Project Information Document (PID)

Concept Stage | Date Prepared/Updated: 22-Dec-2021 | Report No: PIDC32153

BASIC INFORMATION

A. Basic Project Data

Country	Project ID	Parent Project ID (if any)	Project Name
Cambodia	P176615		Cambodia Water Security Improvement Project (P176615)
Region	**Estimated Appraisal Date**	**Estimated Board Date**	**Practice Area (Lead)**
EAST ASIA AND PACIFIC	Sep 15, 2022	Mar 31, 2023	Water
Financing Instrument	**Borrower(s)**	**Implementing Agency**	
Investment Project Financing	Royal Government of Cambodia	Ministry of Water Resource and Meteorology, Ministry of Agriculture, Forestry, and Fisheries	

Proposed Development Objective(s)

To improve aspects of water security and increase agricultural water productivity in selected river basins.

PROJECT FINANCING DATA (US$, Millions)

SUMMARY

Total Project Cost	130.00
Total Financing	130.00
of which IBRD/IDA	125.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Development Association (IDA)	125.00
IDA Credit	125.00

Non-World Bank Group Financing

Other Sources	5.00
AUSTRALIA: Department of Foreign Affairs and Trade	5.00

Environmental and Social Risk Classification	Concept Review Decision
Substantial	Track II-The review did authorize the preparation to continue

B. Introduction and Context

Country Context

1. **Over the past two decades, Cambodia has undergone a significant transition, reaching lower middle-income status in 2015 and aspiring to attain upper middle-income status by 2030.** Prior to the global COVID-19 pandemic, Cambodia was one of the fastest growing economies with a sustained average real growth rate of 7.7% between 1998 and 2019, driven largely by tourism, manufacturing exports, and construction sectors. The country has achieved considerable improvements in socioeconomic indicators such as health and education, though quality and equitable access to basic services remain a challenge. The poverty rate in the country declined from 47.8% in 2007 to 13.5% in 2014. However, the poverty rate has bounced back due to the pandemic over the past two years, with at least an additional 500,000 people identified as poor between June 2020 and January 2021.

2. **The economy and population of Cambodia are vulnerable to climate change impacts, especially impacts from droughts and floods, with increasing frequency and intensity.** The Global Climate Risk Index (2021) ranks Cambodia as the 15th most vulnerable country to climate change globally. The country is particularly prone to flood and drought events, with around 80% of the country located within the Mekong River and Tonle Sap basins. The past 20 years saw substantial losses in production due to flooding (about 62%) and drought (about 36%). Based on the updated NDC, under future climate conditions (2025 and 2050), most of Cambodia's agricultural areas will be exposed to higher risks of drought. Coupled with this high exposure, Cambodia's underlying vulnerabilities remain a key determinant of its disaster risk. Approximately 4.5 million people or about 27% of its total population are estimated as 'near poor,' and susceptible to fall back into poverty due to economic shocks, natural hazards, and environmental degradation. Over the past two decades, there has been a trend of increasing frequency and intensity of floods and droughts causing shocks to the economy and disruptions to people's livelihoods and wellbeing, with rural population being disproportionally affected. For example, between 1987 and 2020 six major drought events affected over 9 million Cambodians (International Disasters Database EM-DAT, 2020); the 2020 floods affected 800,000 people in 20 provinces with widespread impacts in terms of damages to houses and livelihoods and an estimated loss of over US$ 450 million (in 9 of the 20 provinces). The National Strategic Development Plan (NSDP 2019-2023) prioritizes the investment needs for narrowing the rural infrastructure gaps and improving different rural services and institutional capacity to enable more sustainable and climate-resilient socio-economic growth.

3. **Agriculture plays a very important role in the overall economic growth of Cambodia. Irrigation is essential for resilient agricultural development and requires modernization.** The agriculture sector contributes over 30% of national GDP, employs nearly 50% of the total labor force, and provides livelihoods to some 80% of the Cambodian population. Crop production in 2020 accounts for around 62% of agricultural GDP, followed by livestock (24%), fisheries (11%), and forestry (7%). Rice production dominates crop production and is grown on around 75 percent of cropped lands, accounting for 85% of annual food production and almost 70% of dietary energy needs. It is also the largest water user and an important source of greenhouse gas (GHG) emission, with great potential for climate adaptation and mitigation. In recent years, the Royal Government of Cambodia (RGC) has been investing in irrigation infrastructure to boost agricultural

productivity and improve climate resilience. There are now over 2,500 irrigation systems (large, medium, and small), with a total command area of some 1 million ha, or 22% of the total arable land area (4.5 million ha). However, about half of the irrigation systems are not fully functional, with low water use efficiency and/or unreliable irrigation and drainage services. Urgent actions are required to modernize these irrigation systems, along with essential climate-smart agriculture support interventions, for sustainable and resilient agricultural development.

4. **The ongoing COVID-19 pandemic coupled with the impacts of the 2020 floods took a heavy toll on Cambodia's sustainable development, severely affecting sectors critical to the economy.** The country's economy requires a green, resilient, and inclusive recovery. In 2020, the World Bank estimated that the economy would contract by 2.2%, the sharpest decline in recent history, leading the economy into recession for the first time in three decades. Key industries including construction, tourism, and merchandise export, which together account for more than 70% of growth and 39% of total paid employment, have been significantly affected. Because of travel restrictions, international arrivals fell by 74.1%, significantly affecting the tourism sector which contributed about 18.7% of real GDP growth in 2019. With the need to expand social assistance to mitigate the impacts of COVID-19, the pandemic has put a heavy financial burden on the economy, with government providing support at an unprecedented 5% of GDP. As highlighted in the RGC Economy Recovery Plan, the country's economy is in need of a quick and sustainable recovery, and the government is committed to accelerating the transition to a climate-resilient and low carbon mode of development (updated NDC, 2020).

Sectoral and Institutional Context

5. **Cambodia has made concerted efforts to develop a comprehensive range of policies and regulations to support water resources management development for different water services and agricultural production.** The National Water Resource Policy and Water Law both require an integrated approach to water resources management to ensure sustainable and equitable water services. However, much work needs to be done to operationalize such policies and regulations. For example, water resources planning and management at the river basin and water system levels are fragmented. The decree on river basin management has not been institutionalized by bringing different sector agencies and stakeholders together to establish sub-national river basin committees for integrated basin planning and operational management. At the water system level, lack of integrated planning and coordination for infrastructure development (e.g. water storage and irrigation infrastructure), agricultural development and related watershed level interventions, limits the benefits of infrastructure investments.

6. **The Ministry of Water Resources and Meteorology (MoWRAM) is mandated by law as the sector authority for policy administration and regulation implementation as well as management of investments related to water resources, irrigation and flood management**. The MoWRAM coordinates at the national level with different sector ministries in water resources development and management for various services and productive uses: irrigation with Ministry of Agriculture, Fishery and Forestry (MAFF), water supply with Ministry of Industry, Sciences, Technology and Innovation (MISTI), and environmental management with Ministry of Environment (MoE). MoWRAM also hosts the national committee on Mekong which collaborates with the Mekong river riparian countries and the Mekong River Commission (MRC) on Mekong affairs and transboundary water resources management. At the provincial level, the corresponding sectoral departments with similar institutional arrangements have been established but their capacity needs to be substantially improved. The sub-national committees have yet to be established for most of the five river basins in the country, including Coastal Zone; Sekong, Sesan, and Srepok Rivers ('3S'); Upper Mekong; Tonle Sap, and Mekong Delta.

7. **Cambodia has achieved important progress over the past decades in water resources development and management to support socio-economic development. However, water infrastructure is operating at a sub-optimal level in delivering intended services and agricultural water productivity is significantly lower comparing with**

neighboring countries. Over the past two decades, the country has witnessed increasingly erratic rainfall, causing frequent water scarcity (shortage) in the dry seasons and floods in the wet seasons as a result of climate change, lack of sufficient water storage capacity, and crop intensification, etc. For that reason, continuous investments have been made in developing water resources in the country, particularly in irrigation and water storage dams to increase the productivity and climate resilience of agricultural production. However, as noted above, many water infrastructure systems are performing well below their potential due to issues such as lack of reliable water sources, inadequate design, construction deficiencies, and poor management. As a result, water infrastructure investments are not delivering the intended benefits including managing the increasing floods and droughts. This is having a significant negative impact on the country's progress towards achieving the sustainable development goals (SDGs) and improving water security for the general public and different productive sectors.

8. **This lack of and inadequate management of infrastructure is combined with an increasing degradation of natural resources and ecosystem services.** Degradation of ecosystems in upstream areas—the natural infrastructure on which water systems depend—contributes significantly to water insecurity, increasing floods and droughts, land erosion, land and water user conflicts, and limit the development opportunities for the local population. The damages to ecosystems upstream also impact the effectiveness and lifespan of irrigation and river infrastructure which suffers from reduced water availability, increased run-off intensities, and increased sedimentation loads. A recent World Bank study in the Pursat Basin has highlighted the threats posed to irrigated areas by upstream watershed degradation, which results in loss of reservoir capacity due to siltation, reducing water availability for irrigation and hydroelectric power generation (see Annex 2). Conversely, conserving and restoring upstream ecosystems would bring significant economic and water security benefits.

9. **The Royal Government of Cambodia (RGC) is aware of the issues highlighted above and is committed to improving water security in the country.** The National Water Resource Management and Sustainable Irrigation Strategy (2019-2030), developed and endorsed by the RGC, lays out the long-term vision and the investment and institutional development plan for integrated water resources management and sustainable irrigation services with a total estimated investment up to US$2 billion. The government is committed to modernizing water storage, irrigation, and flood management systems following an integrated approach, and improving the management and institutional capacity of related water service delivery. These include management reforms at the river basin and water system levels, and promotion of self-sustaining farmer water user committees (FWUCs) and involvement of the private sector in water system operation and maintenance (O&M) and service delivery. The proposed project is intended to support the RGC in implementation of this strategic plan for improving water security at the river basin, water system and community levels.

Relationship to CPF

10. **The proposed project is well aligned with the priorities in the World Bank's Cambodia Country Partnership Framework (CPF) FY2019-2023.** The proposed project supports the following two CPF Focus Areas and related objectives: (a) improving agricultural productivity and strengthening sustainable use of natural resources including enhancement of climate resilience, to achieve the objectives of increasing agricultural productivity and diversification and improved management of water and land use; and (b) promoting state efficiency and boosting private sector development to strengthen public sector accountability and enhance effectiveness and efficiency of public infrastructure services. It also supports the cross-cutting theme of strengthening governance, institutions, and citizen engagement for improved transparency and accountability as well as public service delivery and access across all sectors. Further, the Project is consistent with the RGC's NSDP (2019-2023) supporting the implementation of the Rectangular Strategy Phase IV (RS4) for growth, employment, equity, and efficiency.

C. Proposed Development Objective(s)

11. The project development objective (PDO) is to improve aspects of water security and increase agricultural water productivity in selected river basins of Cambodia.

Key Results (From PCN)

12. The achivement of the project development objectives will be monitored and measured by the following key results indicators: (a) restored/improved storage capacity for bulk water supply (m^3); (b) area with improved irrigation and drainage services (hectare); (c) increased agricultural water productivity in the project schemes (value of product/m^3) and (d) beneficiaries with improved flood and/or drought resilience (number, disaggregated by gender)).

D. Concept Description

13. The proposed Project envisages to support RGC in implementing an integrated approach to water security focusing on improving water availability for irrigation and bulk water services as well as agricultural water productivity. This project will support the RGC to operationalize the integrated approach to water security at the river basin and water system levels and address the primary threats to water security: challenging hydrological environments worsened by changing climate, weak institutions, under-investment in water infrastructure, low water use efficiency in agriculture, and degrading ecosystems. The project aims to improve governance, implement related policies and regulations, strengthen institutional capacity, and modernize selected water resources management infrastructure and services, in targeted river basins. The Project will adopt the investment project financing (IPF) instrument for an IDA credit of US$125 million. The proposed project with the following four components is expected to be implemented over a period of five years from 2023 to 2028.

14. Component 1. Integrated Water Resources Management (US$36.0m). This component aims to improve the bulk water availability and flood and drought resilience of the target area. It will have two sub-components, water storage dam and operation improvement, and integrated flood and drought management. It has two sub-components: (a) water storage dam and operation improvement; and (b) integrated flood and drought management.

15. Component 2. Sustainable Irrigation Service Development (US$86.0m). The component supports existing irrigation systems modernization and agricultural water management for more reliable and efficient irrigation water supply, irrigation management reform and capacity building for sustainable service delivery as well as private sector engagement to support climate-smart agriculture activities for increasing agricultural water productivity. This component has three sub-components: (a) irrigation system modernization and agricultural water management improvement; (b) irrigation management reform and capacity building; and (c) private sector engagement to support climate-smart agriculture (CSA).

16. Component 3. Institutional Support for Integrated River Basin Management and Project Implementation (US$8.0m). The goal of this component is to pilot multiple-stakeholder governance in one or two sub-basins and build the capacity of the national water resources authority (MoWRAM) and river basin committees in integrated river basin water resources planning and management with a strong focus on addressing flood and drought risk while supporting low-carbon interventions and enhancement of carbon sinks. The component has the following two sub-components: (a) integrated river basin management; and (b) project implementation support.

17. Component 4. Contingency emergency response component (CERC) (US$0m). This zero-amount component is to enable response to unexpected crises and emergencies during the implementation period, which may likely arise from climate-induced floods and/or droughts.

18. The Ministry of Water Resources and Meteorology (MoWRAM) will be the executing agency responsible for overall project management and coordination with related ministries and the Technical Working Group for Agriculture and Water (TWGAW). The MoWRAM will be responsible for all project components except sub-component 2.3. The Ministry of Agriculture, Fishery and Forestry (MAFF) will be the second implementing agency responsible for the implementation of Sub-Component 2.3. Private sector engagement to support climate-smart agriculture (CSA). As illustrated in Figure 4 below, a project steering committee (PSC) chaired by the Secretary of State of MoWRAM will be established to provide strategic directions and policy guidance for the project. A project coordination committee (PCC) headed by a senior official of MoWRAM and comprising senior representatives of the MEF, MAFF, Ministry of Environment (MoE) and Ministry of Industry, Sciences and Technology and Innovation (MISTI), will be charged with high-level coordination of project design and implementation to ensure integrated approach. The TWGAW set up by the RGC and the Development Partner Coordination Group will serve as an advisory group to the PSC. At the technical level, a national project management office (NPMO) with a project director and dedicated multi-disciplinary staff (technical, procurement, financial management, environmental and social, M&E) will be hosted within MoWRAM for overall project implementation management and day-to-day coordination. Project implementation units (PIUs) will be set up in MoWRAM and MAFF for project implementation under respective components.

Legal Operational Policies	Triggered?
Projects on International Waterways OP 7.50	Yes
Projects in Disputed Areas OP 7.60	No

Summary of Screening of Environmental and Social Risks and Impacts

19. The proposed project will cover about 69,968 km2 in upper Mekong basin and sub-basin of Tonle Sap basin in the province of Kampong Thom, Preah Vihear, Siem Reap, Stung Treng, Kratie, Ratanakiri and Modulkiri. The project's primary goal is to improve water security and increase agricultural water productivity in selected river basins for enhanced productivity and climate resilience. The project will be implemented in three river basins of Cambodia i.e. the 3S, 4P and Tonle Sap basins to improve the management of water and natural resources and modernizing water infrastructure for enhanced productivity and climate resilience. The proposed activities are expected to result in economic, environmental, and social benefits through a combination of infrastructure investments and improved watershed management, with focus on modernizing the irrigation services delivery, improving flood and drought management leading to increased resilience and water security in the selected basins and thus improving livelihood opportunities in selected basins in a sustainable manner. The environmental risk is considered Substantial. Environmental risk from the proposed project is based on potential concerns relating to large scale of the project that covers three river basins and the broad range of direct and indirect and induced cumulative impacts. These potential impacts are mainly associated with infrastructure rehabilitation including upgrading of existing water resources, flood management systems, and modernization of existing water storage and irrigation schemes; possible disturbance of existing ecosystem in natural habitats; possible pollution of water and soil during construction period; possible dam safety risks; and the lack of familiarity among PMU staff to the Bank's ESF. The project investments are also expected to lead to indirect and cumulative impacts since series of dams are planned in Sekong Basin in Laos and one is in operation named Houay Ho Dam. And both the Sesan and Srepok rivers

originate in Vietnam's central highlands before flowing through Stung Treng, Ratanakiri provinces in northeast Cambodia making hydropower development along these two Mekong tributaries an international and transboundary concern. In addition, fishery migration and fishery resources are already affected communities living along the 3S river basin. On Sesan river, there is dam (called Lower Sesan 2 Dam) in Stung Treng operating since December 2018. The potential overall cumulative impacts of the project will be assessed through rapid assessment as part of ESMF. The Project's social risks are expected to be Substantial. Some of the infrastructure activities such as water storage dams and irrigation works are large in scale and some land acquisition may be required for construction and rehabilitation works. The constructions will involve international contractors with significant labor influx into the project area. The project areas include provinces where 150,000 households considered poor. Main social impacts are: (i) potential land acquisitions for rehabilitation and reconstruction of irrigation infrastructure (ii) equal access to get project benefits for poor, marginalized farmers and exclusion risks of vulnerable groups including residents vulnerable to floods and droughts in the project basins (iii) addressing labor influx issues due to potential involvement of outside labor force for reconstruction works, including Sexual Exploitation and Abuse/Sexual Harassment (SEA/SH) (iv) potential economic displacement, and/or livelihood losses due to temporary construction induced impacts on agriculture and farm activities (v) potential for complaints without a robust grievance system; and (vii) inclusion and identifying farmer water user associations and forming fair representative river basin committees and stakeholder platform that will function as the local institutions in irrigation water management. The risk rating also considered the lack of capacity of borrower agency. Although the E&S staff of MOWRAM has some experiences with the World Bank safeguards policy application, it has no or limited exposure with application of the ESF and related standards and may require capacity building and on the job training from E&S consultants. Assessment of risks and impacts will inform Stakeholder Engagement Plan (SEP) and the Environmental and Social, Management Framework (ESMF) and various frameworks, procedures and plans as part of the ESMF.

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APPROVAL

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