WB)	
MDB FIP Focal Points	Ancha Srinivasan Principal Climate Change Specialist asrinivasan@adb.org	Gerhard Dieterle (FIP Program Manager) gdieterle@worldbank.org and Meerim Shakirova (Operations Analyst) mshakirova@worldbank.org
MDB FIP TTLs.	Mr. Bruce Dunn, ADB Principal Environment Specialist bdunn@adb.org	Mr. Robert R. Davis Senior Forestry Specialist rdavis1@worldbank.org

Description of the Investment Plan

a) Key challenges related to REDD+ implementation in Cambodia

1. Managing growth and development while minimizing impacts on natural resources - including forests - is a key challenge. The major causes of deforestation and forest degradation are driven to a large degree by factors outside the forest and forest sector. Granting land for economic land concessions (ELCs) for expansion of agriculture investments and for social land concessions (SLCs) for poor and landless families have had major negative impacts on forest resources. Weak forest governance and implementation of land law, together with a lack of state land registration and forest estate demarcation, have further impacted forest resources – resulting in unauthorized encroachment of forest land, unauthorized logging, and unsustainable harvesting of forest and non-forest timber products. Declining timber supply from clearing forest land and lack of enabling conditions have

had a negative impact on investments in sustainable forest management and created a significant gap between supply and demand. Without new initiatives, this can be expected to increase in the future and create additional pressure on protected forests.

2. Recent jurisdictional changes in 2016 and 2017 have transferred all protected areas plus additional areas designated as Biodiversity Conservation Corridors from the Ministry of Agriculture, Forestry and Fisheries (MAFF) to the Ministry of Environment (MoE), while ELCs previously under MoE have been transferred to MAFF. More than four million ha have been transferred between the two ministries. Registration and demarcation in the field have yet to be done. The administrative system is in the process of adjustment but with a significant need for additional staff, training and capacity building as well as physical infrastructure at the field level. All protected areas (PAs) are still in need of management plan and only one out of 51 PAs has been divided according to the zoning stipulated in PA law. With an ongoing decentralization process this creates a very challenging situation for the coming years.

b) Sectors, themes and areas of intervention

3. The Forest Investment Program/ Investment Plan (FIP/IP) aims to support the Royal Government of Cambodia (RGC) in three different areas. Common for the three projects proposals is the aim to support government agencies in defining and developing their new roles - with MoE focused on managing protected areas (project 1), and Forest Administration (FA) focused on managing production forests (project 2) and finally a national level project to support information gathering on forests required for national policies regarding REDD+ and forest policy making in general (project 3). All three projects are aligned with the National REDD+ Strategy and will contribute to the achievement of Cambodia's Nationally Determined Contribution (NDC) as well as the Global Sustainable Development Goals.

4. Project 1: Climate Smart Landscapes through Conservation Corridors will support the RGC to (i) strengthen forest conservation and management, so as to bring a wider range of stakeholders and initiatives to focus on priority issues; (ii) promote ecosystem connectivity through conservation corridors with multiple stakeholders; (iii) improve livelihoods of rural communities and (iv) reduce greenhouse gas (GHG) emissions from the forest sector. This will include piloting landscape management activities for strengthening linkages and management of key forest areas with the recently established corridors designated by the government.

5. Project 2: Reforestation and Production Forests through Public Private Partnerships will support the RGC to establish enabling conditions for investments in the forest sector, increase production forestry, and thus meet the future demands for wood products, including fuelwood. This will take pressure off natural forests. This will include private sector involvement together with opportunities for communities to improve livelihoods through

farm and forest activities, including production and marketing of wood products.

6. Project 3: Implement National Forest Monitoring will support the implementation of a national forest inventory (NFI) as part of the National Forest Monitoring System (NFMS). This will build on existing activities and involve all three agencies responsible for land management - FA and Fisheries Administration (FiA) under MAFF, and General Department of Administration for Nature Conservation and Protection (GDANCP) under MoE. Information will allow Cambodia to collect information on the state of forests, including the seven thematic elements for SFM and improve reporting including for the United Nations Framework Convention for Climate Change (UNFCCC) as well as other international reporting commitments under CBD, UNFF, FAO FRA, CITES, RAMSAR etc. Components two and three will address the need for monitoring ELCs and other forest land users, and pilot a Timber Legality Assurance System (TLAS) as an enabling condition for forest investments.

7. All three projects are exploring new avenues for sustainable development, management and use of natural resources while mitigating climate change and enhancing resilience to the impacts of climate change.

c) Expected outcomes

8. The FIP/IP for Cambodia addresses key challenges for the sustainable management of forests, efforts to mitigate as well as adapt to climate change and enhance the contribution of forests to the economic, environmental and societal benefits for the country. Current institutional environmental governance reform means that the projects aim to catalyze transformational changes and support the government agencies in fulfilling their new role. Project 1 and 2 can be replicated in other places in Cambodia and thus function as pilots for management of PAs and of production forestry.

9. Expected benefits also include improved capacity for governance and more sustainable forest and land management. This will include strengthen capacities for participatory planning, promote clarity about tenure rights for communities and facilitate investments in sustainable climate-smart livelihoods. The transformational impact materializes at three levels: government (national, provincial and commune) will have increased capacity to manage forests in the landscape for multiple benefits; private sector will have enabling conditions and invest in production forestry to reduce the gap between demand and supply; and communities will have secure management control over their lands, improve their livelihoods and participate in commercial activities e.g. agriculture, forestry, ecotourism to enhance their income.

10. The FIP/IP provides three complementary avenues for these changes.

I. Participatory planning for PAs including the new Biodiversity Conservation Corridors and improved livelihoods for forest dependent communities living in and around PAs.
II. Enabling conditions for forest investments with the aim to increase the supply of fuelwood and smaller wood product, while at the same time create jobs and income possibilities for local communities.
III. Generate critical data on the state and extent of forests to facilitate evidence-based policy making for forest and allow Cambodia to expand REDD+ beyond deforestation according to UNFCCC decisions[1] and improve reporting for forest emissions and removals of greenhouse gases (GHG) to the UNFCCC in general[2].

11. The FIP/IP projects will work at both local and national level, and pilot new approaches to natural resource management that address the drivers of deforestation and forest degradation, and support the implementation of strategies prioritized in the National REDD+ Strategy.

[1] UNFCCC Decision 1/CP.16.
[2] National Communications (NC) and Biennial Update Reports (BUR).

Project concepts to be implemented under the investment plan

Project	MDB	Requested FIP Amount (US$ million)			Private Sector Support (US$ million)	Expected Co-Financing (US$ million)	Preparation Grant Request (US$ million)
		Loan[3]	Grant	Total			
Climate Smart Landscapes through Conservation Corridors	TBD	0	14	14		13 including 2 from RGC	0.25
Reforestation and Production Forests through Public Private Partnerships	TBD	0	7	7	TBD	15.4 including 9.8 from private sector investments and 1.8 from RGC	0.25
Implement National Forest Monitoring	TBD	0	3	3		3 including 0.5 from RGC	0.25
		0	24	24		31.4	

[3] Both project 1 and 2 could be partly financed by loans.

1. Introduction

1. The Forest Investment Program (FIP) is one of the three programs of the Strategic Climate Funds (SCF). The SCF supports three targeted programs with dedicated funding to pilot new approaches with potential for scaled-up, transformational action aimed at a specific climate change challenge or sectoral response. The FIP was established in 2009 to support developing countries' efforts to reduce emissions from deforestation and forest degradation by providing scaled-up financing for readiness reforms and public and private investments. It finances programmatic efforts to address the underlying causes of deforestation and forest degradation and to overcome barriers that have hindered past efforts to do so.

2. The objectives of the FIP are to (i) initiate and facilitate steps towards transformational change in developing countries' forest related policies and practices; (ii) pilot replicable models to generate understanding of the links between sustainable forest management (SFM), policy measures and long-term GHG emissions reductions and conservation; (iii) facilitate the leveraging of additional financing resources for REDD+; and (iv) provide valuable experience and feedback in the context of the UNFCCC deliberations.

3. In May 2015, Cambodia was selected by the FIP Sub-committee as one of nine countries to receive $ 250,000 grant to prepare their investment plans. The Ministry of Economy and Finance (MEF) of the Royal Government of Cambodia (RGC) designated the FA of MAFF as the FIP focal point in Cambodia. It has been agreed that the FIP/IP preparation will be undertaken in partnership with the GDANCP of MoE) and the FiA of MAFF.

4. The current FIP/IP was developed through an inclusive process, under the responsibility of the RGC, represented by the MAFF and MoE and with support from the Asian Development Bank (ADB) and the World Bank (WB).

5. The FIP/IP build on the REDD+ readiness process in Cambodia. In 2016 a draft National REDD+ Strategy (NRS) and a Forest Reference Level (FRL) was produced. The latter has been submitted to UNFCCC for technical analysis at COP22 in 2016.

6. Cambodia IP/FIP is structured according to the design document of the Forest Investment Program, FIP Operational Guidelines, and FIP Investment Criteria. Additional information is available in the recommended annexes.

2. Description of Cambodia and Sector Context

7. Cambodia is located in Southeast Asia and covers an area of 181,035 km^2. The population is 15.5 million (2015) of which 98 percent are Khmer, with the remainder being ethnic minorities[4]. Cambodia is home to 24 different indigenous peoples mostly living in the northeastern upland provinces.

Figure 2.1. Map of Cambodia in Southeast Asia

Source: Asian Development Bank

8. Over the last two decades, Cambodia achieved remarkable economic growth and graduated from a low- to a lower middle-income country. In 2015, Cambodia's GDP was about $18 billion and has been increasing at about 7 percent per year since 2010 and poverty rates declined from 50 percent in 2003 to 18 percent in 2012[5]. However, with a low Human Development Index (143 out of 187 countries in 2014) Cambodia still faces many development

[4] UNdata: http://data.un.org/CountryProfile.aspx?crName=Cambodia

[5] World bank: http://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=KH

challenges[6]. Agriculture is the third largest pillar of the Cambodian economy, with about 31 percent of GDP; industry is about 24 percent, and services are about 39 percent (this includes tourism) in 2013[7].

9. Escalating demand for, and pressures on, land and natural resources from increasing population growth, internal migration, and developments in infrastructure and other economic sectors, combined with legislation that is not fully formed and weakly enforced, exposes the forests to unsustainable exploitation and leads to conflicts over rights of access and use[8]. Finally, Cambodia is highly vulnerable to the effects of climate change, in particular from floods, droughts, windstorms, and seawater intrusion. Agriculture, infrastructure, forestry, human health, and coastal zones are the most affected sectors[9].

2.1 Major national forest- or forest landscape-based sources of GHG emissions and projected trends

10. Cambodia is home to forest ecosystems with evergreen forest, deciduous forest, mixed forest, coniferous forest, flooded forest and mangrove forests. Forest is mainly located towards the north and east, and in the southwest of the country where population densities are lower[10].

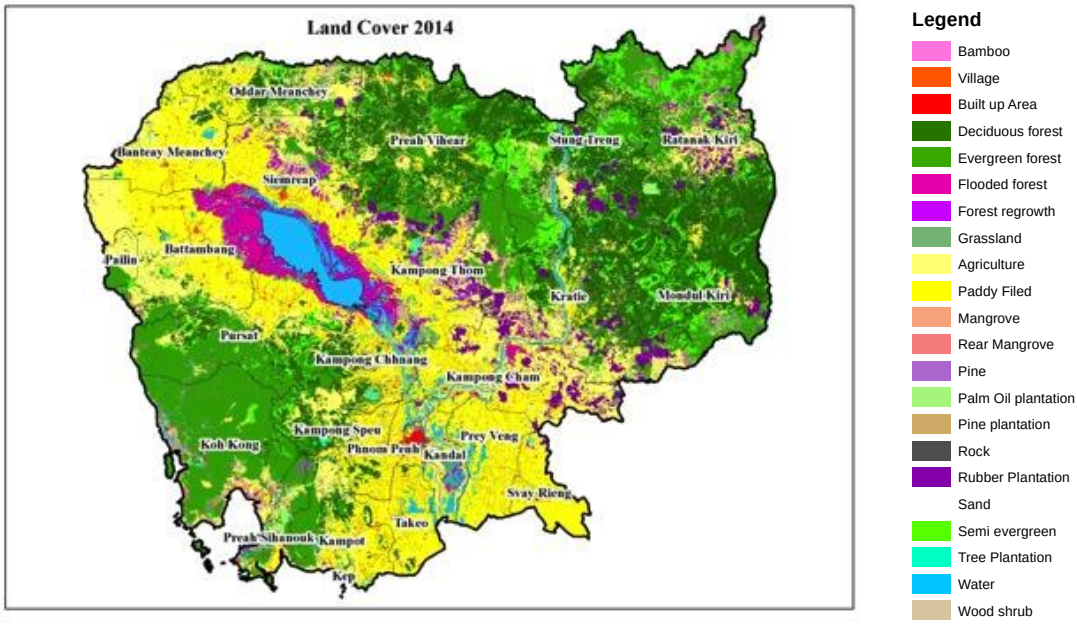
Table 2.1. Forest type and area in Cambodia 2014

Forest Type	Area (ha)	% of Total Land Area
Evergreen forest	2,973,903	16,38
Semi-evergreen forest	1,108,320	6,10
Deciduous forest	3,480,532	19,17
Flooded forests	481,078	2,65
Forest regrowth	228,560	1,26
Mangrove forest	33,002	0,18
Bamboo	130,678	0,72
Forest plantation	48,098	0,26
Other forests	34,102	0,19
Total forest area	8,518,173	46,90

Source: FRL Submission to the UNFCCC

[6] Human Development Index: http://hdr.undp.org/en/countries/profiles/KHM
[7] Agricultural Sector Strategic Development Plan 2014-2018 (2015)
[8] National Forest Programme (2010-2029).
[9] Cambodia Climate Change Strategic Plan 2014-2023
[10] FAO, FRA2015, Cambodia country report

Figure 2.2. Land cover map



Source: Forestry Administration 2014

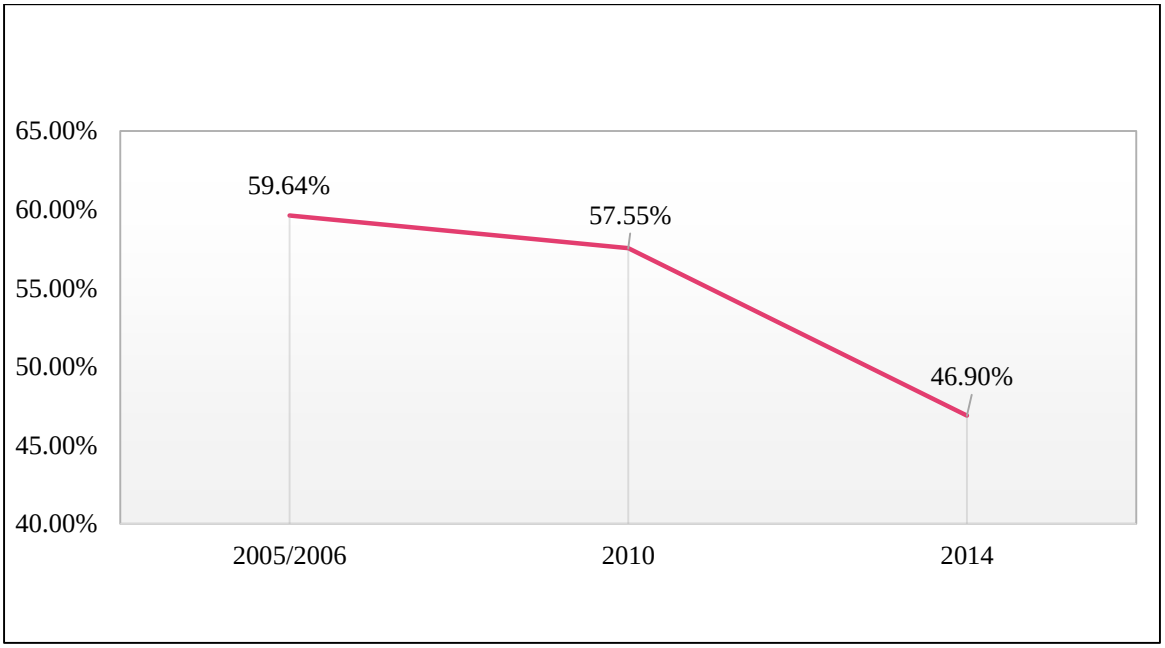
11. Cambodia is a high forest cover country with high deforestation rate. Estimates of the associated GHG data build on the second National Communication (NC) to the UNFCCC submitted in 2015, the Forest Reference Level (FRL)[11] submitted to the UNFCCC in 2016 at COP 22, and the Intended Nationally Determined Contribution submitted in advance of the Paris Conference of Parties (COP21) in 2015.

12. The most recent National Greenhouse Gas Inventory (GHGI) is from the second NC submitted in November 2015 covering the inventory year 2000. According to this inventory removals from Land Use Change and Forestry (LUCF) were slightly greater than emissions from all other sectors in 2000.

13. The proposed FRL is based on the historic average of net emissions from change in forest area for the period 2006 to 2014 based on three data points (see Figure 1). From 2006 to 2014 the average annual deforestation was close to 3 percent annually and between 2010 and 2014 close to 5 percent annually. This is one of the highest deforestation rates in the world. The FRL and the NC cover different years, have different scope and use different forest definitions and therefore are not directly comparable.

[11] While there are no UNFCCC decision on for when to use Forest Reference Level (FRL) or Forest Reference Emission Level (FREL), a FRL is in most cases used where there can be both emissions and removals while a FREL is used when it only cover emissions.

Figure 2.3. Forest cover in Cambodia



Source: Cambodia Forest Reference Level, 2015

14. Emissions from forest degradation as well as removals due to forest growth are also believed to be significant but the available data is insufficient to allow a quantification of the contribution. A proposed National Forest Inventory (NFI) will help fill this gap in the future.

15. Cambodia submitted its Intended Nationally Determined Contribution (INDC) in advance of UNFCCC COP21 in Paris in 2015. Cambodia intends to undertake voluntary and conditional actions to achieve the target of increasing forest cover to 60 percent of national land area by 2030. In absence of any actions the net sequestration from LULUCF is expected to be 7,897 Gg CO_2 in 2030 compared to projected sequestration of 18,492 GgCO_2 in 2010. This is in accordance with the National Forest Program covering the period 2010-2029[12] and is estimated to contribute with an emission reduction of 4.7 tCO_2eq/ha/year.

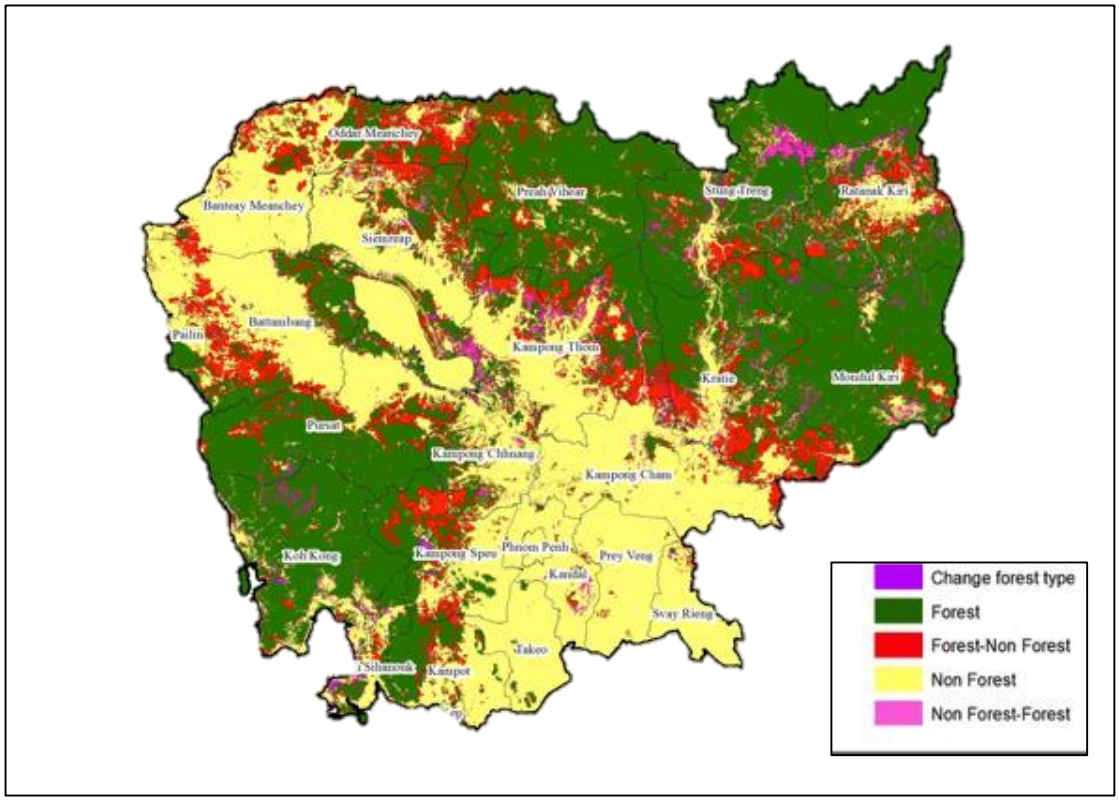
2.2 Status and trends concerning forest and woodland resources

16. The forests have a critical function to provide rural livelihoods including valuable ecosystem services and resource for economic development. Historical forest cover assessment indicates that in 1965, Cambodia had a forest cover of about 73 percent, but by 2010 this had decreased to about

[12] The National Forest Program (2010-2029) has an annual afforestation target of 50.000 ha.

57.5 percent and by 2014 further decreased to 49.48 percent[13] corresponding to 8.99 million ha.

Figure 2.4. Map of land cover change 2010 to 2014



Source: Forestry Administration

17. Compared to neighboring countries such as Vietnam and Thailand, Cambodia still has relative high forest cover percentage. This is partly linked to the fact that economic development has picked up in Cambodia later due to the internal conflict situation.

18. Under IPCC emission scenarios up to 2050 most lowland forest in Cambodia will be exposed to a longer dry period, particularly forest areas located in the northeast and southwest. More than 4 million ha of lowland forest, which currently has a water deficit period of between 4 and 6 months, will become exposed to a greater water deficit period of between 6 to 8 months or more[14]. Exposing forests to longer dry periods might reduce forest productivity and biodiversity. This will pose new challenges for forestry and underscore the need to manage forests sustainably.

[13] This includes rubber and palm oil plantations as forest, which explains the difference to the 46.9% in figure 2.3.

[14] INDC to the UNFCCC now converted into NDC.

2.3 Economic importance of forestry sector and those sectors affecting forests

19. Cambodia's forest subsector contributed about 5.7 percent in 2012 and 5.5 percent in 2013 to GDP[15]. The agriculture sector in comparison contributed about 27 percent of GDP in 2015. Agriculture provides employment for about 57.6 percent of the 6.6 million people in the labor force. However the average productivity per hectare is generally low with only about 8 percent of arable land area in Cambodia is fully irrigated, with another 10 percent having supplemental irrigation[16].

20. In addition to the direct contribution to GDP, forests are also important for non-cash livelihoods in Cambodia. Nearly four million people live within five kilometers of forest areas with forest resources accounting for an average of 10 to 20 percent of household consumption. The vast majority of rural households rely on fuel wood and charcoal. Traditionally, forest resources, and in particular non-timber forest products (NTFP), have provided important safety nets for rural people in times of crisis. NTFPs provide subsistence by providing food, natural medicine, fuelwood, and construction materials for shelter. The average of nine different studies on the value of NFTP from different forest ecosystems in Cambodia is 300 US$/ha/year with a range from 50 to 1050 US$/ha/year. Forests can also underpin cultural and ritual values for many local communities which in some cases exceed the benefits of commercial timber extraction by more than US$200/ha /year[17].

21. Cambodia possesses one of the largest and most diverse fishery sectors in the world and fisheries provide about 80 percent of protein consumed by the population. Fisheries are particularly vital for food security and income for the poorest people. Both upland forests for erosion control as well as flooded forests and mangroves for fish breeding and protection play an important role in maintaining a productive fishery. Soil conservation, carbon sequestration and watershed protection are other ecosystem services provided by forest that has an economic value. Three different studies analyzing watershed protection alone had an average economic value of US$321/ha/year with a range from 176 to 600 US$/ha/year[17].

2.4 Explanation of the key drivers of deforestation and degradation

22. The drivers of deforestation and forest degradation mainly arise from outside the forestry sector. This includes both large-scale legal deforestation, e.g. as part of ELCs where forest land is being converted to other land uses, and small-scale illegal encroachment in forest land. A number of studies have quantified the various drivers for specific geographic areas including as part

[15] This is from a number of sources including fees from ELC and SLC logging, sale of confiscated illegal timber and royalties.
[16] Agricultural Sector Strategic Development Plan 2014-2018 (2015)
[17] Valuation of Forest Ecosystems in Cambodia, UN-REDD, 2014.

of voluntary REDD+ projects but with different methodologies this is not scalable to a national level quantification. The National REDD+ Strategy identified the drivers but did not quantify or separate them into direct and underlying drivers. This FIP/IP propose to address all drivers listed below.

23. **Drivers of deforestation identified in the National REDD+ Strategy**
    - Rapid expansion of agriculture into forest lands, granting of large-scale agro industrial economic land concessions, and distribution of land titles under social land concessions.
    - Uncertain land tenure, land speculation, unauthorized encroachment of forest lands.
    - Migration into forest areas.
    - Unauthorized logging and unsustainable harvesting of forest and non-timber products.
    - Improvements in accessibility to remote forested areas, commercial logging, and infrastructure projects together with lack of government capacity to manage forests in these areas.
    - Weak forest governance, law enforcement, and monitoring of forest and land use sector.
    - Lack of state land registration and forest estate demarcation.
    - Inadequate implementation of environmental and social impact assessment regulations.
    - Population increase and demand for agricultural land.
    - Rural poverty and lack of alternative livelihoods.

24. **Further explanation on the main drivers**
    - Economic Land Concessions. By June 2016, the RGC granted 1,552,700 ha of forest land to 223 companies in 18 provinces. (MAFF's minister speech, during the RGC and ELCs forum, 21 July 2016). A moratorium on the issuance of ELCs from 2012 has introduced a halt to the issuance of ELCs. However, existing ELCs are still clearing forests in accordance with their master plan.

    - In February 2016, the RGC issued the decision on the cancellation of granted ELCs and confiscated 503,531 ha of forest land from 35 ELCs in ten provinces. The current strategy of MAFF/FA is to establish a committee to oversee and push the legal process to ensure that the confiscated and canceled ELC land will be converted from the public-private land to the state land and registered to be subjected for forest restoration and reforestation, community forestry development, production forestry and of other development purposes. MAFF is undertaking a comprehensive review on the ELCs that recently transferred from MoE according to the sub-Decree No.69 dated on 28 May 2016.

    - However, with some ELCs granted inside protected areas including in national parks with unclear demarcation on the ground it remains a

significant challenge to monitor and ensure compliance for the logging operations in the ELC area.

- Social Land Concessions. During the period 2009 to 2013, a total forest area of 2.45 million ha was allocated as social land concessions to poor households, military households and for establishing new villages. In 2014, the government de-gazetted forest land area of 1.2 million ha to issue land titles to landless communities.

- In addition, some parts of forest land area were granted in the form of concession for mining and natural gas study.

- Also significant forest land areas have been subject to illegal encroachment, cleared, and traded for individuals' profits including in connection with road constructions. In addition, infrastructure development without fully conducted environmental impact assessment has negatively affected forest resources (Delux, 2015)[18].

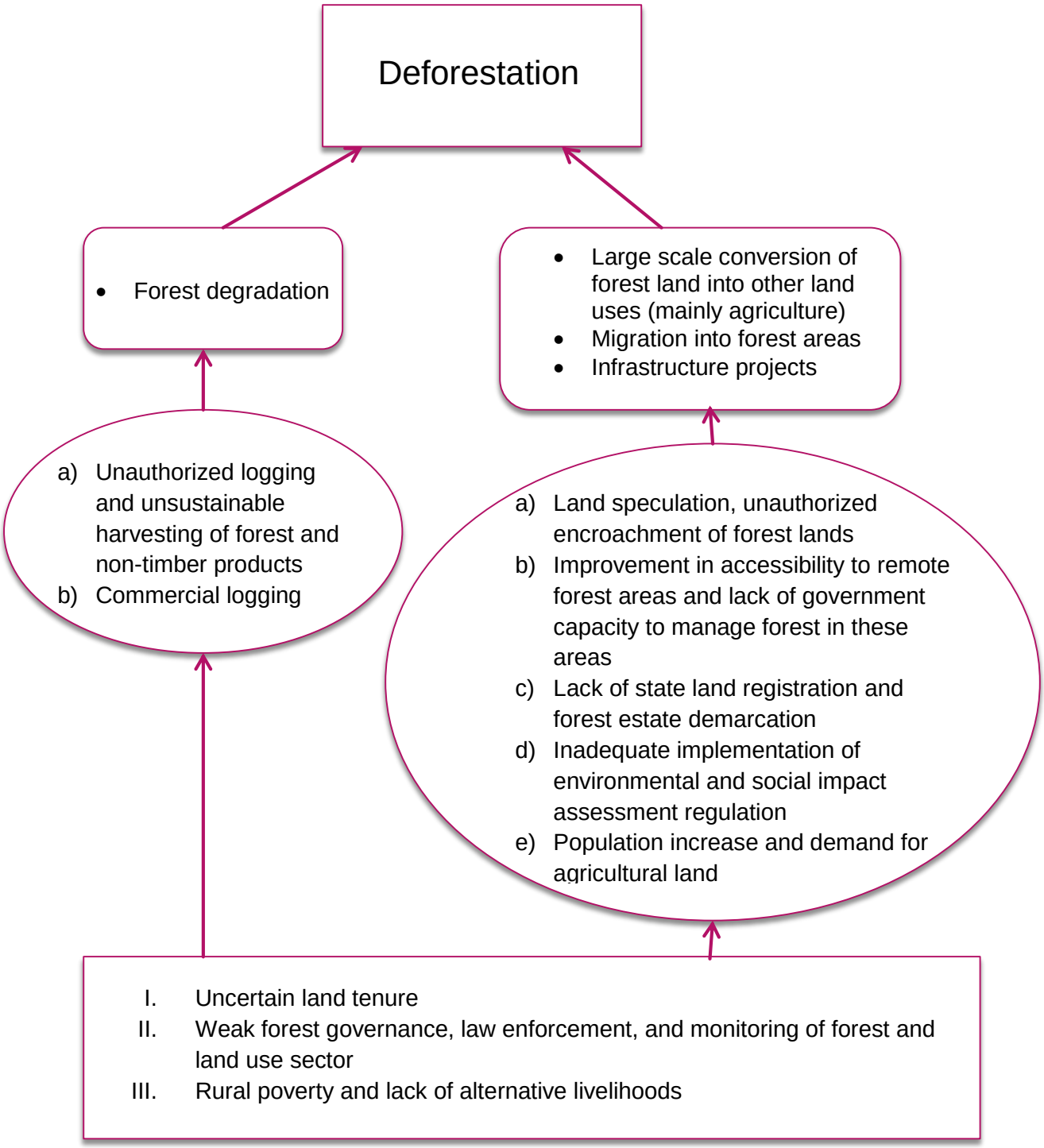
- Rural poverty and unclear land rights lead to poor management and opens up land for speculation and unauthorized encroachment of forest lands. An assessment on land tenure by FAO[19] concludes that existing laws and regulations address forest tenure differently and implementation is poor for multiple reasons but mainly because of weak institutional capacity, lack of commitment and limited or no resources. This leads to inadequate emphasis on increasing the productivity of forest land because policies and legal instruments to provide a basis for designing a comprehensive land-use plan are absent. This can be addressed by the current efforts to draft an Environmental Code. Also FA decided in 2016 to revise the Community Forestry Guidelines from 2006 in order to strengthen Community Forestry in particular to enable communities to do sustainable forestry enterprises.

- Demand for fuelwood for industry and household including charcoal constitutes a significant driver of forest degradation. While charcoal is mainly for domestic cooking purposes, fuelwood is also used by the garment and brick industry. Annual woodfuels[20] demand is estimated at 5.5 million tons with 53 percent for charcoal, 32 percent for domestic cocking and 17 percent for industry (GERES, 2015)[21]. Significant parts of the woodfuel is believed to be of illegal origin partly due to a regulatory framework related to firewood and charcoal production, transportation and retail that requires a very important number of permits (GERES, 2016)[22].

[18] Delux, C. 2015. Drivers of Forest Change in the Greater Mekong Subregion – Cambodia Country Report, LEAF, USAID
[19] FAO, 2016, Forest tenure policies in Cambodia: Status, gaps and way forward.
[20] Woodfuels refer to firewood/fuelwood+charcoal+sawdust.
[21] GERES, 2015, Impact Assessment of Woodfuels Consumption on Deforestation and Forest Degradation in Cambodia.
[22] GERES, 2016, Policy Paper: Regulating the Charcoal and Firewood Trade.

25. The FIP/IP projects will address all the identified drivers of deforestation listed in the NRS. Figure 2.5 below illustrates an initial understanding of the causality between the problem and the drivers.

Figure 2.5. Initial understanding of causality between drivers leading to deforestation



2.5 Summary of National REDD+ Strategy

26. The National REDD+ Strategy (NRS) for 2017 to 2025 is in the final stages of preparation and is expected to be approved during first half of 2017.

27. The NRS has a vision to contribute to national and global climate change mitigation through improved forest land management and sustainable biodiversity conservation. The goal is to reduce deforestation and forest degradation through enhancement of management, forestry development, enhanced carbon stocks and poverty alleviation. The initial phase of the NRS focuses on addressing drivers of deforestation, while building capacity to address forest degradation in a subsequent iteration.

28. Building on REDD+ readiness actions undertaken since 2008, the first phase of the NRS will prioritize access to up-front non-results based finances that will help Cambodia transition to REDD+ implementation phase. A review will be undertaken in 2020 to determine and provide a specific timeline for results based payments from 2021 to 2025. Detailed and prioritized action plans are expected to be developed, including an action plan for strategic knowledge management and coordination, an M&E framework, as well as institutional and financial arrangements for implementation.

29. The NRS has three strategic objectives and 19 strategies to meet the objectives. The proposed FIP/IP projects aim to address all the drivers by supporting the strategic objectives and strategies.

2.6 Integration with Government policies, goals and strategic direction

30. The FIP/IP proposal supports and complements the NRS and the implementation of Cambodia's broader development plans in particular, the following national policies, strategies and programs:
    - Rectangular Strategy Phase III 2013-2018
    - National Strategic Development Plan 2014-2018
    - National Policy on Green Growth and Green Growth Strategic Plan 2013-2030
    - Cambodia Climate Change Strategic Plan 2014-2023
    - National Protected Areas Strategic Management Plan 2016-2030
    - Strategic Planning Framework for Fisheries 2010-2019
    - National Forest Programme 2009-2029
    - Gender and Climate Change Action Plan 2014-2018
    - Cambodia's First 2002, and Second 2015 National Communication to the UNFCCC
    - Cambodia's Nationally Determined Contribution to the UNFCCC
    - Cambodia Sustainable Development Goals, 2015-2030
    - Biodiversity Conservation Corridors Sub-decree

31. The draft National Protected Areas Strategic Management Plan (NPASMP) is of particular importance. With approximately 40 percent of the land area under protection including most of the forest area the NPASMP is very relevant for how Cambodia will manage it's forests and achieve emissions reductions and other ecosystem services. The NPASMP is designed around four strategic objectives and the three FIP/IP projects provide support to achieve all the four objectives.

32. Strategic objectives in the National Protected Areas Strategic Management Plan:
    - Prioritize and Strengthen Conservation
    - Enhance Sustainable Management
    - Expand Community Participation and Benefits
    - Strengthen Institutional Capacity and Collaboration

33. MoE is the country's focal point for the UNFCCC and responsible for implementing the Climate Change Strategic Plan 2014-2023, promoting green growth, and low emissions development approaches.

34. Cambodia ratified the Paris Agreement 6 February 2017. The Nationally Determined Contribution (NDC) to the UNFCCC Cambodia includes a mitigation contribution to undertake voluntary and conditional actions to achieve the target of increasing forest cover to 60 percent of national land area by 203023. The FIP/IP projects will help achieve this ambitious target.

35. The National Forest Programme (NFP) consists of 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. Current national policy commitments under the NFP include increasing the country's forest cover to 60 percent. One of the principal aims of the NFP is to support the establishment of community forests through the allocation of up to two million ha of forestland to rural communities. Under the Forest Law, rights of local communities and the importance of decentralized management of natural resources are well recognized.

36. Besides the NRS, the FIP/IP projects will directly support the implementation of:
    - Project 1 (MoE): BCC sub-decree and environmental code (draft)
    - Project 2 (MAFF): NFP sub program 2 (Development and Management of Production Forests) and sub-program 6 (Tree planting and Development of Forest Plantations).

[23] The NCD contains also mitigation contributions from other sectors. http://www4.unfccc.int/ndcregistry/PublishedDocuments/Cambodia%20First/Cambodia's%20INDC%20to%20the%20UNFCCC.pdf

- Project 3 (MoE and MAFF): NFP sub program 3 (Monitoring, Assessment and Reporting for SFM) and NPASMP

2.7 Summary of other ongoing REDD+ programs

37. In addition to the NRS, Cambodia is one of the pilot countries that receives support from the UN-REDD Programme and the GCF Small Grants Programme to deliver financing directly to indigenous peoples and local communities to empower them to fully engage in the design, implementation and monitoring of REDD+ readiness activities and develop experiences, lessons, and recommendations at the local level that can feed into national REDD+ processes. This initiative is known as the Community-Based REDD+ (CBR+). Registered Community Based Organizations (CBOs), local NGOs and relevant research institutions working on REDD+ related activities are eligible to apply for CBR+ grants, with the maximum amount up to $50,000 for each project. Currently CBR+ is being implemented in the following provinces: Kampong Thom, Preah Vihear, Oddar Meanchey, Rattanakiri, and Kratie.

38. Finally, there are five voluntary REDD+ projects that are being implemented in Cambodia. All of these projects address unplanned deforestation. Oddar Meanchey also addresses afforestation and reforestation (removals) in addition to unplanned deforestation.
    - Oddar Meanchey Community Forestry REDD+ Project, 63,831 ha in Oddar Meanchey Province. Established in 2008.
    - The Seima Protection Forest REDD+ Project, 292,690 ha in Mondulkiri Province with a small area extending into Kratie Province. Established in 2009.
    - Cambodia-Korea REDD+ Joint Project, 70,042 ha in the southwestern edge of the Prey Long Landscape. Established in 2015.
    - Joint Crediting Mechanism in the REDD+ initiative in Prey Lang area. MoU signed in January 2017
    - Southern Cardamom REDD+ Preparation Project, 500,000 ha in Southern Cardamom National Park and Tatai Wildlife Sanctuary in Koh Kong Province. MoU signed in January 2017.

39. Some lessons learned from the early REDD+ projects.
    a. Projects have been successful in raising awareness of climate change and REDD+.
    b. However, projects depend on continued funding that has been provided on an ad hoc basis.
    c. Projects have strong reliance on sale of carbon credits and difficulties in managing expectations.
    d. Projects depend on local activities such as patrolling by communities rather than implementation of national level policies.

2.8 Institutional arrangements

40. The institutional arrangements for the implementation of Cambodia's FIP/IP need to recognize the different roles and responsibilities of the various government authorities that have jurisdictional authority over forest resources in the country. Implementation of FIP/IP is therefore expected to follow Government agency jurisdictions based on the existing laws and policies. Cambodian Law is hierarchical, thus all subsidiary regulations should respect the differentiation of responsibilities laid out in the law. For instance, subsidiary regulations cannot amend responsibilities stipulated in a law[24]. Consequently, management and regulatory jurisdictional authority over forest resources in Cambodia falls under the responsibility of several different government agencies under Cambodian laws. These laws include: Environmental Protection and Natural Resources Management Law 1996, Land Law 2001, Forestry Law 2002, Fisheries Law 2006, Protected Areas Law 2008, Royal Decree on Creation and Determination of Nature Reserves 1993, Sub-decree #83 on Registration of Land of Indigenous Communities 2009, Draft Law on Environmental Impact Assessment 2014. For further description, refer to Annex 5.

41. MAFF (FA and FiA) has jurisdictional and regulatory authority over the Permanent Forest Estate (PFE) including flooded forests and mangroves. MoE (GDANCP) has jurisdictional and regulatory authority over the management of Protected Area (PA) including the core area of Tonle Sap Lake.

42. The National Council for Sustainable Development (NCSD), an inter-ministerial body, is chaired by the Minister of Environment with the Prime Minister as its Honorary Chair. The NCSD has a key role relevant for FIP/IP as it is tasked to promote mainstreaming of sustainable development in collaboration with relevant line ministries and agencies, mobilize resources, direct, and evaluate policies, strategic plans, action plans, legal instruments, programs and projects related to sustainable development; encourage and promote research study, education, training, exchange of technologies and disseminate; manage government information and communications relevant to sustainable development; lead, manage and facilitate the works related to green economy, climate change, biodiversity conservation and biosafety.

43. In May 2015, the RGC issued a sub-decree on the new structure of MoE to improve its effectiveness in managing natural resources and environment. MoE announced its goal to develop the National Environmental Strategy and Action Plan (2016-2023) to mainstream environmental concerns into line-ministry's policies and planning.

[24] Oberndorf, R, 2010. REDD+ in the Cambodian Context: An Overview of the Policy, Legal and Governance Frameworks Impacting Implementation

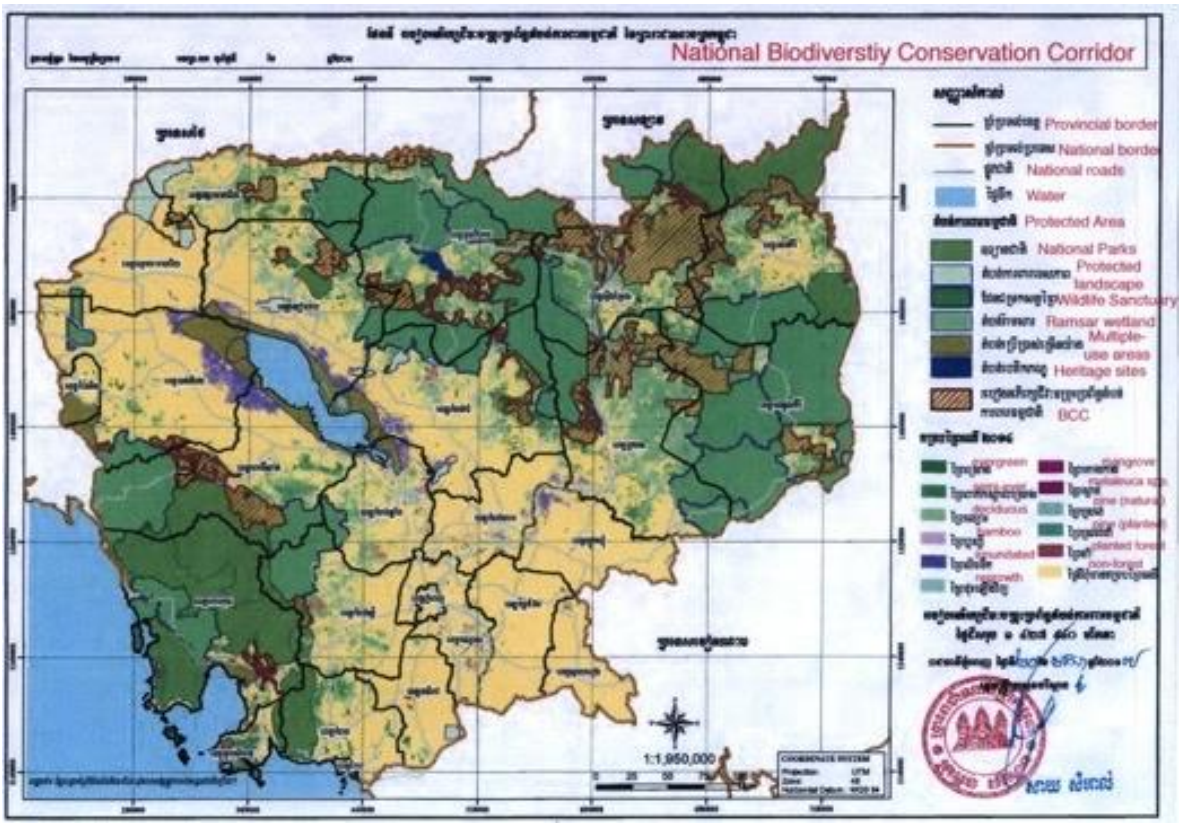
44. In February 2016, the Prime Minister announced a jurisdictional reform for natural resources management. The initial stage of this reform focused upon redefining the roles of MAFF and MoE in terms of sustainable management of natural resources. With these changes, MoE has a primary mandate for protection and conservation of natural resources, while MAFF will focus on the developmental aspects.

45. In January 2017, 1.4 million ha of land have been designated as Biodiversity Conservation Corridors and transferred from MAFF to MoE. This increases the land under the authority of MoE to around 7 million hectares. The sub-decree for how these new lands will be managed has yet to be developed.

46. With the changes, Cambodia has approximately 40 percent of the national territory under protection, which is one of the highest percentages of any country in the world of national territory within protected areas. There are however, significant challenges in terms of management and many PAs are under heavy pressure. Already before the changes made in 2017 the status is that out of 51 protected areas, none of them have a management plan and only one has been zoned according to the PA Law.

47. Since 2015, the preparation of a new Environmental Code has been initiated. The Code is expected to establish overarching legal principles to guide the implementation of existing laws for the achievement of sustainable development, including clarifying the roles and mandates of relevant ministries to govern natural resources. This also includes a new approach to Collaborative Management that will be relevant for management of the natural resources. A new Environmental Impact Assessment law is also expected to be included.

Figure 2.6. Map of Cambodia with the new biodiversity conservation corridors



Source: Ministry of Environment

48. The recent changes entail significant institutional capacity challenges for both MAFF (FA) and MoE. For MoE due to the very large increase in area under their jurisdiction over very short time, which has not yet been accompanied by an equivalent increase in staff and capacity. For FA due to limited experience with production forestry since the moratorium on forest concessions was established in 2002.

3. Opportunities for Greenhouse Gas Abatement

49. Despite its deforestation rate, Cambodia has high potential to reduce emissions from deforestation and forest degradation, and enhance forest carbon stocks. A number of new initiatives as well as the recent institutional changes provide a window of opportunity for reducing emissions from deforestation and forest degradation.

50. The project will foster community engagement in natural resource management. Efforts to include communities in NRM have developed since the mid 1990s with Community Forestry (CF), Community Protected Areas (CPA) and Community Fisheries (CI). Complicated procedures for registration and approval of management plans together with limited user rights have however reduced the effectiveness of these efforts[25]. However, the RGC has taken steps towards enhancing the arrangements for community involvement through development of collaborative management arrangements for NRM approach[26].

51. The moratorium on issuing new ELCs from 2012 will eventually put a halt to one the major drivers of deforestation. However, the moratorium on issuing new ELCs will have significant impact on the supply of timber and fuelwood for both domestic use and export taking into account that timber originating from ELCs contributes more than 90% of the timber supply to the domestic and export markets This could increase pressure on other forest resources and it will most likely require significant efforts to curtail the risk that illegal harvesting leading to both deforestation and forest degradation will increase. To be successful, new measures in addition to the current efforts to manage production and protection forests is needed. Land registration and demarcation together with capacity to develop, support and enforce management plans on one side and initiatives to enable the sustainable production of timber and fuel wood on available land together with a general support for livelihood improvement on the other side.

52. Forest law enforcement. Cambodia is engaged in discussions with the EU regarding entering a Voluntary Partnership Agreement (VPA) as part of the Forest Law Enforcement Governance and Trade (FLEGT) initiative. This together with enhanced regional collaboration on border trade has the potential to reduce the impact of illegal logging linked to international trade.

[25] A capacity development needs assessment undertaken by FAO in 2015-2016 conclude that the area of community tenure has significantly increased in size, and more forest dependent people have legally recognized user rights and limited management rights. However, there are significant gaps relating to responding to the livelihoods of forest-dependent communities. This is largely attributed to the limited support provided to forest-dependent communities for sustainable utilization and commercialization of forest products and services.

[26] Collaborative management is included in the draft law Environment Code.

53. Much of Cambodia's terrestrial carbon stock occurs in areas that have the potential to generate co-benefits and are also important for biodiversity conservation. Many of these areas have protection status. Actions to secure these areas and their carbon and to improve management are likely to achieve substantial co-benefits such as potential for NTFP, soil, water and biodiversity conservation as well as cultural values as also described in section 2.3 on the economic importance of the forest sector.

54. As described in section 7 and illustrated in table 7.1 and 7.2 and further elaborated in annex 1, the three proposed FIP/IP projects will address all drivers listed in the National REDD+ Strategy and complement the strategies of both the NRS and the National Protected Areas Strategic Management Plan and thereby reduce emissions from deforestation and forest degradation.

55. The FIP/IP also complements the two NAMAs registered by Cambodia: 1) Sustainable Charcoal production: These NAMAs are still at the development stage only. The objective of the NAMA is to leverage private sector investment in sustainable charcoal production and solid biomass fuels, support forest restoration, and the conversion of existing producers to sustainable practices and 2) Energy Efficiency NAMA in the Garment Industry in Cambodia: The overall objective of the NAMA is to support Cambodia´s energy efficiency policy and to improve efficiency in the industrial sector and to build capacity in the field of energy efficiency.

4. Enabling Policy and Regulatory Environment

56. The Royal Government of Cambodia has engaged in REDD+ since 2008 and has fully understood the threats posed by climate change and the benefits provided by forests in this regards. This is reflected in a number of high-level policy documents such as the National Strategic Development Plan (2014-2018), Cambodia Climate Change Strategic Plan (2014-2023), National Forest Programme (2010-2029), Draft National Protected Area Strategic Management Plan (2017-2031), Draft National REDD+ Strategy (2017-2026), and Draft Environment and Natural Resources Code of Cambodia.

57. As stated in the National Strategic Development Plan (2014-2018), MoE is obligated to take a comprehensive development approach toward environmental management in Cambodia to ensure sustainable management of natural resources. While recognizing MoE's achievements in the area of management of natural resources and climate change, the NSDP encourages MoE to produce maps; install boundary poles, demarcate the boundary of controlled areas, and carry out data management in all PA; demarcate potential areas for enhancing livelihood of the communities living in PAs; strengthen management and conservation of wetlands, biosphere, and coastal zones; and implement the Cambodia Climate Change Strategic Plan and relevant policies, laws and regulations.

58. Cambodia has been undergoing significant environmental governance reform with the transfer of roles and responsibilities between the MoE and MAFF (Sub-decree 69); the establishment of the National Council for Sustainable Development (Royal Decree) and its Secretariat (Sub-decree 59); On-going revision of the existing Forestry Law, PA Land and Land Law; and recently the Establishment of the Biodiversity Conservation Corridors (Sub-decree 07).

59. The establishment of Biodiversity Conservation Corridors means that an additional 1.4 million ha of forest land is now under the jurisdiction of MoE. This is in addition to the areas that were previously transferred between MoE and MAFF as part of Sub-decree 69. In total, MoE is now managing approximately 40 percent of Cambodia's total land area. MoE has indicated that it will change the way community-managed forests and non-timber forest products as part of the collaborative management principle, a new initiative that is part of the Environmental Code of Cambodia.

60. Of special relevance is the draft National REDD+ Strategy, which aims to reduce deforestation and forest degradation, to promote sustainable management and conservation, and to contribute to poverty alleviation. The NRS sets 19 strategic objectives and identified drivers of deforestation and forest degradation to be addressed. The NRS will be followed by an action plan to achieve the objective.

61. The National Protected Area Strategic Management Plan (2017-2031) aims to guide the future planning and management of individual protected areas and Biodiversity Conservation Corridors. The NPASMP envisions that Cambodia's protected area system contributing to the country's economy and sustainable development, including poverty reduction, through the conservation and sustainable use of its biological, natural and cultural resources and other ecosystem services. Relevant for the FIP/IP are the four strategic objectives of the NPASMP, which are: prioritize and strengthen conservation, enhance sustainable management, expand community participation and benefits, and strengthen institutional capacity and collaboration.

62. In terms of sustainable forest production, National Forest Programme (2010-2029) has a number of key targets, one of which includes afforestation and area under community management, which remain valid. As a contribution to the Sustainable Development Goals, Cambodia aims to rehabilitate 820,000 ha of degraded forest by 2030. Of relevance for investments in the forest sector is the ongoing process of systematic land registration. As stated in the Land Law, land titles can be granted as individual titles or as collective titles where the latter is used for indigenous peoples.

63. The Cambodia Industrial Development Policy (2015-2025) approved in March 2015, is of particular relevance for private sector investments. The policy aims to mobilizing and attracting foreign investments as well as private domestic investments. This will be pursued through revisiting the regulatory environment so as to strengthen the competitiveness (investment climate and trade facilitation, market information, dissemination and informal fees reduction).

64. This was further emphasized by RGC's announcement 120, dated February 8, 2017 that stipulated that the Ministry of Agriculture, Forestry and Fisheries is designated the responsibility to work with private sectors to reforest areas that used to be ELCs, degraded areas, and idle lands where are appropriate.

65. The rights of indigenous peoples are protected in various legal documents in Cambodia such as the Constitution, Land Law, National Policy on the Development of Indigenous People, Forest Law, PA Law, Law on Mineral Resource Management and Exploitation, and draft Environment Impact Assessment Law. The RGC also supports the Declaration on the Rights of Indigenous Peoples. Relevant policies, laws and regulations for the proposed projects have been complied and presented in annex 5 together with a short description.

66. Key constraints identified relevant for the FIP/IP projects not sufficiently addressed by the above:
    - **Project 1:**
        a. Management of BCC is still under development and thus jurisdictional responsibilities still need to be specified

b. Guidelines for land-use within BCC areas are still under developed
c. Thus far only sub-decree exists, but specific directions on how this sub-decree will be implemented do not exist yet

- **Project 2:**
  a. Policies and guidelines on production forest chain are outdated, thus do not reflect current, real situation
  b. Identifying lands that are suitable for reforestation activities
  c. Identifying and agreeing on species to be reforested
- **Project 3:**
  a. Data inconsistency (methods of collection and analysis) between MoE and MAFF
  b. Capacity to interpret the data is limited
  c. Different guidelines for data disclosure between ministries

67. All of these constraints are addressed in the project concepts.

68. The FIP/IP project proposals build on the draft National REDD+ Strategy and some changes to this document can still happen during the government approval process. However, the FIP/IP projects addresses long-standing problems as also documented by independent studies that will continue to be relevant also in a situation where the final NRS will include some changes before it will be approved.

5. Expected Co-Benefits from FIP Investment

5.1 General Co-Benefits

69. This FIP/IP has seven categories of co-benefits, as follows.

a. Improved governance and institutional capacity. All three projects in the FIP/IP support capacity building at both national and sub-national level including for communities. This includes participatory planning processes and management as well as sustainable financing for Project 1, it will include silviculture for Project 2 and forest monitoring for Project 3. Projects 1 and 2 also include capacity building to empower communities to improve their livelihoods including for climate-smart agriculture, forestry and eco-tourism where relevant.

b. Climate resilience. Projects 1 and 2 will take impacts of climate change into consideration when planning land use activities. This includes considerations for water, agriculture and tree planting. Project 3 will help generate information on the impact of climate change on forests and thus provide improved basis for forests policy and planning.

c. Transformational with a potential for replication. All three projects in the FIP/IP are transformational with potentials for replication. Project 1: Climate-Smart Landscapes through Conservation Corridors is a new approach to integrated landscape management. It is an opportunity to build capacity at national and subnational level and pilot planning approaches in selected landscapes, which can be replicated elsewhere in Cambodia. Working on a landscape level will promote integration between sectors as well as between protection and production and increase the ability to incorporate the impact of climate change. Project 2: Improving enabling conditions and attracting investments in the forest sector and securing a long-term sustainable production of forest products. Production models including models for communities can also be replicated elsewhere in Cambodia. Project 3: Data on forest carbon stocks, species composition etc. has not been available before. This will strengthen initiatives to reduce forest related emissions and enhance removals of GHG. Monitoring tools for key land uses such as ELCs does not exist and a timber legality assurance system is also needed to sustain domestic legal production of forest products. Pilots for TLAS can be replicated in all of Cambodia. NFI can be replicated in other countries.

d. Contribution to the improvement of local livelihoods, poverty alleviation, and human development of forest dependent communities, including indigenous peoples. In Projects 1 and 2, participatory planning approaches will take into account the needs of local communities including indigenous peoples. Local investments and capacity building will improve community livelihoods. Participation in production of wood products for sale will increase income. A timber legality assurance system will help both companies and local communities to market timber and fuelwood.

e. Gender. Projects 1 and 2 participatory planning approaches will take into account the different roles and needs of both men and women and support for improved livelihoods will consider the different roles of men and women in the design and implementation of activities.

f. Private sector involvement. Private sector involvement in sustainable forest use and conservation either as investor in sustainable forest management or as a consumer of forest products or products from deforested lands is very limited in Cambodia. The combined projects will seek to create enabling conditions for private sector involvement. This will be through different but complementing components. This will include analysis of current constraints and subsequent proposals for mitigating these constraints. A key prerequisite for private sector investments is clarity about business regulations, for forestry this includes clarity about land tenure, regulations on land use, transport and sale of forest products, taxes etc. In addition, the projects will support the gathering of information on forest resources, trial forest plantations and pilot a system to verify legality of forest products. Legality is a first step towards forest certification and something that can help producers and consumers to develop a sustainable market for forest products. The projects are not proposing a forest certification scheme since project 2 is focusing on increasing the production of fuelwood, which would have difficulties in bearing the cost of certification. However, this part of the project could be a first step towards certification and also work closely with the EU FLEGT initiative, if relevant. Improve enabling conditions for private sector involvement will happen in close dialogue with the private sector but with significant focus on building capacity with relevant agencies and developing proposals for changes to existing regulations, if relevant.

g. Biodiversity and other ecosystem services. A key objective of planning for Biodiversity Conservation Corridors is to ensure connectivity and sustainability for biodiversity and other ecosystem services. Tree planting for production forestry will use appropriate species and avoid invasive alien species. The production will reduce pressure on natural protected forests. Information on forest will facilitate improved management of forest ecosystems. Monitoring of ELCs and other forest land users will help protection of forest resources.

5.2 Estimate of Carbon Sequestration from the FIP/IP

70. Projects 1 and 2 will sequester carbon from reforestation and by avoiding deforestation. To estimate carbon sequestration, the formulas shown in box 1 has been used[27].

[27] From 2006 IPCC Guidelines for National Greenhouse Gas Inventories, equation: 2.9 and 2.10.

Box 1: Formula for calculating carbon and CO_2

C = MAI * D * BEF * CF (tC/ha/year)
MAI is Mean Annual Increment (m3/ha/year)
D = Density (t/m3)
BEF = Biomass Expansion Factor
CF = Conversion Factor, biomass to carbon (tC/t)

CO_2 = C * 44/12

71. For Project 1, we assume reforestation of 4800 ha with appropriate species for production forest planting[28] in 7 years rotation and reforestation of 1200 ha with a lowland evergreen forest species (for conservation planting) that stores carbon for 20 years[29]. We also assume that 4800 ha of avoided deforestation will occur in the same pattern as the 4800 ha of production forest planting. All calculations are for a 20 years period. Further details on calculations are provided in annex 6.

72. Carbon sequestration from Project 1 is as follows:

    414,390 tons CO_2 from reforestation with production forests
    443,989 tons CO_2 from reforestation with a lowland evergreen forest species
    1,775,957 tons CO_2 from avoided deforestation
    2,634,336 tons CO_2 total

73. For Project 2, we assume reforestation of 7100 ha for production forest and 7100 ha of avoided deforestation will occur in the same pattern as the reforestation.

74. Carbon sequestration from Project 2 is as follows:

    612,952 tons CO_2 from reforestation
    2,626,936 tons CO_2 from avoided deforestation
    3,239,888 tons CO_2 total

5.3 Financial and Economic Benefits from Projects 1 and 2

75. Projects 1 and 2 will provide financial and economic benefits to project participants. These have been estimated for each project concept. In Project 1, financial and economic net benefits are estimated only for the revenue-generating components of the project. This includes changes/improvements in livelihoods adopted by household farmers, and establishment of community forests. In Project 2, financial and economic net benefits are estimated for two

[28] In order to estimate possible carbon sequestration, our calculations are based on data from eucalyptus/acacia species. This is not an endorsement to use these species in projects 1 and 2 – other species could be used. Rather, eucalyptus/acacia are reference species for which required data to calculate carbon sequestration is readily available.

[29] All assumptions on areas for reforestation are preliminary only to allow estimation of C sequestration.

out of the three components that are revenue generating, and then for the project as a whole.

76. In order to make estimation of financial and economic net benefits it has been necessary to make some preliminary assumptions about the scope and activities in each project. These assumption are made based on field consultations in four provinces (Koh Kong, Pursat, Siem Reap and Preah Vihear) and include changes in crop cultivation e.g. in project 1 farmers will grow oranges instead of maize as well as improved cultivation of banana and pineapple. Preliminary assumptions are also made on the number of communities participating and areas involved for each crop. More details on the assumptions for both project 1 and 2 are provided in annex 7. It is likely that a comprehensive project preparation will alter some of these assumptions. This will affect the estimation of the financial and economic returns.

77. For Project 1, only component 2, pilot landscape management activities in project corridors, has a revenue-generating component. In this component, we assume that about 60 communities located in 2 – 3 project conservation corridor areas will change or improve their farming activities and also plant some forests; we assume that the forests will be a combination of production forests and conservation forests (to help achieve targets for improved natural resource management set by a landscape management plan for each conservation corridor).

78. Table 5.1 shows the financial net present value (FNPV) and economic net present value (ENPV) for the community farming and forest activities. Table 5.1 shows a FNPV of $40 million and an ENPV of $43 million for the farming improvements and forestry planting. The total project cost of these activities is about $19 million. Under the assumptions of the FNPV and ENPV, the returns justify the project investment.

Table 5.1 Financial and Economic Returns[1] for Community Farming and Forestry

	No. of Ha[1]	FNPV Per Ha	Total FNPV	ENPV Per Ha	Total ENPV
Farming	10617	$4,470	$47,461,590.14	$4,626	$49,114,291.84
Forestry	6000	-$1,315	-$7,888,091.37	-$1,153	-$6,916,201.68
Total			***$39,573,498.77***		***$42,198,090.16***

1 Assumes 51539 ha available in total across 60 communities in 3 designated conservation corridor areas; 10,617 ha for 10,617 households are planted in agricultural crops; 100 ha per community is planted in forestry.

79. For Project 2, financial and economic net benefits have been calculated for two out of the three components that are revenue generating, and then for the project as a whole. The first component in the project is a planning activity that is necessary to be completed prior to the revenue-generating components taking place. Table 5.2 shows the combined FNPV and ENPV

per ha for the 20 communities expected to join the project that will implement farming changes/improvements and plant community production forests. These net financial and economic returns are positive.

Table 5.2 Financial and Economic Returns[1] for Community Farming and Forests

	No. of Ha[1]	FNPV Per Ha	Total FNPV	ENPV Per Ha	Total ENPV
Farming	6213	$3,292	$20,450,686	$3,027	$18,805,708
Forestry	2100	$1,322	$2,776,532	$1,524	$3,201,068
Total			***$23,227,217***		***$22,006,776***

1 Assumes 34,793 ha available in total across 20 communities; 6,213 ha for 6213 households are planted in agricultural crops; 105 ha per community are planted in forestry.

80. It is assumed that companies/JVs in the project will plant 5000 ha of production forests. These have the same per ha financial and economic returns as do the community forests. With these assumptions, the FNPV is about $23 million and the ENPV is about $22 million for these plantations, as shown in Table 5.3.

Table 5.3 Financial and Economic Returns[1] for Company/JV Forestry

	No. of Ha[1]	FNPV Per Ha	Total FNPV	ENPV Per Ha	Total ENPV
Forestry	5000	$1,322	$6,610,790	$1,524	$7,621,591
Total			***$6,610,790***		***$7,621,591***

1 Assumes 5,000 ha are planted in forestry by companies/JVs

81. Table 5.4 shows the FNPV and ENPV for the entire project. For FNPV, project costs are about $27 million, but these are covered by project benefits of about $49 million. For ENPV, project costs are about $22 million, with project benefits of about $43 million.

Table 5.4 Project 2 Financial and Economic Returns[1]

	Total FNPV	Total ENPV
Net Benefits	$29,838,007	$29,628,367
Project Costs	$27,198,357	$22,665,298
Total	***$2,639,649***	***$6,963,069***

1 Financial and economic NPVs calculated over 21 years at 12% discount rate.

82. Where project 1 and 2 will generate direct economic return on investments, project 3 will providing information on the state of the forest and help the RGC, the private sector and civil society take informed decisions on forest policy and investments as well as improve forest governance and reporting on forest and climate targets. This will have significant benefits including economic benefits and project 3 will, with the linkages with project 1 and 2, be cost-effective and thus a relevant part of the FIP/IP despite economic benefits being harder to quantify.

6. Collaboration Among MDBs and with Other Partners

6.1. Previous Donor-Funded Projects in Cambodia

83. A large number of donors have funded projects or programs in Cambodia that are relevant to the projects proposed in the Cambodia FIP/IP.

84. ADB has been and continues to be involved in projects related to forest, biodiversity and land use in general. The current ADB project that is relevant as an underpinning project for REDD+ and the FIP-IP projects is the Biodiversity Conservation Corridor project in Cambodia (the ADB also has sister Biodiversity Conservation Corridor projects in Lao PDR and Vietnam). The BCC project has assisted CFs and CPAs in two provinces to replant and enhance forests; worked with CF and CPA communities to adopt alternate livelihoods that will increase incomes; provided seed capital to community-managed revolving funds; and assisted MoE to develop a strategic plan for the management of CPAs and support the implementation of the Sub decree No.07 ANKr.BK on the Creation of Biodiversity Conservation Corridors.

85. WB has not been engaged in the forest sector (or more broadly in agriculture and natural resources) in Cambodia in recent years. The WB and the government of Cambodia are currently having a dialogue regarding a renewed engagement that could lead to the WB providing funding for projects in forestry and natural resources.

86. The International Finance Corporation (IFC), provided assistance to ACLEDA Bank, which in part enabled ACLEDA to grow from being an NGO microfinance company to become one of Cambodia's largest and one of its most successful banks. IFC holds $1.6 million in equity in ACLEDA and an IFC representative sits on ACLEDA's Board. Earlier, IFC loaned ACLEDA $6 million in 2004 and $5 million in 2006 to support it's lending to SMEs and licensed microfinance institutions. In 2007, IFC provided ACLEDA with trade financing that assisted Cambodian SMEs to develop trade with other countries.

87. The United Nations Development Programme (UNDP) has been active on a number of projects that relates to the forest sector and proposed investment concepts. UNDP is the implementing agency for the Forest Carbon Partnership Facility's (FCPF) Readiness Fund grant to Cambodia. In 2016 this project allocated additional $5 million to Cambodia. The work plan for this grant is being developed.

88. UNDP is the implementing agency for the Collaborative Management for Watershed and Ecosystem Service Protection and Rehabilitation project in the Cardamom Mountains' Upper Prek Thnot River Basin. This project is taking a catchment approach to managing degraded land and also involves

CFs and CPAs undertaking activities to improve the state of natural resources in the catchment. UNDP in 2017 is conducting studies into financial and economic analysis of production models in the forest sector and a study to identify key NTFPs, which is relevant for the FIP/IP.

89. The Food and Agriculture Organization of the United Nations (FAO) has been supporting REDD+ implementation in Cambodia since 2012, first as part of the Cambodia UN-REDD Programme which was completed in 2015 and later through the FCPF project implemented by UNDP. As part of this work FAO is supporting the development of a national forest monitoring system for REDD+ under UN-REDD Targeted Support. FAO is furthermore providing support for: 1) Forest and Landscape Restoration (FLR) efforts under the FLR Mechanism; including a Cambodia nationwide restoration opportunities assessment (ROAM), support on Sustainable Financing for FLR, and FLR cases studies. 2) Assistance to Cambodia with detection of forest degradation in 2017 under a Norway and FAO partnership agreement to improve the capacity of developing countries to monitor and report on forest resources and changes in forest area (SEPAL). 3) GEF-financed. FAO-led project "Strengthening the adaptive capacity and resilience of agriculture-dependent communities using micro-watershed approaches to deal with the adverse effects of climate change and extreme weather on a landscape scale" with a focus on smallholder production, the application of climate-resilient agricultural techniques, reduced green-house gas emissions through conservation agriculture, collaborative activity and value chain development, and community-based sustainable natural resource management. Including communities in Siem Reap and Preah Vihear provinces. 4) Lessons under the EU FAO FLEGT Program: 'Strengthening the Role of Community Forestry in FLEGT in Cambodia.

90. A number of bilateral donors are also involved in supporting Cambodia and relevant for the investment proposal. The Japan International Corporation Agency (JICA) has provided support over a number of years to Cambodia's forest sector, including for REDD+ development. This includes technical support for the development of the Forest Reference Level submission to the UNFCCC as well as pilot activities. This also includes support for the development of REDD+ projects as part of the Joint Crediting Mechanism (JCM) in Prey Long forest landscape.

91. South Korea has provided various support related to reforestation of forest areas in Cambodia within the last decade. Some of the major projects include: (i) AFoCo Landmark Program: restoration of forest degraded regions in Siem Reap; (ii) promotion of forest rehabilitation in Cambodia and Viet Nam through demonstration models and improvement of seed supply system in Siem Reap and Sihanoukville; (iii) reclamation, rehabilitation and restoration of degraded forest ecosystems through pilot testing, exchange of expertise and capacity development in Mondulkiri; (iv) improving capacity on forest restoration in Phnom Penh and Siem Reap.

92. The European Union (EU) has supported the development of the National Forest Programme (2010-2029) and supports a regular five-year update of the program as well as supported the preparatory work for FLEGT program in Cambodia. The engagement between Cambodia and the EU on entering a Voluntary Partnership Agreement (VPA) under the FLEGT initiative is still in process and could materialize when an agreement is made.

93. The US Agency for International Development (USAID) has supported activities related to the forest sector and REDD+ through a number of initiatives. Its Lowering Emissions in Asia's Forests (LEAF) program has produced a number of knowledge products including a study of the drivers of deforestation in Cambodia. Another project, Supporting Forests and Biodiversity Project (SFB), supports communities mainly in the Prey Long forest landscape to improve their livelihoods.

94. Conservation International (CI) together with FAO is helping the RGC preparing a proposal for GCF funding focusing on protected landscapes in the Cardamom Mountains.

95. International Union for Conservation of Nature (IUCN) is implementing a GEF funded project: GEF Sustainable Management of Peatland Ecosystems in Mekong Countries project supporting a landscape approach for peatlands in Cambodia, Lao and Myanmar. In Cambodia the project will be located close to the coast.

96. Groupe Energies Renouvelables, Environment et Solidarités (GERES) is working with the full supply-chain for fuel wood production, improved charcoal kilns, improved cook stoves, sale, governance and efficient use of wood for energy. From their work it has been clear that demand for biomass for energy puts strong pressure on forests resources and that there is an urgent need for sustainable production systems together with improved energy efficiency and that a legality assurance system can support the sustainable and legal production of wood energy.

97. Cambodia Agriculture Value Chain Program (CAVAC) has implemented a number of projects to increase smallholder farmers' income by increasing the value of agricultural production. As part of this work a publication with achievements and lessons learned highlighting the following:
    - Getting to scale is not easily planned in advance, the programs need to be flexible enough to respond quickly to opportunities.
    - Human and financial resources need to be transferred to emerging opportunities.
    - Solutions cannot be pre-engineered, the team needs to engage with companies and remain receptive to a range of possible actions.
    - Innovation is often a joint venture into the unknown, and requires flexible,

pragmatic contractual arrangements.

- Strategies need to be constantly questioned and re-examined – always looking for a better approach.
- Market systems approaches need time – programs need at least five years to have an impact.
- The Business Enabling Environment activities pre-planned in the project design document were not successful. Taking advantage of opportunities worked better.
- CAVAC was most successful in influencing our partners and stakeholders by modeling and demonstrating what works.
- Understanding the opportunities and constraints to change within institutions is essential before offering support.

98. The Cambodia Civil Society Organizations REDD+ Network (CSO-REDD+ Network) is a network of about 25 civil society organizations and development partners who work on natural resources, REDD+ and forestry in Cambodia. The network serves as a bridge between government agencies and non-government institutions including conservation groups, academia, local communities, indigenous people and development partners. The network provides the platform for its members to make contribution to the national policies related to REDD+ since some of its members are also part of the National REDD+ Program Executive Board, the REDD+ Consultation Group, REDD+ Gender Group, and REDD+ Technical Teams.

98. The further development of the FIP/IP projects will require close contact with these programs, projects and networks to ensure synergies and avoid overlap.

6.2. Possible Donors for FIP-IP Projects

99. Cambodia does not have donor commitment for any of the proposed FIP/IP projects. The RCG will explore possible options including GEF and GCF funding and how the funding from these sources will complement and enhance the contribution from the FIP/IP.

100. Cambodia will also engage in dialogue with the relevant MDBs. With recent and on-going legal reforms the RGC considers that the FIP/IP could be a very significant contribution to strengthen the current policy as outlined by the National Strategic Development Plan (2014-2018) and supported by the National REDD+ Strategy and the National Protected Areas Strategic Management Plan. With the clear links to the Nationally Determined Contribution to the Paris Agreement and the Sustainable Development Goals the RGC consider it an opportune time for such engagement.

7. Projects to be Co-Financed by FIP

101. The FIP investment plan for Cambodia contains three projects: (1) Climate Smart Landscapes through Conservation Corridors, (2) Reforestation and Production Forests through Public Private Partnerships, and (3) Implement National Forest Monitoring.

102. The projects will establish and enhance conservation and production forests, protect existing carbon stocks and increase carbon sequestration, improve management and protection of biodiversity and important ecosystem services for livelihoods and climate resilience. The three projects will address all the identified drivers of deforestation and forest degradation and support all the 19 strategies identified in the National REDD+ Strategy as illustrated in table 7.1 and 7.2 at the end of this section and complement existing NAMAs in reducing emissions.

103. The three projects complement each other and will together support the recent institutional changes and priorities by supporting the relevant government agencies to:

- improve the capacity to manage natural resources - particularly forests, soil, and water - in a new framework for landscape management in biodiversity corridor with important climate benefits;
- promote sustainable production forests including by improving enabling conditions for private sector investments;
- assist communities in the project areas to adopt alternative livelihoods that will not degrade the forests and to implement sustainable farming practices; and
- strengthen forest governance by improve the capacity to monitoring the state of forests and major forest users and acquire essential forest data for forest policy development including REDD+.

7.1 Project 1: Climate Smart Landscapes through Conservation Corridors

7.1.1 Context for Project 1

104. To confront deforestation and fragmentation, the Cambodian government recently adopted a “corridor approach” to the management of its forests. This will help to mitigate climate change through the protection and management of carbon sinks and improve adaptation measures to protect habitats and biodiversity. Protecting forested corridors will also contribute to watershed management by reducing runoff, erosion and sedimentation, which can impact aquatic habitats and increase risks to downstream agriculture, as well as jeopardize hydro projects.

7.1.2 Project 1 Objectives

105. The proposed project aims to (i) strengthen the government’s approach to forest conservation and management, so as to bring a wider range of stakeholders and initiatives to focus on priority issues; (ii) promote ecosystem

connectivity through conservation corridors with multiple stakeholders; (iii) improve livelihoods of rural communities and (iv) reduce greenhouse gas emissions from the forest sector.

7.1.3 Expected Key Results from Project 1

106. The project aims to have the following impacts and key results, including:

- Development of a strategic plan for landscape management in corridors
- Design and implementation of a landscape management framework in individual corridors and piloting this in two to three corridors
- Pilot landscape management activities according to corridor plans prepared for the two – three corridors selected for the project
- Generation of climate benefits, including the reduction of greenhouse gas emissions in project corridors
- Support for sustainable climate-smart livelihoods to rural communities to improve incomes in project areas
- Strengthen the management of at least two protected areas that serve as anchors within the corridors
- Capacity building for forestry, conservation, climate change mitigation and landscape management using participatory approaches for national and subnational stakeholders

7.1.4 Project 1 Description

107. The project aims to bring a landscape management approach to two to three newly-designated corridors and strengthen protected areas in each. Along with biodiversity, valuable environmental goods and services in and around existing protected areas will be conserved. This includes the protection of watersheds, which help regulate water quality, quantity and regimen; soils, which will be protected from degradation and nutrient depletion due to unsustainable farming practices; and the preservation of old-growth forests, which are prevented from being deforested, and serve as important carbon sinks for climate-change mitigation. In addition, the project will work with rural communities in and around the corridors to encourage climate-smart livelihoods and increase incomes. The project approach to conservation corridors will be based on the Convention on Biological Diversity (CBD) recommendations and guidelines (2003, 2004 and 2006) and the operation would coordinate with relevant ongoing and planned initiatives to ensure synergies and consistency in the support to the government for landscape level planning and management.

108. The project aims to achieve both financial and economic sustainability. On the financial side, the improvements in livelihood and on-farm activities, including soil conservation, would serve to increase household incomes in corridors. From an economic side, the improved protection of forests would preserve valuable carbon stocks. Good watershed management would help to protect hydro projects and agriculture in basins adding security and longevity to the investments.

109. The project contains three components:

1. Design and trial a framework for participatory planning for corridor management. The component would aim to improve the enabling environment for corridors management and planning in the context of climate-change mitigation. It would work with a range of government entities and other stakeholders, including non-governmental organizations, development partners and representatives of civil society. Specific activities include:
   - Developing a strategic plan for Cambodia's conservation corridors initiative.
   - Developing conceptual and operational plans for two to three designated conservation corridors, including inventories, assessments, zoning criteria and guidelines for participation.
   - Reviewing the policy framework and drafting proposals for improving the regulatory framework to support climate-change mitigation, adaptation and landscape management in the forest sector.
   - Development and validation of eligibility criteria for beneficiary participation in pilot corridor activities.
   - Training and capacity building for stakeholder involvement.

2. Pilot landscape management in selected corridors. Component 2 would aim to pilot landscape management activities for strengthening linkages and management of key forest areas with the recently established corridors designated by the government. About 60 communities in strategic areas within the corridors would receive assistance for developing and implementing climate-smart livelihoods based on participatory models. One protected area in each corridor serving as an anchor would also be strengthened. Specific activities include:
   - Carrying out of demonstration activities of desirable landscape management practices in target corridors; and development and carrying out of capacity building activities and technical assistance on best practices for agriculture, forestry, ranching and conservation.
   - Provision of technical assistance for the preparation and carrying out of community subprojects, including assistance in the design of climate-smart farm plans to support the implementation of subprojects; carrying out of capacity building activities to raise awareness of conservation benefits and climate change.
   - Strengthening protected area management through the provision of training, infrastructure, goods (such as vehicles, computers, firefighting equipment), technical studies, boundary surveys and demarcation, activities to mainstream climate-change mitigation and adaptation concepts into management, among others.
   - Monitoring and evaluation of results and impacts, especially for the reduction of greenhosue gas emissions.

3. Design and operate sustainable financing mechanisms for landscape management in corridors. The component would develop proposals for a financing mechanism to fill gaps, and planning to support the long-term

sustainability of landscape management, climate-change mitigation and corridors activities, as well as sustainable forestry concerns. Options such as conservation trust funds, carbon financing and micro-financing, among others would be considered. Partnerships for financing would be explored and the project would aim to have the mechanism in-place and operational by mid-term.

7.2 Project 2: Reforestation and Production Forests through Public Private Partnerships[30]

7.2.1 Context for Project 2

110. The Cambodia government has banned the establishment of new ELCs. Some existing ELCs have had their land areas reduced and/or the length of their lease reduced. Thus, the supply of wood products from ELCs will be reduced in the future. Cambodia has limited experience with production forestry and private sector investments in the forest sector. To develop and sustain a production of timber and fuelwood, enabling conditions for private sector investments is required, as well as enhanced efforts to unlock the potential of communities to participate and benefit from sustainable forest management.

7.2.2 Project 2 Objectives

111. Support efforts to meet future demands for wood products, including fuelwood, and reduce pressure on natural forests by increasing investments in wood products from production forestry.

7.2.3 Expected Key Results from Project 2

112. The project aims to have the following impacts and key results, including:

- Arrangements in place by the Cambodian government to attract companies to invest in production forests.
- Increased in private sector investment in production forestry.
- Increased reforestation with production forests.
- Increase in communities direct engagment in production forestry.
- Technical assistance and financial support to adopt new livelihoods or improve existing livelihoods inclding for poor households and households headed by women.
- Increase in investments in community facilities that support new livelihoods or more sustainable farming practices in project areas.

7.2.4 Project 2 Description

113. The project aims to establish a cluster of short-rotation production forests to produce wood products, for example fuel wood or poles. This project will increase carbon sequestration through reforestation of the new production forests, and by reducing deforestation via the illegal logging in

[30] It is assumed that the project will be reforestation on lands previously deforested, however, there can also be instances where afforestation or forest rehabilitation are more appropriate. In any case, the project will avoid converting natural forests to plantations.

national parks, wildlife sanctuaries, and other state forests (this occurs in order to obtain wood products that are not available through legal sources of supply). This project is transformational because the Cambodia government previously has not made any significant and sustained efforts to encourage and support the development of a production forestry industry.

114. The production forest cluster established could contain forests managed by companies, government departments, and community-managed forests. Participants in the production forest cluster will be encouraged to work together to share forest production technology and practices, and eventually approaches to marketing and value chain. The project will support communities that have community-managed production forests in the project by providing technical assistance and financing for new livelihoods, or improving existing livelihoods. These new or improved livelihoods will increase household incomes, particularly in the period of time from planting to the first harvesting of the new production forests. This will replace income that the communities could have earned from the land they place in new production forest.

115. Project components:

1. Establish enabling conditions for public-private partnerships and community investments in the forest sector. Specific activities include:
   - Identify the opportunities and constraints to establishing production forests through public-private partnerships and community investments, and then developing a framework that will provide incentives – financial and non-financial – for investments in production forests. This will require further dialogue with private sector entities representing the full value-chain and will draw on synergies with project 3 regarding forest resource assessment and experiences from piloting legality assurance system.
   - Design and deliver a capacity-building program for government officials on how to develop and then implement a framework of enabling conditions to establish production forests.

2. Establish and trial production forests. Specific activities include:
   - Pilot investments in production forests through public-private partnerships and community investments.

3. Support forest dependent communities to establish small production forests and improvements in alternate livelihoods. Specific activities include:
   - Develop models and provide technical assistance, extension services, marketing, and value chain assistance to communities that establish production forests.
   - Design and establish a financial mechanism to encourage community investments in sustainable livelihoods, and forest and land management.

7.3 Project 3: Implement National Forest Monitoring

7.3.1 Context for Project 3

116. Forest monitoring is necessary for evidence-based forest policy development and for effective management of forests whether it is for production or conservation purposes. The focus on forests both a national and international level is increasing not least in connection with climate change. Forest data is also needed for fulfilling international commitments such as reporting to UNFCCC and FAO. As most other developing countries Cambodia don't have data on emissions from forest degradation at national scale, and the submitted FRL including only emissions from deforestation. NFI data is the first step towards allowing Cambodia also to report on emissions and removals from changes in forest carbon stocks in existing forests. Cambodia has already made progress by developing a design for a National Forest Inventory (NFI) and conducted training in the use of satellite images and field assessment but need to implement and conduct field surveys of forests in all of Cambodia. This project will work closely with other initiatives such as the FCPF project that also includes a MRV component but not in a position to implement a NFI at national scale.

117. Timber, other wood products can be a climate friendly material when produced sustainably without depleting the resources. Trading in illegal timber is a major concern for countries trying to protect and manage forests. A concern for both producers and consumers and this has led to significant efforts devoted to ensure legality of timber traded. In the current situation there is a risk that legal wood products will have difficulties to compete with illegal sourced wood products and consumers will not be able to distinguish and buy preferred legal wood. Cambodia has already for some years been engaged in such discussions towards a VPA with the EU as part of the FLEGT initiative. Project 3 will be able to complement and synergize with work under the FLEGT initiative.

7.3.2 Project 3 Objectives

118. The proposed project aims to: (i) provide information on the state of the forests in Cambodia; (ii) mitigate climate change effectively by providing updated information on forest carbon stocks in accordance with UNFCCC decisions on REDD+; (iii) improve monitoring capacities for economic land concessions and other forest land users that have a forestry component; (iv) Further develop the Timber Legality Assurance System (TLAS).

7.3.3 Expected Key Results from Project 3

119. The project aims to have the following impacts and key results, including:

- Build capacity on forest monitoring in the involved government agencies and improve knowledge on the state of the forest by producing updated information including on biodiversity (species distribution), forest management including possible degradation, regeneration, carbon stocks etc. and ultimately support sustainable forest management.

- Take the first step towards allowing Cambodia to report on reducing emissions from forest degradation in accordance with UNFCCC decisions on REDD+ and target these emissions more effectively. This will also help Cambodia to fulfill and report on international commitments such as the Nationally Determined Contributions (NDC) following the UNFCCC Paris Agreement, as well as reporting under CBD, UNFF, FAO FRA, CITES, RAMSAR etc.
- Enable evidence-based forest policy and thus improve management of protected and production forests as well as Economic Land Concession with a forest component.
- Build on existing efforts to design and pilot an effective Timber Legality Assurance System that will allow Cambodia as well as suppliers and consumers of timber and other wood products to have the market advantage of being able to demonstrate legality of their products.

7.3.4 Project 3 Description

120. A proposal for a NFI design was developed in 2014. A NFI will fulfill UNFCCC REDD+ requirements and be part of a robust and transparent national forest monitoring system to collect information on forest carbon pools. The project will build on this earlier work including work on carbon measurements already done for mangrove forests and wetlands.

121. Project components:

1. Support the implementation of a NFI. Activities include:
   - Identifying open source tools that will integrate well with existing information, establishing a steering group with representatives from relevant stakeholders. Develop a protocol for which indicators to sample, agree on a MoU between the participating agencies on data collection and handling with the aim to fulfill the management needs of the respective agencies. This will include consideration on data needs not only for REDD+ reporting but also for forest policy development in general including the seven thematic elements for SFM [31] as well as other reporting requirements.
   - Develop a plan for the implementation of the field survey including protocols for data handling and procurement of necessary equipment.
   - Implement the NFI field survey.

2. Support monitoring of ELCs and other forest land users with a forestry component. Specific activities include:
   - Establish a system for monitoring specific land uses based on a combination of satellite images and ground-based data. This will integrate with component 1 to utilize NFI data.

3. Further develop the Timber Legality Assurance System. The project will pilot a TLAS to help producers as well as government agencies to provide a possibility for legal producers of wood products to demonstrate and verify legality to buyers. This will fill a gap for the legal producers of timber and provide a competitive advantage. The project will work with existing initiatives

[31] The seven thematic elements identified under the UN Non-legal binding instrument on forests are: Extent of forest resources; Forest biological diversity; Forest health and vitality; Productive functions of forest resources; Protective functions of forest resources; Socio-economic functions of forest resources and Legal, policy and institutional framework.

and target both timber for export and timber for domestic consumption including fuelwood for the industry. The project will not pilot a full certification system of sustainability but legality will be an important first step in this direction. Specific activities include:

- Establishing a legal definition that includes laws relating to the whole supply chain; this includes a multi-stakeholder consultation process.
- Identify gaps and problems including how to verify compliance.
- Develop robust, credible supply chain control rooted in existing systems and procedures.
  Pilot a system to verify compliance with the legal definition.

122. Table 7.1 below lists the identified drivers and shows how the FIP/IP projects address the different drivers. While some impact will be at national level such as increased capacity for participatory planning in key ministries as well as national forest data, other impacts will be piloted at the identified project areas with the potential to be replicated and scaled up in other parts of Cambodia.

Table 7.1. Drivers of deforestation and forest degradation in Cambodia from the National REDD+ Strategy[32] and how they are being addressed by the FIP/IP Projects.

Driver	Addressed by FIP/IP Projects
Rapid expansion of agriculture into forest lands, granting of large-scale agro industrial economic land concessions, and distribution of land titles under social land concessions.	The moratorium on ELCs will eventually put a halt to this driver. Project 3 will help monitor ELCs and ensure compliance with existing master plans.
Uncertain land tenure, land speculation, unauthorized encroachment of forest lands.	Project 1 and 3 with participatory planning, capacity building and forest monitoring
Migration into forest areas.	Project 1, 2 and 3 with support for improved livelihoods, planning and monitoring.
Unauthorized logging and unsustainable harvesting of forest and non-timber products.	Project 1, 2 and 3 with capacity building including in forestry, establishment of sustainable production and support to legality assurance.
Improvements in accessibility to remote forested areas, commercial logging, and infrastructure projects; and Inadequate government capacity to manage forests in	Project 1 and 3 with capacity building and forest monitoring.

[32] The draft National REDD+ Strategy doesn't distinguish between direct and underlying drivers.

these areas.	
Weak forest governance, law enforcement, and monitoring of forest and land use sector.	Project 3 with forest monitoring including for ELCs and other forest land users.
Lack of state land registration and forest estate demarcation.	Project 1 and 3 with participatory land use planning, zoning and demarcation and forest monitoring.
Inadequate implementation of environmental and social impact assessment regulations.	Project 1 with capacity building at national and sub-national level.
Increasing regional and global demand for raw materials such as rubber and sugar.	Project 1 and 2 with support for more productive agriculture can address the supply side.
Population increase and demand for agricultural land.	Project 1 and 2 with support for more productive agriculture and thus reduce the demand for additional agriculture land.
Rural poverty and lack of alternative livelihoods.	Project 1 and 2 with support for improved livelihoods and enhanced income generation for community households.

123. The NRS further identify 19 different strategies to address the drivers. Table 7.2 below illustrates how the three FIP/IP projects match the 19 strategies.

124. While the NRS works on national scale the FIP/IP projects, in particular project 1 and 2 partly works partly at national scale and partly at project scale piloting policies and measures to address the drivers of deforestation and forest degradation.

Table 7.2. Strategic objectives and strategies from the draft National REDD+ Strategy and supporting FIP/IP project.

Strategic Objectives	Strategies	Supporting FIP/IP project
Improve management and monitoring of forest resources and	Strengthen management of forest conservation areas, such as protected areas and flooded and mangrove conservation areas.	Project 1
	Promote forest land tenure security through forest land classification zoning, demarcation, and	Project 1

forest land use	registration.	
	Strengthen law enforcement activities to address unauthorized logging, and encroachment.	Project 3
	Monitor the status of ELCs and SLCs for compliance with regulations.	Project 3
	Support harmonization of legal frameworks for effective management of forest resources.	Project 1
	Strengthen regulatory framework and capacity for social and environmental impact assessment and compliance.	Project 1
	Strengthen capacity for data management and establish decision support systems for forest and land use sector.	Project 3
Strengthen implementation of sustainable forest management	Strengthen and scale up community-based forest management.	Project 1 and 2
	Engage and encourage the private sector to implement alternative and sustainable supply chains from agro industrial plantations, and to reduce emissions.	Project 2
	Expand afforestation, reforestation, and restoration activities.	Project 2
	Enhance timber supply and wood-based energy sourced from community-based forest management areas and private plantations to reduce pressure on forest areas.	Project 2
	Promote effective, equitable, sustainable management and use of forests, forest lands and non-timber forest products	Project 2
	Identify and implement alternative and sustainable livelihood development programmes for local communities most dependent on forest resources	Project 1 and 2
Mainstream approaches to reduce deforestation, build capacity and engage	Support mechanisms to mainstream policies and measures that reduce deforestation in relevant government ministries and agencies.	Project 1 and 3
	Strengthen national and sub national capacity for improved coordination mechanisms for national land use policy and planning	Project 1

stakeholders	Strengthen capacity, knowledge and awareness of stakeholders to enhance their contribution to reducing deforestation and forest degradation	Project 1 and 3
	Encourage public engagement, participation and consultations in forestry and land use planning, and promote the involvement of multiple stakeholders.	Project 1
	Strengthen capacity of academic and research institutes in training, research and technology development associated with forestry and land use.	Project 3
	Establish partnerships with development partners in building knowledge and human resources related to forestry, land use and climate change.	Project 1, 2 and 3

8. Risk Assessment

Implementation risks and their mitigation measures	
Risks	**Mitigation Measure**
Implementation capacity **T**he projects introduce new concepts at a time where significant revisions of the relevant legal framework are taking place including recent structural changes between the ministries responsible for forests. Weak governance capacity and corruption will weaken project implementation Low capacities to manage funds - ministries do not have adequate staffing and capabilities in-house to implement the projects in a timely manner. Risk that insufficient harmonization and coordination among sector ministries could lead to implementation difficulties and inconsistencies. Low capacity of communities and government Technical difficulties (eg. lack of experience in SFM and best practices for plantations)	The project design documents will reflect the status of the legal framework to ensure coherence. The projects will have a strong focus on building capacity at both national and local level and it is also work with non-governmental stakeholders and contract companies to undertake key tasks. Project plans will include clear output and outcomes to be achieved as well as scheduled delivery and responsibility assigned. All three projects will have one agency as executing agency and relevant agencies as implementing agencies with a clear result framework to avoid confusion about responsibilities. The FIP/IP will be approved by the NCSD in collaboration with the key responsible ministries including Ministry of Agriculture, Forestry and Fisheries, Ministry of Environment, Ministry of Economy and Finance. The NCSD as an inter-ministerial body also responsibility for REDD+ in Cambodia, is in a key position to ensure alignment among programmes and continued government support. Capacity building will be both at national and local level including for communities and include forestry aspects. This will include strong extension and technical support systems to introduce technically sound best practices.
Social risks Social effects may be seen if conflicts arise over forest tenure and rights. Previous failures with the distribution of community benefits may degrade trust in current efforts. Working in remote locations and bringing services to people living	Participatory approaches to planning and management taking into account government (national and local), communities including indigenous peoples, NGOs and private sector will preempt conflict. The projects will work with local government and local NGOs to make plans both realistic and ambitious. The projects will not include or lead to un-voluntary resettlements.

there is a challenge. There is a lack of equitable participation of both genders in land use and natural resource management activities, and the role of women in projects is underestimated, when projects could have an adverse impact on social structure and gender roles. Indigenous peoples rights are not respected. Private sector engagement could be difficult due to previous experiences with lack of transparency and clarity regarding to tenure and law enforcement.	Special consideration will be taken to ensure consultations allow both men and women to consulted. Special consideration will be taken to respect the rights of indigenous peoples where they will be involved in project activities. For communities including indigenous peoples it is the aim of the projects to promote community management and benefits and tenure rights. For project 2 the first step will be to analyze opportunities and constraints to establishing production forests through public-private partnerships and community investments. Based on this a framework for investments in production forests will be developed. This will be done in close dialogue with both government and the private sector.
Environmental risks Poor planning and/or implementation may negative environmental consequences. Natural habitats will be negatively affected. Use of invasive alien species. Increase in GHG emissions.	Environmental Assessment (EA) will be done during project planning. Impacts on natural habitats are expected to be positive by virtue of the projects objective and design. The Environmental Management Framework (EMF) will include a screening mechanism for the use of exotics species to ensure that they are only used when required and do not replace native vegetation or impact biodiversity. The projects will minimize GHG emissions from project activities as much as possible e.g. when use of fertilizers is necessary. All forest activities are expected to either reduce emissions or enhance removals of GHGs.

125. Continued monitoring of risks will be an integrated part of risk management as well as a feedback loop on lessons learned and recommended action that can improve project implementation. This will also assist in further policy, legal and regulatory reforms.

126. While the MDBs have their own safeguards that will be applied for project planning and implementation, it is also expected that Cambodia, with the support of the FCPF project will develop a Safeguard Information System (SIS) according to UNFCCC decisions that could be used for reporting on FIP/IP projects.

9. Financing Plan and Instruments

127. Detailed investment and financing plans have been prepared for each of the three projects. These are summarized in Annex A1, A2, and A3.

9.1. Investment Plans for FIP-IP Projects in Cambodia

128. A summary of the investment plans follows:

(i) Project 1: Climate Smart Landscapes through Conservation Corridors, requires about $27 million in total investment, of which about $0.53 million is to design and trial a framework for landscape management plans in corridors and pilot the development of landscape management plans in 2–3 project corridors; $20 million is to pilot landscape management activities in 2–3 project corridors, following the landscape management plans for those corridors; $0.57 million is to design and operate sustainable financing mechanisms that can fund landscape management activities in corridors; $1.4 million is for project management; and $4.4 million is for price and physical contingencies.

(ii) Project 2: Reforestation and Production Forests through Public Private Partnerships, requires about $22.5 million in total investment, of which $0.21 million is to establish enabling conditions for investment into production forests from private companies/JVs and communities; $11.5 million is to pilot the establishment of production forests by private companies/JV; $6.3 million is to support communities in the project to establish production forests and adopt alternate livelihoods; $1.2 million is for project management; and $3.2 million is for price and physical contingencies.

(iii) Project 3: Implement National Forest Inventory, requires about $5.8 million in total investment, of which about $3.8 million is to develop the system, purchase required hardware, software, and materials, and collect field data; $0.15 million is to monitor key indicators in forests and ELCs; $0.26 million is to develop a timber legality assurance system; $0.94 million is for project management; and $0.7 million is for price and physical contingencies.

9.2. Financing Plans for FIP-IP Projects in Cambodia

129. A summary of the financing plans follows:

(i) Project 1: Climate Smart Landscapes through Conservation Corridors, can be financed by donors providing about $25 million of funds and the Cambodian government about $2 million. Donors could include a multi-lateral development bank, bi-lateral donors, and FIP. Government funds are to pay taxes on goods and services purchased by the project; previously, the government has accepted paying taxes on other projects.

(ii) Project 2: Reforestation and Production Forests through Public Private Partnerships, can be financed by donors providing about $10.8 million of funds, private companies/JVs about $9.8 million, and the Cambodian government about $1.8 million. Donors could include a multi-lateral bank, bi-

lateral donors, and FIP. Their funds would pay for the establishment of production forests on small blocks in community-managed forests in the project, funds for communities in the project to adopt alternate livelihoods, seed capital for community-managed financing mechanisms, and subsidies to private companies/JVs to establish production forests. Private company/JV funds pay for the establishment of their production forests. Government funds pay for taxes on goods and services purchased by the project.

(iii) Project 3: Implement National Forest Inventory, can be financed by donors, either multi-lateral or bi-lateral, or FIP providing about $5.4 million of funds and the Cambodian government providing about $0.4 million of funds to pay taxes on goods and services purchased by the project.

130. Project 1 lends itself more to grant financing for the donor's portion of the investment. But, it would be possible to provide loan financing for the revenue generating parts of the project, the main one being the development of alternate livelihoods. Project 2 is appropriate for either grant or loan project – there will be a substantial amount of revenues generated through the project. Under loan financing, it might be preferable for the donor to waive interest payments on the loan until the first forests mature and the project actually begins to generate revenue from which the loan can be repaid. This will likely be 8–10 years from the start of the project, although smaller revenues could be earned by about year 5 of the project. Project 3 is mainly appropriate for grant financing – there will be no revenue generated directly from this project.

131. Cambodia recently achieved a per capita income that was high enough for the multi-lateral donors to advise Cambodia that future financing for projects would likely be mostly loans. The RGC is applying to the multi-lateral donors for dispensation, in order to continue with grant-funded projects. Bilateral donors have their own requirements to determine whether projects are eligible for grant or loan financing.

132. The Cambodian government will provide in-kind to continue and expect also to maintain at least current levels of financing for activities such as support for livelihoods, afforestation, community forestry development as part of the annual national budget for natural resource management. How this can complement the FIP/IP has not been decided yet, but will be investigated.

10. Results Framework

133. Table 10.1 below shows the expected outcomes of Cambodia FIP/IP following the format of the FIP/IP Logical Results Framework

Table 10.1 FIP/IP Logical Framework

Country-level FIP Results Framework		
Theme/Results	Indicator	Source of data
Reduced GHG emissions from deforestation and forest degradation and removals from enhancement of carbon stocks	a) Million tons CO2 reduced emissions relative to reference level b) Million tons CO2 sequestered through reforestation and other activities enhancing forest carbon stocks	Project reports and national forest monitoring system data. Baseline: national level FRL has been developed and submitted to UNFCCC, deforestation rate at province level is also available.
Livelihoods co-benefits	a) Number of people or households directly benefited • Increased income • Received training • Improved access to financing and markets • New employment opportunities including in forestry	Project reports, data on benefits disaggregated by gender. Baseline needs to be established as part of the project preparation phase.
The themes below will be assessed through a score-card system following FIP Monitoring and Reporting Toolkit (March 2016)		
Biodiversity and other environmental services	a) Reduced forest loss. b) Improved forest management and climate smart agriculture practices c) Improved management to enhance environmental services such as improved watershed protection	Project report, reports from relevant ministries (MoE and MAFF) will support the score-card

		system.
Governance	a) Strategic plan for landscape management of Biodiversity Conservation Corridors developed and approved. b) Management plans for BCC in project areas developed with broad participation by relevant stakeholders. c) Regulatory framework for private sector investments in forestry is clear and enabling conditions have improved. d) Information on the state of the forests is available through data collected by the NFI e) Supervision of forest users has improved with availability of land use data. f) Legality of wood products can be verified in a transparent and cost-effective manner.	Project report, reports from relevant ministries (MoE and MAFF) will support the score-card system.
Tenure, rights and access	a) Management plans for Biodiversity Conservation Corridors with zoning provide tenure clarity in project areas. b) Communities participating in production forestry have clear tenure rights and access to market forest products. c) Private sector investments in forest plantations have clarity about tenure. d) Forest monitoring provides improved clarity on state of forest resources and made public available through thematic reports.	Project report, reports from relevant ministries (MoE and MAFF) will support the score-card system.
Capacity development	a) Government agencies including at provincial level have increased capacity to conduct participatory planning for Biodiversity Conservation Corridors. b) Communities have increased capacity in forestry management including production forestry as well as climate smart agriculture practices with increased benefits. c) Government agencies can manage the implementation of a National Forest Inventory and produce reports on the state of forests. d) Government agencies including	Project report, reports from relevant ministries (MoE and MAFF) will support the score-card system.

	at provincial level have increased capacity in production forestry. e) Government agencies including at provincial level can facilitate the cost-effective operation of a legality assurance system.	

Annex 1 The Proposed Investment Projects

Annex 1.1 Proposed Project 1: Climate Smart Landscapes through Conservation Corridors

1.1.1 Overview and Reasons for Requesting FIP Financing

1. This project will develop and implement a landscape management approach to newly-designated conservation corridors, including protected areas that may anchor the corridors. This includes developing a strategy for conservation corridors, designing a framework for plans for individual corridors, developing individual plans for two – three selected corridors; piloting landscape management activities in the selected corridors; and designing and implementing sustainable financing mechanisms that will support landscape activities in corridors for the long-term. This project will increase carbon sequestration by reforestation, slowing deforestation, and enhancing the productivity in existing agricultural areas. The project will also improve the sustainability of natural resources in corridor areas. This is a transformational project – managing natural resources long-term through landscape management in corridors is a new approach for Cambodia.

1.1.2 Problem Statement

2. To confront deforestation and fragmentation, the Cambodian government recently announced that it would adopt a “corridor approach” to the management of forest lands that are in proximity to protected areas. This corridor approach will help to mitigate climate change through the protection and management of carbon sinks, and improve adaptation measures to protect habitats and biodiversity. Protecting forested corridors will also contribute to watershed management by reducing runoff, erosion and sedimentation, which can impact aquatic habitats and increase risks to downstream agriculture, as well as jeopardize hydro projects.

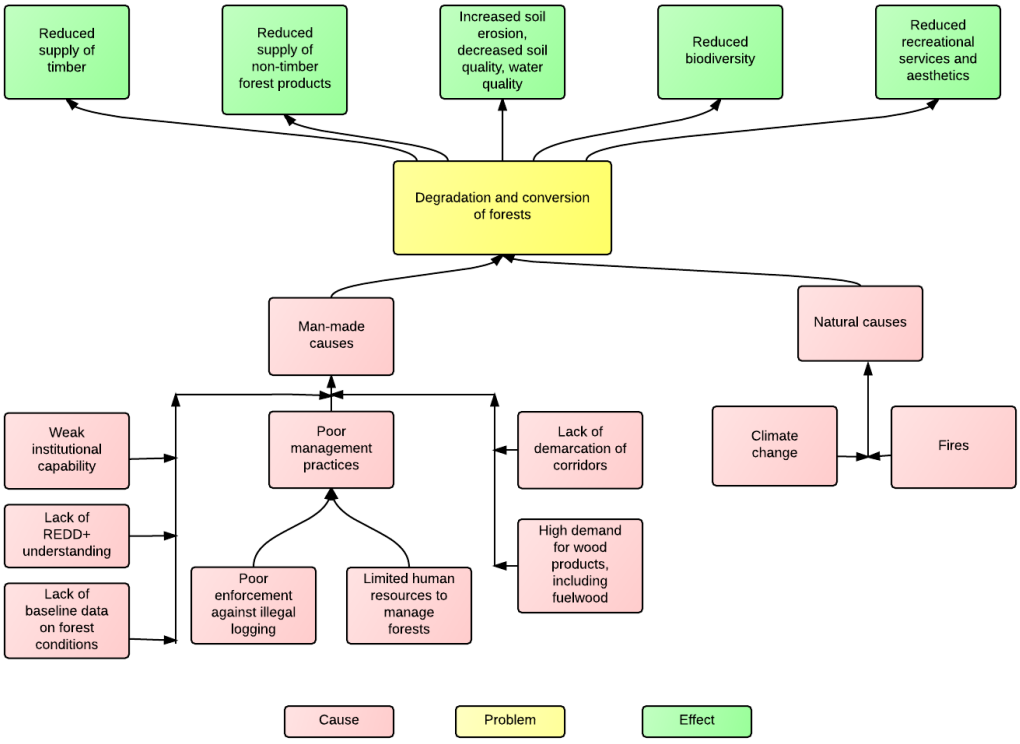
3. Figure A1-1 shows a problem tree developed for this project.

1.1.3 Rationale for the Project

4. The project aims to bring under participatory forms of management two to three strategic forest corridors in Cambodia and strengthen at least one protected area that anchors each. Along with biodiversity, valuable environmental goods and services in and around existing protected areas will be conserved. This includes the protection of watersheds, which help regulate water quality, quantity and regimen; soils, which will be protected from degradation and nutrient depletion due to unsustainable farming practices; and the preservation of forests, which are prevented from being deforested, and serve as important carbon sinks for climate-change mitigation. In addition, the project will work with rural communities in and around the corridors to encourage climate-smart livelihoods and increase incomes. The project approach to conservation corridors will be based on the Convention

on Biological Diversity (CBD) recommendations and guidelines (2003, 2004 and 2006) and the operation would coordinate with relevant ongoing and planned initiatives to ensure synergies and consistency in the support to the government for landscape level planning and management.

Figure A1-1. Problem Tree for Project 1.



5. The project aims to achieve financial and economic sustainability. On the financial side, the improvements in livelihood and on-farm activities, including soil conservation, would serve to increase household incomes in corridors. From the economic side, the improved protection of forests would preserve valuable carbon stocks. Good watershed management would help to protect hydro projects and agriculture in basins adding security and longevity to the investments.

1.1.4 Project Objectives

6. Project 1 has three main objectives:

   (i) Design and trial a framework for participatory planning for corridor management. This new framework aims to improve the enabling environment for corridor planning and management in the context of climate-change mitigation. Led by MoE, a range of central, provincial, and local government entities, communities in the corridors, and other stakeholders, including non-governmental organizations, development partners and representatives of civil society will design a framework for developing corridor plans. Trials to use this framework to develop corridor plans will be carried out in selected corridors in the project.

(ii) Pilot landscape management in selected corridors. This aims to support government agencies and local communities to carry out landscape management activities in project corridors, according to the plans prepared for those corridors. It will strengthen linkages and management of key forest areas with the recently established corridors. About 60 communities in strategic areas within the project corridors would receive assistance for developing and implementing climate-smart livelihoods based on participatory models. Livelihoods that rely on forests in protected areas will use the forest as a long-term sustainable asset, not as a short-term unsustainable flow of wood products. One protected area that anchors each corridor will also be strengthened.

(iii) Design and operate sustainable financing mechanisms for landscape management in corridors. This will develop proposals for financing mechanisms that will support landscape management activities in corridors for the long-term, and in particular activities that address the sustainability of landscape management, climate-change mitigation and sustainable forestry concerns. Options for financing mechanisms could include conservation trust funds, carbon financing, and micro-financing for communities, among others. Partnerships for funding and operating financing mechanisms will be explored. The project aims to have financing mechanisms operational by about the mid-point of the project.

1.1.5 Project Intervention Areas

7. The project could take place in selected corridors that protect water systems connected to the Tonle Sap Lake. To develop the concept for Project 1, reference corridors and protected areas in Koh Kong and Pursat provinces were used. These were chosen in consultation with MoE.[33]

8. During project preparation, MoE will develop criteria to select project implementation areas. These could include:
   - Landscape with BCC with important ecosystems such as watersheds and forest with high conservation value.
   - Deforestation hotspots.
   - Landscape with BCC connecting protected areas.
   - Community interest.
   - Representative landscape for BCCs with a view to facilitate replicability of project components

1.1.6 Project Implementation Arrangements

- Executing agency: MoE
- Implementing agencies: GDANCP, GDA
- Duration: 5 years, starting in 2019.

[33] During project preparation, the location of the project could change. This will depend on the criteria used by MoE to select project locations, and the donor's acceptance of these.

1.1.7 Project Components and Activities

Component 1: Design and trial a framework for participatory planning for landscape management in corridors.

Activities	Who/How
1. Prepare a strategic plan for landscape management in newly-designated conservation corridors and a framework for developing individual plans for each corridor.	MoE,with technical assistance financed by the project, will work with other government agencies and stakeholders to develop a strategic plan and framework for individual plans.
2. Review the policy framework and draft proposals for improving the regulatory framework to support landscape management in corridors, and in particular climate-change mitigation and adaptation.	MoE to implement with technical assistance financed by the project.
3. Develop conceptual and operational plans for two to three designated conservation corridors. This will include forest inventories, landscape assessments, zoning criteria, and guidelines for participation.	MoE with technical assistance financed by the project, will work with provincial and local governments, local communities, and stakeholders in each corridor, to develop corridor plans.
4. Develop and validate of eligibility criteria for beneficiary participation in corridor management activities.	MoE to implement with technical assistance financed by the project.
5. Design and implement training and capacity building for stakeholders involved in corridor management.	MoE with technical assistance financed by the project, will design and deliver training and capacity building.

Component 2: Pilot landscape management in selected corridors.

Activities	Who/How
1. Carry out demonstration activities of desirable landscape management practices in target corridors; and develop and carry out capacity building activities and technical assistance on best practices for agriculture, forestry, and conservation.	MoE with technical assistance financed by the project, will develop demonstration activities, and design and deliver capacity building and technical assistance.
2. Provide technical assistance for the preparation and carrying out of community subprojects, including assistance in the design of climate-smart farm plans to support the implementation of subprojects; carry out capacity building activities to raise awareness of conservation benefits and climate change.	MoE with technical assistance financed by the project, will provide technical assistance and capacity building.
3. Strengthen protected area management through the provision of training, infrastructure, goods (such as vehicles, computers, firefighting equipment), technical studies, boundary surveys and demarcation, activities to mainstream climate-change mitigation and adaptation	MoE with technical assistance financed by the project, will provide training, initiate technical studies and procure necessary

concepts into management, among others.	equipment.
4. Monitor and evaluate results and impacts, especially for the reduction of greenhouse gas emissions.	MoE will implement.

Component 3: Design and operate sustainable financing mechanisms for landscape management in corridors.

Activities	Who/How
1. Evaluate alternative financing mechanisms that could support landscape management in corridors over the long-term. Select financing mechanisms to be implemented by the project.	MoE, with technical assistance financed by the project will evaluate and select.
2. Design the governance structure and operating rules for each financing mechanism.	MoE with technical assistance financed by the project will undertake the design.
3. Prepare proposals and applications for funds for each financing mechanism.	MoE with technical assistance financed by the project, will prepare proposals and implement.
4. Provide assistance in starting each financing mechanism and capacity building for those who will govern and operate the financing mechanisms.	MoE with technical assistance financed by the project, to undertake.

1.1.8 Safeguards

9. The expected outcome of Project 1 will have a positive social impact (i) on poverty (by improving rural livelihoods and creating jobs) and clarifying land tenure rights; (ii) for women (by providing opportunities for women in livelihoods and decision-making on natural resources); (iii) for indigenous people (by encouraging their inclusion in improved livelihoods, and decision-making on natural resources). The project will not include involuntary resettlements. The project will have a positive impact on the environment through replanting or enhancing forests (and not introducing alien invasive species or converting natural forests); mitigating and enhance resilience to climate change; protecting biodiversity and ecosystem services. Further, the project will introduce multi-stakeholder engagement, and use participatory methods in planning and implementing its activities.

1.1.9 Preliminary Project Investment and Financing Plans

10. The preliminary project investment plan for the project concept described in this annex follows in Table A1-2. This investment plan could change during detailed project preparation by a donor.

Table A1-2. Preliminary Project Investment Plan

Item	Amount[a]	Share of Total (%)
A. Base Cost[b]		
1. Design and trial a framework for participatory planning for corridor management.	536,530	2%
2. Pilot landscape management in selected corridors.	20,042,662	74%
3. Design and operate sustainable financing mechanisms for landscape management in corridors.	572,160	2%
Project management	1,408,340	5%
Subtotal (A)	22,559,692	
B. Contingencies[c]	4,459,890	17%
Total (A+B)	**$27,019,582**	**100%**

[a] Includes (i) taxes and duties of $2,019,812 to be financed by the Cambodian government; and (ii) estimated cost for annual auditing ($86,068).

[b] In 2017 prices as of 1 January 2017.

[c] Price contingencies computed on all costs except international and national consultants, based on cost escalation factors of 3.6% for 2019 and 1.8% for 2020–2023 for local currency costs; 7.0% for 2019 and 3.5% for 2020–2023 on foreign exchange costs; and 10.0% for national consultant fee rates in the final 2 years of project implementation.

Source: FIP/IP preparatory team estimates.

11. The preliminary project financing plan follows in Table A1-3. This financing plan could change during detailed project preparation by a donor.

Table A1-3. Preliminary Project Financing Plan

Source	Amount	Share of Total (%)
Donors	24,999,770	93%
Companies	0	0%
Government	2,019,812	7%
Total	**27,019,582**	**100**

Source: FIP/IP preparatory team estimates.

12. The Cambodian government requests $250,000 from FIP to assist with the costs of detailed project preparation. This amount could be supplemented by donor funds for project preparation.

Annex 1.2 Proposed Project 2: Reforestation and Production Forests through Public Private Partnerships

1.2.1 Overview and Reasons for Requesting FIP Financing

13. Project 2 aims to establish a cluster of short-rotation production forests to produce wood products, such as fuelwood or poles. The new production forests will increase carbon sequestration through reforestation, and by reducing deforestation via the illegal logging in national parks, wildlife sanctuaries, and other state forests (this occurs in order to obtain wood products that are not available through legal sources of supply. This project is transformational because the Cambodia government previously has not made any significant and sustained efforts to encourage and support the development of a production forestry industry.

1.2.2 Problem Statement

14. Cambodia has had limited tree planting and forest enhancement for production forestry. There is almost no production forestry industry in Cambodia. Wood supply has come mainly from economic land concessions and from (mostly illegal) harvesting of trees in protected areas. There is a lack of enabling conditions for private sector or community investment into production forestry.

15. This has resulted in limited forest production of wood products and increased pressure to harvest natural forests, including those in protected areas.

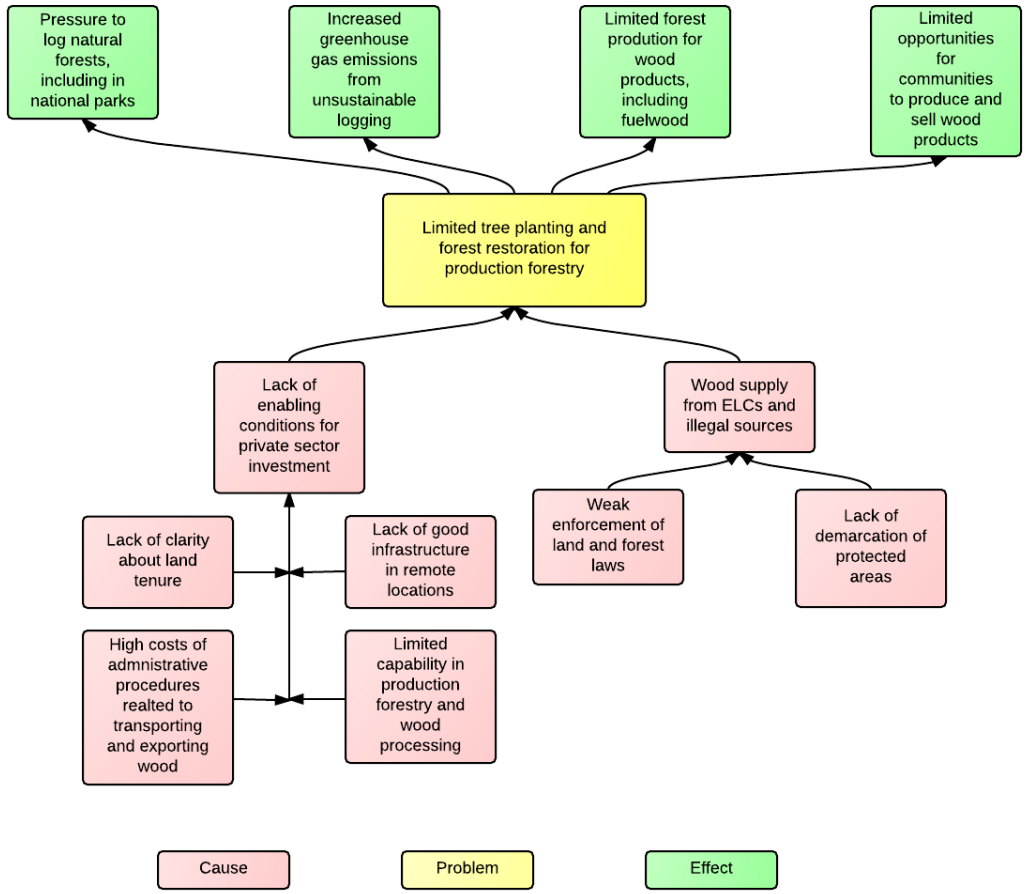
16. Figure A2-1 shows a problem tree developed for this project.

1.2.3 Rationale for the Project

17. The production forest cluster established by Project 2 will be the first significant establishment of new production forests in Cambodia in recent years. This forest production cluster will address acute shortages in the supply of certain wood products, where demand has been increasing for years, and which will very likely still be in place in another 10 – 15 years. This should reduce illegal harvesting of trees in national parks, wildlife sanctuaries, and other state forests that now takes place to try and meet demand for wood products.

18. By working with the communities that have forest lands, Project 2 will provide an opportunity for communities to increase income from new livelihood activities. This will in essence replace income that the communities could have earned from the land they place in new production forest. New livelihood activities could include some that recognize the forest as an asset base that can provide sustainable livelihoods and incomes for a long period of time. Enhanced capacities to engage in silvicultural practices and access to value chain assistance and possibility for alternative investments will promote long-term sustainability for communities involved in production forestry.

Figure A2 -1. Problem Tree for Project 2.



1.2.4 Project Objectives

19. Project 2 has three main objectives:

I. Strengthen enabling conditions for public-private partnerships and community investments in the forest sector.

II. Establish and trial production forests. Some of these new production forests will be managed by companies or joint ventures under long-term leases for the land – mostly degraded land - from the government. The land to be leased is state-owned, and could be from canceled economic land concessions. Other new production forests will be managed by communities with forest lands in the project area. In both cases, the production forests will be short rotation and suitable for fuelwood or other softwood products.

III. Assist communities in the project to adopt alternative livelihoods that can also increase household incomes, particularly during the 10-year period for the new production forests to reach maturity for the first harvest. This will be done by (a) identifying suitable alternate livelihoods and providing technical and financial assistance to communities to change to these; (b) assisting communities to establish and operate community financing mechanisms.

20. These community-financing mechanisms will make low-interest loans and/or otherwise provide funds to their household members who wish to adopt alternative livelihoods or otherwise improve their livelihood situation. The companies or joint ventures that operate the large-scale production forests in objective (i) above will provide technical assistance – and eventually marketing and value chain assistance – to the communities in the project.

1.2.5 Project Intervention Areas

21. This project could take place on state forest lands located in one or two provinces. To develop the concept for Project 2, forest land areas in Siem Reap and Preah Viehear provinces were used. These were chosen in consultation with FA.[34]

22. During project preparation, FA will develop criteria to select project implementation areas. These could include:
    - Availability of land for reforestation.
    - Distance to markets for fuelwood.
    - Community interest.

1.2.6 Project Implementation Arrangements

- Executing agency: FA
- Implementing agencies: FA
- Duration: 5 years, starting in 2019

1.2.7 Project Components and Activities

Component 1: Establish enabling conditions for public-private partnerships and community investments in the forest sector.

Activities	Who/How
1. Identify issues around enabling conditions for private sector investments in the forest sector. They may include administrative procedures for business operation, transport and selling of wood and tenure and prepare a strategy to address those issues. Enable the government to conclude an appropriate lease with one or more private sector forestry companies. Consider the following non-exclusive list of issues: a. Length of lease b. Financial terms c. Incentives required to the leasing company d. Legal requirements e. Role of government other than leasing the land. In certain circumstances, the government may wish to participate as a joint venture partner with a company in a production forest operation.	FA with technical assistance financed by the project will identify constraints for private sector investments and prepare a strategy and an appropriate approach for private sector investments.
2. Design and implement a training program for officials in FA, provincial departments, and other central government	FA with technical assistance financed by the project will

[34] During project preparation, the location of the project could change. This will depend on the criteria used by FA to select project locations, and the donor's acceptance of these.

agencies on policies to establish enabling conditions, land leasing practices, and recruitment of companies to invest	design and deliver a training program for provincial and central FA officials.

Component 2: Establish and trial production forests.

Activities	Who/How
1. Identify areas that could support production forests of short rotation species suitable for fuelwood, poles, or other wood products a. Prepare a short list of possible areas, the land ownership of those areas, and the biophysical characteristics of each area. b. Rank the possible areas for development into production forest. c. For each of the top-ranked areas, design a conceptual plan for establishing production forest over a 5-year period. The production forests should not be monoculture plantations, and can include small areas of conservation forest, such as for areas alongside streams.	FA with technical assistance financed by the project will identify suitable areas and conduct assessment for growing short rotation species suitable for producing various wood products.
2. Prepare and implement a procurement plan to call for competitive tenders from Cambodian and international companies on leasing the land. a. Identify companies who could tender and communicate with them about the tender process. b. Call for proposals c. Evaluate proposals d. Negotiate the leases	FA with technical assistance financed by the project will design the procurement process and develop lease negotiations.
3. Provide financial support to companies according to the enabling conditions determined above.	Project implementation team to provide.
4. Companies or joint ventures join the pilot and invest in establishing and maintaining production forests	Companies or joint ventures
5. Develop and implement a monitoring approach for the company/JV forests. a. Specify time frames for each monitoring b. Specify targets for the monitoring and indicators to measure progress towards the targets	FA to coordinate the monitoring of production forest establishment and maintenance by companies/JVs and communities
4. Design and implement a training program for FA officials on working with companies/JVs to establish production forests.	FA with technical assistance financed by the project will design and deliver a training program for provincial and central FA officials.

Component 3: Support forest dependent communities to establish small production forests and improvements in alternate livelihoods

Activities	Who/How

1. Identify areas in project communities that could be used for production forests of short rotation species suitable for various wood products, and prepare forest management plans for those areas. a. Each community to delineate an area suitable for production forests. Record the areas on digital maps used by FA to oversee community forests. b. Each community to develop a plan for establishing and maintaining a production forest over a 3-year period. Plans should cover land preparation, acquisition or growing of seedlings, planting seedlings, tending seedlings.	FA, possibly with companies or JVs in the project that operate new production forests, to provide technical assistance to communities in the project to identify areas for their new production forests and develop associated forest management plans.
2. Each community in the project to establish and maintain their production forest, according to the plan, with activities to be done annually.	FA, with assistance from companies that operate new production forests, to supervise and coordinate where necessary the community production forest activities.
3. Design alternate livelihoods for each CF and CPA. These should be suitable to increase household incomes in the 10 year time period it will take the first production forests to mature, and the communities can sell their wood products.	FA with technical assistance financed by the project ,will identify alternate livelihoods and specify how these can be implemented in each community in the project.
4. Design and deliver a training program on alternate livelihoods to communities in the project. The program should establish and operate demonstration sites of alternate livelihoods.	FA with technical assistance financed by the project will design and deliver of training programs, and establish the demonstration sites.
5. Design governance and operating rules for a community financing mechanism. Financing mechanisms to be managed by communities in the project.	FA with technical assistance financed by the project will design governance and operating rules for a community financing mechanism
6. Train communities in the project in how to establish and operate their community financing mechanism. The project will provide seed funds to each community after a community successfully completes training and formally establishes their mechanism.	FA with technical assistance financed by the project will deliver a training program and allocate seed funds.
7. Design and implement a monitoring system that will regularly review the community production forests, implementation of alternate livelihoods, and performance of the community financing mechanism.	FA with technical assistance financed by the project will design and implement a monitoring system.
8. Design and implement a training program for FA officials on developing alternate livelihoods and establishing community financing mechanism in communities.	FA with technical assistance financed by the project will design and deliver a training program for provincial and central FA officials.

1.2.8 Safeguards

23. The expected outcome of Project 2 will have a positive social impact (i) on poverty (by improving rural livelihoods and creating jobs, especially in production forestry) and clarifying land tenure rights; (ii) for women (by providing opportunities for women in livelihoods and managing production forests); (iii) for indigenous people (by encouraging their inclusion in improved livelihoods). The project will not include involuntary resettlements. The project will have a positive impact on the environment through replanting or enhancing forests (and not introducing alien invasive species or converting natural forests); mitigating and enhance resilience to climate change. Further, the project will introduce multi-stakeholder engagement, and use participatory methods in planning and implementing its activities.

1.2.9 Preliminary Investment and Financing Plans

24. The preliminary project investment plan for the project concept described in this annex follows in Table A2-2. This investment plan could change during detailed project preparation by a donor.

Table A2-2. Preliminary Project Investment Plan

Item	Amount[a]	Share of Total (%)
A. Base Cost[b]		
1. Establish enabling conditions for public-private partnerships and community investments in the fore	217,440	1%
2. Establish and trial production forests	11,502,210	51%
3. Support forest dependent communities to establish small production forests and improvements in a	6,291,120	28%
Project management	1,215,440	5%
Subtotal (A)	19,226,210	
B. Contingencies[c]	3,265,948	15%
Total (A+B)	**$22,492,158**	**100%**

[a] Includes (i) taxes and duties of $1,375,830 (for donor-funded expenditures only) to be financed by the Cambodian government; and (ii) estimated cost for annual auditing ($86,068).

[b] In 2017 prices as of 1 January 2017.

[c] Price contingencies computed on all costs except international and national consultants, based on cost escalation factors of 3.6% for 2019 and 1.8% for 2020–2023 for local currency costs; 7.0% for 2019 and 3.5% for 2020–2023 on foreign exchange costs; and 10.0% for national consultant fee rates in the final 2 years of project implementation.

Source: FIP/IP preparatory team estimates.

25. The preliminary project financing plan for the project concept described in this annex follows in Table A2-3. This financing plan could change during detailed project preparation by a donor.

Table A2-3. Preliminary Project Financing Plan

Source	Amount	Share of Total (%)
Donors	10,820,504	48%
Companies	9,845,824	44%
Government	1,825,830	8%
Total	**22,492,158**	**100**

Source: ADB estimates.

26. The Cambodian government requests $250,000 from FIP to assist with the costs of detailed project preparation. This amount could be supplemented by donor funds for project preparation.

Annex 1.3: Proposed project 3: Implement National Forest Monitoring

1.3.1 Overview and Reasons for Requesting FIP Financing

27. Project 3 will address a key constraint for forest policy development and for the forest industry: there are no consistent and up-to-date records on the condition or classification of forests. A NFI design document has been produced with support from FAO, JICA and the UN-REDD Programme. Project 3 seeks to implement the NFI and integrate it with monitoring of forest land users such as economic land concessions (ELCs). The project will also support efforts to establish an efficient Timber Legality Assurance System (TLAS). This project is transformational for Cambodia in that it has no forest monitoring system now; with recent institutional changes in government ministries that give MoE a mandate to manage nearly 40 percent of Cambodia's land area (and nearly all forests), the national forest monitoring system will become a key informational tool that MoE can use to underpin its management of forests.

1.3.2 Problem Statement

28. The Cambodia government has no consistent and up-to-date records on the condition and classification of forests. This means the government cannot easily target forest activities/projects based on REDD +. The government cannot implement an effective forest monitoring system and meet reporting requirements of international agencies. The government cannot easily identify wood products that have come from legal forests, as compared to wood products that come from illegally harvested trees.

1.3.3 Rationale for the Project

29. Project 3 is a small-scale but strategically important project aimed at relevant Cambodia government ministries and key stakeholders to the forest sector including for both REDD+ and industry. With climate change threats there has been an increased demand for monitoring and managing data on forest carbon data. Detailed information and monitoring of Cambodia forests would allow the Cambodia government to better target future activities/projects based on REDD+ including the assessment of results in terms of forest area and carbon stocks, and on land degradation; improve the institutional and regulatory framework around forestry; and improve governance and management of forests.

30. According to UNFCCC decisions on REDD+ countries are requested to establish a national forest monitoring system (NFMS) following IPCC guidelines using a combination of remote sensing and ground-based forest carbon inventory approaches35. This will also serve to provide information for other reporting obligations such as Biennial Update Reports (BUR) and for monitoring the implementation of the Nationally Determined Contribution (NDC) to the UNFCCC. Besides REDD+, information on state of the forests will be useful for forest policy development in general, for forest conservation,

[35] UNFCCC Decision 4/CP.15 and 11/CP.19.

for production forestry, community forestry and a prerequisite for participatory management of forest resources including for attracting private sector investments. This information would allow Cambodia officials to also understand the condition of ELCs that have at least a partial forestry component.

31. The TLAS should be seen both in light of the on-going dialogue with the EU on VPA under the FLEGT initiative and as part of the enabling conditions to promote private sector investment in the forest sector. The project will need to work closely with existing initiatives in order to seek synergies and avoid overlaps.

1.3.4 Project Objectives

32. This project has three objectives which together will improve the ability and capacity to manage forests in Cambodia: (i) implement the NFI as part of the NFMS that will ultimately contain baseline information on all national forests – including those in protected areas; on leased government land that is managed by private companies; and on private land; (ii) develop a monitoring tool using the NFI data to allow improved monitoring of important land uses such as ELCs; and (iii) further strengthen TLAS to not only focus on timber for export but also wood products for domestic use.

1.3.5 Project Intervention Areas

33. The project will be based in government ministries in Phnom Penh. The system should ultimately include information on all forest areas in Cambodia, regardless of the ownership, use, and location of forests.

34. Appropriate area for piloting TLAS will be identified based on areas with an existing production of wood products.

1.3.6 Project Implementation Arrangements

- Executing agency: GDANCP
- Implementing agencies: FA, FiA
- Duration: 5 years, starting in 2019

1.3.7 Project Components and Activities

Component 1: Implementation of National Forest Inventory.

Activities	Who/How
1. Establish national steering group with representatives from all relevant agencies to oversee the implementation of the NFI.	GDANCP will establish a national Steering group
2. Develop a protocol for which indicators to sample, agree on a MoU between the participating agencies on data collection and handling with the aim to fulfill the management needs of the respective agencies.	GDANCP with technical assistance financed by the project will design the system. (Note: FAO and JICA have provided support for the development of a NFI design and a training manual. This component should build on these earlier efforts).

	Consultants to coordinate with the information management departments in MoE, FA, and FiA.
3. Identify the hardware and software required to host the system taking into account on-going work, and purchase these. a. Hardware should be cloud-based or partially hosted by MoE and MAFF, with full back-up in another cloud location. b. Software licenses should include GIS, forest inventory software, forest statistical software, data base software, data analysis software, report-writing software. Open source software should be considered.	GDANCP with technical assistance financed by the project will develop specification of hardware and software needs for the system. This will be coordinated between the information management departments in MoE, FA, and FiA.
4. Develop ToR and identify the teams/consultants to implement the field survey.	GDANCP and FA, with technical assistance financed by the project
5. Design and deliver a training program to government officials in MoE, FA, and FiA on how to develop and operate the system, and produce reports on the state of forests.	GDANCP contracts a consulting company, NGO, or Institute to design a training program and deliver this to officials in MoE, FA, and FiA.

Component 2: Develop a plan and pilot the monitoring of forests, ELCs and other large forest land users.

Activities	Who/How
1. Prepare a proposal for forest and land use monitoring that integrate with NFI monitoring and fulfill government monitoring needs for ELCs and other large forest land users with a forestry component.	GDANCP and FA, with technical assistance financed by the project will propose a design of the system.
1. Pilot the system and integrate with NFI data collection.	GDANCP and FA, with technical assistance financed by the project.

Component 3: Develop a Timber Legality Assurance System.

Activities	Who/How
1. Establish a legality definition that includes laws relating to the whole supply chain; this includes a multi-stakeholder consultation process on the definition.	GDANCP and FA, with technical assistance financed by the project.
2. Identify gaps and problems including how to verify compliance	GDANCP and FA, with technical assistance financed by the project will test the legality definition.
3. Develop robust, credible supply chain control rooted in existing systems and procedures.	GDANCP and FA with technical assistance financed by the project will propose a design of the system.

4. Pilot a system to verify compliance with the legality legal definition	GDANCP and FA, with technical assistance financed by the project will pilot the system.

1.3.8 Safeguards

35. The expected outcome of project 3 will provide a direct positive social impact in terms of enhancing capacity of government officials, providing opportunities for women and indigenous people in forestry management. The project will have an indirect positive social impact by improving forest governance and strengthening capacity for participatory planning and management. The project will have an indirect positive impact on the environment by monitoring for the introduction of alien invasive species and natural forest conversions; and supporting information gathering and analysis as a prerequisite for mitigating and building resilience to climate change and protecting biodiversity and ecosystem services.

1.3.9 Preliminary Investment and Financing Plans

36. The preliminary project investment plan for the project concept described in this annex follows in Table A3-2. This investment plan could change during detailed project preparation by a donor.

Table A3-2. Preliminary Project Investment Plan

Item	Amount[a]	Share of Total (%)
A. Base Cost[b]		
1. Design and develop a national forest monitoring system	3,791,412	65%
2. Monitor key indicators in forests and ELCs	154,830	3%
3. Design and implement a Timber Legality Assurance System	258,380	4%
Project management	944,840	16%
Subtotal (A)	5,149,462	
B. Contingencies[c]	706,817	12%
Total (A+B)	**$5,856,279**	**100%**

[a] Includes (i) taxes and duties of $393,792 to be financed by the Cambodian government; and (ii) estimated cost for annual auditing ($86,068).
[b] In 2017 prices as of 1 January 2017.
[c] Price contingencies computed on all costs except international and national consultants, based on cost escalation factors of 3.6% for 2019 and 1.8% for 2020–2023 for local currency costs; 7.0% for 2019 and 3.5% for 2020–2023 on foreign exchange costs; and 10.0% for national consultant fee rates in the final 2 years of project implementation.

Source: FIP/IP preparatory team estimates.

37. The preliminary project investment plan for the project concept described in this annex follows in Table A3-3. This investment plan could change during detailed project preparation by a donor.

Table A3-3. Preliminary Project Financing Plan

Source	Amount	Share of Total (%)
Donors	5,429,837	93%
Companies	0	0%
Government	426,442	7%
Total	**5,856,279**	**100**

Source: FIP/IP preparatory team estimates.

38. The Cambodian government requests $250,000 from FIP to assist with the costs of detailed project preparation.

Annex 2 Stakeholder Involvement Plan

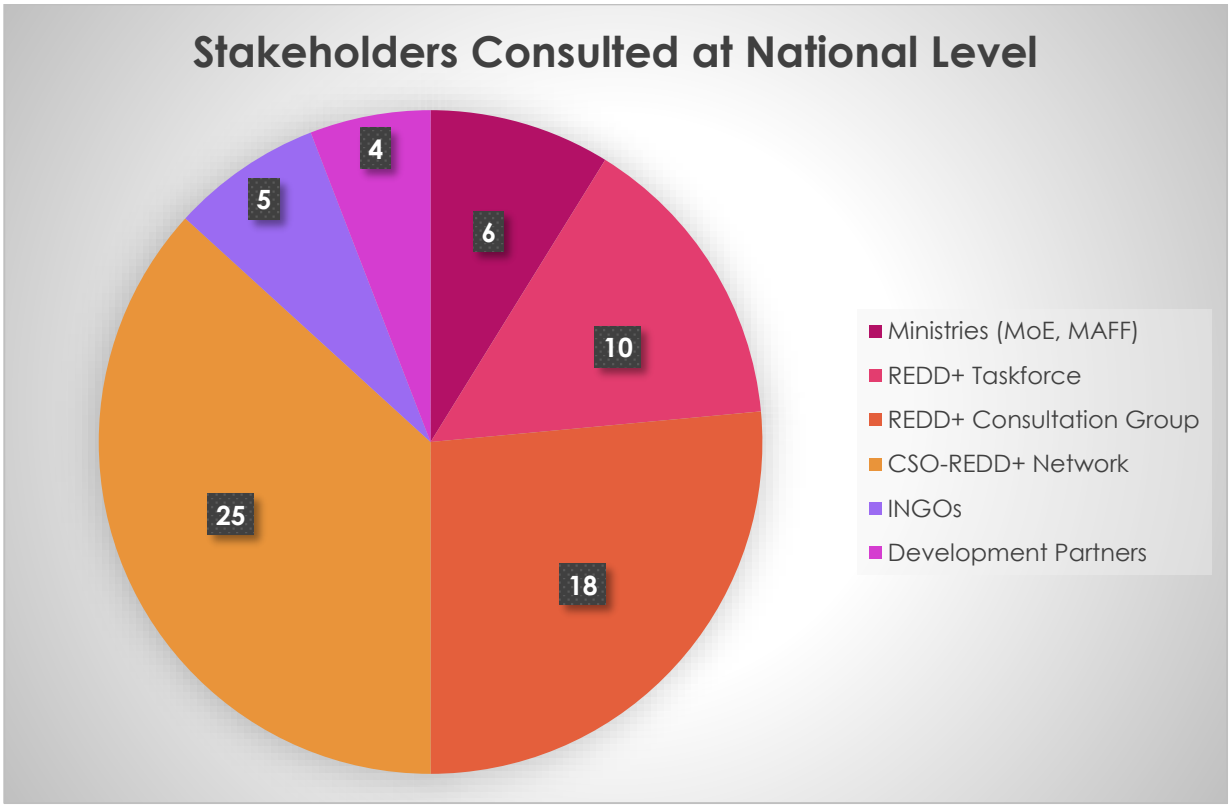
1. Development of the Cambodia FIP/IP is a result of an extensive consultation process that continues and is built upon the processes currently implemented by the government through the implementation of the UN-REDD Programme and the FCPF. Two of the key REDD+ institutional arrangements that have been extensively consulted include the Cambodia REDD+ Taskforce, which comprises of seven ministries and the Cambodia REDD+ Consultation Group, which consists of 18 members who represent constituents from nine different sectors (academia, international NGOs, national NGOs, local NGOs, community forestry, community fisheries, community protected areas, indigenous people, and private sector). Draft FIP was also consulted with the Cambodia CSO-REDD+ Network, which consists of about 25 NGOs working on forest, land and community's livelihood in Cambodia.

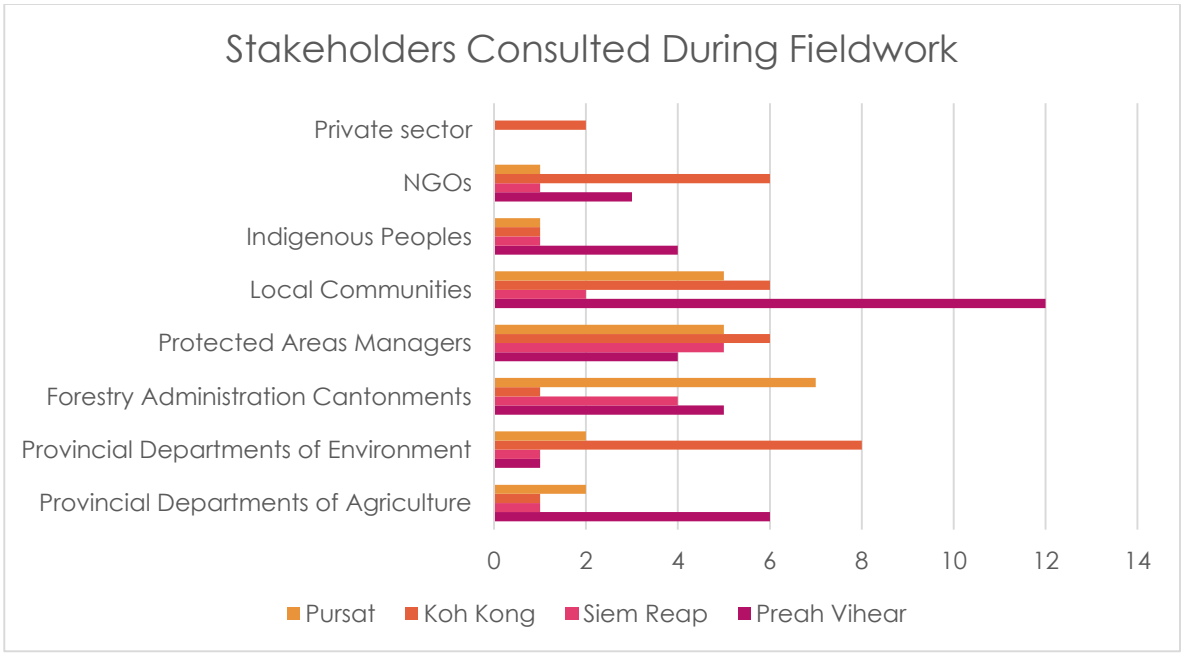
2. Additional to stakeholders at the national level, the process to develop Cambodia FIP also involved stakeholders at the sub-national level. Field visits were conducted in four provinces that could be the potential sites for FIP implementation such as Preah Vihear (18 to 22 December 2016), Siem Reap (23 to 29 December 2016), Koh Kong (2 to 5 January 2017), and Pursat (6 to 9 January 2017). Stakeholders consulted/ interviewed at these provinces include Provincial Departments of Agriculture, Forestry and Fisheries; Provincial Departments of Environment; Forestry Administration Cantonments; Protected Areas Managers; Local Communities (community forestry, community fisheries, and commune councils); Indigenous People; NGOs; and Private Sector representatives.

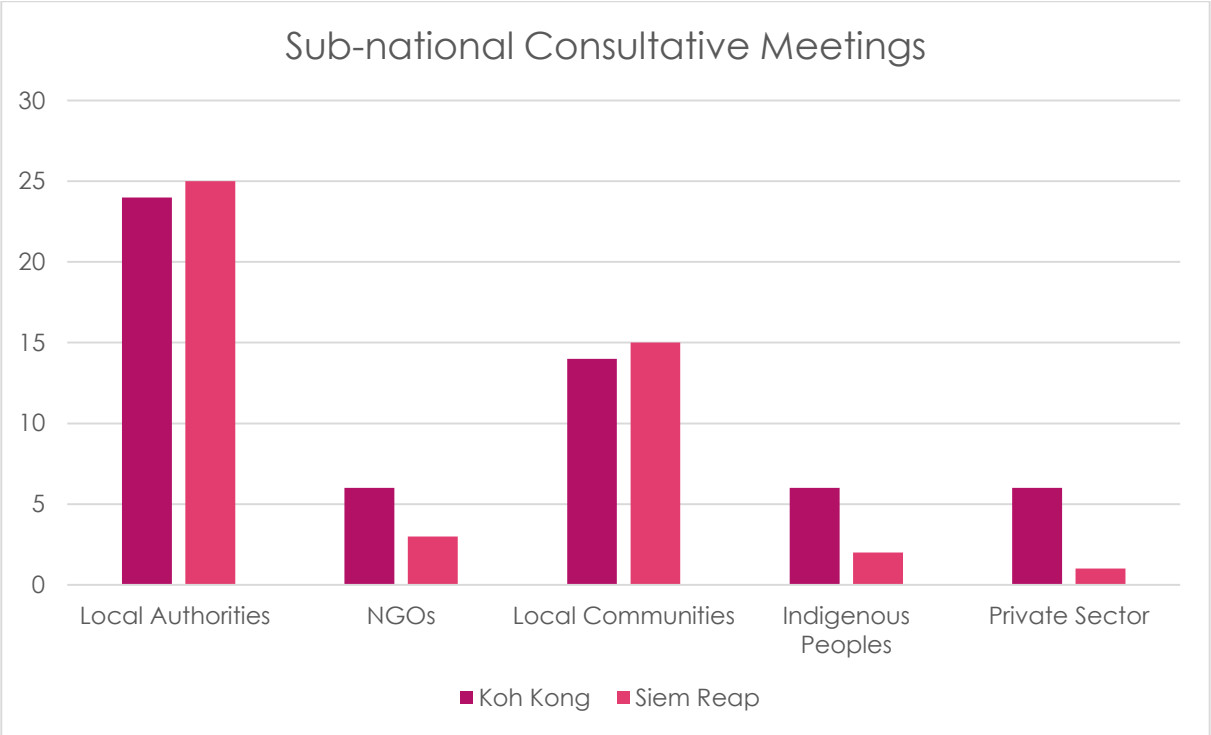
3. When the first draft of Cambodia FIP/IP was develop, two sub-national consultative meetings were conducted with participation from stakeholders from government and non-government institutions as well as local communities and private sector. The first workshop was conducted on February 1, 2017 in Koh Kong, while the second workshop was held on February 3, 2017 in Siem Reap. Comments from these consultative meetings and comments received from other groups of stakeholders at the national level contributed to the second draft of the Cambodia FIP. The national workshop is to be held on March 6, 2017 in Phnom Penh to finalize the draft Cambodia FIP.

4. Overall, stakeholders involved in the consultation and preparation of the Cambodia FIP/IP do not include only those working in the forestry sector under the Ministry of Agriculture, Forestry and Fisheries (MAFF) and Ministry of Environment (MoE) but other sectors that are directly and indirectly engaged on issues related to forest degradation and deforestation at the national and provincial levels such as line government agencies, private sectors, development partners, civil society organizations, local communities and indigenous peoples.

5. The following chart summarizes the consultation process that has been undertaken since Cambodia started to develop the FIP/IP.







6. Once the Investment Plan is approved by the FIP Sub-Committee, it is anticipated that these groups will continue to be engaged during the next steps of individual FIP project development as fully and effectively as possible. As project being developed, other stakeholders may be identified and will be included in the consultation and discussions to the extent possible. Where relevant, those stakeholders will be coordinated and involved in the implementation of the FIP projects. Consultations at the province and down to districts, villages and communities – with particular attention on participation of indigenous peoples, women and those that are most vulnerable – will be undertaken during the project designs and implementation when the specific areas for FIP investments are identified.

Annex 3 Cambodia National REDD+ Strategy

1. The Royal Government of Cambodia (RGC) strongly supports the development and implementation of REDD+ as an option to mitigate the impacts of climate change, reduce greenhouse gas (GHG) emissions from the forestry sector, contribute to socio-economic development, and promote the shift towards green inclusive development. Current Cambodian national development policies, strategies and programs have incorporated REDD+ as part of their strategic agendas. Following decisions adopted by the United Nations Framework Conventions on Climate Change (UNFCCC), REDD+ implementation in Cambodia has three consecutive phases: Readiness, Implementation, and Results-Based Payments (RBP) for verified emissions reductions. Cambodia is currently at the end of its Readiness Phase, and plans to transition to the Implementation Phase from 2017. According to, the Warsaw Framework for REDD+, Cambodia shall establish four interconnected elements: 1) National REDD+ Strategy (NRS), 2) National Forest Monitoring System (NFMS), 3) Safeguards Information System (SIS), and 4) Forest Reference Emissions Level/ Forest Reference Level (FREL/FRL).

2. Based on the Council of Ministers' guidelines, the NRS was prepared following the development policies and priorities; the formulation of a vision, mission and goals; the development of a strategic framework consisting of strategic objectives and strategies; the identification of a set of actions, institutional arrangements and implementation framework and mechanisms; the analysis of financial resources; and the development of a Monitoring and Evaluation (M&E) framework. The vision, mission and goals of the NRS were formulated based on the analysis of institutional capacity, experiences in forest lands management, and gender-responsive strategies to address the drivers of deforestation and forest degradation.

3. **VISION:** The NRS contributes to national and global climate change mitigation through improved forest lands management and sustainable biodiversity conservation.

4. **MISSION:** Improve the functioning and capacity of national and sub-national institutions and strengthen the implementation of existing policies, laws, and regulations to achieve the improvement resource resources and forest land management, and sustainable biodiversity conservation.

5. **Goals:** Reduce deforestation and forest degradation through the enhancement of management, forestry development, enhance carbon stocks and contribute to poverty alleviation.

6. The initial phase the NRS will address deforestation while building capacity to address forest degradation in a subsequent iteration. Cambodia will implement REDD+ at the national level under the result based-finance of the UNFCCC. To achieve the vision, mission and goals, the NRS has identified three connected strategic objectives and 19 strategies.

7. The institutional arrangements for the implementation of the NRS recognize the different roles and responsibilities of the various government authorities that have jurisdictional authority over forest resources in the country. Implementation of the NRS is therefore expected to follow the RGC's agency jurisdictions, with different government agencies contributing to developing REDD+ Action Plans for the different forest areas, according to the existing laws and policies.

8. Between 2017 and 2020, functions of the institutional arrangements such as the Taskforce and its Secretariat, Technical Teams, Consultation Group, and Gender Group will be retained. However, to oversee the RBP implementation phase, starting 2021, RTF and a Secretariat shall be upgraded their mandates and authority in order to:
    - Govern and coordinate all REDD+ PAMs in Cambodia at the national level;
    - Oversee and accelerate improvements in forest resource governance in order to reduce the rate of deforestation and forest degradation;
    - Ensure effective and equitable funding services and fair allocation of incentives for institutions implementing REDD+ PAMs.

9. It is extremely important that to ensure the success of the NRS, relevant procedures be more transparent; enabling systems need to be strengthened to ensure public accountability; data and maps must be integrated; effective, equitable and influential thematic coordination must be implementable among the relevant government institutions at all administrative levels. These reforms will require a commitment to the public interests, open-mindedness to cross-cutting issues such as gender and REDD+, and most importantly awareness and responsiveness on the part of all involved stakeholders. They must find the motivation to change from business-as-usual so that Cambodia can successfully make the shift towards a green, inclusive development pathway by reducing deforestation and forest degradation. This is the ultimate aim of the Cambodian NRS.

10. As a major milestone for the REDD+ readiness work, Cambodia completed and submitted in 2016 a nation Forest Reference Level to the UNFCCC[36] covering all of Cambodia. The FRL will be technical assessed by independent LULUCF experts during 201737. The FRL includes emissions and removals from deforestation as well as reforestation/afforestation. The key features of the FRL are shown in table 1 below.

Table 3-1: Features of the proposed FRL

Proposed FRL	79,245,643 tCO_2/year
Scope (activities)	Deforestation and reforestation/afforestation
Scale (area)	National
Greenhouse gases	CO_2
Carbon pools	Above and below ground biomass
Method	Calculating average annual emissions using data from three years

[36] In accordance with UNFCCC decision 12/CP.17.
[37] In accordance with UNFCCC decision 13/CP.19.

	(2006, 2010 and 2014), using emission factors for nine different forest types and assuming zero carbon after deforestation. Minimum mapping unit of 5 ha.
Time period covered	2006-2014
Forest definition used	Forest refers to a unit of an ecosystem in the form of wetland and dry land covered by natural or planted vegetation with a height from 5 meters on an area of at least 0.5 hectares, and canopy crown cover of more than 10%. This also includes forest regrowth and areas under afforestation or reforestation. Rubber, oil palm plantations and perennial crops are excluded from this definition.

Annex 4 Technical Review of the Country Investment Plan by an Expert/Peer Review Group

The independent review together with response matrix is provided in a separate document.

Annex 5 Relevant Policies, Laws and Regulations for the FIP/IP

1. **Ministerial Organization and Functioning Sub-decrees:** Every ministry within Cambodia has a sub-decree that clearly spells out its organizational structure, functions and duties.
   - **Ministry of Agriculture, Forestry and Fisheries (MAFF):** Jurisdiction over issues related to the agricultural field within Cambodia, including issues related to watershed management such as forestry, agricultural irrigation and fisheries management.

   - **Ministry of Industry, Mines and Energy (MIME):** In terms of functions that are linked to watershed management, MIME has authority over issues involving the generation of hydropower as well as sanitary water production. Within these areas, MIME appears to have overlapping jurisdiction with MoWRaM.

   - **Ministry of Land Management, Urban Planning and Construction (MLMUPC):** This Ministry is responsible for issues concerning land management within the country, and is responsible for the delineation and demarcation of areas of state public land. In addition, MLMUPC has the specific function of ensuring that decisions on infrastructure construction are in accordance with priorities of the government's land management policy.

   - **Ministry of Environment (MoE):** The ministry has general jurisdiction over environmental and natural resources protection issues within Cambodia, such as pollution control, environmental education, management planning and the review of environmental impact assessments for development projects. MoE also has management authority over the protected areas system in Cambodia.

   - **Ministry of Water Resources and Meteorology (MoWRaM):** It is the most prominent ministry in Cambodia in terms of water resources management. Within this ministry is the Department of Water Resources Management that has direct authority over hydropower production, watershed management areas and the technical review and monitoring of all water resource construction activities in Cambodia. The Department of Hydrology and River Works is responsible for evaluating and monitoring water resources and preparing plans for watershed protection. This ministry will be responsible for implementing a Water Resources Law and subsidiary rules and regulations once they are enacted in Cambodia.

2. **Relevant Laws**
   - **Law on Environmental Protection and Natural Resources Management (1996):** This law sets up a broad mechanism for environmental and natural resources planning, protection and monitoring in Cambodia. The law calls for the Ministry of Environment to create national and regional environmental plans. The law also grants this ministry authority over water pollution control issues.

   - **Law on the Administration and Management of the Commune (2001):** This legislation grants executive and legislative authority to semi-autonomous democratically elected commune councils at the local level of government in Cambodia. Commune Councils have the authority to protect the environment and

natural resources within their commune boundaries. The commune councils must create commune development plans.

- **Land Law (2001):** This land helps to identify the types of land that come under the direct control and ownership of the state (state private and state public lands). Natural bodies of water and water courses are considered property of the state according to this legislative document. Land use master plan shall clearly indicate the area to be allocated for national defense, agriculture, commerce, industry, handicraft, culture, tourism, religion, and administrative buildings and public facilities. From these provisions the area set aside for tourism and public facilities can be allocated for the targeting for restoration or tree planting.

- **Forestry Law (2002):** This law sets up the regime for management of Cambodia's forest resources. Within this law, authority over specific forested areas is outlined, with the Forestry Administration under the Ministry of Agriculture, Forestry and Fisheries having primary authority over state public forest lands except protected areas that are under the jurisdiction of the Ministry of Environment, and flooded forests that come under the jurisdiction of the Fisheries Administration. According to the Forestry Law Article 10, all natural production forest types are state property managed by the FA and MAFF. However, the Forestry Law clearly states that private forest plantations are encouraged. Local communities have customary user rights to collect forest products and by-products within the Protection Forest with minor impact on the forests.

- **Law on Protected Areas (2008):** The objective of this law is to manage and effectively implement the conservation of biological resources and sustainably use the natural resources in the Protected Areas. It determines the responsibilities and participation of local communities, indigenous ethnic minorities, and the general public. According to this law, the state recognizes and secures access to traditional uses, local customs, beliefs, and religions of local communities and indigenous ethnic minority groups residing within and adjacent to the protected areas. The MoE is the jurisdictional trustee authority over NPAs, with its General Department of Administration for Nature Conservation and Protection (GDANCP) serving as the secretariat for the management of these areas. The Protected Area Law recognized a multiple use area zone in the Protected Areas that can be used by the communities. In this zone, the communities can apply agroforestry methods or Forest Farming. In forest farming, shade tolerant trees may be planted that can provide cash crops to the communities.

- **Commune and Sangkat Law (2001):** The law on Commune and Sangkat mandates the communes to protect the resources in their communes that includes the environment and natural resources. Under this provision, the FA should include in its policy strategies of involving the Communes in the developments. The Partnership Forestry recommended by the NFP should be considered in engaging the Communes in restoring the forests.

- **Fisheries Law (2006):** The Fisheries Law grants the Fisheries Administration (FiA) of the MAFF the power to manage and regulate flooded forest and mangrove areas outside of the Protected Areas (PA). The Fishery Law allows Cambodian citizens to form Community Fisheries to take part on the sustainable management, conservation and development and se of Fishery resources (Article 59). At present,

several Community Fisheries are established in where the communities are involved in the management and planting of the flooded forests.

- **Water Resources Management Law (2007):** The purpose of this law is to foster the sustainable and effective management of Cambodia's water resources in order to attain socio-economic development and ensure the welfare of the people. The law provides legislation for water resources management and outlines an implementation framework. The law defines the mandates of the Ministry of Water Resources and Meteorology (MoWRaM), which includes conducting an inventory of all the water resources in the country and preparing a national water resources plan. However the law does not specify the details of what this plan should actually consist of. It does state though that any water resources projects that are to be carried out in Cambodia shall be in accordance with the national water resources plan, the economic development plan and the national and regional environmental plans that have been prepared by the Ministry of Environment.

- **Royal Decree on Watershed Management (2000)**: This document stipulates a general basis and directive for watershed management as it relates to forested areas of the country and grants the clear authority to the Ministry of Agriculture, Forestry and Fisheries regarding the management of forested areas within watersheds, in cooperation with other ministries, international organizations and civil society. It mainly focuses on the management and protection of forests within the watershed areas in Cambodia in order to prevent soil erosion, protect soil fertility, water sources, water quality, reduce surface runoff, stabilize ground water recharge, as well as preserve bio-diversity and environmental equilibrium (Article 3). The selection of forested areas for management and development within the watershed are required to be defined by a sub-decree (Article 4).

- **Sub-decree on Water Pollution Control (1999):** This sub-decree regulates water pollution control in Cambodia, and requires dischargers to apply for permits and to meet effluent standards prior to discharge. The Ministry of Environment is responsible for enforcing the provisions in this regulation that is mandated by the Law on Environmental Protection and Natural Resources Management. The sub-decree primarily focuses on the control of point source discharges of pollution into receiving streams. Detailed effluent standards are included within this document, but Cambodia has not yet created a standardized fee system for discharges of wastewater.

- **Draft Sub-decree on Watershed Management (1998):** Through the aforementioned Royal Decree on Watershed Management the MAFF has been mandated to propose by sub-decree forested areas within critical watersheds that are to be brought under watershed management. The Forestry Administration is currently still in the process of drafting the sub-decree through its Watershed and Forest Land Management Office. The sub-decree will contain three chapters with the first one dealing with objectives and the designation of tasks and responsibilities related to watershed management. Chapter 2 defines forested areas within critical watersheds which are to be brought under watershed management. Chapter 3 deals with the management of forested areas and agriculture on sloping land.

3. Laws and policies relevant for the rights of Indigenous Peoples in Cambodia

- **Constitution (1993) (article 44)** states that (Khmer) persons, individually or collectively shall have the right to ownership and that the right to confiscate properties from any person shall be exercised only in the public interest as provided for under the law and shall require fair and just compensation in advance.
- **Draft EIA law** requires an environmental and social impact assessment. The law has an elaborate process for impact assessments and public information sharing. The law requires the involvement of project-affected person in any resettlement planning and requirement of compensation to be provided for lost assets.
- **Law on Mineral Resource Management and Exploitation (2001)** requires a written agreement of the private owner or respective government institution before exploration.
- The RGC supports **the Declaration on the Rights of Indigenous Peoples supported by Cambodia (2007).**
- **Land law (2001)** has a specific reference to IPS by stating that no authorities outside the community may acquire any rights to immovable properties belonging to IP. This law also recognizes the collective property rights of IPS by stating that the IPs shall continue to manage their community and immovable property according to their traditional customs.
- **Sub-decree on economic land concession (2005)** also prohibits involuntary resettlement of lawful land holders.
- **National Policy on the Development of IPs (2009)** provides additional guidance for Indigenous peoples lands
  - The lands of IPs communities that are collective properties shall not be sold or transferred to any individual or group outside the communities.
  - IP's communities may not be forced to leave the lands they have been occupying and using as collective ownership.
  - Should there be any resettlement, this relocation can be carried out in compliance with the standards on resettlement, subject to prior, appropriate and fair compensation.
- **Forest law (2002**) recognizes customary, subsistence use rights of forest produces and by products for local communities, and rights of shifting cultivation by indigenous communities registered with the state. It also states that concessionaires shall not interfere with customary user rights taking place on land property of IPs who have customary access to user rights practiced by communities.
- **Fishery law (2004):** recognizes the traditional use rights of fisheries resources for local communities under the regulation of this law.
- **Protected area law (2008):** Access to traditional use of natural resources and customary practices of local community and Indigenous ethnic minority groups on family scale may be allowed as follows.
  - **Core zone**: no access.
  - **Conservation zone**: recognition of access to traditional use, local customs, belief and religions of the local communities the ethnic groups.
  - **Sustainable zone**: same as above.
  - **Community protected area** recognition of use of natural resource in accordance with the management plan but no right to clear or work forest lands.

4. Relevant Programs and Strategies

- **National Forestry Programme (2010-2029)**

- **Forest plantation** has been supported by the national budget. The number of forest plantation areas has been increasing although with some fluctuation. There are two types of forest plantation: annual plantation and Arbor Day plantation. The annual plantation usually covers degraded lands or former forestlands that were deforested years ago. Arbor Day plantation encourages the public, government institutions, and the private sector to participate in forest maintenance and reforestation. Arbor Day is usually chaired by the Head of the State or the King. It is promoted by television and radio broadcasts throughout the country. The NFP sets a target for establishing 50,000 ha of forest plantations annually in order to increase forest resource.
- **Production Forest (PF)** is forest area having the primary function for sustainable production of timber and NTFPs. It includes forest concession, forest permitted for harvesting, degraded forest, forest to be rehabilitated, reserved area for forest regeneration or forest plantation, reforested areas and forest areas under agreement between the FA and the local community.
- **Private Forest** shall be maintained by the owners with the interest rights to manage, develop, and harvest, use, sell and distribute the products by themselves.

- **The National Policy Statement on the Forestry Sector** was declared by the prime minister in July 2002. The objectives are:
  - The conservation and the sustainable management of the country's forest resources shall provide a maximum contribution to the sustainable socio-economic development of the Kingdom of Cambodia.
  - The remaining forest resources of the country shall be considered as Permanent Forest Estate and managed by exclusively promoting conservation and sustainable forest management initiatives that directly contribute to the rehabilitation and conservation of a maximum stock of forested land and forest resources.
  - A wide range of coordinated multi-stakeholder processes shall be implemented to enable the harmonization of the different perceptions, interests and objectives of the various forest interest groups at all levels.
  - To continue to support forestation of arable land and to protect those trees for the development of forest resources.

5. **Timber processing and wood technology development.** The 2006 Sub-decree on "Timber and Non-timber Forest Products Allowed for Export and Import" stipulates that logs or rough sawn timber are prohibited from export in order to enhance incentives for local timber industry to produce high quality value-added and competitive products. The majority of forest products, however, have been exported in the form of semi-finished products without significant value-adding. Compared to neighboring countries Cambodia still has considerable natural forests, which could contribute to the country's economy if the forest industry was properly developed to also play a bigger role in rural livelihoods. Sustainable wood processing depends on a continued flow of raw material from sustainably managed forest resources. Transparent chain of custody of timber product transportation from logging sites to factory log-yards and to retail shops is extremely important. Analyses of potential supply of legally produced timber under SFM The government carefully analyses the potential sustainable supply of timber and identifies systems to ensure that the capacity of the timber processing industry is in balance with its sources of supply. While ensuring appropriate SFM systems are established through NFP activities, the government carefully creates an enabling environment for larger timber processing to a level where it is in balance with sustainable supply.

6. **Sub-decree on National Forestry Development Fund (2016).** The National Forestry Development Fund could be used for Reforestation; Silviculture and forestry rehabilitation; Forest Protection and Conservation and bio-diversity; Forest and wildlife scientific and technical research; Extensions on Forest and Wildlife sector; Development in Forest and wildlife sector; Development of Community Forestry; and Training human resources for the Forest and Wildlife sector. To encourage the participation of the communities, the fund may be used to support the Community Forestry in producing seedlings to be distributed during tree planting activities.

7. **Sub-Decree on Community Forestry Management (2003) and Prakas on Guideline on CF.** The Sub-Decree on Community Forestry Management (2003) aims to empower local communities to manage and use forest resources to preserve their culture and traditions as well as to improve their livelihoods. The objectives of this Sub-Decree are to strengthen the implementation of the Forestry Law and other legislations related to forest resources management by local community including the manner of implementing the community forestry. The sub-decree prescribes the manner of entering a CF Agreement between the community and the FA. This includes setting the term limit of the Agreement which is a period of 15 years renewable for another 15 years. It is noted that the priority sites for CF are those degraded forests.

8. **Sub-Decree on Economic Land Concession (2005).** The sub-decree determines the criteria, procedures, mechanisms and institutional arrangements for initiating and granting new economic land concessions, for monitoring the performance of all economic land concession contracts and for reviewing economic land concessions (Article 1). The law provides that Economic Land Concessions may be granted to develop the land for intensive agricultural and industrial-agricultural activities based on the land use plan for the area but should be within the framework of natural resource management based on appropriate ecological system (Article 3). Article 4, Article 5 and 14 emphasizes the need for the economic land concessions to conform to Land Use Plans adopted by the Provincial-Municipal State Land Management Committees and in consideration to the perpetual environmental protection and natural resources. Following the provisions of the Sub-Decree, the Technical Secretariat on Economic Land Concessions should ensure that the ELCs should include in their development plans provision for restoration of the critical areas such as the riparian areas and the areas with steep slopes.

9. **National Strategic Development Plan (NSDP) 2014-2018.** The NSDP outlines the importance of conserving Cambodia's unique natural heritage and biodiversity, along with enhancing environmental sustainability, sustainable economic growth, poverty reduction, and improvements on the lives of rural communities. The NSDP recognize the need to give highest attention to manage the environment and natural resources to minimize impacts of climate change. The NSDP 2014-2018 also emphasizes the need for Cambodia to "balance between development and conservation", and recognize the need for: (1) green cover, forest and wildlife conservation; (2) sustainability manage the fisheries resources; and (3) ensure the sustainability of the ecosystem, so that the quality of land and sustainability of water sources could be improved by focusing on the protection of biodiversity, wetlands and coastal areas. Among others, the NSDP sets target to (1) clearly determining the ownership of natural resources; (2) developing an appropriate incentive scheme for the conservation of natural resources and empowering the sub-national government, communities and individuals to participate in their conservation; and (3) stepping up cooperation with concerned stakeholders under the framework of green growth and climate change. The NSDP sets a national target of

60% forest cover with an annual area to be reforested of 25,000 hectares from 2014 to 2018.

10. **Cambodia Energy Sector Strategy (2016).** Ministry of Mines and Energy (MME) has a target for reducing dependence on wood for cooking. However, both MME and the MAFF have no target for developing the fuelwood supply in the country to support the fuelwood requirements of communities that are dependent on fuelwood for cooking.

11. **Cambodia Energy Sector Strategy (2016).** The Strategy identified the tree planting along the road sides and other public places to contribute in addressing fuel wood deficit in the agricultural areas. The Strategy recommends (1) organizing tree planting in schools, pagodas and villages, to increase awareness to the people. (2) planting of fast growing fuelwood species that adapts to Cambodia's environment as an important component of wood energy strategy; establishment of Village Woodlot for the production of fuelwood that can become an important source of income for villages. The planning for tree planting should also cover the road rights of way, Pagodas and some public places. Planting in these areas will enhance the esthetic conduction and provide shades. The branches may also supplemental wood requirements. The commune can include in their Commune Land Use Plans development of village woodlots. In case there are existing Community Forests, the village can set aside part of the community forest for fuelwood production. Community activities such as tree planting may be conducted in these areas.

12. **Cambodia Climate Change Strategic Plan (CCCSP) 2014 – 2023.** This Strategic Plan provides a policy of mitigating the impacts of climate change and securing people's support in the mitigation activities. CCCSP also aims to make the critical ecosystems like the (Tonle Sap Lake, Mekong River, coastal ecosystems, highlands, etc.), biodiversity, protected areas and cultural heritage sites more resilient to climate change. Besides protection of water and forest resources, the Royal Government is promoting tree planting, rehabilitation of degraded forests and investment in production of biofuels.

Annex 6 Estimate of Carbon Sequestration from Projects 1 and 2

1. Definitions

C = b x f
where
C = extracted carbon (tons/ha/year)
b = biomass increment (tons/ha/year)
f = conversion factor, biomass to carbon

C = MAI * d* fe* f
MAI = mean annual increment (cu mt/ha/year)
d = density (tons/cu mt)
fe = biomass expansion factor

2. Project 1 – fast growing species[38] plus a lowland evergreen forest species

From reforestation with a fast growing species in a 7-year rotation			
MAI	20	Ha	4800
d	0.55		
fe	1.3		
f	0.47		
C to CO_2	3.67		
	6.72	tons carbon accumulated per ha per year for 7 years	
	23.53	tons carbon per ha on average over 7 years	
Total CO_2	414,390	tons CO_2 for 4800 ha over 7 years[39]	
From reforestation with a lowland evergreen forest species			
MAI	15	Ha	1200
d	0.55		
fe	1.3		
f	0.47		
C to CO_2	3.67		

[38] In order to estimate possible carbon sequestration, our calculations are based on data from eucalyptus/acacia species. This is not an endorsement to use these species in projects 1 and 2 – other species could be used. Rather, eucalyptus/acacia are reference species for which required data to calculate carbon sequestration is readily available.

[39] Note that CO_2 removal from a plantation in a 7-year rotation is only equal to the average carbon stock over one rotation. This will not increase by having another rotation but it will have an effect on the supply of wood and thus cause less forest degradation leading to deforestation.

	5.04	tons carbon per ha per year
	20	years
Total CO_2	443,989	tons CO_2 for 1200 ha over 20 years

From avoided deforestation of natural forest[40]

MAI	15	Ha	4800
d	0.55		
fe	1.3		
f	0.47		
C to CO_2	3.67		
	5.04	tons carbon per ha per year	
	20	years	
Total CO_2	1,775,957	tons CO_2 for 4800 ha over 20 years	
Grand Total CO_2	2,634,336	tons CO_2 from project 1 over 20 years	

3. Project 2 - fast growing species

From reforestation with fast growing species in a 7-year rotation

MAI	20	Ha	7100
d	0.55		
fe	1.3		
f	0.47		
C to CO_2	3.67		
	6.72	tons carbon accumulated per ha per year for 7 years	
	23.53	tons carbon per ha on average over 7 years	
Total CO_2	612,952	tons CO_2 for 7100 ha over 7 years	

From avoided deforestation of natural forest

MAI	15	Ha	7100
d	0.55		
fe	1.3		
f	0.47		
C to CO_2	3.67		
	5.04	tons carbon per ha per year	

[40] The area of avoided deforestation is the same as the area with fast growing species. The plantation is producing more wood than the natural forest per ha and the assumption is that this will compensate for the fact that not all harvesting in natural forest will lead to deforestation.

	20	Years	
Total CO_2	2,626,936	tons CO_2 for 7100 ha over 20 years	
Grand Total CO_2	3,239,888	tons CO_2 from project 2 over 20 years	

Annex 7 Financial and Economic Benefits from Projects 1 and 2

1. Projects 1 and 2 will provide financial and economic benefits to project participants. These have been estimated for each project. In Project 1, financial and economic net benefits are estimated only for the revenue-generating components of the project. This includes changes/improvements in livelihoods adopted by household farmers, and establishment of community forests. In Project 2, financial and economic net benefits are estimated for two out of the three components that are revenue generating, and then for the project as a whole.

2. Note that the estimation of the financial and economic net benefits is heavily dependent on assumptions made about the scope and activities in each project. It is likely that when donors agree to sponsor a project and undertake a comprehensive project preparation, the scope and details of activities in project components will change; this will affect the estimation of the financial and economic returns. Financial net benefits include the cash costs and revenues for each farm crop and plantation forest. Economic net benefits take the financial figures and adjust the cash figures to be economic opportunity costs.

a. Financial and Economic Net Benefits for Project 1

3. In this project, only component 2, pilot landscape management activities in project corridors, has a revenue-generating component. In this component, we assume that about 60 communities located in 2 – 3 project conservation corridor areas will change or improve their farming activities and also plant some forests; we assume that the forests will be a combination of production forests and conservation forests (to help achieve targets for improved natural resource management set by a landscape management plan for each conservation corridor).

4. Table 5.1 shows an example of communities that could be selected to participate in Project 1. The selection of communities will take place during a comprehensive project preparation for Project 1, so the list of communities is only an example. The communities in Table 5.1 all have community-managed forest land – the table shows the number of ha and number of households for each community-managed forest in one project Biodiversity Conservation Corridor. Thus, the project could include three times the number of ha and households that are shown in Table 5.1.

Table 5.1 Example Community Profiles in Project 1

No.	Name	Location	Village Names	Ha	Households	Farm Activities
1	Chomka Chrey Tbong Community Protected Area	Anlung Reap commune, Veal Veng district, Pursat province	Chomka Chrey Tbong	575	139	Banana, pineaple, maize, animal raising
2	Die Kraham Community Protected Area	Anlung Reap commune, Veal Veng district, Pursat province	Die Kraham village	633	143	Banana, pineaple, maize, mung bean, rice, animal raising
3	Sre Peang Commd unity Protect Area	Pramoy commune, Veal Veng district, Pursat province	Sre Peang village	306	57	Banana, pineaple, maize, mung bean, rice, animal raising
4	Krang Rongearng Community Protected Area	Pramoy commune, Veal Veng district, Pursat province	Krang Rongearng village	655	90	Banana, maize, mung bean, rice, animal raising
5	Kandal Community Protected Area	Pramoy commune, Veal Veng district, Pursat province	Kandal village	578	105	Banana, pineaple, maize, mung bean, rice, animal raising
6	Tumpor Community Protected Area	Pramoy commune, Veal Veng district, Pursat province	Tumpor village	460	41	Banana, pineaple, maize, mung bean, rice, animal raising
7	Chomka Chrey Chueng Community Protected Area	Anlung Reap commune, Veal Veng district, Pursat province	Chomka Chrey Chueng village	445	70	Banana, pineaple, maize, mung bean, rice, animal raising
8	Promuoy Community Protected Area	Pramoy commune, Veal Veng district, Pursat province	Promuoy village	2230	337	Banana, pineaple, maize, mung bean, rice, animal raising
9	Sting Thmie Community Forest	Promouy commune, Veal Veng district, Pursat province	Sting Thmie village	502	77	Rice, cassava, banana, and animal raising
10	Veal Community Forest	Samroung commune, Phnom Kravagn district, Pursat province	Veal village	285	145	Orange, mung bean, vegetable and animal raising
11	Rovieng Community Forest	Samroung commune, Phnom Kravagn district, Pursat province	Rovieng district	139	171	Orange,banana, mung bean, vegetable and animal raising
12	Prek Mouy Community Forest	Samroung commune, Phnom Kravagn district, Pursat province	Prek Mouy village	511	237	Orange, banana, mung bean, vegetable and animal raising
13	O Baktra Community Forestry	Samroung commune, Phnom Kravagn district, Pursat province	O Baktra village	849	360	Rice, banana, mung bean, vegetable and animal raising
14	Koh Sroolao Community Protected Area	Koh Kapik commune, Kokong district, Koh Kong province	Koh Sroolao village	347	444	Rice, fruitry, fishing and animal raising
15	Top Cheang Community Forestry	Dong Pregncommune, Sre Ambel district, Koh Kong province	Top Cheang village	3,046	264	Rice,vegetable, animal raising
16	Tom Born Sakda Nuk Pol Ti Mouy Community Forestry	Tatai commune, Koh Kong district, Koh Kong province	Anlung Vack and Koh Andet village	384	250	Banana, mango, rice, animal raising
17	Torm Born Sakda Nuk Pol Ti Pi Community Forestry	Tropeang Roung commune, Koh Kong district, Koh Kong province	Tropeang Roung village	535	90	Banana, fruit tree , animal raising
18	Torm Born Sakda Nuk Pol Ti Bie Community Forestry	Tropeang Roung commune, Koh Kong district, Koh Kong province	Die Tumneab village	605	195	Banana, mango, taro animal raising
19	Torm Born Sakda Nuk Pol Ti Buon Community Forestry	Resie Chrom commune, Thmore Bang district, Koh Kong province	Resie Chrom village	1,082	137	Banana, rice , taro, pineaple, fishing, animal raising
20	Sovan Baitang Community Forest	Kadoul commune, Sre Am Bel district, Koh Kong province	Sovanna village	3,013	187	Vegetable, rice, agroforestry,
	Total			17,180	3539	

5. We assume that a representative farm in a conservation corridor will produce banana, pineapple, and maize without the project. With the project, we assume that a representative farm will improve sustainable production of banana and pineapple, but drop maize in favor of producing oranges. We estimate the financial and economic returns per ha for each of the crops without and with the project. These are shown in Table 5.2.

Table 5.2 Financial and Economic Returns[1] Per Ha of Agricultural Crops Produced by a Household in Project 1

	FNPV	FIRR	ENPV	EIRR
Without Project				
Banana	$1,754	32.2%	$2,447	39.7%
Pineapple	$7,223	36.1%	$8,695	41.5%
Maize	$1,055	High	$1,476	High
With project				
Banana	$3,228	38.0%	$4,104	45.7%
Pineapple	$10,604	46.6%	$12,068	52.2%
Orange	$9,584	31.3%	$10,296	33.4%
Net Return Per Ha[2]	***$4,470***		***$4,626***	

1 Financial and economic NPVs calculated over 20 years at 12% discount rate.

2 Assumes that a representative ha consists of equal parts of the three crops without the project and then the three crops with the project.

6. Table 5.2 shows the financial net present value (FNPV), financial internal rate of return (FIRR), economic net present value (ENPV), and economic internal rate of return (EIRR) for each of the three crops per ha. Table 5.2 also shows the FNPV and ENPV of the net return for one ha, where each crop is grown on .33 ha. In the case of banana and pineapple, improvements in production practices (which are also sustainable) introduced to farmers by the project lead to the improvement in financial and economic returns. The substitution of orange production for maize provides a substantial improvement in financial and economic returns.

7. We assume that the communities in the project corridors will plant production and conservation forest, in response to meeting the natural resource sustainability targets set by the landscape management plan for each corridor in the project. Table 5.3 shows the financial and economic returns for a ha of planted production and conservation forest. We assume that 80 percent is in production forest (we assume a fast growing species[41] in a 7-year rotation and the harvested wood is sold as firewood) and 20 percent is in conservation forest that is never harvested. For example, the conservation forest could be plantings along streams in order to stabilize soil and improve soil conservation.

8. Table 5.3 shows that the planted forest achieves a negative FIRR; this low return is because we assume the conservation trees planted by the project will be left in the ground in perpetuity, so there are no revenues associated with conservation trees.

[41] Based on data from neighboring countries.

9. We took the FNPV and ENPV per ha for farming changes/improvements and planting community forests, and estimated the aggregate FNPV and ENPV for this component. This is shown in table 5.4. We assume that each of the 10,617 households in the project corridors will have 1 ha under farming improvement and that the estimated 60 communities in the project will plant a total 6000 ha of forests.

Table 5.3 Financial and Economic Returns Per Ha[1] of Community Forests Planted

Financial Returns			Economic Returns	
	FNPV	**FIRR**	**ENPV**	**EIRR**
Without Project				
Production and Conservation Forest[2]	$0	0.0%	$0	0.0%
Total	***$0***		***$0***	
With project				
Production and Conservation Forest[3]	-$1,315	-	-$1,153	-11.2%
Total	***-$1,315***		***-$1,153***	
Net Return Per Ha	***-$1,315***		***-$1,153***	

1 Financial and economic NPVs calculated over 21 years at 12% discount rate.

2 Assumes forest land has no agricultural or forestry production.

3 One ha of production forest consists of 800 eucalyptus trees grown for firewood on a 7 year rotation cycle and 200 conservation trees that are kept in perpetuity (i.e. streamside planting for soil conservation). MAI is assumed to be 11 tons/ha and price $9/ton

Table 5.4 Financial and Economic Returns[1] for Community Farming and Forestry

	No. of Ha[1]	**FNPV Per Ha**	**Total FNPV**	**ENPV Per Ha**	**Total ENPV**
Farming	10617	$4,470	$47,461,590.14	$4,626	$49,114,291.84
Forestry	6000	-$1,315	-$7,888,091.37	-$1,153	-$6,916,201.68
Total			***$39,573,498.77***		***$42,198,090.16***

1 Assumes 51539 ha available in total across 60 communities in 3 designated conservation corridor areas; 10,617 ha for 10,617 households are planted in agricultural crops; 100 ha per community is planted in forestry.

10. Table 5.4 shows a FNPV of $39.5 million and an ENPV of $42 million for the farming improvements and forestry planting. The total project cost of these activities is about $19 million. Under the assumptions of the FNPV and ENPV, the returns easily justify the project investment.

b. Financial and Economic Net Benefits for Project 2

11. For Project 2, we estimate financial and economic net benefits for two out of the three components that are revenue generating, and then for the project as a whole. The first component in the project is a small planning activity that is necessary to be completed prior to the revenue-generating components taking place.

12. Table 5.5 shows an example of communities that could be selected to participate in Project 2. The selection of communities will take place during a comprehensive project preparation for Project 2, so the list of communities is only an example. The communities in Table 5.5 all have community-managed

forest land – the table shows the number of ha and number of households for each community-managed forest. We assume that the project will engage 20 communities with community managed forest land in the project. Thus, the project could include the number of ha and households that are shown in Table 5.5.

Table 5.5 Example Community Profiles in Project 2

No.	Name	Location	Village Name	Ha	Households	Farm Activities
1	Varin Community Forest	Varin commune, Varin District, Siem Reap province	Varin village	913	272	Rice, cassava, vegetable and animal raising
2	Changkan Roy Community Forest	5 communes (Varin, Svay Sor, Prasat and Lvea Krang) in Varin district, Siem Reap province	11 villages from 5 communes	9,980	650	Rice, cassava, cashew, mung bean and animal raising (cow, chicken and pig)
3	Beng Mealea Community Forest	Beng Mealea commune, Svay Lue district, Siem Reap province	Beng Mealea	1,514	225	Rice, vegetable, cassava and animal raising
4	Romcheck Community Forest	Romcheck commune, Bantay Srey district, Siem Reap province	Romcheck village	330	119	Rice, vegetable, cassava and animal raising
5	Tbeng Lech Community Forest	Tbeng commune, Bantay Srey district,Siem Reap province	Tbeng Lech villager	210	144	Rice, vegetable, animal raising
6	Sanday Community Forest	Khnas Sanday, Bantay Srey district, Siem Reap province	Sanday village	427	77	Rice, vegetable,cassava, and animal raising
7	Prey Thom Community Protected Area	Khnorng Phnom commune, Svay Lue district, Siem Reap province	Anlong Thom village	117	270	Cashew nut, rice, cassava, taro and banana and a little with chicken, cow and pig.
8	Kromum Pok Community Protected Area	Kantuot commune, Svay Lue district, Siem Reap province	Kromum Pol village	137	1,492	Cassava, rice, and fruit tree and a little with chicken, cow and pig.
9	Chob Soam Community Protected Area	Sre Noy commune, Varin district, Siem Reap province	Tropeang Krasang village	470	1,348	Cassava, rice, and fruit tree and a little with chicken, cow and pig.
10	Chaeb Lech Community Forest	Chaeb Muoy commune, Chaeb distridct, Preah Vihear province	Chaeb Lech village	2,642	306	Rice, cassava, cow, chicken and pig raising
11	Kompong Sranors Commune Forest	Kompong Sraloa 1 commune, Chaep District, Preah Vihear province	Kompong Sraloa village	3,130	118	Rice, cow, chicken and pig raising
12	Preah Lean Community Forest	Kompong Sraloa 2 commune, Chaeb district, Preah Vihear province	Kompong Semi village	1,233	44	Rice, cow, chicken and pig raising
13	Preah En Phkay Reah Community Forest	Kompong Sraloa 2 commune, Chaeb district, Preah Vihear province	Kompong Preah En village	1,332	95	Rice, cow, chicken and pig raising
14	Prey Changha Thom Community Forest	Kompong Sraloa 2 commune, Chaeb district, Preah Vihear province	Kompong Sraloa village	1,473	185	Rice, cow, chicken and pig raising
15	Prey Niyum Tropeang Chambox Community Forest	Kompong Sraloa 1 commune, Chaeb district, Preah Vihear province	Tropeang Chombox village	3,682	56	Rice, cow, chicken and pig raising
16	Tmart Biey Thean Krasang Community Protect Area	Pring Thom commune, Chomksan district, Preah Vihear province	Tmart Biey village	1,763	222	Rice, cassava, cashew, and animal raising (cow, chicken and pig)
17	Rolum Terk Khmao Community Protected Area	Yeang commune, Chomksan district, Preah Vihear province	Reaksmie village	1,305	123	Rice, cow, chicken and pig raising
18	Prey Cheu Phleung Community Protected Area	Yeang commune, Chomksan district, Preah Vihear province	Kong Yong village	2,162	201	Rice, cow, chicken and pig raising
19	Prey Thmor Koul Community Protected Area	Po commune, Chomksan district, Preah Vihear province	O Kork villager	783	47	Rice, cassava, cow, chicken and pig raising
20	Aphlogn Phnom Die Community Protected Area	Kantuot commune, Chomksan district, Preah Vihear province	Char village	1,190	219	Rice, cassava, cow, chicken and pig raising
	Total			34,793	6,213	

13. We assume that a representative farm in Project 2 will produce rice, cashew nut, and cassava without the project. With the project, we assume that a representative farm will improve sustainable production of rice and cashew nut, but drop cassava in favor of producing sugar cane. We estimate the FNPV, FIRR, ENPV, and EIRR per ha for each of the crops without and with the project. These are shown in Table 5.6.

14. We assume that each community will plant about 105 ha of production forestry. We assume this will be a fast growing species[42], grown on a 7-year rotation for firewood, and on a 10-year rotation for poles. The FNPV, FIRR, ENPV, and EIRR per ha for production forestry are shown in Table 5.7.

Table 5.6 Financial and Economic Returns[1] Per Ha of Agricultural Crops Produced by a Household in Project 2

	FNPV	FIRR	ENPV	EIRR
Without Project				
Rice	$908	32.2%	$1,345	High
Cashew nut	$1,296	36.1%	$2,017	17.4%
Cassava	$3,343	High	$4,458	High
With project				
Rice	$3,572	38.0%	$4,007	High
Cashew nut	$1,429	46.6%	$2,579	23%
Cassava	$10,399	31.3%	$10,296	33%
Net Return Per Ha[2]	***$3,292***		***$3,027***	

1 Financial and economic NPVs calculated over 20 years at 12% discount rate.
project and then the three crops with the project.
2 Assumes that a representative ha consists of equal parts of the three crops without the project and then the three crops with the project.

Table 5.7 Financial and Economic Returns[1] Per Ha of Community Production Forest in Project 2

Financial Returns			**Economic Returns**	
	FNPV	**FIRR**	**ENPV**	**EIRR**
Without Project				
Production Forest[2]	$0	0.0%	$0	0.0%
Total	***$0***		***$0***	
With project				
Production Forest[3]	$1,322	19.8%	$1,524	21.4%
Total	***$1,322***		***$1,524***	
Net Return Per Ha	***$1,322***		***$1,524***	

1 Financial and economic NPVs calculated over 21 years at 12% discount rate.

2 Assumes forest land has no agricultural or forestry production.

3 One ha of production forest consists of 800 eucalyptus trees grown for firewood on a 7 year rotation cycle and 200 trees that are grown for poles. MAI is assumed to be 11 tons/ha and price $9/ton for firewood and $15 per pole, with 1 ton greenwood = 15 poles.

[42] In order to estimate possible net financial and economic benefits, our calculations are based on data from eucalyptus/acacia species. This is not an endorsement to use these species in Project 2 – other species could be used. Rather, eucalyptus/acacia are reference species for which required data to calculate net financial and economic benefits are readily available.

15. Table 5.8 shows the combined FNPV and ENPV per ha for farming changes/improvements and planting community production forests. Overall, these net financial and economic returns are very positive.

Table 5.8 Financial and Economic Returns[1] for Community Farming and Forests

	No. of Ha[1]	FNPV Per Ha	Total FNPV	ENPV Per Ha	Total ENPV
Farming	6213	$3,292	$20,450,686	$3,027	$18,805,708
Forestry	2100	$1,322	$2,776,532	$1,524	$3,201,068
Total			***$23,227,217***		***$22,006,776***

1 Assumes 34,793 ha available in total across 20 communities; 6,213 ha for 6213 households are planted in agricultural crops; 105 ha per community are planted in forestry.

16 We assume that companies/JVs in the project will plant 5000 ha of production forests. We assume that these have the same per ha financial and economic returns as do the community forests. Under these assumptions, the FNPV is about $6.6 million and the ENPV is about $7.6 million for these plantations.

Table 5.9 Financial and Economic Returns[1] for Company/JV Forestry

	No. of Ha[1]	FNPV Per Ha	Total FNPV	ENPV Per Ha	Total ENPV
Forestry	5000	$1,322	$6,610,790	$1,524	$7,621,591
Total			***$6,610,790***		***$7,621,591***

1 Assumes 5,000 ha are planted in forestry by companies/JVs

17 Table 5.10 shows the FNPV and ENPV for the total farming and forestry activities carried out by communities in the project and for the production forests established by companies/JVs in the project.

Table 5.10 Financial and Economic Returns[1] for Total Farming and Forestry

	Total FNPV	Total ENPV
Community Farming/Forestry	$23,227,217	$22,006,776
Company Forestry	$6,610,790	$7,621,591
Total	***$29,838,007***	***$29,628,367***

1 Financial and economic NPVs calculated over 21 years at 12% discount rate.

18 Table 5.11 shows the FNPV and ENPV for the entire project. For FNPV, project costs are about $27 million, but these are covered by project benefits of about $39.8 million. For ENPV, project costs are about $22 million, with project benefits of about $39.6 million.

Table 5.11 Project 2 Financial and Economic Returns[1]

	Total FNPV	Total ENPV
Net Benefits	$29,838,007	$29,628,367
Project Costs	$27,198,357	$22,665,298
Total	***$2,639,649***	***$6,963,069***

1 Financial and economic NPVs calculated over 21 years at 12% discount rate.