

GEF-6 PROJECT IDENTIFICATION FORM (PIF)

PROJECT TYPE: Medium-sized Project

TYPE OF TRUST FUND: Capacity Building Initiative for Transparency

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PART I: PROJECT INFORMATION

Project Title:	Strengthening capacity in the agriculture and land-use sectors for enhanced transparency in implementation and monitoring of Cambodia's Nationally Determined Contribution (NDC)			
Country(ies):	Cambodia	GEF Project ID:1		
GEF Agency(ies):	FAO (select) (select)	GEF Agency Project ID:	643089	
Other Executing Partner(s):	Ministry of Environment; Ministry of Agriculture, Forestry and Fisheries	Submission Date:	15 May 2017	
GEF Focal Area(s):	Climate change (CBIT)	Project Duration (Months)	36 months	
Integrated Approach Pilot	IAP-Cities IAP-Commodities IAP-Foo	d Security Corporate P	rogram: SGP 🔲	
Name of parent program:	[if applicable]	Agency Fee (\$)	82,008	

A. INDICATIVE FOCAL AREA STRATEGY FRAMEWORK AND OTHER PROGRAM STRATEGIES²

		(in \$)		
Objectives/Programs (Focal Areas, Integrated Approach Pilot, Corporate Programs)	Trust Fund	GEF Project Financing	Co- financing	
(select) (select) CBIT OI 3: MRV systems for emissions reductions in place and reporting verified data.	CBIT	431,621	865,500	
(select) (select) CBIT OI 7: Number of countries meeting Convention reporting requirements and including mitigation contributions.	CBIT	431,621	865,500	
Total Project Cost		863,242	1,731,000	

B. INDICATIVE PROJECT DESCRIPTION SUMMARY

Project Objective: By 2020 Cambodia is preparing reports to the UNFCCC under the Paris Agreement Enhanced Transparency Framework (ETF) with strengthened agriculture and land use sector components including inventories of emissions sources and sinks and information necessary to track progress against priority actions identified in Cambodia's NDC for these sectors.

•					(in	\$)
Project Components	Financing Type ³	Project Outcomes	Project Outputs	Trust Fund	GEF Project Financing	Co- financing
Component 1. Institutional arrangements to coordinate preparation of ETF reports for agriculture, land-use and other relevant sectors enhanced.	TA	1.1 Institutional arrangements coordinating information and data collection from the agriculture and land use sectors into ETF processes and reports enhanced.	1.1.1 Coordination mechanism established/strengthen ed integrating relevant authorities from the agriculture and land use sector into national UNFCCC reporting processes.	CBIT	307,265	107,000
	· ·		1.1.2. Assessment prepared to assess institutional, data collection, analysis and reporting capacity gaps and needs for			

¹ Project ID number will be assigned by GEFSEC and to be entered by Agency in subsequent document submissions.

When completing Table A, refer to the excerpts on GEF 6 Results Frameworks for GETF, LDCF and SCCF and CBIT guidelines.

³ Financing type can be either investment or technical assistance.

		meeting ETF		
		requirements with		
		specific focus on the		1
	1			
		priority NDC actions		
		for the agriculture and		
		land-use sectors (in		
		PPG, building on		
		BUR)		
	1			
		1 1 2 N C 1 PPP		
		1.1.3. National ETF]	İ
		monitoring and		
		reporting roadmap for		
		the agriculture and		
	44	land-use sectors		
		prepared and adopted		
		FF		[
		1.1.4		
		1.1.4. Capacity		
	1	developed to clarify		
	1	measurement and]	
	•			
-		reporting of key NDC		•
		information		
		(baselines, Business-		
		As-Usual targets) and]	
		support provided for		
		ETF reporting in the		
		agriculture and land-		1
		, -		
		use sectors		
		1.1.5. Cambodia's		
		engagement		
		strengthened in the		
		agriculture and land-		
		-		
		use sectors with		
		international		
		transparency-related		
		processes under the		f
		UNFCCC		
	:			
	1.2 Best practices on	1.2.1 Multi-sectoral	www.	
				1
	ETF reporting	coordination]
	processes, information	mechanism		
	gathering, system	strengthened		
	infrastructure,	integrating relevant		
	methodologies in the	authorities, data and		
	agriculture and land-use	information systems		
	sectors disseminated to			
		into national		
	relevant priority sectors	UNFCCC reporting		j l
	(e.g. energy,	processes.	***	
		P. 000000		
	industry/trade,			
	transportation).	1.2.2 ETF lessons		
		learned from		
]		agriculture and land-		
]				
		use sectors monitored,		
		captured, up-scaled		
		and shared to enhance	1	
[
		wider national,		
-		regional and global		
		reporting (e.g. via the		
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	Т	1	01.1.1.01			<u>"</u>
			Global Coordination Platform.)			
			i iauvini.)			
			1.2.3 Peer exchange	-		
			program on			
			transparency activities			
			established for			
	7		relevant priority			
	TA		sectors.	CBIT	238,750	827,000
Component 2. Capacity to assess and report emissions and removals from the agriculture and land-use sectors and to design and monitor		2.1 Reporting on inventories of emissions sources and sinks and mitigation activities from agriculture and land-use sectors strengthened.	2.1.1. Regular and systematic documentation and archiving process established to ensure accuracy and sustainability of the	~~^		321,000
related emission			inventory, including			
reduction activities			quality assurance and quality control, in the			
strengthened			agriculture and land- use sectors			
			2.1.2. GHG information			
			management system (MIS) and			
			infrastructure for			
			agriculture and land-			
			use sectors upgraded			
			(interface w/ 3.1.3)			
			2.1.3. Capacity and			
			system hardware			
			developed for relevant			
			institutions at different			
i.			levels to adopt and			
			mainstream latest			
			tools and methodologies to			
•			develop country-			
			specific emissions			
			factors, improve			
			activity data and better			
			quantify the impact of			
			mitigation policy measures in the			
			agriculture and land-			
			use sectors (inter-face			
			w/ 3.1.4).			
			2.1.4.			
			National/sectoral reports prepared and			
			submitted on			
			inventory of emissions			
			sources and sinks and			
			emissions reduction activities from			

			agriculture and land- use sectors consistent with latest UNFCCC			
Component 3. Capacity to monitor and report adaptation activities in agriculture and landuse sectors strengthened	TA	3.1 Monitoring and reporting of NDC priority adaptation actions in the agriculture and land-use sectors strengthened	guidance 3.1.1. Assessment prepared of relevant good practice methodologies and frameworks for monitoring and reporting NDC priority adaptation actions in the agriculture and land- use sectors	CBIT	238,750	797,000
			3.1.2. National/sectoral appropriate indicators and monitoring and reporting framework developed for NDC priority adaptation actions in the agriculture and land- use sectors			
			3.1.3. Adaptation information management system (MIS) and system infrastructure for agriculture and landuse sectors upgraded (interface w/ 2.1.2)			
			3.1.4. Capacity and system infrastructure developed supporting relevant institutions at different levels to adopt and mainstream monitoring and reporting processes for NDC priority adaptation actions in the agriculture and land-use sectors (interface w/ 2.1.3).			
			3.1.5. National reports prepared and submitted on priority adaptation activities in the agriculture and land-use sectors consistent with latest UNFCC guidance			

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	Subtotal		784,765	1,731,000
	Project Management Cost (PMC) ⁴	CBIT	78,477	
	Total Project Cost		863,242	1,731,000

For multi-trust fund projects, provide the total amount of PMC in Table B, and indicate the split of PMC among the different trust funds here: (N/A)

C. INDICATIVE SOURCES OF CO-FINANCING FOR THE PROJECT BY NAME AND BY TYPE, IF AVAILABLE

Sources of Co- financing	Name of Co-financier	Type of Co- financing	Amount (\$)
Recipient Government	Ministry of Environment	In-kind	30,000
Recipient Government	Ministry of Agriculture, Forestry and Fisheries	In-kind	77,000
GEF Agency	FAO- TCP/CMB/3602 on National Soil Information and Land Suitability Evaluation System for Cambodia	Cash	297,000
GEF Agency	FAO-TCP/CMB/3603/C1 on Strengthening Cambodian LULUCF and REDD+ reporting capacity	Cash	47,000
GEF Agency	FAO-UNFA/CMB/041/UND on establishment of NFMS for reduction of emissions from the forest deforestation and degradation-plus (REDD+) readiness in Cambodia	Cash	780,000
GEF Agency	FAO-OSRO/CMB/401/USA on Emerging Pandemic Threat 2 (EPT2)	Cash	500,000
Total Co-financing			1,731,000

D. INDICATIVE TRUST FUND RESOURCES REQUESTED BY AGENCY(IES), COUNTRY(IES), FOCAL AREA AND THE PROGRAMMING OF FUNDS ⁴⁾

						(in \$)	
GEF Agency	Trust Fund	Country/ Regional/ Global	Focal Area	Programming of Funds	GEF Project Financing (a)	Agency Fee (b) ^{b)}	Total (c)=a+b
FAO	CBIT	Cambodia	Climate Change	Cross-Cutting Capacity	863,242	82,008	945,250
Total GE	F Resou	rces			863,242	82,008	945,250

a) Refer to the Fee Policy for GEF Partner Agencies.

E. PROJECT PREPARATION GRANT (PPG)⁵

Is Project Preparation Grant requested? Yes No I If no, skip item E.

PPG AMOUNT REQUESTED BY AGENCY(IES), TRUST FUND, COUNTRY(IES) AND THE PROGRAMMING OF FUNDS

Project Preparation Grant amount requested:	: \$	PPG Agency Fee:	

⁴ For GEF Project Financing up to \$2 million, PMC could be up to 10% of the subtotal; above \$2 million, PMC could be up to 5% of the subtotal. PMC should be charged proportionately to focal area based on focal area project financing amount in Table D below.

⁵ PPG requested amount is determined by the size of the GEF Project Financing (PF) as follows: Up to \$50k for PF up to\$2m (for MSP); up to \$100k for PF up to \$3m; \$150k for PF up to \$6m; \$200k for PF up to \$10m; and \$300k for PF above \$10m. On an exceptional basis, PPG amount may differ upon detailed discussion and justification with the GEFSEC.

C P P	- TD - 1	Country/ Programming			(in \$)		
GEF Agency	Trust Fund	Regional/Global	Focal Area	Programming of Funds	PPG (a)	Agency Fee ⁶ (b)	
FAO	CBIT	Cambodia	Climate Change	Cross-Cutting Capacity	50,000	4,750	54,750
Total PP	Total PPG Amount					4,750	54,750

F. PROJECT'S TARGET CONTRIBUTIONS TO GLOBAL ENVIRONMENTAL BENEFITS⁷

Provide the expected project targets as appropriate.

Corporate Results	Replenishment Targets	Project Targets
Maintain globally significant biodiversity and the ecosystem goods and services that it provides to society	Improved management of landscapes and seascapes covering 300 million hectares	Hectares
Sustainable land management in production systems (agriculture, rangelands, and forest landscapes)	120 million hectares under sustainable land management	Hectares
3. Promotion of collective management of transboundary water systems and implementation of the full range of policy,	Water-food-ecosystems security and conjunctive management of surface and groundwater in at least 10 freshwater basins;	Number of freshwater basins
legal, and institutional reforms and investments contributing to sustainable use and maintenance of ecosystem services	20% of globally over-exploited fisheries (by volume) moved to more sustainable levels	Percent of fisheries, by volume
Support to transformational shifts towards a low-emission and resilient development path	750 million tons of CO _{2e} mitigated (include both direct and indirect)	metric tons
5. Increase in phase-out, disposal and reduction of releases of POPs, ODS,	Disposal of 80,000 tons of POPs (PCB, obsolete pesticides)	metric tons
mercury and other chemicals of global	Reduction of 1000 tons of Mercury	metric tons
concern	Phase-out of 303.44 tons of ODP (HCFC)	ODP tons
Enhance capacity of countries to implement MEAs (multilateral environmental agreements) and	Development and sectoral planning frameworks integrate measurable targets drawn from the MEAs in at least 10 countries	Number of Countries: 1
mainstream into national and sub-national policy, planning financial and legal frameworks	Functional environmental information systems are established to support decision-making in at least 10 countries	Number of Countries: 1

PART II: PROJECT JUSTIFICATION

- 1. Project Description. Briefly describe: 1) the global environmental and/or adaptation problems, root causes and barriers that need to be addressed; 2) the baseline scenario or any associated baseline projects; 3) the proposed alternative scenario, GEF focal area⁸ strategies, with a brief description of expected outcomes and components of the project; 4) incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF, SCCF, CBIT and co-financing; 5) global environmental benefits (GEFTF) and/or adaptation benefits (LDCF/SCCF); and 6) innovation, sustainability and potential for scaling-up.
- Problem, root causes and barriers to be addressed.

⁶ PPG fee percentage follows the percentage of the Agency fee over the GEF Project Financing amount requested.

⁷ Provide those indicator values in this table to the extent applicable to your proposed project. Progress in programming against these targets for the projects per the *Corporate Results Framework* in the *GEF-6 Programming Directions*, will be aggregated and reported during mid-term and at the conclusion of the replenishment period. There is no need to complete this table for climate adaptation projects financed solely through LDCF, SCCF or CBIT.

⁸ For biodiversity projects, in addition to explaining the project's consistency with the biodiversity focal area strategy, objectives and programs, please also describe which <u>Aichi Target(s)</u> the project will directly contribute to achieving.

- 1. Cambodia has a total land area of 181,035 km². Its topography consists of plains in the central of the country surrounded by mountainous and highland regions, and a lengthy coastline in the south of the country. Most of Cambodia falls within the Mekong River Basin with the country's hydrology dominated by the Mekong River and its' major tributaries, including the Tonle Sap River. The Tonle Sap River joins the Mekong River and the Tonle Sap Lake9. Cambodia has a tropical monsoon climate with distinct rainy season, which runs from May to early October and a drier, cooler season which runs from November to March¹0. Temperatures generally average around 25 to 27 degrees Celsius throughout the year except just before the rainy season, when average temperatures can approach 30 degrees Celsius¹¹¹. The population of Cambodia was 14.7 million in 2013 and is growing at an average annual rate of 1.46 percent among the highest in Southeast Asia¹².
- 2. Agriculture Sector Overview: From 2010 to 2014 Cambodia's GDP grew at an average rate of 7 percent per year. Agriculture--including forestry, crop and livestock production and fisheries—is a significant source of economic activity, accounting for 28.7 percent of GDP in 2015, and a significant source of greenhouse gas emissions 4. Key drivers of agricultural growth include large natural area and resource potentials, foreign investments, public expenditures in infrastructure, credit and activity in global and regional markets 5. Cambodian agricultural output grew by 8.7 percent annually between 2004 and 2012. This growth was driven by increased output of key crops including paddy rice, maize, cassava, sugarcane and vegetables. However, recent research by the World Bank indicates that output growth in the Cambodian agriculture sectors declined markedly in 2013 and 2014. The Bank recommended that targeted public sector investments in public good agricultural services could help to ensure continued, needed agricultural growth 16.
- 3. Agriculture and land-use activities are crucial to the livelihoods of Cambodian people. While industrial scale agriculture (e.g. via Economic Land Concessions) is increasing in Cambodia, most farmers are still smallholder households who often face constraints due to factors including land tenure issues, inadequate access to and management of land and water resources, lack of access to improved/sustainable inputs and technology, poor farming skills and limited infrastructure (e.g. irrigation and roads). The agriculture sectors employed 45.3 percent of the total labor force in 2014. Eighty-five percent of the population live in rural areas, and over 60 percent of the population is directly and/or indirectly dependent on income generated by the sector. The agricultural growth Cambodia enjoyed over the past decade has included 'pro-poor' targeting, with the number of poor declining from 7 million to 3 million and mostly in rural areas.
- 4. While expansion of the agriculture sectors has been, and will continue to be crucial for ensuring growth, poverty reduction and development in Cambodia, recent trends associated with the expansion of agriculture output, particularly of crops, highlight numerous environmental and climate-related risks that require greater attention and scrutiny to ensure growth is sustainable and addressing the core and inherent vulnerabilities associated with agriculture livelihoods.
- 5. Crops: Crops are the major agriculture sub-sector in Cambodia and the key source of agricultural growth. Cambodian agriculture has historically been anchored in fragile subsistence rain-fed systems centered on rice production often with inadequate access to irrigation. However, over the past decade production has increased significantly largely due to a combination of land expansion and yield increase. Cropland accounts for around 14 percent of the total Cambodia's total land area or 25,000 square kilometers. Rice accounts for about 74 percent of the cropped area. Wet rice cultivation is concentrated in the low-lying provinces of the southern

⁹ IFAD, Cambodia – Environmental and Climate Change Assessment, 2013

¹⁰ Royal Cambodian Government, Cambodia's Second National Communication to the United Nations Framework Convention on Climate Change, 2015

¹¹ IFAD, 2013, op. cit.

¹² Royal Cambodian Government, 2015, op. cit.

¹³ World Bank, Clear Skies-Cambodia, Economic Update, October 2014

¹⁴ Royal Cambodian Government, 2015, op. cit.

¹⁵ IFAD, Agriculture Services Programme for Innovation, Resilience and Extension, Final Project Design Report, 2015.

World Bank, Cambodian Agriculture in Transition: Opportunities and Risks, 2015

part of the country and the Tonle Sap basin, while the higher areas in the northeast and southwest are dominated by forest, plantation and upland crops. While rice remains the most important crop for Cambodian agriculture, production of other important crops including cassava, sugarcane and maize have increased significantly (Table 1). Planting of rubber crops has also been increasing rapidly at a rate of 16 percent annually. As these areas go into production, rubber output will likely grow dramatically in the near future.

TABLE 1 PRODUCTION, AREA, AND YIELDS OF MAJOR CROPS, CAMBODIA, 2002-2012¹⁷

		2002			2012	
Crop	Production (ton)	Cultivated Area (ha)	Yield (ton/ha)	Production (ton)	Cultivated Area (ha)	Yield (ton/ha)
Rice	3,822,509	1,994,645	1.916	9,290,940	2,980,297	3.117
Maize	148,897	80,470	1.850	950,909	215,442	4.414
Cassava	122,014	19,563	6.237	7,613,697	337,800	22.539
Vegetables	163,175	34,433	4.739	411,435	54,155	7.597
Soybean	38,661	33,438	1.156	120,165	70,972	1.693
Sugarcane	173,105	9,581	18.068	1,220,255	36,722	33.230

6. Farm chemicals: Use of chemical fertilizers and pesticides is growing in parallel with crop production. The World Bank has found that increased use of urea and other types of chemical fertilizers was particularly common for rice and vegetable production and expected to grow in the future while also expanding to other crops such as maize (Table 2). The use of chemical insecticides was also found to be growing particularly in vegetable and maize production¹⁸. Soil erosion and low soil fertility are evident where degradation has impacted as much as 43 percent of land or 7.7 million hectares. While increased application of chemical inputs has been linked to flow-on issues including soil acidification, low soil fertility, and increased GHG emissions, the current capacity of government to monitor the purchase and use of farm chemicals remains limited. Use of chemical inputs is largely unregulated¹⁹.

TABLE 2 ILLUSTRATIVE USE OF FERTILIZERS, CAMBODIA, 2005 AND 2013²⁰

		2005			2013		
		Farm Size			Farm Size		
Crop	Small	Medium	Large	Small	Medium	Large	
Wet season rice (kg/ha)	53	94	93	72	65	63	
Dry season rice (kg/ha)	133	89	40	133	127	192	
Cassava (kg/ha)	-		_	12	-	8	
Maize (kg/ha)	35	_	_	74	7	9	

- 7. Livestock and fisheries: Livestock is the second largest agriculture sector activity in Cambodia and an important source of food, income and labor for rural Cambodian households²¹. Around 75 percent of all households in Cambodia raise livestock and/or poultry, with 86 percent of these households keeping between 2 to 9 animals²². Larger livestock are employed in farm labor, while smaller livestock such as pigs and chickens are used for consumption and sale²³.
- 8. Fishing, both in freshwater bodies such as lakes, rivers and rice paddy fields and coastal water bodies, is a significant agriculture sector activity and an important source of food security and nutrition for Cambodian households. Based on the recent agriculture census prepared by the Ministry of Agriculture, Forestry and Fisheries (MAFF) and FAO, 87.9 percent of households reported they were engaged in fishing, while

¹⁷ *Ibid*,

¹⁸ World Bank, 2015, op. cit.

¹⁹ ADB. Cambodia: Sector Assessment Summary - Agriculture, natural resources and rural development, 2014

²⁰ World Bank, 2015, op. cit.

²¹ MAFF & FAO, Census of Agriculture in Cambodia, 2013

²² Ibid.

²³ IFAD, 2013, op. cit.

- 15.3 percent reported they were engaged in aquaculture activities. Most households combined fishing with crop cultivation and/or raising livestock and poultry, as well as other aquaculture activities. However, unlike with crops or livestock activities, more than 90 percent of fishing is used for home consumption. As a result, fishing is a particularly important for household food security and nutrition in Cambodia²⁴. Fishing is largely conducted using netting and fish traps. Only a small proportion of households reported using boats for fishing. A recent agriculture sector assessment by ADB indicates that the fisheries resources are increasingly under threat from water pollution and hydro power developments along key river systems²⁵.
- 9. Forestry: About 60 percent of Cambodia's land area is classified as forest²⁶. These resources are under growing pressure from land clearing and agricultural expansion. National level deforestation (at 1.3 percent per annum over the period 2010 to 2015²⁷) has reduced the productive capacity of Cambodian forest ecosystem services and agro-ecological flows, impacted water quality and its availability to agriculture. The ADB estimates that as much as 55 percent of Cambodia's forests are degraded. Forest resources are still an important source of energy for Cambodian households with many still reliant on fuel wood for cooking. Non-timber forest products are also an important, alternate source of income for rural households²⁸.
- 10. Water resources: Cambodia has a rich endowment of renewable water resources with the majority currently being dedicated to the agriculture sectors. The Ministry of Water Resources and Meteorology (MOWRAM) estimates that the agriculture sectors consume around 96 percent of the country's freshwater resources. Rainfall distribution and river discharges vary significantly from season to season. Water resources in Cambodia are increasingly at risk from discharges of agriculture and industrial wastes into water bodies and general deterioration of watersheds associated with unsustainable management²⁹.
- 11. Cambodian agriculture is particularly susceptible to flood and drought. Seasonal flood associated with the accumulation of rainfall in the upper catchments of the Mekong and Tonle Sap rivers results in consistent flooding in and around the Tonle Sap Lake and the surrounding provinces to the south. These floods can be aggravated by heavy rainfall associated with tropical depressions and storms. The intensity and frequency of floods have increased considerably since 1999 with major floods occurring in 2000, 2001, 2009, 2011 and 2013. Drought is also a key concern with major events in 1998, 2001, 2002, 2003 and 2016 causing significant losses in numerous provinces³⁰.
- 12. Land tenure: The absence of clear definitions and demarcation of different types of land remain a key challenge for the more sustainable management and monitoring of natural resource use in Cambodia. Population growth has increased pressure on land while sales forced by poverty, debt or domestic emergencies, and in some cases expropriation of land, have resulted in smaller average plot sizes and increased inequality in land distribution. More than 90 percent of farms are less than 4 hectares, and more than half of this number are less than 2 hectares³¹. Agricultural land per capita has also decreased significantly (from 0.55 ha in 1990, to 0.38 ha in 2002). Land ownership is governed by the Land Law of 2001 and despite a significant land titling effort, most agricultural land is still not covered by formal land titles. An increasing number of small farms presents several significant challenges for effective monitoring and reporting of agriculture activity data.
- 13. Agriculture as a driver of climate change: The agriculture and land-use sectors are key sources of GHG emissions in Cambodia and, as a result, a contributor to global anthropogenic climate change. According to Cambodia's Second National Communication to the UNFCCC in 2015 (SNC), the agriculture sector was responsible for 21.1 MtCO²-eq of emissions in 2000 representing around 44 percent of total emissions at the

²⁴ MAFF & FAO, 2013, op. cit.

²⁵ ADB, 2014, op. cit.

²⁶ IFAD, 2015, op. cit.

²⁷ FAO, Global Forest Resources Assessments 2015

²⁸ IFAD, 2013, op. cit.

²⁹ ADB, 2014, op. cit.

³⁰ MAFF, Plan of Action for Disaster Risk Reduction in Agriculture 2014-2018, 2013

³¹ MAFF & FAO, 2013, op. cit.

- national level. Methane emissions from rice paddy accounted for approximately 68 percent of reported agriculture emissions, followed by enteric fermentation at 16 percent.
- 14. Forest and grassland conversion was the largest source of GHG emissions in 2000, responsible for 22,858.73 MtCO2 of emissions accounting for 49 percent of total national emissions. However, changes in biomass stocks and the abandonment of managed lands were reported as significant carbon sinks of -48.2 MtCO² in total. As a result, on aggregate the land use change and forestry sectors were reported as a sink of -24.6 MtCO².
- 15. Unofficial data on emissions collected and compiled by FAO and other organizations indicate that emissions from both the agriculture and land-use and forestry sectors in Cambodia are changing. Emissions from the land-use change and forestry sectors are now reported by most sources as a net source of emissions rather than a sink³². According to the initial Cambodian national forest reference emission level submitted to the UNFCCC, now an official source, net emissions have risen to an estimated 27.5 MtCO² annually over period 2006-2010, and 131 MtCO² annually over period 2010-2014. It should be noted that forest reference level submitted to the UNFCCC covers deforestation and limited emissions caused by forest degradation.
- 16. Statistics compiled by FAO on emissions from the agriculture sector in Cambodia indicate that, in keeping with the rapid pace of expansion of Cambodian agriculture over the past decade, total emissions from the agriculture sectors have grown by as much as 25 percent between 2000 and 2013³³. The methodologies used to report these unofficial statistics for agriculture sector activities are based on the IPCC 2006 Guidelines for National Greenhouse Gas Inventories, while the figures reported in the Cambodia SNC are based on the IPCC 1996 Revised Guidelines. As a result, the values reported and any trends are difficult to compare and verify. These issues are discussed further below.
- 17. Climate trends and projections: A synthesis assessment produced by IFAD³⁴ found that Cambodia's climate has been undergoing a range of climate changes and that these will continue over the coming century. Average annual temperatures have been increasing over the past five decades as well as an increase in the number of hot days and nights accompanied by declines in the number of cold days and nights. Recent projections indicate that, depending on the models and scenarios used, average temperatures will increase by 0.7-2.7 degrees Celsius by the 2060s and between 1.4-4.3 degrees Celsius by the end of the century. Any anticipated changes in temperature are expected to be greater in the lower altitude areas of the country where the bulk of Cambodia's agriculture activity is located.
- 18. While no significant change in precipitation patterns has been observed, climate projections indicate risks of greater seasonal variability in the future. In general, average rainfall is expected to grow during the rainy season and decline further during the dry season, while Cambodia's overall seasonal variability in rainfall is expected to become more pronounced. The incidence of heavy rainfall events is projected to increase. The overall anticipated impact is that uncertainty regarding the availability of water resources is expect to increase over the coming decades³⁵.
- 19. Climate risk for agriculture: The trends in agricultural output and management of natural resources combined with anticipated climate change and persistent capacity constraints mean that Cambodia's agriculture sectors are highly at risk from adverse climate variability and climate change. Farmers relying on rain-fed production systems will face the most significant challenges. Projected increases in the seasonal variability of precipitation will combine with increased temperature and evapotranspiration to further put additional pressure on available water resources. The incidence of heavy rainfall events, flood and drought are also projected increase. The findings of a climate change vulnerability assessment prepared for Cambodia's SNC indicates that most of

³² WRI, CAIT Database, Cambodia, 2017

³³ FAO, FAO Statistics Database, Cambodia, 2017

³⁴ IFAD, 2013, op. cit.

³⁵ *Ibid*.

Cambodia's agriculture areas will be exposed to higher drought risks³⁶. Meanwhile, seasonal and flash floods, particularly in the Tonle Sap River Basin will continue to present risks to key agriculture producing areas.

- 20. Rising temperatures will also affect the growth cycles of crops leading to possible reductions in crops yield. Studies have indicated that rice yields can decline by up to 10 percent for every 1°C increase in minimum temperature during the growing season³⁷. Changes in climates can also increase the incidence of pests and diseases leading to flow-on implications for production yields, use of chemical inputs such as pesticides and overall human health.
- 21. Cambodian agriculture's largely rain-fed systems are particularly susceptible to climate variability and extreme climate events. The variable nature of water availability for agricultural production poses increased risks for farmer liyelihoods and the rural economy. Unsurprisingly, given that most of Cambodia' agricultural output is still rain-fed, the incidence of rainfall, flood and drought have been highlighted by Cambodian farmers as their key concerns in agricultural production above issues such as input prices and access to credit³⁸.
- 22. Cambodia's Nationally Determined Contribution Cambodia's agriculture and land-use strategies, policies, and investments are crucial for addressing the nation's poverty, food security, and the country's ability to respond and adapt to climate change. Enhancing monitoring and planning systems for agriculture sector activities to adapt to climate change impacts address drivers of anthropogenic GHG emissions are crucial for fostering more sustainable development both for Cambodia and more specifically within Cambodia's agriculture and land-use sectors. This crucial nature of action in the agriculture and land-use sectors to address climate change impacts and drivers is reflected in Cambodia's first NDC, which was submitted to the UNFCCC on 6 February 2017.
- 23. To address the drivers and impacts of climate change in the agriculture and land-use sectors, the Government of Cambodia has highlighted a number of specific actions (covering both adaptation and mitigation) based upon an assessment key climate vulnerabilities and opportunities for emissions reduction³⁹. Fourteen (14) specific actions are highlighted in the current NDC and are summarized in the able below along with an assessment of how improved capacity for monitoring and reporting could inform and enhance achievement of these actions:

Category	Short description of priority adapted from Cambodia's NDC	How improved monitoring and reporting systems can support NDC implementation
Mitigation	 Promoting use of renewable energy and adopting energy efficiency for garment factory, rice mills, and brick kilns Promoting more efficient cook stoves Forestry: Reclassification of forest areas to avoid deforestation⁴⁰ Implementation of the FLEGT programme in Cambodia 	 Actual and forecast emissions reductions that can be recalculated on a regular basis to better assess progress Improved accuracy of national GHG inventories and monitoring and reporting of agriculture and land-use mitigation actions Capacity to better identify potential mitigation actions in the agriculture and land-use sectors Enhanced basis for objective assessment of ambition levels with respect to agriculture and land-use

³⁶ Royal Cambodian Government, 2015, op. cit.

³⁷ IFAD, 2013, op. cit.

³⁸ ADB, Improving rice production commercialization in Cambodia: Findings from a farm investment climate assessment, 2014

³⁹ Royal Cambodian Government, Cambodia's First Nationally Determined Contribution, 2017

⁴⁰ A precise list of actions under reduced emissions from deforestation and degradation (REDD+) will be finalized after finalization of the REDD+ Strategy

Category Adaptation	Short description of priority adapted from Cambodia's NDC Planning and disaster risk reduction:	How improved monitoring and reporting systems can support NDC implementation cmissions reduction activities Strengthened evidence base to appeal for finance, technology transfer, and capacity building, will keep the per capita emissions to an estimated 2.04 tCO2eq by 2030 ⁴¹ Agreed indicators to prepare
	 Promoting and improving the adaptive capacity of communities, especially through community based adaptation actions, and restoring the natural ecology system to respond to climate change Strengthening early warning systems and climate information dissemination Strengthening technical and institutional capacity to conduct climate change impact assessments, climate change projections, and mainstreaming of climate change into sector and sub-sector development plans Water management: Developing and rehabilitating the flood protection dykes for agricultural and urban development Increasing the use of mobile pumping stations and permanent stations in responding to mini-droughts, and promoting groundwater research in response to drought and climate risk Developing climate-proof agriculture systems for adapting to changes in water variability to enhance crop yields Implementing management measures for protected areas to adapt to climate change 	national baseline scenarios for adaptation which can better inform progress Improved reporting of adaptation actions Strengthened evidence base to better design and implement adaptation actions and appeal for finance and technical support Improved capacity to identify, implement and monitor adaptation co-benefits Capacity to better identify best practices to scale-up adaptation in a way that facilitates systematic improvements in resilience Overall improvement in resilience to climate change impacts in rural communities and rural livelihoods
	Promoting climate resilient agriculture in coastal areas through building sea dykes and scaling-up of climate-smart farming systems Developing crop varieties suitable to Agro-Ecological Zones (AEZ) and resilient to climate change Aquaculture:	
	Promoting aquaculture production systems and practices that are adaptive to climate change	

24. The implementation of the above actions requires improved institutional coordination and a robust system for capturing precise data and information that is accurate and credible in reporting on GHG inventories (e.g. by sources and sinks). This requires that Cambodia have systems in place to track progress in achieving NDCs across priorities covering both mitigation and adaptation, as well as a wide range of sectors (e.g. agriculture and land use, energy, transport) and related sub-sectors (e.g. livestock, field crops, water and forestry).

⁴¹ Royal Cambodian Government, 2017, op. cit.

- Baseline scenario and associated baseline projects
- 25. At a global scale, a fundamental challenge for the successful implementation of the Paris Agreement is ensuring that the Parties can meet the reporting requirements of the Enhanced Transparency Framework (ETF) outlined in Article 13 of the Agreement. Specifically, countries are required to provide a national inventory report of anthropogenic emissions by sources and removals by sinks of greenhouse gases using good practice methodologies; and information necessary to track progress made in implementing and achieving NDC contributions for both mitigation and adaptation. While, as a Least Developed Country, Cambodia is not required to submit biannual ETF reports as will be required by other Parties to the Paris Agreement, there may be benefits to tacking pre-emptive action to strengthen national monitoring and reporting systems and processes in advance of eventual graduation from LDC status; particularly in key economic sectors such as agriculture and land use.
- 26. In Cambodia, preparation of Cambodia's first NDC was managed by the National Council for Sustainable Development (NCSD). NCSD is responsible for the coordination of climate change activities in Cambodia and to promote a stronger, comprehensive and effective national response to climate change⁴². Cambodia's NDC sets forth a clear framework for action to address both the impacts and drivers of climate change in the agriculture and land-use sectors and the basis for the development and strengthening of monitoring and reporting systems and processes pursuant to the requirements of the ETF.
- 27. The proposed project's key executing partner is the Ministry of Environment's Climate Change Department (CCD). CCD is responsible for formulation of draft climate change plans and policies and serves as secretariat to the Cambodian Government's focal points for UNFCCC, the Intergovernmental Panel on Climate Change (IPCC), the Kyoto Protocol and the Clean Development Mechanism (CDM). CCD also coordinates interministerial technical working groups by sectors and themes (GHG inventory, mitigation, vulnerability and adaptation, and UNFCCC implementation)⁴³. CCD also supports the climate change activities of the NCSD and acts as the coordinating agency for UNFCCC reporting.
- 28. In addition to the NDC, action by the Cambodian Government to address climate change impacts and drivers in the agriculture sector falls under the Cambodia Climate Change Strategic Plan (CCCSP). The CCCSP 2014-2023 aims to address a range of CC issues including adaptation, GHG mitigation, and low-carbon development. The CCCSP is being implemented in three phases and is currently in the second phase of implementation.
- 29. Under the CCCSP phase two the Cambodian Government is working to mainstream climate change at the sector level based on sector specific plans and identify opportunities to finance further adaptation activities. The proposed CBIT project will contribute to CCCSP phase two activities to operationalize an M&E framework for climate change mitigation and adaptation; particularly for the agriculture and land-use sectors. Sector specific development and climate change plans relevant to the implementation of the CCCSP provide a basis for capacity building, peer exchange and reporting sector specific progress to CCD.
- 30. The relevant CCCSP sector plan for the agriculture and land-use sectors is the Climate Change Priorities Action Plan for Agriculture, Forestry and Fisheries Sector 2016-2020 (CCPAP). The CCPAP outlines a number specific priorities and actions that support implementation of national contributions under the Paris Agreement, Sendai Framework on Disaster Risk Reduction and the Sustainable Development Goals. The proposed CBIT project aims to address key gaps regarding timely reporting of accurate data from lower level administrative units and the provision of systems and protocols to aggregate this information to prepare credible reports relevant to the agriculture and land-use priorities identified in Cambodia's NDC and CCCSP.

⁴² Royal Cambodian Government, 2017, op. cit.

⁴³ Royal Cambodian Government, 2015, op. cit.

- 31. A number of projects have been implemented in support of these sector specific plans to try and improve monitoring and reporting of mitigation and adaptation outcomes in the sector. Phase 2 of the Climate Change Enabling Activity Project in 2003 implemented rudimentary improvements for the collection of activity data and the development of emissions factors for a number of forestry activities using the IPCC 1996 Guidelines. More recently, MOE and UNEP with support from the GEF Trust Fund have been supporting work to develop Cambodia's first Biennial Update Report (BUR) for the UNFCCC under the Umbrella Programme for Biennial Update Report to the United National Framework Convention on Climate Change (UNFCCC). The proposed CBIT project will be coordinated with and build upon the efforts to prepare Cambodia's first BUR under this programme. The CBIT project will provide capacity with regards to GHG emissions reductions and needs to specifically and more accurately target agriculture, land use sector components and supports received from UNFCCC to Cambodia since the submission of the SNC.
- 32. Under the Reducing Emissions from Deforestation and Degradation (UN-REDD) Cambodia National Programme and the Forest Carbon Partnership Facility (FCPF) Project (2013-2017) the Cambodian Government in partnership with FAO, UNDP, UNEP and the World Bank has been working to establish effective National Management Systems for the REDD+ Readiness process and stakeholder engagement. As part of these programmes a national Forest Reference Emissions Level (FREL) and National Forest Monitoring System (NFMS) has been developed. This CBIT project will build upon REDD+ capacity needs assessments at national and regional levels and expand to other land-use types with a particular focus on agriculture. In doing so the proposed CBIT project will work to strengthen knowledge and institutional arrangements for data collection, storage and reporting for a range of land uses. Experiences accumulated by FAO and partners in developing REDD+ MRV systems including Forest Reference Emission Levels (FREL) will be used as the basis for designing and implementing MRV systems for agriculture activities identified in Cambodia's NDC.
- 33. The Ministry of Agriculture, Forestry and Fisheries in partnership with FAO has prepared the Agriculture census of Cambodia (2015), which provides an important basis for much of the necessary activity data for progressively enhancing the monitoring and reporting of mitigation and adaptation activities in the agriculture and land-use sectors. The census provides time series statistical data of a wide range of agricultural activities and resources, i.e. livestock, agricultural land, fertilizers, crop productions, soil quality. The information collected through the census and the network developed to implement the census will be utilized to better target and apply CBIT activities under the proposed project.
- 34. MAFF is also leading the implementation of the **National Bio-digester Programme (NBP)** (2016-2020), which aims to increase the number of family sized, quality bio-digesters with the total 9,250 bio-digesters, including the 3,000 pro-poor bio-digester model, in selected provinces. The NBP and its extensive network of extension agents will provide a basis for the rollout of CBIT monitoring activities at the field-level. The NBP provides a range of quantitative and qualitative information on GHG mitigation activities in the livestock sector in programme locations, mechanisms for planning of emission reduction and targets, and serves an example of institutional arrangements available to potential mitigation projects.
- 35. Another particularly important baseline initiative that will be closely coordinated with the proposed CBIT project is the IFAD funded **Agriculture Services Programme for Innovation**, **Resilience and Extension (ASPIRE)** Programme (2014-2021), which is being implemented by MAFF. This programme's objective is the development of an improved model of extension services for Cambodia that will help smallholder farmers to contribute to broad-based economic growth. ASPIRE is a national programme that will be implemented through Provincial Departments of Agriculture in ten provinces over the full life of the programme. Component 2 of ASPIRE is dedicated to capacity development for extension services and will provide a key entry point for the field monitoring and data collection activities envisioned under the proposed CBIT project.
- 36. With respect to adaptation, the **Mainstreaming Climate Resilience into Development Planning** (2012-2019) programme being implemented by MOE and the Asian Development Bank will provide CBIT with a basis for enhancing the monitoring and reporting of adaptation activities relevant to Cambodia's NDC. This project is

developing a knowledge management system for project-based adaptation activities in a series of seven infrastructure investment projects being funded by ADB and implemented by government agencies including the Ministry of Environment, the Ministry of Water Resources and Meteorology and the Ministry of Agriculture, Forestry and Fisheries. The monitoring and reporting framework is based upon the framework used by the global Climate Investment Funds programme. The proposed CBIT project will benefit from the experiences developed under this program with knowledge sharing and preparation and implementation of adaptation knowledge management systems. The proposed CBIT project will adapt and expand the Systems being piloted under this programme to aggregate adaptation monitoring and reporting activities in the agriculture and land-use sectors at the project, sub-national and national levels.

- 37. Under its global Climate Finance Readiness Programme (2015-2018), USAID and GIZ are supporting CCD implement its National Adaptation Plan process. Activities being implemented under this programme include developing finance strategies and an implementation plan for the NAP, as well as efforts to strengthen whole of government approaches for integrating climate change considerations into sectoral planning and budgeting processes. While the NAP is an important process for better planning of adaptation across government, monitoring and reporting activities under the NAP are process based and provide only a basis for monitoring implementation of the NAP itself. As a result, NAP monitoring and reporting forms only element of the adaptation reporting requirements of the NDC. The proposed CBIT project will support the development of indicator sets and monitoring and reporting processes for sector-specific adaptation activities under Cambodia's NDC and the CPAP that can be aggregated to inform broader NAP reporting processes being established under this programme in Cambodia.
- 38. Under the new phase of the Cambodia Climate Change Alliance (CCCA) programme (2014-2019), which is implemented by MOE with support from UNDP, aims to strengthen national systems and capacities to support the implementation and coordination of Cambodia's climate change response a number of activities are underway to try and strengthen broader monitoring and reporting systems for climate change action. The CCCA has a coordination role at MOE and will be an important node for the peer-to-peer exchanges and dissemination activities incorporated under Component 1 of the proposed CBIT project.
- 39. Despite the past and ongoing project to build monitoring and reporting capacity for GHG inventories and mitigation and adaptation actions, Cambodia's SNC prepared in 2015 indicated that insufficient technical and financial resources are still major constraints to the preparation of national communications on a continuous basis. Based on a synthesis of the SNC findings regarding capacity and ongoing national consultations and stocktaking exercises with responsible ETF stakeholders in Cambodia, a number of specific constraints for effective preparation of GHG inventories and monitoring and reporting mitigation and adaptation activities were identified (see Table 4).

TABLE 4 BARRIERS AND CONSTRAINTS FOR MEETING ETF REQUIREMENTS IN CAMBODIA WITH A FOCUS ON THE AGRICULTURE AND LAND-USE SECTORS 4445

Requirements for national implementation of the ETF		Current Barriers and Constraints - Cambodia
Awareness and understanding of ETF reporting requirements.	•	Lack of awareness regarding the Paris Agreement, the ETF and the need for enhanced transparency in monitoring and reporting of mitigation and adaptation activities.
Clear and robust <i>institutional arrangements</i> for coordinating sector specific information for ETF monitoring and reporting exercises	•	Lack of coordination amongst relevant Ministries in the gathering of data and information needed to report progress against NDC actions in the agriculture and land-use sectors
Regular and comprehensive reporting of anthropogenic emissions <i>inventories</i> by sources and removals prepared using good	•	Lack of activity data and local emission factors. Reliance on outdated IPCC methodologies for measurement and monitoring of emissions from the agriculture sectors.

⁴⁴ Royal Cambodian Government, 2015, op. cit.

⁴⁵ FAO, Cambodia - Country status on emissions reductions and climate change adaptation activities and reporting, 2016

Requirements for national implementation of the ETF	Current Barriers and Constraints - Cambodia
practice methodologies accepted by IPCC and agreed upon by the Parties to the Paris Agreement	 Data classification is different from IPCC Guideline categories; particularly for LUCF Insufficient financial support for regular inventory preparation Lack of national experts for GHG inventory preparation Lack of harmonized, national verification processes
Information necessary to track progress made in implementing and achieving <i>mitigation</i> contributions in the agriculture and land-use sectors	 Limited experience with measuring, reporting and verification (MRV) systems for emissions from the agriculture and land-use sectors Insufficient short-term and long-term planning information and data for all sectors to conduct mitigation analysis and projections of national emissions Financial constraints for mitigation analysis and the implementation of identified options Shortage of technical experts capable of conducting MRV in the agriculture and land-use sectors Absence of quality assurance or control mechanisms in the preparation and reporting of emissions inventories and emissions reduction activities
Information necessary to track progress made in implementing and achieving <i>adaptation</i> contributions in the agriculture and land-use sectors	 Lack of harmonized indicator and monitoring systems for adaptation based on national priorities Weak capacity to implement monitor and evaluate field-level projects and activities in the agriculture and land-use sectors Insufficient relevant data and information to conduct an assessment for immediate climate change adaptation action in Cambodia under the conditions of increased likelihood of floods and droughts Limited research conducted for related sectoral impact to climate change Shortage of capable technical experts and financial resources for adaptation activities and accompanying monitoring exercises
Clarity on <i>support received</i> including information on government and donor contributions to strengthen UNFCCC monitoring and reporting activities	 Lack of financial management mechanisms to effectively implement the adaptation and mitigation options Lack of information on activities, projects and other information related to climate-friendly technology development and transfer

40. Agriculture was singled out in Cambodia's SNC as the country's most vulnerable sector as well as the most important due to its role in providing livelihoods for the majority of the population. It was noted that coordination, knowledge and access to information among agricultural communities at a rural, provincial and national level are limited, and that targeted interventions targeting the sector could strengthen capacity to better manage climate risks.

TABLE 5 ASSESSMENT OF CAMBODIA'S BASELINE CAPACITY FOR MRV AND TRANSPARENCY BASED ON THE GEF-6 CBIT INDICATOR AND RATING SYSTEM

Indicators	Scale	Rating	Comment
Quality of MRV systems tracking results related to low-GHG development and GHG emissions mitigation.	1-10	2	Refer to assessment in Table 6. Measurement systems are in place but data is of poor quality and/or methodologies are not robust. Reporting is done only on request or to a limited audience or only partially. Verification is not practiced.
Institutional capacity for transparency related activities	1-4	2-3	CCD is the designated transparency institution and has some staff with some capacity to coordinate and implement transparency activities under Article 13 of the Paris Agreement. CCD has authority or mandate to coordinate transparency activities under Article 13. Lack of awareness and coordination with relevant authorities at MAFF and with provincial level authorities responsible for monitoring agriculture and land-use sector activities. Activities are not integrated into national planning or budgeting activities. Limited financial resources to carry

out tr	ransparency	r re	ated	activities.

41. Utilizing the GEF-6 CBIT rating system outlined in the Programming Directions for CBIT, the assessment of Cambodia's current performance against each indicator is presented in Table 5. This assessment indicates that the baseline capacity of Cambodian Government agencies to meet ETF requirements using current systems and processes is weak.

TABLE 6 ASSESSMENT OF THE QUALITY OF MRV SYSTEMS IN CAMBODIA WITH PARTICULAR FOCUS ON AGRICULTURE AND LAND-USE ACTIVITIES

	Measurement	Reporting	Verification
What	Is what is being measured clearly defined? Are indicators associated with actions appropriate?	What is being reported? In what form? Is it complete information?	What is the process for verification?
Cambodia Assessment	Inventory is being reported using IPCC 1996 Revised Guidelines for agriculture and LULUCF.	Mitigation activities are not being reported in a systematic way. National REDD+ program has developed forest reference levels for future reporting of activity based changes to emissions sources and sinks; particularly with respect to forestry.	There is currently no verification process for mitigation activities.
How	Are methodologies for measurement robust? How cost effective/ efficient is it?	What are the reporting pathways/formats? Accessible to how many? How cost effective is it?	Are methodologies for verification standard accepted? How cost effective is it?
Cambodia Assessment	Lack of reliable activity data and context specific emissions factors; particularly for agriculture. Improving activity data and developing context specific emissions factors requires investment in capacity building, hardware and systems.	CCD is responsible for coordinating inventory and mitigation reporting at the national level. No BUR has been submitted. Mitigation is reported on a project/activity basis and is not reported in a coordinated manner.	There is currently no verification process for mitigation activities.
Who	Who is doing the measurement? Collating the information? Analyzing it?	Who is responsible for reporting the information? To whom?	Who is doing the verification?
Cambodia Assessment	Analysis of GHG inventories and mitigation is coordinated and prepared by CCD using generic emissions factors.	There is currently no systematic process for actors involved in mitigation activities to register or report their activities to CCD.	There is currently no verification process for mitigation activities.
When	Is there a standard measurement cycle? Is it periodic or one-time only (e.g. Project based)?	When is the reporting done? Does reporting match key milestones / monitoring periods (CIF reporting, Convention Reporting, etc.)?	When is verification done? As a standard or only on demand for specific indicators?
Cambodia Assessment	There is no standard measurement cycle. There is no systematic monitoring of mitigation projects or activities in Cambodia.	There is no standard measurement cycle for mitigation reporting. No BUR has been submitted.	There is currently no verification process for mitigation activities.

42. The assessment presented above suggests that Cambodia is behind schedule in making tangible progress against much of the action plan presented in the **National Capacity Self-Assessment (NCSA)** for the CBD, UNFCCC and UNCCD prepared in 2006; particularly as it related to capacity to prepare GHG inventories and mitigation and adaptation monitoring and reporting systems. Addressing the needs and gaps outlined in the NCSA report will enable Cambodia to produce more timely and accurate reports for UNFCCC processes; particularly the

reporting requirements under the Paris Agreement ETF. Priority actions identified under the NCSA for reporting to the UNFCCC that would benefit from additional support to the agriculture and land-use sectors under CBIT are detailed in Table 7. The proposed CBIT project will work to address the priorities identified as part of the NCSA assessment to strengthen institutions and capacity required for enhanced monitoring and reporting under UNFCCC processes over the long-term with a technical focus on the unique needs of the agriculture and land-use sectors.

TABLE 7 CAMBODIA NCSA PRIORITY ACTIONS AND RELATED SECTOR-SPECIFIC GAPS/NEEDS THAT CAN BE ADDRESSED BY ${\rm CBIT}^{46}$

NCSA Priority	Description	Related sector-specific gaps/needs that can be addressed by CBIT	Relevant Project Outputs
Action No.			in alternate CBIT scenario
	 Improve and strengthen ability to: Understand in-depth the technical aspects of GHGs Undertake GHG inventory Do mitigation analysis and promote interagency collaboration on mitigations Undertake vulnerability and adaptation assessments Develop energy data (e.g., using demand analysis and forecasting) Develop and improve GHG emission factors by sector Use projection methods of GHG emission and removal Apply determinant factors to project crop growth and production variability. 	 Capacity to clarify reporting against mitigation and adaptation targets through improved baselines and BAU projections covering projections for agricultural output Capacity on GHG measurement, GHG inventory and emission factor development for agriculture and land-use sectors Preparation of Cambodia specific emission factors for key agriculture and land-use sector activities Development of sector specific GHG inventory and mitigation knowledge management systems for the agriculture sectors Capacity to understand national emission scenarios and adjust national sector-specific mitigation planning processes accordingly 	Output 1.1.4; Output 2.1.2; Output 2.1.3;
5	Improve and strengthen their ability to adopt appropriate technologies and sustainable development programs like CDM and cogeneration.	Capacity to enhance mitigation and adaptation outcomes of target NDC interventions	Output 1.2.2;
6	Improve and strengthen their ability to advance Cambodian national interests on climate change matters in international fora and negotiations, and to represent Cambodia in regional and global networks on climate change mitigation and adaptation.	 Knowledge and resources to better inform Cambodian Government involvement in UNFCCC processes regarding transparency and sector-based target setting exercises Support to engage in sub-national, national, regional and global peer-to-peer exchange on ETF reporting requirements 	Output 1.1.5; Output 1.2.1; Output 1.2.3:
8	Elevate the level of public sector financial commitment to fulfilling the obligations to the UNFCCC through raising decision-makers' awareness and understanding of national interests on biodiversity conservation. Widen and intensify institutional	 Capacity to assess and adjust NDC ambition levels to attract international support Capacity to monitor and report donor contributions to actions to tackle climate change drivers and impacts Preparation of national sector specific 	Output 1.1.3; Output 3.1.1;

⁴⁶ Royal Cambodian Government, Thematic Assessments and Action Plan for the three Conventions: National Capacity Self-Assessment (NCSA) for the CBD, UNFCCC and UNCCD, 2007

NCSA Priority Action No.	Description	Related sector-specific gaps/needs that can be addressed by CBIT	Relevant Project Outputs in alternate CBIT scenario
	commitments to: Attend to climate change vulnerability and adaptation issues in Cambodia Prioritize and mainstream climate change matters and activities in national and sectoral plans and sustainable development strategies in the country Develop and procure needed infrastructure, facilities and equipment to strengthen national capacities to respond to climate change vulnerabilities and to take measures to adapt to climate change Harmonize and integrate national policies and international climate change agreements into national and sectoral actions on climate change Strengthen international collaboration or climate change matters	adaptation indicators and systems capable of measuring progress against NDC adaptation priorities • Preparation of systems to aggregate adaptation monitoring and reporting to capture progress toward NDC adaptation priorities • Development of sector specific adaptation data management systems • Capacity to understand national climate-risk scenarios and adjust national sector-specific adaptation planning processes accordingly	Output 3.1.2; Output 3.1.4; Output 3.1.5.

- 43. Without intervention by the GEF through CBIT, the Government will continue to have underdeveloped capacity to meet the enhanced transparency requirements for reporting against NDC actions and related national plans -- most notably in the agriculture and land-use sectors. As these sectors are particularly important to the development trajectory and emissions profile of Cambodia, focused attention on improving transparency systems and processes in these sectors need to be prioritized. However, lessons learned from action in these sectors will also be relevant to other relevant Cambodian sectors (.e.g. industry, construction, transportation), which will be engaged with and informed by the activities of this project. It is likely that without intervention, emissions from the sector will be measured using outdated methodologies, and technology reports will be produced without proper quality assurance mechanisms and adaptation actions will be poorly monitored and reported. The continuation of this baseline scenario would be inconsistent with the spirit of the Paris Agreement, the ETF and the establishment of the CBIT.
 - The proposed alternative scenario, GEF focal area strategies, with a brief description of expected outcomes and components of the project
- 44. The GEF alternative scenario is to develop and implement a capacity building program that will draw upon the CBIT fund to ensure that by 2020 Cambodia is preparing reports from the agriculture and land use sectors consistent with the requirements of the ETF, including more up-to-date inventories of emissions sources and sinks using advanced IPCC guidance and information necessary to track progress against priority actions identified in Cambodia's NDC. This program will target capacity building activities under three components, and in three key areas:
- 45. Component 1. Institutional arrangements for transparency: Activities under this component will address barriers associated with institutional coordination and awareness to ensure that information and data from the agriculture and land-use sectors is coordinated and integrated into national ETF processes and reports. Activities

implemented under this component will be closely coordinated with other relevant activities on mitigation and adaptation M&E and knowledge management being implemented under the Reducing Emissions from Deforestation and Degradation (UN-REDD) Cambodia National Programme, the Forest Carbon Partnership Facility (FCPF) Project, the Mainstreaming Climate Resilience into Development Planning programme and the Cambodia Climate Change Alliance (CCCA) programme.

- 46. Outcome 1.1. will support coordination, education and capacity building activities that include: establishment of institutional coordination mechanisms for ETF reporting in the agriculture and land-use sectors (Output 1.1.1); building upon the BUR submission, preparation in PPG of a detailed capacity gaps and needs assessment for transparency based upon Cambodia's NDC priority actions (Output 1.1.2); and formulation of a national roadmap for enhanced transparency (Output 1.1.3). Activities will also provide support for using available activity data to establish more robust baseline scenarios and benchmarking processes to facilitate tracking of progress in achieving NDC targets for the agriculture and land-use sectors and, eventually, improved capacity for periodically changing ambition levels associated with activity targets (Output 1.1.4). Under this Outcome support will also be provided to relevant agencies from MOE, MAFF and MOWRAM to engage in global capacity building efforts in the lead up to the Paris Agreement commitment period.
- 47. As noted above, some lessons learned have already been developed through the MRV/accounting systems and process established under the Reducing Emissions from Deforestation and Degradation (UN-REDD) Cambodia National Programme and the Forest Carbon Partnership Facility (FCPF) Project. The proposed CBIT project activities will leverage these experiences to incrementally build capacity amongst agriculture sector stakeholders and then expand out by engaging with other sectors through a national program of capacity building with Outcome 1.2. Activities under the Outcome specifically targets and informs other important national sectors, and a multi-sectoral, national level coordination mechanism will be strengthened to integrate relevant authorities into UNFCCC reporting processes (i.e. including industry/trade, construction, energy and transportation, and other sectors to be determined).
- 48. Existing multi-sectoral coordination mechanisms established via parallel programs including the Mainstreaming Climate Resilience into Development Planning programme and the Cambodia Climate Change Alliance (CCCA) programme will be built upon as platforms for inter-ministerial working groups. A strategy will be developed to disseminate data, enhance information systems, lessons learned and relevant tools from the agriculture and land-use sectors under the proposed CBIT project (Outputs 1.2.1 and 1.2.2). Information systems, data, tools and improved programming will be shared for improved national, regional and global programming (e.g. such as via the FAO Global CBIT programme, and the CBIT Global Coordination Platform). The strategy and mechanisms developed will aim to maintain established capacities beyond the lifetime of the project. A core delivery method for capacity building will be a series of peer-to-peer exchanges with relevant agencies at the national level responsible for NDC priorities in other sectors (Output 1.2.3).
- 49. Component 2: Transparency for monitoring and reporting emissions and emissions reductions: Under this component, activities will be designed to address barriers for improved reporting of GHG emissions and removals from the agriculture and land-use sectors and establish more advanced measurement, monitoring and reporting systems for priority NDC emissions reduction actions in these sectors. Activities implemented under this component will draw upon baseline projects and initiatives, particularly the extension network developed through the ASPIRE programme, to enhance the collection and reporting of relevant activity data for priority NDC mitigation actions.
- 50. Under Outcome 2.1 the proposed CBIT project will work towards regular, reliable and systematic archiving processes, including quality assurance and control for data and information produced and reported for sector-specific inventories of GHG source and sinks (Output 2.1.1). These processes will also underpin more effective measurement, monitoring and reporting of mitigation activities in the agriculture and land-use sectors.

- 51. A dedicated information management system (MIS) for agriculture and land-use activities involving investment in basic but critical IT hardware and system infrastructure to store and manage existing and projected GHG emissions data and information requirements and drawing together data and information from relevant agencies and projects in the agriculture and land-use sectors will be established. These investments will be supplemented with training and capacity building activities for system administrators and agency focal points to enable staff to adhere to reporting protocols and data standards (Output 2.1.2). These systems will be designed to interface with and—where possible—enhance existing systems for field monitoring and data collection by provincial MAFF extension agents and extension services provided through the ASPIRE programme. Systems and protocols will also be established to better monitor contributions from donors and other sources to support implementation of NDC mitigation contributions in the agriculture and land-use sectors. Capacity building activities will include establishing processes to ensure the reliability and sustainability of the inventory monitoring, including quality assurance and quality control, in the agriculture and land-use sectors.
- 52. Through investment in human resources and measurement technology at local universities and research institutions, the proposed CBIT project will also provide capacity to adopt improved GHG inventory standards in the agriculture and land-use sectors and enable enhanced field-level GHG monitoring systems (*Output 2.1.3*). Targeted investments in mobile data collection hardware and applications will be applied to expand geographical coverage. Activities will also include training and support for national institutions to develop context-specific emissions factors for key sector activities and to incrementally move from reporting inventories, emissions and removals using the IPCC Revised 1996 Guidelines (Agriculture and Land Use, Land-use Change and Forestry) to the later IPCC 2006 Guidelines (Agriculture, Forestry and Other Land Use). Extension agents will be provided with training and hardware where required to generate data from the field using fit-for-purpose measurement and monitoring equipment and systems that will interface with MIS nodes at sub-national and national levels. These activities are planned to be coordinated with and build upon the efforts to prepare Cambodia's first BUR under the Cambodia component of the Umbrella Programme for Biennial Update Report to the UNFCCC.
- 53. The activities under this Output of the proposed CBIT project will directly benefit from the MRV systems being developed and trialled for the REDD+ National Programme in Cambodia including potential to adapt and utilize existing data management platforms, tools and methodologies for GHG estimates and measurements. These systems will then be applied to key activities in the agriculture and land-use sectors relevant to existing or potential future NDC priority mitigation actions including reducing emissions from rice production, livestock, fertilizer application, biomass burning, etc. The final output under this Outcome will be agriculture and land-use sector contributions to national communications and biennial update reports consistent with latest UNFCCC guidance (Output 2.1.4).
- 54. Component 3. Transparency for monitoring and reporting adaptation: Under this component, activities will be designed to establish the basic frameworks and infrastructure for enhanced monitoring and reporting adaptation activities in agriculture and land-use sectors. Activities under this component will be linked to the extension network developed through the ASPIRE programme and designed to interface with ongoing M&E activities being implemented by the Mainstreaming Climate Resilience into Development Planning programme, the Cambodia Climate Change Alliance (CCCA) programme and the activities on the National Adaptation Plan (NAP) under the USAID-GIZ Climate Finance Readiness programme.
- 55. Activities under Outcome 3.1 will be designed to address barriers for adaptation monitoring and reporting of priority NDC adaptation actions in the agriculture and land-use sectors. Based on a review of the NDC priorities and relevant planning documents, sector specific indicators, methodologies, frameworks and interventions will be identified (Outputs 3.1.1 and 3.1.2). These activities will build upon relevant sector-specific experiences from the Mainstreaming Climate Resilience into Development Planning programme and be designed to interface with national reporting systems for the NAP being developed under the USAID-GIZ Climate Finance Readiness programme. In particular efforts will be focused on the potential to aggregate reporting on field level adaptation activities into broader outcome level indicator reporting necessary for NAP monitoring and reporting processes.

- 56. In tandem with activities under component 2 to establish MIS for GHG inventories from the agriculture and land-use sectors and for enhanced monitoring and reporting mitigation activities, complimentary systems will be developed and utilized to store and manage existing and projected data and information on adaptation initiatives in support of the NDC (Output 3.1.3). Parallel Investments in data collection hardware will be made to enhance the monitoring capacity of national and local authorities at the field level (Output 3.1.4 linked with Output 2.1.3). As with Output 2.1.3, these systems developed will be designed to interface with and—where possible—enhance existing systems for field monitoring and data collection by provincial MAFF extension agents and extension services provided through the ASPIRE programme. Systems and protocols will also be established to better monitor contributions from donors and other sources to support implementation of NDC adaptation contributions in the agriculture and land-use sectors. Capacity building activities will include assessment of good practices and methodologies for monitoring NDC priority adaptation actions; training on adaptation monitoring and reporting at different administrative levels and aggregating indicators to develop reporting for national level NDC achievements with respect to adaptation. The final output under this Outcome will be agriculture and land-use sector contributions to national communications consistent with latest UNFCCC guidance on reporting adaptation contributions (Output 3.1.5).
- 57. As the implementing entity of the proposed CBIT project, FAO will draw upon its deep technical understanding of the agriculture and land-use sectors and wide range of tools and methods for development of emissions inventories, measuring and monitoring emissions from agriculture, land use and land-use change, agriculture and land-use MRV systems, quality assurance protocols and adaptation planning and monitoring.
 - Incremental/additional cost reasoning and expected contributions from the baseline, the GEFTF, LDCF/SCCF, CBIT and co-financing:
- 58. Without the CBIT project, necessary conditions for meeting the Paris ETF will not be met in Cambodia. Cambodia has prioritized emissions reductions and adaptation actions in the agriculture and land-use sectors as part of its NDC. These actions will need to be monitored and reported under the Paris ETF. Without assistance from CBIT, the serious capacity and institutional gaps identified above will continue to result in incomplete, inconsistent and inaccurate reporting of GHG inventories and possible emissions reductions from the most important economic sectors in Cambodia. In addition, adaptation actions will continue to be reported in a sporadic, piecemeal fashion based upon individual projects with little or no aggregation to inform national adaptation priorities or NDC reporting requirements.
- 59. With respect to GHG inventories and emissions reporting, although good inroads have been made for the forestry sector due to national REDD+ activities, necessary activity data and emission factors using the latest IPCC guidelines (2006) are not available for compiling robust national GHG inventories for other agriculture and land use sectors. The technical rigor of Cambodia's National Communications to date have also been inconsistent; particularly for the agriculture and land-use sectors. A Biennial Update Report (BUR) has not been submitted to date. With the assistance of the UNEP supported GEF Enabling Activity, Cambodia is preparing its first BUR submission. For this stand-alone activity, Cambodia has been collecting a range of activity data on Greenhouse Gas (GHG) emissions reductions from the various sectors. However, apart from the forestry sector data available from the REDD+ FRL activities, no efforts have been made to improve the capacity to compile and analyze information on GHG inventories and emission reductions from other agriculture and land-use sectors. Given the significant expansion of the agriculture sectors in Cambodia over the past decade, it is essential that this CBIT project intervene to address the lack of robust GHG inventory data and reporting on emissions from the agriculture sectors. Poor information on these important economic sectors is a crucial impediment to effective overall transparency and will restrict the Cambodian government's ability to identify and program activities that could improve farm productivity and efficiency, while also reducing emissions.
- 60. With the CBIT project, Cambodia's national capacity to track progress of priority actions on climate adaptation from the agriculture and land use sectors as identified in the NDC will be strengthened, and the information on climate adaptation will be collected in a systematic manner to fulfill both Paris ETF requirements. Secondly,

with the support of the project, Cambodia will improve the quality and coverage of data collected and reported on GHG emissions from the agriculture and land use sectors by transitioning from Revised IPCC 1996 Guidelines (Agriculture and LULUCF) to the IPCC 2006 Guidelines (AFOLU) for national GHG inventories, and from Tier 1 to Tier 2 emission factors where possible and practical. Moreover, with an increased national capacity to measure, monitor, and report against the priority actions identified in the NDC, it puts Cambodia in a better position to increase its level of ambition on including more ambitious emissions reductions activities in the agriculture and land sectors.

- 61. With respect to adaptation, a range of baseline projects and initiatives are developing potentially relevant headline indicators and reporting systems; largely on a project basis. This CBIT project will provide incremental support for necessary hardware and systems to coordinate adaptation reporting and to aggregate sector specific M&E processes in the agriculture and land use sectors to provide coherent national reporting on adaptation activities and progress toward NDC adaptation targets.
- 62. Lastly, the project intervention will enhance Cambodia's long term vision for climate change reporting and transparency improvement over time through enhanced institutional capacity and arrangements targeting wider/national sector emissions and adaptation accounting.
 - Global environmental benefits (GEFTF), and adaptation benefits (LDCF/SCCF)
- 63. The global environmental benefits targeted by this proposed capacity building program will flow from the improved coordination and capacity to monitor and report action to address the drivers and impacts of climate change in a transparent manner.
- 64. In the near term the project will support the upgrading and establishment of systems to provide an evidence-base for more effective mitigation and adaptation in the agriculture and land-use sectors. Over time the systems supported by the project will allow policy makers and planners at national and provincial levels to design interventions to address climate change drivers and impacts based upon a more complete understanding of what works. In the longer-term the improved understanding of mitigation and adaptation potentials made possible through the project will provide the Royal Cambodian Government with greater opportunity to increase levels of ambition for both mitigation and adaptation in future iterations of Cambodia's NDC and better articulate the magnitude and types of financial and technical support required to meet national priorities.
- 65. The project directly supports Cambodia to adopt transformational shifts towards low-emission and resilient development. Global environmental benefits can also be expected in the form of enhanced contributions from Cambodia to collective global efforts to work towards aggregate emission pathways consistent with holding the increase in the global average temperature to well below 2 °C above pre-industrial levels. The number of tons of CO2e to be mitigated (including both direct and indirect) will be determined during the PPG phase.
 - Innovation, sustainability and potential for scaling-up:

Innovation:

66. The proposed CBIT project will facilitate scientific innovation through investment in infrastructure and systems to update and modernize the measurement and monitoring capacities of the Royal Cambodian Government and local technical and research institutions. The project will facilitate investment and technology transfer for new and updated equipment at local universities and labs to measure and monitor emissions from a wide range of agriculture and land-use activities. The project will also facilitate investment in dedicated knowledge management information systems and IT hardware for the more effective management and reporting of data and information related to transparency of both mitigation and adaptation actions. Field monitoring systems will be overhauled under the project through the upgrading of data collection processes with the wider application of mobile telecommunications, app-based data collection platforms and cloud-based data storage and transfer

services where appropriate. Systems upgraded through the project in the Ministry of Environment and Ministry of Agriculture, Fisheries and Forestry will be able to replicate in other national Ministries, and at reduced effort and cost.

- 67. These systems will be designed to benefit from recent advances and tools for estimating GHG emissions from the crops, livestock and forestry sectors. FAO, with partners, has developed or is currently developing a suite of tools for standardizing emissions monitoring and reporting at Tier 2 levels. For example, the Global Livestock Environment Assessment Model (GLEAM) establishes baselines and assesses the impacts of different mitigation and adaptation scenarios at local and national scale. Based on IPCC Tier 2 methodology and GIS based modeling of livestock distribution, GLEAM allows the assessments of all major GHG emissions from livestock and the impacts of all actions to reduce emissions from the sector. Similar tools are under development for field crops based on projects including a global program on Mitigating Agricultural Greenhouse Gases (MAGHG) and support for countries in Southeast Asia to prepare Nationally Appropriate Mitigation Actions for different field crops.
- 68. With the application of GHG estimation tools such as GLEAM and those developed under MAGHG, Cambodian national institutions will have enhanced capacity to measure progress toward NDC priorities in agriculture and land-use sectors. At global level, evidence tested and compiled in Cambodia will facilitate the improvement of scientific knowledge of GHG emissions reduction potential from AFOLU sectors, consequently improving our knowledge to estimate global environmental benefits. These systems once implemented and operational will support the potential for improved understanding of mitigation and adaptation potentials and the possibility for increased levels of ambition and quantification of support required in future iterations of Cambodia's NDC in the lead up to and during the commitment period of the Paris Agreement.
- 69. In addition, the project adopts an innovative approach that integrates extensive stakeholder consultations and assessments of capacity needs and baseline activities for monitoring the progress. The project interventions have been formulated by taking into account the need to enhance national capacity in monitoring mitigation and adaptation actions for AFOLU and relevant sectors as a whole emerging from the representatives of line ministries in Cambodia at the regional transparency workshop organized in Bangkok, Thailand in June 2016.

Sustainability:

- 70. With the project support, Cambodia will be able to articulate a clear plan of action with regards to national reporting of its NDC, utilizing the monitoring and reporting roadmap, coordination mechanisms, and technical guidelines prepared by the project. All stakeholders will be empowered to access, archive, analyze, and monitor the necessary information and activities with regards to agriculture and land-use sectors, as well as to inform processes by lessons learned in other sectors.
- 71. Through the capacity building activities, the capacities of technical and policy focal points from the two participating ministries as well as the capacities of relevant national institutions will be improved. The soft skills and knowledge acquired will be retained through the systematic support put in place through the establishment of climate change transparency database, Management Information System (MIS).
- 72. The core outcome of the project is to establish an enabling institutional coordination mechanism to ensure greater collaboration among line ministries, in particular, Ministry of Environment and Ministry of Agriculture, Forestry and Fisheries and the National Council for Sustainable Development (NCSD). During the project life cycle, at least one Agriculture and LULUCF (IPCC 1996 Revised) or AFOLU (IPCC 2006) chapter within country NDC reporting will be facilitated and improved by the government with technical supervision of FAO. This experience and institutional memory will better prepare the government of Cambodia to fully take-over the reporting processes in the next reporting cycle from 2020 onwards. Furthermore, the transfer of GHG measurement and estimation technologies supported through improved national capacity in the agriculture and

land use sectors is expected/will potentially help Cambodia improve its ambitions by including reductions in GHG emissions from these sectors into its NDC emissions reductions targets.

Potential for scaling-up:

- 73. The project specifically embeds opportunities to scale-out and scale-up the measures implemented. As highlighted, the relative importance of the agriculture and land-use sectors to the Cambodian economy and the significant technical challenges and capacity gaps for enhanced transparency in these sectors in the Cambodian context necessitate a focused, sector specific approach. However, the information management systems and infrastructure for monitoring and reporting mitigation and adaptation actions in the agriculture and land-use sectors established under the project will be designed in way to allow for easy replication and adoption by other sectors.
- 74. Hardware, capacity building and training provided to national and local level stakeholders will be developed as modules that they can be adapted to improve data collection methods and analysis across all sectors. By working through and strengthening the institutional mechanisms in place for transparency of climate change actions the project will be able to better facilitate this process of scaling out project-developed systems and processes. The enhanced capacity provided by the project will enable regular national reporting of actions to address climate change drivers and impacts as envisioned under Paris Agreement, Article 13.
- 75. Outcome 1 of the project will also facilitate Cambodia's engagement in international transparency-related processes under the UNFCCC. With the enhanced institutional capacity and engagement with international process, the government of Cambodia will be capacitated to identify potential partners to further develop scaling-up actions and investment opportunities for further improving transparency over time, as well as to benefit other countries in the region to develop more transparent, accurate, complete, consistent and comparable monitoring and reporting systems.
- 76. The government will use a combination of national budget, and planned international support for fulfilling its reporting requirements to the Convention and ensure continued application and sustainability of the transparency systems and infrastructure for the other sectors.
- 2. <u>Stakeholders</u>. Will project design include the participation of relevant stakeholders from <u>civil society organizations</u> (yes ⊠ /no□) and <u>indigenous peoples</u> (yes □ /no□)? If yes, identify key stakeholders and briefly describe how they will be engaged in project preparation.
- 77. The project will be implemented in close cooperation with relevant stakeholders at the national, provincial and district levels. Key executing entities will include:

TABLE 8 CBIT PROJECT STAKEHOLDERS AND ROLES

TABLE 6 CBH PROJECT STAKEHOLDERS AND ROLES					
Agency	Role or mandate	Involvement in CBIT Project			
Department of Climate Change/General Secretariat of National Council for Sustainable Development (NCSD)/Ministry of Environment (MoE)	The Department of Climate Change on behalf of NCSD is responsible for project technical oversight, policy guidance, review and endorsement. The NCSD is also focal point for key conventions (CBD, UNFCCC, and UNCCD) and plays a key role in coordination with other relevant ministries and stakeholders.	 Lead agency for all coordination and decision-making on ETF issues Overall lead of CBIT project activities and integrating CBIT project learning into ETF activities of other relevant sectors 			
General Directorate of Agriculture (GDA), Ministry of Agriculture, Forestry and Fisheries (MAFF)	GDA is responsible for supporting the the implementation and coordination in capacity development within the sector, and ensure that information and data from	Lead agency for engaging and coordinating with agriculture stakeholders at national and provincial levels; and providing,			

	the agriculture and land-use sectors is collected and integrated	data, information and technical advice with respect to the agriculture and land-use sectors. • Will provide support to better coordinate extension support activities under the ASPIRE Programme
Forestry Administration (FA), Ministry of Agriculture, Forestry and Fisheries (MAFF)	FA is responsible for development, technical support and regulation of all forestry activities with their mandates	 Lead agency for engaging on technical issues related forestry and REDD+ and within REDD+ task forces Will provide support for capacity building activities; particularly sharing experiences with REDD+, forest reference levels and MRV
Ministry of Water Resources and Meteorology (MOWRAM)	MOWRAM is responsible for addressing scientific and political issues related to water resources both domestic and international. It also houses the Department of Meteorology, which manages the country's meteorological stations along with other related issues	Lead agency for engaging on technical issues related to water sector adaptation measures identified in the NDC
Ministry of Women's Affairs (MOWA)	MOWA is responsible for encouraging public institutions, civil society and the private sector to integrate gender equality into their policies and programs, and acts as a coordinator and facilitator for gender mainstreaming across government	Will provide advice regarding integration of CBIT activities with MOWA's National Neary Rattanak Strategy of Ministry of Women's Affairs and the Gender Mainstreaming Policy and Strategy in the Agriculture Sector 2016-2020
Cambodia Climate Change Alliance Programme Team	The CCCA Programme Team is responsible for implementation of Phase Ii of the CCCA Programme. The CCCA Programme coordinates with a range of stakeholders engaged in climate change activities in Cambodia	Support for coordination activities being led by CCD and supplementary guidance on M&E processes supported by the CCCA Programme and relevant for enhanced, economy-wide reporting
Provincial departments of the Ministries of Environment and Agriculture, Forestry and Fisheries	Notably for environment and agriculture responsible for implementation of national law and policy at provincial level in terms of natural resources management and protection. With the project, they will be also responsible for implementation and coordination of activities at provincial level for effective capacity, monitoring and reporting	 Lead agencies for engaging with provincial level authorities to plan, coordinate and implement field level monitoring and reporting activities Responsible for coordinating and supporting capacity development, consultation and data collection at provincial levels

- 78. In addition, specialized national and provincial agencies will be engaged to enhance data and information collection and coordination with the two ministries, MoE and MAFF and other relevant sectors as prioritized in the Cambodia's NDC.
- 79. Civil Society Organizations (CSOs) and research institutions have been and will continue to be engaged in the design and implementation of the project, including the baseline assessment and stocktaking of the existing activities and systems. The institutional and coordination structure will consider including dissemination strategies for effective data management and reporting processes.

- 3. Gender Equality and Women's Empowerment. Are issues on gender equality and women's empowerment taken into account? (yes 🗵/no 🔲). If yes, briefly describe how it will be mainstreamed into project preparation (e.g. gender analysis), taking into account the differences, needs, roles and priorities of women and men.
- 80. The project will ensure the preparation of the necessary documentation and publications in which principle of gender sensitive and specific data and information are included. Gender concepts, gender equity and issues in agriculture and climate change will be mainstreamed during the implementation, making sure a better participation of women in the project activities. Through cooperation with the government partners, the project intervention will be in line with the GEF Gender Equality Action Plan and the existing policy and strategy in the country specifically including the National Neary Rattanak Strategy of Ministry of Women's Affairs and the Gender Mainstreaming Policy and Strategy in the Agriculture Sector 2016-2020 of MAFF. The project will ensure that women's specific needs are met, that women enjoy equal access to project activities and that women benefit equitably from the project's activities.
- 81. In terms of overall socio-economic benefits, the project will benefit Cambodian society and economy by supporting the Cambodian Government in advancing its NDC implementation, monitoring progress of national mitigation and adaptation priority activities in the NDC. An appropriate transparency framework can generate multiple social, economic and environmental co-benefits such as human capacity, local and national institutions, cost-effective national budgeting and planning, reduced vulnerability of its food systems, and the national resources and ecosystems that the food systems depend upon. Through improved and more transparent data, the project also supports improved and better targeted local, regional and national investment and decision making.
- 4 Risks. Indicate risks, including climate change, potential social and environmental risks that might prevent the project objectives from being achieved, and, if possible, propose measures that address these risks to be further developed during the project design (table format acceptable).

TABLE 9 RISKS TO CBIT PROJECT IMPLEMENTATION AND MEASRUES TO ADDRESS THEM

No.	Description of risks	Types of risks	Probability	Measures to address the risks		
			and Impact (Scale 1-5)			
1	Lack of political will to support the project activities due to change government	Political	P=2 I=5	Cambodia has now ratified the Paris Agreement and submitted its first NDC. This implies that the government at all levels and across all sectors is full committed to implementation of the Paris Agreement and associated ETF requirements. To safeguard against changes I momentum associated with changes in key government posts risk management measures will include awareness raising among key		
2	Lack of coordination among concerned ministries and local government authorities	Organizational	P=3 I=4	decision makers combined with a strong stakeholder involvement plan. To address risks associated with coordination the project will work through existing coordination mechanisms such as the CCCSP and the CCCA. Clear project institutional arrangements that specify roles and responsibilities of those		
3	Limited cooperation on data and information sharing among stakeholders	Organizational	P=3 I=5	concerned will be reinforced by working through these existing mechanisms. To address risks associated with data management, consultation and data system assessments will be crucial elements of activities under Outputs 2.1.2 and 3.1.3. The project will also build on existing systems where possible developed for REDD+ with respect to mitigation and for NAP and ADB with respect to		

No.	Description of risks	Types of risks	Probability and Impact (Scale 1-5)	Measures to address the risks
				adaptation. Clear agreement of the stakeholders to collect and hand over required data and information.
4	Inability for the government to fund the ETF related activities beyond the project cycle	Financial	P=4 I=4	The proposed CBIT project will include measures to mainstream ETF activities into government budgetary and extra-budgetary processes. It will be proposed that ETF reporting be incorporated into current and future CPAP processes.
5	Gender mainstreaming hindered by resistance from local and national stakeholders	Cultural	P=3 I=3	Clear initial communication on gender equality as one of the key monitoring element for tracking progress of the project – particularly with respect to adaptation monitoring and reporting and co-benefits.
6	Transparency related work loses momentum as the Paris Agreement is not adopted	Political	P=1 I=4	See risk 1 above. To address this issue CBIT project activities will focus on the potential positive externalities associated with improved data collection, monitoring and reporting of agriculture and land-use sector mitigation and adaptation activities. These could include more effective targeting of initiatives to improve farm and land-use efficiency and strengthen rural resilience. This 'no-regrets' approach will aim to highlight the need for and benefits of this transparency work that will go beyond the lifetime of the Paris Agreement.

- 5. Coordination. Outline the coordination with other relevant GEF-financed and other initiatives.
- 82. The proposed CBIT project will complement past, ongoing and pipeline activities to support the Government of Cambodia to enhance management and monitoring practices in the agriculture and land-use sectors (Table 10).

TABLE 10 OTHER INITIATIVES THAT WILL BE COORDINATED WITH UNDER PROPOSED CBIT PROJECT IN CAMBODIA

Other Ongoing and Pipeline Initiatives	Areas of complementarity with the proposed CBIT Project
Strengthening the adaptive capacity and resilience of agriculture-dependent communities using microwatershed approaches to deal with the adverse effects of climate change and extreme weather on a landscape scale, GEF-FAO. USD5M. (2013-2018) This project aims to strengthen adaptive capacity and the resilience of rural communities to climate change through community-driven development and a mechanism for flexibility in the management of the natural resource base, limiting agricultural expansion and improving the profitability of farming systems.	The proposed CBIT project will ensure coordination to ensure contributing to enhance transparency-related processes; and vice versa by learning from strengthening adaptive capacity and resilience of agriculture-dependent communities, 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.
Forest and Landscape Restoration (FLR) Mechanism Project, FAO. USD416,820. (2016-2019) The main objective of the project is to develop and implement Forest and Landscape Restoration	The project will support better capacity and enabling environment for Forest and Landscape Restoration activities in Cambodia, resource mobilization and implementation to replicate the successful experiences and modality in other region of

initiatives/programs in Cambodia with an integrated landscape approach taking into account the mosaic land use patterns and the diverse interests of stakeholders.

Cambodian Forest Landscape.

The proposed CBIT project will ensure smooth institutional coordination and capacity development on on new initiatives and systems to be developed by the FLRM project while the FLRM will complement to a better data collection and reporting.

TCP/CMB/3602 - National Soil Information and Land Suitability Evaluation System for Cambodia, FAO. USD300,000. (2016-2018)

This project aims to build national capacity in all phases of the design and operation of a National Soil Information and Land Suitability Evaluation System for Cambodia (CASIS).

This TCP will develop the design and information technology infrastructure necessary for CASIS, gather existing disparate soil information into a common form and publically-accessible web site, make a limited set of field observations and laboratory measurements of soil types that are not represented in current databases.

The proposed CBIT will directly benefit and ensure coordination and capacity development on data collection and production, and data availability and transparency as well as the monitoring.

Pipeline GCF-programme on Climate Smart Sustainable Landscapes in Cambodia, Conservation International-FAO-WWF-WCS. USD150M (Approx.). (2018-2029)

The overall goal of this pipeline project is to reduce emissions from deforestation in ecosystem service-rich landscapes and stimulate private investment in low emission energy, agriculture and forestry. This pipeline project will advance Cambodia's National REDD+ Strategy (approved in 2016) by advancing subnational REDD+ activities with three Provincial authorities where there are important natural forest landscapes. Both public and private sector interventions will be integrated to address the deforestation threats and energy demand. The public sector interventions aim to improve forest protection and management, provide livelihood alternatives for forest dependent people, restore degraded forests, and build the capacity of national and provincial authorities needed to improve forest protection and management. The private sector component of the project seeks to overcome the current lack of long term, green finance options in Cambodia.

The proposed CBIT project will provide a good framework for the monitoring and reporting to be followed up by the joint programme.

Pipeline project on Cambodia Inter-Censual Agricultural Survey, FAO. USD1.7M. (Approx.). (2018-2019)

The purpose of the CIAS 2018 is to collect up to date information on specific topics of interest for the agricultural sector, to update the structural data collected during the CAC 2013 and to inform policy makers and decision makers guiding the development of the sector.

The survey will be led by both Ministry of Planning and MAFF. The inter-censual survey allows for the measurement of changes in key variables in a relatively short period of time to guide policies, specifically in five year plans. The conduct of the CIAS 2018 inter-censal survey will ensure that a useful data series of information is generated over time and that the specialist knowledge, survey and analytical skills of the Government staff continue to be developed.

The proposed CBIT project will directly benefit and ensure coordination and capacity development on data collection and data availability for monitoring and reporting in agriculture sector.

- 6. Consistency with National Priorities. Is the project consistent with the National strategies and plans or reports and assessements under relevant conventions? (yes \(\subseteq / \) no \(\subseteq \)). If yes, which ones and how: NAPAs, NAPs, ASGM NAPs, MIAs, NBSAPs, NCs, TNAs, NCSAs, NIPs, PRSPs, NPFE, BURs, NDCs, etc.
- 83. The proposed capacity building program is drawn directly from the priorities outlined in Cambodia's NDC, which is based upon existing national laws, regulations, and policies on issues related to climate change and the agriculture and land-use sectors. These policies such as the CCCSP and CPAP were outlined in the baseline section. The proposed CBIT project will also contribute to and build upon additional policies related to sustainable development in the agriculture and land-use sectors.

TABLE 11 RELEVANT POLICY FRAMEWORKS FOR CBIT CAMBODIA

Militar Malatanas, et al Carlet e Militar (1925 - 1926) de la france de la france de la france de la companya de la france de la companya de la france de la fran	POLICY FRAMEWORKS FOR CBIT CAMBODIA			
Policy Framework	Relevance			
National Strategic	NSDP, 2014-2018 is a Master Plan elaborates priorities set by rectangular strategy III and			
Development Plan (2014-2018)	follows by other key sectoral strategies and programmes to design to achieve the NSDP			
Provide the second seco	goals. Development of agriculture and natural resources management is one of the key			
	priorities of NSDP. The NSDP underpins the NDC and this CBIT project will be relevant			
	for monitoring the effective implementation of the NSDP as it relates to agriculture.			
Strategy for Agriculture and	The SAW is a rolling medium to long term program to guide the implementation of			
Water (SAW) (2010-2013)	individual projects and actions aimed at improving food security and economic growth			
	through (i) enhancing agricultural productivity and diversification and (ii) improving			
	water resource development and management. The CCPAP is underpinned by the SAW.			
	Monitoring and reporting systems developed under this CBIT project will be relevant for			
	monitoring the effective implementation of the SAW.			
Agriculture Strategic	The ASDP aims to contribute to poverty reduction, ensure enough & safe food availability			
Development Plan (ASDP)	for all people, through modernization of the agricultural sector based on a new approach			
(2014-2018)	and with changed scope and pace for accelerating agricultural economic growth, and			
	sustainable natural resource management & conservation. A key pillar of the ASDP is			
	strengthening the institutional capacity and increasing efficient supporting services and			
0.0025400354000000000000000000000000000000	human resource development, which is highly relevant to the activities under the proposed			
	CBIT project.			
Green growth policy and	The National Strategic Plan on Green Growth (NSPGG) 2013-2030 was endorsed by the			
national strategic action plan	Council of Ministers in March 2013. It focuses on nine strategic directions, one of which			
and the Green Growth Road	is about Green Environment and Natural Resources, which further outlines eight strategies			
Map, 2013-2030	including:			
	- Green agriculture, food security, food safety and hygiene			
	- Sustainable water resources management			
	- Effective management of energy and renewable energy			
	- Management if sustainable land use			
	- Conservation and sustainable fisheries management			
	- Infrastructure development and transportation			
	- Green tourism development			
	- Environmental quality control			
2 (14) (14)	A number of actions listed in the NSPGG are relevant to CCA and mitigation i.e.			
	development and implementation of programs to respond to CC, sustainable land use			
	management, implementation of REDD+, preparation of policy and legal frameworks for			
	a system of payment for ecosystem services, conservation of natural resources etc.			
	Monitoring and reporting systems developed under this CBIT project will be relevant for			
	monitoring the effective implementation of the Green Growth Road Map as it relates to			
	agriculture.			
National Adaptation	The National Adaptation Program of Action to Climate Change (NAPA) was endorsed by			
Programme of Action to	the Council of Ministers of the Royal Government of Cambodia on October 20, 2006. The			
Climate Change, 2006	main goal of the Cambodian NAPA is to provide a framework to guide the coordination			
	and implementation of adaptation initiatives through a participatory approach, and to build			
	synergies with other relevant environment and development programmes. Cambodia's			
	NAPA presents priority projects to address the urgent and immediate needs and concerns			
	of people at the grassroots level for adaptation to the adverse effects of CC in key sectors			
	such as agriculture, water resources, coastal zone and human health. It encourages all			
	concerned ministries and agencies to undertake their utmost efforts to integrate the			
	priority projects identified in this National Programme into their respective sectoral plans.			
	NAPA has identified 39 priority projects, 20 of which address the issues of agriculture			
	and water resources. The NAPA has informed priorities actions identified in Cambodia's			
	NDC. As a result, the proposed CBIT project will contribute to national efforts to better			
	report progress toward NAPA priorities.			

Policy Framework	Relevance			
National Environment	The NESAP Strategic Goal is to leverage in-depth reform and modernization of the			
Strategy and Action Plan	environmental and natural resources sustainability and sustained social and economic			
(NESAP), 2016-2023 (final	development through well-informed/planned and executed actions for improving resource			
draft)	use efficiency and productivity, sustainable financing mechanism, and reducing waste and			
Section 2015 August 1997 Augus	pollution and improving human health and well-being. Implementation of the CBIT			
Experience of the second of th	project and development of enhanced monitoring and reporting of agriculture sector			
Content and a content of the content	activities will help inform future strategies to reduce environmental impacts in the			
	agriculture and land-use sectors.			

- 84. As a result, the proposed capacity building program is highly consistent with the national priorities of Cambodia with respect to efforts to tackle the drivers and impacts of climate change.
- 7. Knowledge Management. Outline the knowledge management approach for the project, including, if any, plans for the project to learn from other relevant projects and initiatives, to assess and document in a user-friendly form, and share these experiences and expertise with relevant stakeholders.
- 85. The project adopts two core knowledge management approaches: 1) Dissemination and maintenance of on-line based database and learning forums; and 2) Promotion of knowledge sharing culture and coordination. To successfully implement these approaches, the project plans to employ a national communication specialist who will produce key knowledge products in locally acceptable formats using electronic materials for webpage, ICT, radios, paper, or other appropriate means. Knowledge products will be fully translated into local languages for better dissemination and integration. Secondly, project aims to promote knowledge sharing culture and coordination for data collection and analysis in Cambodia. This includes an enhanced coordination among line ministries, local governments, and grass root actors working together towards improved transparency in climate change related data for the agriculture and land-use sectors. Under the CBIT project coordination will be facilitated primarily under Component 1 and activities to design the integrated sector roadmap for transparency and peer-to-peer exchanges.
- 86. Cost effectiveness is developed in this, and where the intervention draws upon the latest tools and methodologies with regards to GHG emissions measurements/estimation and analytical frameworks for assessing the impacts of adaptation actions for AFOLU sectors that have already been developed by FAO and applied to larger national contexts.
- 87. The institutional mechanisms for UNFCCC reporting will build on existing national structures and political processes instituted by CCD rather than creating new systems. Intuitional and technical capacities developed through component 1 to 3 will build on existing national efforts up to date based on comprehensive capacity needs assessment to avoid overlaps. The coordination mechanism will largely depend on existing networks that consist of stakeholders who hold some capacities in climate-related transparency work. Online platforms and MIS will be facilitated to further assist sharing and systematic management of knowledge and information. Although in-person trainings will be conducted in some places, the project aims to increase the use of on-line trainings and e-learning platforms for long-term education purpose. Such archiving, communication, and capacity building efforts will help the project reach out to broader stakeholders and partners with minimal cost.

PART III: APPROVAL/ENDORSEMENT BY GEF OPERATIONAL FOCAL POINT(S) AND GEF AGENCY(IES)

A. RECORD OF ENDORSEMENT⁴⁷ OF GEF OPERATIONAL FOCAL POINT (S) ON BEHALF OF THE GOVERNMENT(S):

(Please attach the Operational Focal Point endorsement letter(s) with this template. For SGP, use this SGP OFP endorsement letter).

NAME	POSITION	MINISTRY	DATE (MM/dd/yyyy)
H.E Dr. Lonh Heal	GEF Operational Focal	Ministry of	24 APRIL 2017
	Point, Ministry of	Environment	
	Environment		

B. GEF AGENCY(IES) CERTIFICATION

This request has been prepared in accordance with GEF policies⁴⁸ and procedures and meets the GEF criteria for project identification and preparation under GEF-6.

Agency Coordinator, Agency name	Signature	Date (MM/dd/yyyy)	Project Contact Person	Telephone	Email
Daniel Gustafon Deputy Director- General (Programmes) And Officer-in- Charge for Investment Centre Division	Part	15 May 2017	Alexandre Huynh (Mr), FAO Representative in Cambodia, House #5, Street 370, BBK I, Phnom Penh, Cambodia	+855 23 216 566	Alexandre.Huynh@fao.org
Jeffrey Griffin Senior Coordinator FAO GEF Unit Investment Centre Division			Aaron Becker, FAO Regional Office of Asia/Pacific Aaron.Becker@fao.org	+39 06 570 55680	GEF-Coordination- Unit@fao.org; Jeffrey.Griffin@fao.org

C. Additional GEF Project Agency Certification (Applicable Only To Newly Accredited GEF Project Agencies)

For newly accredited GEF Project Agencies, please download and fill up the required <u>GEF Project Agency Certification</u> of Ceiling Information Template to be attached as an annex to the PIF.

⁴⁷ For regional and/or global projects in which participating countries are identified, OFP endorsement letters from these countries are required even though there may not be a STAR allocation associated with the project.

⁴⁸ GEF policies encompass all managed trust funds, namely: GEFTF, LDCF, SCCF and CBIT