Report and Recommendation of the President to the Board of Directors

Project Number: 48409-002
June 2018

Proposed Loan and Administration of Loan and Grant
Kingdom of Cambodia: Climate-Friendly Agribusiness Value Chains Sector Project

Asian Development Bank

CURRENCY EQUIVALENTS
(as of 5 June 2018)

Currency unit	–	riel/s (KR)
KR1.00	=	$0.00024
$1.00	=	KR4,115.68

ABBREVIATIONS

ADB	–	Asian Development Bank
CSA	–	climate-smart agriculture
EIRR	–	economic internal rate of return
GCF	–	Green Climate Fund
GDR	–	General Department of Resettlement
GHG	–	greenhouse gas
GMS	–	Greater Mekong Subregion
ICT	–	information and communication technology
LARF	–	land acquisition and resettlement framework
MAFF	–	Ministry of Agriculture, Forestry, and Fisheries
O&M	–	operation and maintenance
PAM	–	project administration manual
PPP	–	public–private partnership

GLOSSARY

agribusiness value chain	–	covers integrated and interdependent functions of growing, collecting and transporting, warehousing, post-harvest processing, merchandising, grading, packaging, and marketing and selling.
climate-smart agribusiness	–	refers to proactive support for enhancing climate resilience while reducing the carbon footprint of operations along the value chain.
climate-smart agriculture	–	an approach to transforming and reorienting agricultural development under climate change; may be defined as agriculture that increases productivity, enhances resilience (adaptation), reduces or removes greenhouse gas emissions (mitigation), where possible, and ensures the achievement of food security and development goals.
green finance	–	investments that provide environmental benefits (e.g., reductions in air, water, and land pollution; reductions in greenhouse gas emissions; and improved energy efficiency) in the broader context of sustainable development. It involves efforts to internalize environmental externalities and adjust risk perceptions to boost environmentally friendly investments and reduce environmentally harmful ones. It involves effective management of environmental risks across the financial system.

NOTE

In this report, “$” refers to United States dollars.

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CONTENTS

PROJECT AT A GLANCE

1. Basic Data

Project Number: 48409-002

Project Name	Climate-Friendly Agribusiness Value Chains Sector Project	**Department /Division**	SERD/SEER
Country	Cambodia	**Executing Agency**	Ministry of Agriculture, Forestry & Fisheries
Borrower	Government of Cambodia		

2. Sector

	Subsector(s)	ADB Financing ($ million)
✓ **Agriculture, natural resources and rural development**	Agricultural policy, institutional and capacity development	0.99
	Agricultural production	3.71
	Agro-industry, marketing, and trade	14.53
	Irrigation	36.30
	Rural market infrastructure	32.24
	Rural solid waste management	2.23
	Total	**90.00**

3. Strategic Agenda

	Subcomponents
Inclusive economic growth (IEG)	Pillar 2: Access to economic opportunities, including jobs, made more inclusive
Environmentally sustainable growth (ESG)	Eco-efficiency
	Environmental policy and legislation
	Global and regional transboundary environmental concerns
	Natural resources conservation
Regional integration (RCI)	Pillar 4: Other regional public goods

Climate Change Information

CO_2 reduction (tons per annum)	8,150
Climate Change impact on the Project	Medium

ADB Financing

Adaptation ($ million)	1.35
Mitigation ($ million)	2.77

Cofinancing

Adaptation ($ million)	25.58
Mitigation ($ million)	4.40

4. Drivers of Change

	Components
Governance and capacity development (GCD)	Institutional development
Knowledge solutions (KNS)	Knowledge sharing activities
Partnerships (PAR)	International finance institutions (IFI)
	Official cofinancing
Private sector development (PSD)	Promotion of private sector investment

Gender Equity and Mainstreaming

Effective gender mainstreaming (EGM)	✓

5. Poverty and SDG Targeting

Geographic Targeting	No
Household Targeting	No
SDG Targeting	Yes
SDG Goals	SDG2, SDG8, SDG9, SDG13

Location Impact

Rural	High
Urban	Low

6. Risk Categorization: Low

7. Safeguard Categorization

Environment: B **Involuntary Resettlement:** B **Indigenous Peoples:** B

8. Financing

Modality and Sources	Amount ($ million)
ADB	**90.00**
Sovereign Project (Concessional Loan): Ordinary capital resources	90.00
Cofinancing	**40.00**
Green Climate Fund - Project grant (Full ADB Administration)	30.00
Green Climate Fund - Project loan (Full ADB Administration)	10.00
Counterpart	**11.04**
Beneficiaries	3.66
Government	7.38
Total	**141.04**

Source: Asian Development Bank

I. THE PROPOSAL

1. I submit for your approval the following report and recommendation on a proposed loan to the Kingdom of Cambodia for the Climate-Friendly Agribusiness Value Chains Sector Project. The report also describes the proposed administration of a loan and a grant to be provided by the Green Climate Fund (GCF) for the Climate-Friendly Agribusiness Value Chains Sector Project, and if the Board approves the proposed loan, I, acting under the authority delegated to me by the Board, approve the administration of the GCF loan and grant.

2. The proposed project supports fulfilling the government's Agriculture Sector Strategic Development Plan and the Industrial Development Policy, by improving the competitiveness of agribusiness value chains in Kampong Cham and Tboung Khmum provinces along the Greater Mekong Subregion (GMS) southern economic corridor, and in Kampot and Takeo provinces along the south coastal economic corridor.[1] The project will boost the climate resilience of critical agricultural infrastructure and help commercialize rice, maize, cassava, and mango production. It will help increase crop productivity and diversification; improve the capacity for storage, processing, and quality and safety testing; and promote the use of solar and bioenergy. It will strengthen the technical and institutional capacity for climate-smart agriculture (CSA) and create an enabling policy environment for climate-friendly agribusinesses. This will in turn promote long-term environmental sustainability and enhance the profitability for farmers and agribusinesses.

II. THE PROJECT

A. Rationale

3. **Sector performance.** Agriculture—including processing, transportation, and trade of farm products—is crucial for the Cambodian economy, still accounting for 33.7% of the nation's gross domestic product. Crop production is the largest contributor (59.4%) to the sector's gross domestic product.[2] Agriculture grew at 4.5% per annum during 2008–2012, driven by the expansion of cultivated land and high prices of farm products, but it slowed down during 2013–2016 (0.9% per annum) because of the loss of those drivers, extreme weather events, and rapid growth in other sectors, such as industry and services.[3] The transition from a traditional subsistence to a modern commercial agriculture sector is slow.[4]

4. **Development constraints.** To accelerate the transition to commercial agriculture, several barriers related to infrastructure, capacity, and policy must be removed. Currently, agribusiness value chains in Cambodia remain less developed, more fragmented, less resource-efficient, and less competitive than those in neighboring countries such as Thailand and Viet Nam. Most commodities are exported in raw form, and most of the value addition to Cambodia's agricultural products occurs in Thailand and Viet Nam. This is mainly the result of (i) poor production and post-harvest infrastructure leading to low productivity and high post-harvest losses (15% to 20%); (ii) limited capacity to deal with the impacts of climate change; and (iii) an unfavorable policy environment for agribusiness. Farming remains mostly subsistence and rain-fed. Many irrigation schemes are not functional. High energy costs and poor-quality road networks also contribute to

[1] Government of Cambodia, Ministry of Agriculture, Forestry, and Fisheries. 2015. *Agriculture Sector Strategic Development Plan, 2014–2018.* Phnom Penh; and Government of Cambodia, Ministry of Industry and Handicrafts. 2015. *Industrial Development Policy, 2015–2025*. Phnom Penh.

[2] Sector Assessment (Summary): Agriculture, Natural Resources, and Rural Development (available from the list of linked documents in Appendix 2).

[3] Government of Cambodia, Ministry of Planning. 2016. *National Institute of Statistics.* Phnom Penh.

[4] World Bank. 2015. *Cambodian Agriculture in Transition: Opportunities and Risks*. Washington DC.

high production and distribution costs. Varieties grown are of low productivity and less resilient to the impacts of climate change. The labor shortage in rural areas has increased because of migration, but farm mechanization is still limited. The drying, storage, and processing facilities at farm cooperatives are still rudimentary, leading to poor quality and safety of food products. Quality and safety standards remain weak. Private investments in agriculture are low in the absence of sound agribusiness policy frameworks for public–private partnerships (PPPs). Market liberalization and changing global trade rules that require stringent quality and food safety standards are also making it hard for Cambodian farmers to access competitive markets.

5. Cambodia's agriculture sector is highly vulnerable to impacts of climate change. High risks of flood and drought combined with poverty and low adaptive capacity makes Cambodia one of the most vulnerable countries in the world.[5] Weather patterns have been unpredictable of late but essentially result in longer dry seasons and droughts, and rainy seasons that start late but are more intense. Climate projections to 2050 suggest that Cambodia will experience changes in temperature and rainfall with significant adverse impacts on farming communities and ecosystems. Farm residues are mostly used as fuel for cooking or burnt in the open, leading to increased greenhouse gas (GHG) emissions. About 75% of households use firewood for cooking, of which about 88% comes from natural forests, partly contributing to forest degradation and deforestation. Reducing the reliance on firewood and fossil fuels is therefore critical.

6. **Opportunities.** Investments in climate-friendly agribusiness value chain infrastructure coupled with targeted capacity strengthening and policy support are vital to tackling the above constraints. Intensified crop production with irrigation and efficient water management, improved production and postharvest infrastructure with better connectivity to cooperatives and markets, and adoption of CSA production practices and climate-resilient varieties will enhance food security, reduce postharvest losses, and help farmers to better cope with climate change. Integration of renewable energy options can enhance competitiveness by reducing energy costs. Farm mechanization can help manage labor shortages, while support to cooperatives can encourage farmers to work together to enhance their bargaining power and farming incomes.

7. **Government's efforts.** The government's Agriculture Sector Strategic Development Plan, 2014–2018 aims to enhance the competitiveness of the sector through greater agricultural productivity (intensification), diversification, and commercialization. Measures include the (i) expansion of agricultural extension services, improvement of seed quality to respond to market needs, and better postharvest technology; (ii) creation of an enabling environment for the private sector and adoption of good agricultural practices; (iii) strengthening of policies that will support agricultural businesses and exports, and improve product quality and standards (e.g., sustainable rice platform); (iv) bolstering of the analytical capacity of the National Agricultural Laboratory; (v) rehabilitation of the infrastructure of state farms and agricultural development centers; (vi) implementation of the strategy and action plan for climate change adaptation and mitigation; and (vii) promotion of private investment in agriculture through PPPs. The government also promotes biogas and bioenergy consumption;[6] a priority in the government's Intended Nationally Determined Contribution.[7]

8. **ADB's value addition and special features.** The project includes innovations such as improved design standards of rural infrastructure to make it climate resilient and more sustainable, and enhance regional connectivity and trade along the GMS transport corridors. The project will

[5] Verisk Maplecroft. 2018. *Climate Change Vulnerability Index*. https://maplecroft.com/about/news/ccvi.html
[6] Government of Cambodia. 2014. *Cambodia Climate Change Strategic Plan, 2014–2023*. Phnom Penh.
[7] Government of Cambodia. 2015. *Cambodia's Intended National Determined Contribution*. Phnom Penh.

expand the use of advanced technologies such as laser land levelling, and information and communication technologies (ICT) to improve resource use efficiency and reduce GHG emissions. By providing targeted capacity building and policy support to stakeholders along the value chain, the project will enhance crop production and productivity in project areas, diversify livelihood options, and assist smallholders' transition from subsistence to commercial agriculture. By improving the testing capacity for quality and safety, the project will significantly enable broader access by project beneficiaries to high-value (export) markets within and beyond the GMS. Using cooperatives as an entry point, the project will foster PPPs and encourage the private sector to invest in input and output markets, and marketing. The government prioritized rice, maize, cassava, and mango in Kampong Cham, Kampot, Tboung Khmum, and Takeo provinces.[8] The project will promote economic integration through harmonization of standards and complement initiatives on trade and agriculture.[9] It will also complement planned projects on irrigation and agricultural value chains.

9. **Lessons.** The project design incorporates lessons from ADB and other development partner-funded programs such as the (i) climate-resilient rice commercialization program and (ii) the strategic program for climate resilience.[10] Lessons call for (i) improving climate resilience of critical rural infrastructure, (ii) strengthening capacity of farmers in CSA and of agribusinesses in climate-friendly technologies and practices, and (iii) supporting an enabling policy environment for climate-friendly agribusinesses. Many projects have focused on only one of these issues, and no other development partner has yet designed a project in an integrated manner.

10. **Strategic fit.** The project is aligned with the Agriculture Sector Strategic Development Plan 2014–2018; National Climate Change Action Plan (2016–2018); National Strategic Plan on Green Growth (2013–2030); the GMS Regional Investment Framework 2022; ADB's country partnership strategy, 2014–2018 for Cambodia; and was included in the country operations business plan, 2018–2020 for Cambodia.[11] The project is consistent with ADB's Operational Plan for Agriculture and Natural Resources, which aims to increase value addition and expand partnerships with the private sector in productivity enhancement, agro-processing, and retailing.[12]

B. Impact and Outcome

11. The project is aligned with the following impact: agricultural competitiveness

[8] ADB provided project preparatory technical assistance for the Climate-Friendly Agribusiness Value Chains Sector Project. The government selected target provinces and commodities based on their proximity to transport corridors, agribusiness potential, climate vulnerability, and government priorities.

[9] ADB. 2012. *Report and Recommendation of the President to the Board of Directors: Proposed Loans, Grant, and Technical Assistance to the Kingdom of Cambodia and the Lao People's Democratic Republic for Trade Facilitation: Improved Sanitary and Phytosanitary Handling in Greater Mekong Subregion Trade Project.* Manila; Greater Mekong Subregion Core Agriculture Support Program. 2017. *Strategy for Promoting Safe and Environment-Friendly Agro-Based Value Chains in the Greater Mekong Subregion and Siem Reap Action Plan*, *2018–2022*. Bangkok.

[10] ADB. 2013. *Report and Recommendation of the President to the Board of Directors: Proposed Loans and Administration of Grants and Loan to the Kingdom of Cambodia for the Climate-Resilient Rice Commercialization Sector Development Program*. Manila; ADB. 2015. *Major Change in Technical Assistance: Mainstreaming Climate Resilience into Development Planning in Cambodia*. Manila.

[11] Government of Cambodia, Ministry of Agriculture, Forestry, and Fisheries. 2015. *Agriculture Sector Strategic Development Plan, 2014–2018.* Phnom Penh; Government of Cambodia, National Council on Green Growth. 2013. *National Strategic Plan on Green Growth (2013–2030)*. Phnom Penh; ADB. 2017. *Greater Mekong Subregion Economic Cooperation Program: Regional Investment Framework 2022.* Manila; ADB. 2014. *Country Partnership Strategy: Cambodia, 2014–2018*. Manila; ADB. 2017. *Country Operations and Business Plan: Cambodia, 2018–2020*. Manila.

[12] ADB. 2015. *Operational Plan for Agriculture and Natural Resources: Promoting Sustainable Food Security in Asia and the Pacific in 2015–2020.* Manila.

improved.[13] The project will have the following outcome: productive and resource-efficient agribusiness value chains developed in project areas.[14]

C. Outputs

12. **Output 1: Critical agribusiness value chain infrastructure improved and made climate-resilient.** This output bridges gaps in infrastructure to enhance the competitiveness of the value chains of rice, maize, cassava, and mango in target provinces. It involves rehabilitation and modernization of rural infrastructure to increase production and resource efficiency, reduce postharvest losses, and enhance quality and value chain links while reducing GHG emissions and increasing climate resilience. Key activities involve (i) rehabilitating irrigation and water management infrastructure (off-farm irrigation systems, on-farm rainwater harvesting ponds, and drip irrigation) to climate-resilient condition; (ii) upgrading agricultural cooperatives' value chain infrastructure (drying, processing, and storage facilities); (iii) improving the connectivity of farms to cooperatives and markets through climate-resilient farm road networks; (iv) strengthening the infrastructure for agricultural quality and safety testing; and (v) promoting renewable energy (biodigesters and use of solar energy in target cooperative areas) to reduce GHG emissions.

13. The project will rehabilitate water management infrastructure through de-silting works and upgrades of design standards to withstand climate variability and projected climate changes, and install drip irrigation systems to improve yields and deliver exportable mango fruit. The project will support the construction of climate-proofed postharvest units at farm cooperatives. It will improve climate resilience of farm-to-market roads by increasing the height of embankments, promoting cross drainage, and selecting permeable materials, among other measures. The sustainability of the infrastructure is ensured through an integrated approach to operation and maintenance (O&M) practices, focusing on institutions, capacity building, financing, and technologies.

14. **Output 2: Climate-smart agriculture and agribusiness promoted.** Key activities include (i) deploying climate-resilient varieties; (ii) strengthening the capacity for climate-friendly production practices and technologies; and (iii) promoting farm mechanization and extension. The project will support the Cambodian Agricultural Research and Development Institute to produce, multiply, and distribute climate-resilient varieties of rice and maize and to improve weaning and acclimatization of mango and cassava. The project will train at least 40,000 farmers (of which 16,000 are women) on CSA practices. It will demonstrate laser land leveling to improve water use efficiency and enhance the capacity of farmers' water user groups to operate and manage irrigation schemes. The project will construct and upgrade four farm mechanization workshops and four agribusiness training facilities to train farm water user communities, women farmers, and members of agricultural cooperatives in infrastructure O&M and farm mechanization.

15. **Output 3: Enabling environment for climate-friendly agribusiness enhanced.** The project will support the Ministry of Agriculture, Forestry, and Fisheries (MAFF) and the Ministry of Commerce in creating a favorable policy environment for agribusiness to mobilize the private sector participation through PPPs and contract farming. Activities include (i) formulating climate-friendly agribusiness policies and standards; (ii) promoting green finance and risk-sharing mechanisms; and (iii) supporting climate risk management through ICT. The project will provide support for farm product certification, quality, and resilience standards, including Cambodia's good agricultural practice and organic fertilizer standards. The project will support cooperatives

[13] The impact is reflected in enhanced productivity, climate resilience, quality and safety, value addition, and rural household incomes.

[14] The design and monitoring framework is in Appendix 1.

in becoming sustainable agribusiness ventures by linking up with the private sector and by establishing crop-centric PPP forums. The project will raise financial institutions' awareness on green finance and the integration of environmental and climate risk screening criteria into credit application and reporting procedures. Using ICT, the project will provide weather, market, and agronomic information to create an environment for more effective climate risk management.

D. Summary Cost Estimates and Financing Plan

16. The project is estimated to cost $141.04 million (Table 1). Detailed cost estimates by expenditure category and by financier are included in the project administration manual (PAM).[15]

Table 1: Summary Cost Estimates
($ million)

Item		Amount[a]
A.	**Base Cost**[b]	
	1. Critical agribusiness value chain infrastructure improved and made climate-resilient	93.58
	2. Climate-smart agriculture and agribusiness promoted	11.39
	3. Enabling environment for climate-friendly agribusiness enhanced	7.39
	Project Management Activities	6.84
	Subtotal (A)	**119.20**
B.	**Contingencies**[c]	**20.38**
C.	**Financial Charges During Implementation**[d]	**1.46**
	Total (A+B+C)	**141.04**

Note: Numbers may not sum precisely because of rounding.
[a] Includes taxes and duties of $9.37 million to be financed by the Asian Development Bank (ADB) and Green Climate Fund (GCF) for civil works, training, and incremental operating cost, and $2.34 million by the government for goods, equipment, and services through exemption.
[b] In first quarter 2018 prices.
[c] Physical contingencies computed at 10% for civil works and equipment, 0% for consulting services, and 0% for the other expenditure categories. Price contingencies on foreign currency costs computed at 1.5% from 2018 to 2020 and 1.6% thereafter. Price contingencies on local currency costs computed at 3.2% for 2018 and 3.5% thereafter; includes provision for potential exchange rate fluctuation under the assumption of a purchasing power parity exchange rate.
[d] Interest during construction was computed at 1.00% per year for the ADB loan and at 0.25% per year for the GCF loan.
Source: Asian Development Bank.

17. The government has requested a concessional loan of $90 million from ADB's ordinary capital resources to help finance the project. The loan will have a 32-year term, including a grace period of 8 years; an interest rate of 1.0% per year during the grace period and 1.5% per year thereafter; and such other terms and conditions set forth in the draft loan agreement. The sector lending modality is appropriate for this project because the government has a robust sector development plan (footnote 1) and has demonstrated adequate capacity to implement it. Overall sector policies are adequate but need improvement to enable the growth of agribusinesses. The modality also enables the government to identify and finance additional subprojects while continuing to execute necessary policy reforms in implementing the sector development plan.[16]

18. The summary financing plan is in Table 2. ADB will finance expenditures related to works, equipment, consulting services, and incremental operating costs. GCF will provide cofinancing on a cost-sharing basis in the form of a loan equivalent to $10 million and a grant equivalent to $30 million, to be administered by ADB. The GCF loan will have a 32-year term, including a grace period of 8 years, a service charge of 0.25% per year and such other terms and conditions set

[15] Project Administration Manual (available from the list of linked documents in Appendix 2).
[16] ADB. 2003. Sector Lending. *Operations Manual*. OM Section D3/BP. Manila.

forth in the draft GCF loan agreement. Climate mitigation is estimated to cost $13.6 million and climate adaptation is estimated to cost $26.9 million. ADB will finance about 20% of mitigation costs and 5% of adaptation costs. GCF will cover the rest.

Table 2: Summary Financing Plan

Source	**Amount** ($ million)	**Share of Total** (%)
Asian Development Bank		
Ordinary capital resources (concessional loan)	90.00	63.8
Green Climate Fund (loan)[a]	10.00	7.1
Green Climate Fund (grant)[a]	30.00	21.3
Beneficiaries	3.66	2.6
Government	7.38	5.2
Total	**141.04**	**100.0**

[a] Administered by the Asian Development Bank.
Source: Asian Development Bank.

E. Implementation Arrangements

19. The implementation arrangements are summarized in Table 3 and described in detail in the PAM.

Table 3: Implementation Arrangements

Aspects	**Arrangements**		
Implementation period	October 2018–September 2024		
Estimated completion date	30 September 2024 (estimated closing date for loans and grant: 31 March 2025)		
Management			
(i) Oversight body	Project Steering Committee (chaired by the Minister of MAFF, vice-chaired by MEF representative and with members from MOWRAM, MRD, MOC, MIH, and MOE)		
(ii) Executing agency	MAFF		
(iii) Key implementing agencies	The General Directorate of Agriculture, the Cambodian Agricultural Research and Development Institute, and the General Directorate of Animal Health and Production in MAFF, the General Directorate of Technical Affairs of MOWRAM, and the General Directorate of Technical Affairs of MRD.		
(iv) Implementation units	National level (Phnom Penh): MAFF: coordinating project director, project manager, finance officer, procurement officer, procurement assistant, safeguards officer (including gender), M&E officer, administrative officer and administrative assistant MOWRAM: project director, civil engineer, finance officer, procurement officer, and administrative officer MRD: project director, civil engineer, finance officer, procurement officer, and administrative officer Provincial level: 24 staff (six in each of the four provinces) Each provincial project implementation office will comprise the director of PDAFF, representatives of PDWRAM and PDRD, and three PDAFF staff from cooperatives, agricultural extension, and animal health and production		
Procurement	ICB (goods)	2 contracts	$5.63 million
	NCB (goods and works)	95 contracts	$102.55 million
	Shopping (goods)	Multiple	$0.80 million
Consulting services	QCBS	4 contracts	$12.22 million
	SSS	1 contract	$2.79 million
Advance contracting	(i) Recruitment of the project implementation consultants, the feasibility study and detailed engineering design consultants, and the capacity building and climate smart agriculture consultant team; and (ii) procurement of works contract for the Trapaing Run irrigation subproject.		
Disbursement	The ADB and ADB-administered loan and grant proceeds will be disbursed following ADB's *Loan Disbursement Handbook* (2017, as amended from time to time) and detailed arrangements agreed upon between the government and ADB.		

ADB = Asian Development Bank; ICB = international competitive bidding; MAFF = Ministry of Agriculture, Forestry, and Fisheries; M&E = monitoring and evaluation; MEF = Ministry of Economy and Finance; MIH = Ministry of Industry and

Handicrafts; MOC = Ministry of Commerce; MOE = Ministry of Environment; MOWRAM = Ministry of Water Resources and Meteorology; MRD = Ministry of Rural Development; NCB = national competitive bidding; PDAFF = provincial department of agriculture, forestry, and fisheries; PDRD = provincial department of rural development; PDWRAM = provincial department of water resources and meteorology; QCBS = quality- and cost-based selection; SSS = single source selection.
Source: Asian Development Bank.

III. DUE DILIGENCE

A. Technical

20. Project preparation considered the (i) economic viability of technical options and compatibility with local conditions; (ii) adaptation and mitigation [biogas and solar energy promotion] measures; (iii) options to maximize the agribusiness value chain benefits to farmers; (iv) mechanisms to strengthen links to enhance and consolidate the production base for target value chains; and (v) measures to minimize adverse environmental and social impacts. The project team incorporated adaptation measures in terms of siting, construction, and upgrades of infrastructure to reduce climate change risks. The project team conducted technical due diligence for three representative subprojects: (i) Trapaing Run irrigation and modernization; (ii) agricultural cooperative cassava chip drying, processing, and storage; and (iii) Tram Kak drip irrigation for improved mango production. The team evaluated representative subprojects against eligibility criteria, which are detailed in the PAM. The project incorporates a participatory development approach, whereby beneficiary farmers will participate in the design and implementation of subprojects. Cooperatives and farmers will be partially responsible for the O&M of infrastructure.

B. Economic and Financial

21. The project team conducted an economic and financial analysis for the representative subprojects. The economic internal rate of return (EIRR) for the Trapaing Run irrigation subproject is 13.1%, based on increased yield and cropping intensity. The Tram Kak drip irrigation subproject yields an EIRR of 22.5%, based on improved yield and higher percentage of grade A mango fruit. The cassava cooperative subproject yields an EIRR of 18.8%, based on a higher cassava price due to processing and off-season sales. The sensitivity analysis considered several downside scenarios: (i) a 10% increase in subproject costs, (ii) a 10% increase in operating costs, (iii) a 10% reduction in benefits, and (iv) a combination of all three scenarios. In all scenarios, the EIRRs for all subprojects exceed 9% and are economically viable. The project, especially in outputs 2 and 3, generates other benefits that could not be monetized, such as (i) sound agribusiness policies that attract private sector investment; (ii) stronger institutional and human capacity; and (iii) other environmental benefits from CSA, biodigesters, and laser land leveling.

22. For the irrigation subprojects, the beneficiaries will perform routine O&M. The project will either establish and/or strengthen farmers' water user communities and enhance their capacity for O&M. The financial analysis indicates that the subproject will generate sufficient incremental net income for the beneficiaries to contribute to routine O&M. However, periodic maintenance typically requires more resources, specialized equipment, and skills beyond the ability of the beneficiaries. In 2016, the Ministry of Economy and Finance allocated an annual O&M budget of $15 million. As the funding is allocated upon request by the implementing agencies, the project implementation consultants will assist the agencies to tap into this fund for periodic O&M. For drip irrigation system and cooperative storage facilities, orchard owners and cooperative members are expected to take responsibility for periodic and routine O&M. The annual net operating cash flows of these subprojects are positive, indicating that the beneficiaries will have sufficient financial resources to provide for O&M. All subprojects will develop a viable and realistic O&M plan.

C. Governance

23. Project implementation, financial management, and procurement will be aligned with the government's standard operating procedures. The existing institutional structures for financial management are adequate. The pre-mitigation financial management risk is moderate as several government staff members are conversant with the financial management guidelines of ADB. All procurement financed by ADB will be in accordance with ADB's Procurement Guidelines (2015, as amended from time to time) and Guidelines on the Use of Consultants (2013, as amended from time to time).[17] The project procurement risk is moderate. ADB's Anticorruption Policy (1998, as amended to date) was explained to and discussed with the government and MAFF. The specific policy requirements and supplementary measures are described in the PAM.

D. Poverty, Social, and Gender

24. The project is classified *general intervention*. It will benefit at least 390,000 people (80,000 households) by increasing their net incomes.[18] It will promote inclusive economic growth, reduce poverty, and provide rural jobs and improved services, including the development of partnerships between farmers, cooperatives, processors, distributors, and traders. Farmers will produce quality products on time and with continuity of supply. Landless and poor households will be included in agribusiness, farm mechanization, and O&M training. Identified poor households in project areas will be targeted for jobs related to civil works. Landless and poor farmers will have the opportunity to access off-farm and on-farm employment related to postharvest support services.

25. The project is categorized *effective gender mainstreaming*. The project team prepared a gender action plan, which includes gender actions, performance indicators, and targets to promote women's voice and active participation in project activities.[19] The project will promote gender equality and women's empowerment by boosting women's capacity in CSA production and processing, management and business, farm machinery use and maintenance, and by strengthening links between women-led enterprises and the agribusiness industry. In addition, a detailed gender analysis of value chains will inform the refinement of the gender action plan and the development of a gender-responsive agribusiness policy. Women will be targeted for training and jobs in infrastructure-related rehabilitation and O&M, and as decision-makers in the selection of climate-resilient varieties. The project will work in close partnership with the Women Farmers' Network and MAFF's Gender and Children Project Support Unit and strengthen their capacity to ensure sustainability of gender mainstreaming efforts in the sector.

E. Safeguards

26. In compliance with ADB's Safeguard Policy Statement (2009), the project's safeguard categories are as follows.

27. **Environment (category B).** The project is expected to achieve significant environmental benefits, including cumulative reduction of 240,000 tons of carbon dioxide equivalent of GHG emissions, improved resilience, and increased crop diversity in the project areas. The project team conducted environmental due diligence for three representative subprojects and prepared a sample initial environmental examination, including an environmental management plan, for the

[17] Universal procurement will apply as per ADB. 2013. *Blanket Waiver of Member Country Procurement Eligibility Restrictions in Cases of Cofinancing for Operations Financed from Asian Development Fund Resources*. Manila.

[18] Summary Poverty Reduction and Social Strategy (accessible from the list of linked documents in Appendix 2).

[19] Gender Action Plan (accessible from the list of linked documents in Appendix 2).

irrigation subproject to provide a prototype for screening and identifying impacts of potential interventions and serve as a template for preparing the environmental management plans.[20] The other two subprojects have been classified *category C*. The government prepared the environmental codes of conduct and the environmental assessment and review framework to guide the screening and categorization of subprojects, identify potential impacts and prepare environmental impact assessments as required, and uploaded them to the ADB website in January 2018.[21] Only subprojects classified as category B or C will be financed. All subprojects will be screened for climate risks and incorporate risk reduction measures.

28. **Involuntary resettlement (category B).** Due diligence conducted for three representative subprojects shows no need (or only minimal need) for land acquisition, and none will result in any physical or economic displacement.[22] However, as most of the subprojects will be prepared after Board approval, the government prepared the land acquisition and resettlement framework (LARF) to guide the screening and selection of subprojects as well as the resettlement planning process, and uploaded the LARF to ADB's website in January 2018.[23] Only subprojects classified as category B or C will be financed. The government will prepare the land acquisition and resettlement plan in accordance with LARF and ADB's Safeguard Policy Statement for any subproject entailing involuntary resettlement impact.

29. The General Department of Resettlement (GDR) under the Ministry of Economy and Finance together with the project management unit, and with support from the project implementation consultants, will update due diligence reports, and conduct due diligence for all subprojects identified after Board approval. A screening checklist will be applied to (i) reject subprojects with significant negative impacts; and (ii) assess impacts and confirm categorization of subprojects as either B or C. For subprojects involving voluntary land donation only in case of minimal land requirement, GDR will conduct due diligence as defined in the LARF. If negotiated settlement (willing buyer-willing seller) is used: (i) GDR will involve a third party to validate and document the process; and (ii) GDR will submit the report with supporting documents to ADB for concurrence and no objection before any civil works commence. If the land is acquired involuntarily, the GDR will prepare a land acquisition and resettlement plan in accordance with the LARF, compensate for all affected land and/or assets, and send to ADB for concurrence and disclosure prior to issuance of the bidding documents.

30. **Indigenous peoples (category B).** No indigenous peoples or ethnic minorities reside in the areas of sample subprojects. However, some ethnic minorities may live in project provinces who could be impacted by subprojects chosen during project implementation. Impacts are largely expected to be positive. The project will not finance any category A subprojects. The executing agency prepared an ethnic minority development framework to ensure inclusion, full consultation, and participation of ethnic minority households, which was uploaded to the ADB website in January 2018.[24] The institutional capacity of the executing agency to manage impacts on indigenous peoples, as verified during due diligence, is considered adequate. Adequate resources have been allocated to the preparation and implementation of social and environmental safeguards, and to their monitoring and reporting. Training of national and provincial staff on

[20] Initial Environmental Examination: Trapaing Run Irrigation Subproject (accessible from the list of linked documents in Appendix 2).
[21] Environmental Assessment and Review Framework (accessible from the list of linked documents in Appendix 2).
[22] The due diligence report for the irrigation subproject indicated that villagers decided to voluntarily donate minor strips of land to have better access to irrigation. A rigorous due diligence procedure to verify voluntary donation bona fide included in the resettlement framework will be used to further screen and select subprojects during implementation.
[23] Land Acquisition and Resettlement Framework (accessible from the list of linked documents in Appendix 2).
[24] Ethnic Minority Development Framework (accessible from the list of linked documents in Appendix 2).

social and environmental safeguards will continue during project implementation, as needed.

F. Summary of Risk Assessment and Risk Management Plan

31. Significant risks and mitigating measures are summarized in Table 4 and described in detail in the risk assessment and risk management plan.[25]

Table 4: Summary of Risks and Mitigating Measures

Risks	Mitigating Measures
Declining demand for Cambodian products because of competition from external markets and stringent requirements for quality and safety from importing countries	The project will promote awareness of farmers, cooperatives, and agribusinesses on export standards and ways to compete with external markets and strengthen their capacity for quality and safety testing in line with the requirements of importing countries.
Capacity constraints for infrastructure design and procurement	The project will train focal points from the technical departments of implementing agencies on procurement, contracting, and monitoring of subprojects, and compliance with climate standards.
Climate change impacts may adversely impact project investments	The project will make sure to incorporate locally appropriate adaptation measures in the design of infrastructure funded by the project.
Limited attention to O&M of agribusiness infrastructure	The project will highlight the importance of O&M through institutional arrangements, capacity building, financing, and technical measures. Subprojects will develop realistic and technically viable O&M plans. Adaptation measures will contribute to lower O&M costs.

O&M = operation and maintenance.
Source: Asian Development Bank.

IV. ASSURANCES

32. The government and MAFF have assured ADB that implementation of the project shall conform to all applicable ADB policies, including those concerning anticorruption measures, safeguards, gender, procurement, consulting services and disbursement as described in detail in the PAM and loan documents. The government and MAFF have agreed with ADB on certain covenants for the project, which are set forth in the draft loan and grant agreements.

V. RECOMMENDATION

33. I am satisfied that the proposed loan would comply with the Articles of Agreement of the Asian Development Bank (ADB) and recommend that the Board approve the loan of $90,000,000 to the Kingdom of Cambodia for the Climate-Friendly Agribusiness Value Chains Sector Project, from ADB's ordinary capital resources, in concessional terms, with an interest charge at the rate of 1.0% per year during the grace period and 1.5% per year thereafter; for a term of 32 years, including a grace period of 8 years; and such other terms and conditions as are substantially in accordance with those set forth in the draft loan agreement presented to the Board.

6 June 2018

Takehiko Nakao
President

[25] Risk Assessment and Risk Management Plan (accessible from the list of linked documents in Appendix 2).

DESIGN AND MONITORING FRAMEWORK

Impact the Project is Aligned with
Agricultural competitiveness improved (Agriculture Sector Strategic Development Plan, 2014–2018)[a]

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
Outcome Productive and resource-efficient agribusiness value chains developed in project areas.	By 2026 a. At least 15% increase in yields (2017 baseline: rice 2.7 tons/ha, maize 4 tons/ha, cassava 20 tons/ha and mango 15 tons/ha). b. GHG emissions reduced by 240,000 tons of CO_2 (2017 baseline: 0 tons reduced as a result of the project). c. At least 50 agribusinesses become more resource-efficient in terms of water savings (5%–10% efficiencies); energy savings (20%); and reduction in postharvest losses (10%) (2017 baseline: 0).	a. MAFF agricultural census b. UNFCCC reports c. PPMS reports	Declining demand for Cambodian agricultural products because of competition from external markets and stringent requirements for quality and safety from importing countries
Outputs 1. Critical agribusiness value chain infrastructure improved and made climate-resilient.	By 2024 1a. 27 irrigation and water management systems targeting 15,000 ha and 25,000 households (with at least 50,000 women) rehabilitated and made climate-resilient (2017 baseline: 0). 1b. 800 on-farm rainwater harvesting ponds commissioned (2017 baseline: 0). 1c. At least 250 km of farm roads upgraded to climate resilient standards to improve connectivity of farms to cooperatives and markets (2017 baseline: 0). 1d. 80 agricultural cooperatives[b] have integrated adaptation measures in post-harvest infrastructure investments (2017 baseline: 5). 1e. Crop product quality and safety testing infrastructure in National Agricultural Laboratory upgraded to test 1,500 samples (2017 baseline: 700) and generate service income of more than $75,000 (2017 baseline: $0). 1f. 12,000 additional biodigesters and 6,000 compost huts made operational, benefiting at least 80,000 persons, including at least 50% women, due to better household air quality (2017 baseline beneficiaries: 11,468 persons, including 5,721 women).	1a–1f. PPMS annual progress reports 1a-1b. MOWRAM annual report 1c. MRD annual report 1d–1f. MAFF annual progress reports	Capacity constraints to infrastructure design and procurement Climate change impacts may adversely impact project investments. Limited attention to O&M of agribusiness infrastructure

Results Chain	Performance Indicators with Targets and Baselines	Data Sources and Reporting Mechanisms	Risks
2. Climate-smart agriculture and agribusiness promoted.	2a. Three additional climate-resilient varieties of rice and maize released (2017 baseline: 0). 2b. 40,000 farmers (of whom 16,000 are women) trained in CSA and agribusiness development skills, of which 50% are SRP-compliant with direct links to millers and exporters (2017 baseline for SRP compliance: 0). 2c. 27 FWUCs or FWUGs made operational and 500 FWUC/FWUG members (of which 30% women) developed capacity to operate and maintain their irrigation schemes (2017 baseline: 0). 2d. Four provincial agricultural development centers and four engineering workshops made fully operational to provide agribusiness services and strengthen farmer value chain links (2017 baseline: 0).	2a–2d. PPMS annual progress reports	
3. Enabling environment for climate-friendly agribusiness enhanced.	3a. Climate-smart and gender-responsive agribusiness policy for target commodities, including a PPP framework focusing on agribusinesses, formulated (2017 baseline: 0).[c] 3b. Cambodia good agricultural practice for tropical fruit and organic fertilizers endorsed as national standard for tropical fruit and organic fertilizers (2017 baseline: 0). 3c. 50 staff, including 30% women, from financial institutions trained in CSA and green finance (2017 baseline: 0). 3d. 30 agribusinesses, including 30% led or owned by women,[d] trained on green finance and CSA (2017 baseline: 0). 3e. 20,000 households, including 20,000 women, provided with information on climate risk-sharing instruments (2017 baseline: 0). 3f. ICT platform for climate-friendly agribusiness established in Kampong Cham Province (2017 baseline: 0).	3a–3f. PPMS annual progress reports	

Key Activities with Milestones

1. Critical agribusiness value chain infrastructure improved and made climate-resilient

1.1 Construct representative subproject for irrigation and confirm implementation plans for rehabilitating or developing critical infrastructure for priority value chains (Q1–Q4 2019).

1.2 Confirm land availability, locations, suitability, and connectivity for siting processing, storage, marketing, and logistics infrastructure (Q1 2019–Q1 2020).

Key Activities with Milestones
1.3 Undertake detailed design, tender, and construct critical production and post-harvest infrastructure to climate-resilient condition (Q2 2019–Q3 2024). 1.4 Establish management systems for O&M of infrastructure (Q1 2022–Q3 2023). **Output 2: Climate-smart agriculture and agribusiness promoted** 2.1 Deploy climate-resilient varieties of rice and maize (Q2 2019–Q2 2024) [G/CD]. 2.2 Conduct training for farmers, SMEs, and private sector on CSA (Q2 2019–Q2 2024) [G/CD]. 2.3 Establish or upgrade mechanical workshops and training facilities (Q3 2019–Q2 2020). **Output 3: Enabling environment for climate-friendly agribusiness enhanced** 3.1 Assist in formulating climate-smart agribusiness support including policy and regulations, and advice on agronomy, markets, and links between farmers and the private sector (Q2 2019–Q4 2022) [G/CD, GE]. 3.2 Conduct training on climate risk management and green finance, including structuring of public–private partnerships in agribusiness (Q2 2019–Q1 2024) [G/CD, PSD]. 3.3 Establish ICT platform for climate risk management (Q3 2020–Q2 2024) [G/CD, PSD]. **Project Management Activities** Mobilize project implementation consultants (Q4 2018). Establish PPMS, and conduct needs assessment for specific project management skills (Q2 2019). Provide training courses to project staff on project management, procurement, financial management, gender, and social and environment safeguards (Q4 2018–Q3 2024).
Inputs
ADB: $90,000,000 (loan) Green Climate Fund: $40,000,000 ($10,000,000 loan and $30,000,000 grant) Government: $7,376,000 Beneficiaries: $3,664,000
Assumptions for Partner Financing
Not applicable.

ADB = Asian Development Bank; CO_2 = carbon dioxide; CSA = climate-smart agriculture; FWUC = farmer water user committee; FWUG = farmer water user group; G/CD = governance and capacity development; GE = gender equity; GHG = greenhouse gas; ha = hectare; ICT = information and communication technology; km = kilometer; MAFF = Ministry of Agriculture, Forestry, and Fisheries; MOWRAM = Ministry of Water Resources and Meteorology; MRD = Ministry of Rural Development; O&M = operation and maintenance; PSD = Private Sector Development; PPMS = project performance monitoring system; PPP = public–private partnership; Q = quarter; SMEs = small and medium-sized enterprises; SRP = sustainable rice platform; UNFCCC = United Nations Framework Convention on Climate Change.

[a] Government of Cambodia, Ministry of Agriculture, Forestry and Fisheries. 2016. *Agricultural Sector Strategic Development Plan, 2014–2018.* Phnom Penh; Government of Cambodia, Council for Development of Cambodia. 2015. *Cambodia Industrial Development Policy, 2015–2025.* Phnom Penh; Government of Cambodia, National Climate Change Committee. 2015. *Cambodia Climate Change Strategic Action Plan, 2014–2023.* Phnom Penh.

[b] Preferential support given to agricultural cooperatives with majority of female members.

[c] As women are more vulnerable to the impacts of climate change, any policies developed for public-private partnerships or contract farming arrangements for promoting agribusinesses under output 3 are responsive to the needs, constraints, and vulnerabilities of women. The detailed gender analysis of the value chains proposed in the gender action plan is expected to inform this process.

[d] Enterprises led or owned by women are enterprises with at least one of the following: (i) at least 50% of senior managers are women, (ii) at least 50% of enterprise ownership is controlled by women, or (iii) at least 50% of the staff are women.

Source: Asian Development Bank.

LIST OF LINKED DOCUMENTS

http://www.adb.org/Documents/RRPs/?id=48409-002-3

1. Loan Agreement: Asian Development Bank
2. Loan Agreement: Green Climate Fund
3. Grant Agreement: Green Climate Fund
4. Sector Assessment (Summary): Agriculture, Natural Resources, and Rural Development
5. Project Administration Manual
6. Contribution to the ADB Results Framework
7. Development Coordination
8. Economic and Financial Analysis
9. Country Economic Indicators
10. Summary Poverty Reduction and Social Strategy
11. Risk Assessment and Risk Management Plan
12. Climate Change Assessment
13. Gender Action Plan
14. Initial Environmental Examination: Trapaing Run Irrigation Subproject
15. Environmental Assessment and Review Framework
16. Indigenous Peoples Planning Framework: Ethnic Minority Development Framework
17. Land Acquisition and Resettlement Framework

Supplementary Documents

18. Feasibility Study Report for Trapaing Run Irrigation Subproject
19. Feasibility Study Report for Tram Kak On-farm Water Management Subproject
20. Feasibility Study Report for Agricultural Cassava Drying, Processing, and Storage Facility Subproject
21. Due Diligence Report on Land Acquisition and Resettlement for Trapaing Run Irrigation Subproject
22. Detailed Poverty and Social Impact Analysis
23. Detailed Gender Analysis
24. Detailed Economic and Financial Analysis
25. Financial Management Assessment
26. Procurement Risk Assessment
27. Stakeholder Consultation and Participation Plan
28. Stakeholder Communication Strategy
29. Institutional Capacity and Training Plan
30. List of Prescreened Subprojects