



The World Bank

Cambodia Water Security Improvement Project (P176615)

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Project Information Document (PID)

Appraisal Stage | Date Prepared/Updated: 28-Mar-2024 | Report No: PIDA0137



BASIC INFORMATION

A. Basic Project Data

Project Beneficiary(ies)	Region	Operation ID	Operation Name
Cambodia	EAST ASIA AND PACIFIC	P176615	Cambodia Water Security Improvement Project
Financing Instrument Investment Project Financing (IPF)	Estimated Appraisal Date 18-Mar-2024	Estimated Approval Date 31-May-2024	Practice Area (Lead) Water
Borrower(s) Kingdom of Cambodia	Implementing Agency Ministry of Agriculture, Forestry, and Fisheries, Ministry of Water Resources and Meteorology		

Proposed Development Objective(s)

The project development objective is to build the foundation for improved water security in Cambodia and increase agricultural productivity in selected river basins and to provide an immediate and effective response in case of an eligible crisis or emergency.

Components

- Component 1: Improve water resources planning and institutions.
- Component 2: Improve and sustain water service delivery for irrigation and domestic use.
- Component 3: Support services to increase climate resilience in irrigated agriculture.
- Component 4: Project management, coordination, and monitoring and evaluation.
- Component 5: Contingent emergency response.

PROJECT FINANCING DATA (US\$, Millions)

Maximizing Finance for Development

- Is this an MFD-Enabling Project (MFD-EP)? No
Is this project Private Capital Enabling (PCE)? No

SUMMARY

Total Operation Cost	150.00
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Total Financing	150.00
of which IBRD/IDA	145.00
Financing Gap	0.00

DETAILS

World Bank Group Financing

International Development Association (IDA)	145.00
IDA Credit	145.00

Non-World Bank Group Financing

Counterpart Funding	5.00
Borrower/Recipient	5.00

Environmental And Social Risk Classification

Substantial

Decision

The review did authorize the team to appraise and negotiate

B. Introduction and Context

Country Context

1. **Between 1998 and 2019, Cambodia was one of the fastest-growing economies in the world with a sustained average real growth rate of 7.7 percent.** Growth was driven largely by tourism, manufacturing exports, real estate, and construction. From 2009 to 2019/2020, the poverty rate in Cambodia declined from 33.8 percent to 17.8 percent. In 2015, the country reached lower-middle-income status; by 2030, Cambodia aspires to attain upper-middle-income status. During this period of growth, Cambodia achieved considerable gains in socioeconomic indicators, such as health and education, but equitable access to basic public services remains a challenge.

1. **In 2020, the economic shock caused by COVID-19 together with the consequences of devastating floods pushed Cambodia into its first recession in 25 years.** The pandemic caused global demand to decrease, supply chain disruptions, and nationwide lockdowns. At least 500,000 additional people identified as poor in 2020. Key industries, including construction, tourism, and merchandise export, which together account for more than 70 percent of growth and 39 percent of total paid employment were significantly affected. GDP growth dropped sharply, from 7.1 percent in 2019 to -3.1 percent in 2020, gradually returning to three percent growth in 2021. The project is in line with the RGC's vision and overall development strategy for the country as encapsulated in its five-year Pentagonal Strategy Phase I (PS-I, 2023-2028) for growth, employment, equity, efficiency, and sustainability. The PS-I commits to building the foundation for achieving



Cambodia's vision for 2050. The water sector is recognized as a priority area for the promotion of agriculture and rural development, for ensuring environmental sustainability and readiness for responding to climate change, and for the promotion of a green economy. The PS-I formulates actions for enhancing water security in Cambodia. This includes strengthening water resources planning and institutions, developing WRM infrastructure, and enhancing O&M services. In addition, the project is fully aligned with the World Bank Group's Country Partnership Framework (CPF) for Cambodia FY2019–2024 (Report No. 136500-KH).

2. Cambodia is highly vulnerable to the impacts of climate change, especially those related to the variability of precipitation and the frequency and intensity of floods and droughts. Cambodia is particularly prone to flooding during the wet season, which runs from May to September, as 80 percent of the country is located within the Mekong River and Tonle Sap basins, and to prolonged droughts during the dry season. The impact of climate change includes increased annual average temperature, which has risen 0.18°C per decade. The number of 'hot days' in Cambodia has increased by as much as 46 days per year over the last century. Over the past 20 years, Cambodia has faced substantial seasonal losses in crop production due to flooding and drought. Between 1987 and 2020, six major drought events affected over nine million Cambodians, significantly impacting the livelihoods of farmers and small land holders. Climatic events have disproportionately affected poor and vulnerable households. In 2020, severe flooding in 20 provinces affected 800,000 people; nearly 50 percent of these people belonged to poor and vulnerable households. Widespread damage to houses, agricultural lands, and key infrastructure, such as roads, bridges, irrigation schemes and dams, have resulted in an estimated loss of over US\$450 million. Approximately 2.4 million people, or 15 percent of Cambodia's population, are defined as near poor¹ and are susceptible to falling back into poverty due to economic shocks, natural hazards, and environmental degradation. In addition, climate change is projected to reduce the country's GDP by 2.5 percent in 2030 and by up to 9.8 percent in 2050; this will impact the country's ability to reach upper-middle-income status. Without adequate adaptation measures, climate change could, depending on the climate scenario, increase the poverty rate by 0.3 to 6.0 percent points by 2040.

Sectoral and Institutional Context

3. Cambodia is a water-rich country with a water resource endowment equivalent to 4,760 m³ per capita compared to global average of 4,000 m³ per capita. However, water resources are unevenly distributed across seasons and subbasins. Cambodia experiences severe water shortages during the dry season, which lasts up to seven months a year, triggering competing demands among agriculture, environment, industry, and domestic water supply. The Tonle Sap and Mekong River basins, the most densely populated areas of the country, are particularly susceptible to water shortages.

4. Cambodia has limited capacity to manage its freshwater resources which negatively impacts the availability of water supply for urban and rural consumption. This is particularly sensitive given that Cambodia has an urgent need to accelerate access to meet the Sustainable Development Goal (SDG) 6 targets—universal access to safely managed WSS services by 2030. Currently, 94 percent of all water withdrawals in Cambodia go to the agricultural sector, mostly to irrigate rice paddies. During the 1970s, Cambodia constructed many small to medium-size reservoirs with one meter to two-meter-high earthen embankments to store water for supplementary irrigation and facilitate recession cultivation after the wet season. Many of these reservoirs and irrigation systems, however, were constructed without adequate technical input, posing challenges for operation and maintenance (O&M). As a result, most of the existing infrastructure is currently in disrepair and requires rehabilitation and upgrading to meet modern agricultural productivity targets. This situation is particularly acute in the Tonle Sap; the Sekong, Sesan, and Srepok Rivers (3S); and the Prek Preah, Prek Krieng, Prek Kampi,

¹ Defined as people whose daily per capita consumption lies between the poverty line and 1.25 times the poverty line.



Prek Te, and Prek Chhlong (5P)² basins. The high Water Deficit Index of these basins suggests that current agricultural water practices are unsustainable and will limit the water sector's capacity to respond to future climate shocks.

5. Climatic projections of ever more frequent annual flooding during the wet season and severe droughts during the dry season stand to jeopardize both Cambodia's food production capacity and GDP growth going forward. Disruptions to logistical corridors caused by floods have a profound impact on agricultural supply chains, both domestically and for international trade. The impact of prolonged periods of drought on yields is also significant. Under a high-emission scenario, wet season rice yields (rainfed) are expected to continuously decrease and could be reduced by up to 70 percent of current yield levels. Vulnerable groups risks may face food and nutrition crises in the event of extreme climatic events such as floods and droughts.

6. Rice production produces significant greenhouse gas (GHG) emissions and is highly vulnerable to climate variability. In the absence of adaptation measures and even with the benefits of increased atmospheric concentrations of CO₂ accounted for, yield losses of 10-15 percent could be expected by the 2040s under both Representative Concentration Pathways (RCP) 4.5 and RCP 8.5³. These losses are closely linked to an increase in temperature during the growing season. Strengthening approaches and techniques for climate smart agriculture (CSA) in sector development are becoming increasingly important. Adaptation and building resilience are key in responding to climate change challenges. Successful adaptations might also prepare the way for accessing carbon credit markets.

7. The Royal Government of Cambodia embraces integrated water resources planning as a guiding principle for the strategic planning of priority water resource investments in order to enhance Cambodia's resilience to future climate shocks. The National Water Resources Policy and the Water Law both require an integrated approach to water resources management (WRM) for sustainable and equitable water services. Under the Law on Water Resources Management of the Kingdom of Cambodia, promulgated in June, 2007 four sub-decrees⁴ were developed, and two of them enacted. Article 12 of the Water Law established provisions for water allocation and licensing, however, no sub-decree was enacted to formally apply water allocation rules and principles, causing confusion amongst various water users and the regulatory environment.

8. MOWRAM is mandated by law as the authority for policy, regulation, and management of investments related to water resources, irrigation, and flood management. MOWRAM coordinates with different sector ministries at the national level on matters related to water use and management of water resources, including: (i) irrigation with the Ministry of Agriculture, Forestry and Fisheries (MAFF); (ii) domestic water supply with the Ministry of Industry, Science, Technology, and Innovation (MISTI); and (iii) environmental management with the Ministry of Environment (MOE). MOWRAM also hosts the National Committee on the 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, corresponding sectoral departments, such as the Provincial Department of Water Resources and Meteorology (PDWRAM) and the Provincial Department of Agriculture, Forestry, and Fisheries (PDAFF) are in place to

² The 3S and 5P river basins are located in the Upper Mekong basin and are part of the 39 river basins in Cambodia. The three basins (Sekong, Sesan and Srepok) are called the 3S river basins. These three river basins join and constitute an international river basin shared between Cambodia, Lao PDR and Viet Nam. The 5P river basins are the combination of the four river basins (Prek Preah, Prek Krieng, Prek Kampi, Prek Te, Prek Chlong) and have a total catchment area of 11,235 km². Prek Chlong is a river basin connected from the Prek Te and Mekong Delta basins.

³ Li et al. (2017) – need a full reference here.

⁴ The four sub-decrees include a sub-decree on the procedures for the establishment of Farmer Water User Committees (FWUC) (enacted on June 30, 2018), a sub-decree on River Basin Management (enacted on July 10, 2015) setting out principles for sustainable water resource management at the river basin scale, a sub-decree on Water Allocation and Licensing (drafted in 2015 but not enacted due to disagreements on water pricing), and a sub-decree on Water Quality (drafted in 2015).



coordinate field implementation and monitor activities on site. The operating capacity of the provincial departments, however, remains limited. Although Cambodia has made efforts to develop a wide range of policies and regulations to support WRM, much needs to be done to operationalize them. For instance, the decree on river basin management has not been institutionalized, and sector agencies and stakeholders have yet to work together to establish subnational river basin committees (RBCs) for integrated basin planning and operational management.

9. **The Cambodia Public Finance Review: *From Spending More to Spending Better*⁵** identified several factors that constrain Cambodia's ability to sustainably increase the productivity of water resources, including:

- (a) **Capacity constraints at the national and subnational levels.** This is mainly due to a lack of experienced WRM and irrigation professionals in MOWRAM and within the PDWRAMs. This institutional weakness is further amplified by a dispersed and outdated knowledge base; there are serious gaps in the data and information required for scientific analysis and informed decision-making for effective risk management and optimal utilization of water resources.
- (b) **Institutional fragmentation and limited coordination across the ministries working in the water sector.** MOWRAM has expressed its goal to expand irrigated areas by 1.2 million hectares by 2033 in its National Water Resources Management and Sustainable Irrigation Roadmap and Investment Program (2019–2033). If this program is fully implemented, it will increase current water demand by up to 80 percent and will require close dialogue across the food-energy-water nexus, including the agricultural, hydropower, water supply and sanitation, and environmental sectors.⁶ Despite attempts by development partners in the past years, there has been limited strategic-level coordination between national and subnational governments, hindering effective management of water resources for irrigation and other purposes, and prospects for meeting the Government's objectives by 2033.
- (c) **A lack of funding for subnational governments.** There are also insufficient funds available to adequately manage, operate, and maintain irrigation schemes and systems; this includes a lack of financing for O&M staff and to support Farmer Water User Committees (FWUC), leading to an overall deterioration of irrigation infrastructure and a reduction in agricultural production levels.⁷

10. **Agriculture is an important pillar in Cambodia's economy.** According to the 2020 Cambodia Agriculture Survey, 2.04 million households, equivalent to 57 percent of households in Cambodia, are involved in agricultural production,⁸ and more than 50 percent of these households depend on subsistence farming. This indicates that despite efforts to move toward export-oriented commercial agriculture, the country's agriculture sector remains focused on subsistence farming. Although the agriculture sector's contribution to national GDP has declined over the last decade from 33.5 percent to just over 22 percent as a result of the country's structural economic transformation, the sector still employs one-third of the country's labor force and provides livelihoods to approximately 80 percent of the population. In 2022, rice production accounted for roughly 59.3 percent of agricultural production.

11. **Irrigation holds potential for enhancing agricultural productivity.** Cambodia has 4.5 million ha of arable land, with 4.0 million ha used for seasonal crops, mainly rice, and 0.5 million ha for permanent crops like rubber and fruit trees. Only one million ha of seasonal crops are irrigated. Expanding irrigation could increase rice yields significantly. Such a shift coupled with the adoption of modern agricultural practices, such as crop diversification, would allow farmers to transition

⁵ Cambodia Public Finance Review: From Spending More to Spending Better, World Bank 2023

⁶ Cambodia Country Climate and Development Report. Washington, D.C: World Bank, 2023

⁷ Public Expenditure Review for water and irrigation, World Bank, 2023

⁸ See https://nis.gov.kh/nis/Agriculture/CAS2020/Statistical%20Release%20CAS%202020_EN.pdf



to high-value crop cultivation with improved returns while boosting climate resilience and improving water use efficiency.

12. **Investments in irrigation infrastructure alone are insufficient to increase agricultural productivity.** In recent years, MOWRAM has been investing in irrigation infrastructure to boost agricultural productivity. Investments, however, have focused on the rehabilitation of infrastructure, and O&M arrangements remain inadequate. Several donor-funded projects have attempted to empower the PDWRAM and FWUCs to take on O&M responsibilities, but limitations in terms of staff capacity and budgetary constraints continue to undermine the quality of irrigation water services to end-users. Consequently, approximately half of the irrigation systems are only partially operational, resulting in erratic irrigation and drainage services that undermine agricultural productivity.

13. **Strengthening women's role in WRM is central to the project.** According to a recent gender analysis of the water sector, women are the principal users of water. Women constitute the majority (52.2 percent) of the active agricultural population, as well as the majority (62 percent) of the members of agricultural cooperatives. Despite women's prominent role in agriculture, their representation in community organizations, such the FWUCs and RBCs, remains low—only 14 percent of overall FWUC members and 22 percent in project areas are women and leadership positions are almost entirely held by men. Multiple barriers limit women's participation in FWUCs and RBCs, including gender norms that discourage women from holding public offices. The majority of FWUCs are chaired by local political and administrative leaders, such as the village/commune chiefs, and women are largely underrepresented in these positions.

C. Proposed Development Objective(s)

Development Objective(s) (From PAD)

14. The project development objective is to build the foundation for improved water security in Cambodia and increase agricultural productivity in selected river basins and to provide immediate and effective response in case of an eligible crisis or emergency.

Key Results

15. The progress toward the PDOs achievement will be assessed through the following indicators:

- (a) Climate-informed River Basin Management Plans for selected basins, prepared and endorsed (number)
(baseline:0; target:3)
- (b) Total number of people benefitting from improved water service delivery (Number) (baseline: 0; target:113700)
- (c) Increased crop productivity (percentage) (baseline:0; target; 20)

D. Project Description

Component 1: Improve Water Resources Planning and Institutions (US\$10 million)

16. **Subcomponent 1.1: Strengthening Water Resources Institutions and National Policies (US\$2 million).** This subcomponent will finance consulting services to support the reforms and capacity building necessary for effective management of water resources under climate change impacts, specifically floods and droughts. It will support: (a) a review of and contributions to key legislation and policy documents, including two sub-decrees on water allocation and licensing and water quality management; (b) the development of dam safety practice guidelines that incorporate climate risk actions for the selected subprojects; and (c) development of a national dam safety framework to uniformly and through a structured approach address O&M procedures for single- and multi-purpose reservoirs in Cambodia.



17. **Subcomponent 1.2: Water Resources Monitoring and Information (US\$3.5 million).** This subcomponent will strengthen government systems for the collection, analysis, and dissemination of data and information required for effective, climate informed WRM, including flood and drought management, at the national and local levels. Activities under this subcomponent include: (a) the purchase, installation, and operation of four hydro-met stations for selected river basins; (b) the purchase, installation, and operation of a sensor-based automated system for water distribution; (c) technical assistance for the establishment and management of databases and updating and calibrating of existing hydraulic/hydrological models using the new database structure within MOWRAM; (d) the purchase of high-performance computing power for running the models; (e) the establishment of a national risk-based monitoring framework for dam safety and operation; and (f) the setting up of transboundary data-sharing arrangements

18. **Subcomponent 1.3: Strengthening of Basin Governance and Planning (US\$4.5 million).** This subcomponent will finance: (a) the preparation and operationalization of RBMPs for the Prek Te and Sre Pok sub-basins within the larger Mekong River basin and one other basin to be selected in conjunction with MOWRAM; (b) the establishment and strengthening of RBCs for these basins; (c) the setting up of a comprehensive and participatory stakeholder engagement process; and (d) strengthening transboundary water cooperation through dialogue and the development of a knowledge exchange program focused on developing a transboundary approach to address climate change.

Component 2: Improve and Sustain Water Service Delivery for Irrigation and Domestic use (US\$110 million)

19. **Subcomponent 2.1: Rehabilitation and Upgrading of Multi-purpose Water Resources Infrastructure (US\$33.50 million).** This subcomponent will enhance resilience against climate change-exacerbated hydrological shocks by improving irrigation, boosting sustainable water supply availability, enhancing flood control, and increasing environmental benefits in the Svay Chrum and Srae Huy sub-basins of 3S and 5P. Activities include: (a) strengthening dyke structures to manage erosion and mitigate potential reservoir failures caused by increased intensity and frequency of extreme events; (b) raising crest levels, broadening the width, and extending the length of existing embankments for supplementary water availability for irrigation. These interventions will enhance water security during periods of drought and/or contribute to flood mitigation; (c) rehabilitating and modernizing discharge gates and spillways to reduce flood overtopping and failure risks due to climate extremes and fitting them with automatic and/or mechanical control systems that lower O&M costs; and (d) supporting the annual O&M of dams and reservoirs during the project duration following standard MOWRAM O&M procedures for dams and reservoirs. This subcomponent will also finance the preparation of feasibility studies, engineering designs and construction activities, including the integration of nature-based solutions for increased flood and drought risk management. Investments may also involve facilities for bulk water offtake for domestic use that will require support to strengthen water resources coordination between MOWRAM and MISTI as well as investments to support the sustainable management of water resources during climate-induced drought.

20. **Subcomponent 2.2: Rehabilitation and Upgrading of Irrigation Infrastructure (US\$71.50 million).** The subcomponent will finance the rehabilitation of existing irrigation systems for the Svay Chrum and Srae Huy sub-basins of the 3S and 5P. This includes: (a) the rehabilitation and upgrading of intake facilities and water regulating structures to enhance the resilience of critical infrastructure to climate risks and for improved water resources management; (b) the modernization of small-scale water storage units for enhanced drought risk management; (c) the rehabilitation of drainage and irrigation canal systems for improved climate change exacerbated flood risk management; and (d) supporting the annual O&M of irrigation systems throughout project implementation following standard MOWRAM O&M procedures for irrigation systems. This subcomponent will also finance the preparation of the feasibility studies, engineering designs and construction activities for selected irrigation systems in flood and drought-prone areas that will be selected in the first year of the project. Modernizing water storage units within the irrigation schemes will further enhance water availability and serve as an additional buffer during drier periods.



21. Subcomponent 2.3: Improving Institutional, Technical, and Financial Capacity of the PDWRAMs and FWUCs to Deliver Better Water Services (US\$5 million). The subcomponent will build institutional and technical capacity of the PDWRAMs and FWUCs of the Svay Chrum and Srae Huy irrigation schemes and will establish financial arrangements to ensure that last-mile irrigation services to farmers are delivered in a timely and efficient manner. Activities will include: (a) establishing new and strengthening existing FWUCs to build capacity in delivering irrigation services; (b) building capacity of PDWRAM staff, including awareness raising on the importance of gender inclusive representation in water resource related decision-making, to support the FWUCs in delivering inclusive irrigation services and to prepare guidelines to address climate-exacerbated floods and droughts; (c) reviewing existing and preparing new gender-inclusive farmer-centered guidelines/manuals on O&M for canals, embankments, headworks, and other water control infrastructure; and (d) providing performance-based funds for setting up mechanisms for the collection of irrigation service fees to cover the costs of O&M. The performance-based funds will ensure the transfer of funds to PDWRAMs and FWUCs based on performance indicators that measure sub-national stakeholder engagement, site supervision, and O&M services. The project will ensure meaningful participation of women and other underrepresented groups in the FWUCs.

Component 3: Support Services to Increase Climate Resilience and Water Use in Irrigated Agriculture (US\$20 million)

22. Subcomponent 3.1: Improved technology adoption (US\$11.00 million). This subcomponent will finance: (a) the piloting of the adoption of CSA/LEA techniques and approaches in demonstration areas and field trials to help farmers reduce their vulnerability to climate risks; (b) the piloting of input-saving technologies related to the efficient use of water, fertilizer, pesticides and other agricultural inputs; (c) supporting the adoption of circular agriculture production models to manage by-products (crop residues) and reduce waste; (d) piloting the adoption of LEA to contribute to lowering emissions from farming; (e) enhancing agro-biodiversity and soil health that include the use of native seed varieties and soil rehabilitation projects; (f) providing training to farmers to enhance farmer skills on system operation and management of Svay Chrum and Srae Huy irrigation schemes; and (g) providing training program to MAFF and PDAFF to assist farmers in adopting modern farming techniques and approaches. It will also cover the expenses for equipment, technological devices, and initial setup costs of demonstration sites to train farmers on all aspects of this sub-component.

23. Subcomponent 3.2: Improved Service Delivery (US\$9.00 million). This subcomponent aims to strengthen the institutional and technical capacity of both public and private stakeholders, such as MAFF, PDAFF, the Royal University of Agriculture (RUA) and other private sector partners, to further develop existing capabilities in CSA and LEA in Cambodia. Key activities include: (a) piloting E-extension and certification to support adoption of CSA and LEA agriculture practices; (b) capacity building for research institutions and technical departments for effective technology transfer in CSA. This involves training programs, workshops, and the provision of resources to facilitate effective technology transfer and the adoption of CSA, including where possible, AWD for rice production systems; (c) enhancing private and public service delivery engagement functions (extension, skills, technology) and infrastructure of both private and public agricultural service providers; and (d) providing support to strengthen farmer groups and agricultural cooperatives to enhance their capabilities in collective purchasing, marketing, and the adoption of sustainable agricultural practices.

Component 4: Project Management, Coordination, and Monitoring and Evaluation (US\$5 million from IDA and US\$5 million Government-funded).

24. Subcomponent 4.1 supports MOWRAM's project management and incremental costs, and Subcomponent 4.2 supports MAFF's project management and incremental costs, including: (a) communication and outreach; (b) specialized individual consultants; (c) equipment; and (d) incremental operating costs.

25. **Component 5: Contingent Emergency Response Component (CERC) (US\$0).** This zero-dollar component will provide immediate response to an eligible crisis or emergency, as needed.



26. The beneficiaries consist of people who will directly benefit from the upgraded infrastructure, the improved water supply services for domestic and agriculture use, the enhanced resilience of livelihoods to climate shocks, and the capacity building under the project. Approximately 113,700 people, 50 percent of whom are female, in the project's area of intervention are expected to directly benefit from the project's investments. Additionally, more than 43,000 people, including small business vendors, fishermen, and other beneficiaries, will indirectly benefit from different aspects of the project. The staff of MOWRAM, MAFF, the PDWRAMs, and PDAFFs will also benefit from the project's capacity building support to improve their O&M performance and overall sector performance in the long run.

27. Women are key beneficiaries. The project will enhance women's water resource management skills and support actions to increase women's representation and participation in water resources management and governance.

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

Summary of Screening of Environmental and Social Risks and Impacts

28. **The overall E&S risk is considered Substantial.** The environmental risk rating is considered **Substantial** mainly due to limited capacity of MOWRAM in managing E&S risks and impacts of projects with other development partners, and MOWRAM's past experience in implementing E&S due diligence tasks related to the Environmental and Social Framework (ESF) and safeguard policies, particularly in managing dam safety risks. Project activities and investments are unlikely to result in irreversible environmental impacts. Risks and impacts are mostly temporary, predictable and mitigation measures are known. The nature and magnitude of potential impacts are limited to:

(a) **dam safety:** based on the available information on the size of the dams and consequence level as well as potential operational issues, an initial assessment indicated that the safety risk of the Svay Chrum dam is considered substantial while the Srae Huy dam is considered as substantial;

(b) **construction related impacts**, which include waste generation, noise and vibration, pollution to receiving water bodies, and occupational health and safety. Potential impacts are temporary, predictable, and reversible. Mitigation measures are readily available and reliable. Environmental risks from construction activities will be mitigated through the implementation of site specific Environmental and Social Management Plans (ESMPs); and

(c) **indirect impacts on critical habitat** qualifying bird species from development of the Svay Chrum reservoir: These birds are vulnerable to an ongoing illegal wildlife trade (IWT) and may be impacted indirectly by construction-related disturbance and net gain measures are therefore applicable. The ESMP for Svay Chrum has been prepared to address construction-related impacts and net gain can be achieved by applying the World Bank Good Practice Note (GPN) on "Reducing Illegal Trade of Biodiversity and Living Natural Resources." A dedicated Biodiversity Action Plan (BAP) will be developed for the reservoir where impacts are expected on the bird species. The Environmental and Social Commitment Plan (ESCP) has included a provision for this measure.

29. The social risk rating is considered **Substantial** due to the social risks/impacts related to: (a) potential land acquisition for rehabilitation and construction of irrigation infrastructure; (b) ensuring equal access to project benefits for



poor, marginalized farmers; (c) impacts on livelihood activities and cultural properties of indigenous peoples; and (d) the labor influx due to potential involvement of outside labor force for construction works. The Sexual Exploration and Abuse/Sexual Harassment (SEA/SH) risk is classified as Moderate as the project is unlikely to involve a large number of foreign workers for civil works, and contracted workers are expected to be hired from local areas. The E&S risks of the project have been assessed and consultations with key stakeholders were carried during project preparation. Nine Environmental and Social Standards (ESS) are assessed as relevant: ESS1, ESS2, ESS3, ESS4, ESS5, ESS6, ESS7, ESS8 and ESS10 in addition to OP7.50 (international water ways). The overall E&S impacts of the project are expected to be positive. The E&S risks/impacts will be managed using the following instruments, an ESMF, Resettlement Policy Framework (RPF), an Indigenous Peoples Planning Framework (IPPF), a Stakeholder Engagement Plan (SEP) including a project Grievance Redress Mechanism (GRM), Labor Management Procedures (LMP) and two site specific ESMPs for the first year of project implementation. In addition, the CERC ESMF will be prepared in Year 1 of project implementation, and to be disclosed, consulted, and adopted by the MOWRAM and MAFF and implement throughout project implementation. The client also prepared an ESCP that outlines all the due diligence requirements and activities to be implemented during the project.

30. Resettlement impacts will require special attention during implementation given the uncertainty of the affected households for undefined interventions. All ESF instruments have been disclosed in-country by MOWRAM and MAFF on their respective websites on March 10, 2024, and on the World Bank's portal on March 27, 2024.

E. Implementation

Institutional and Implementation Arrangements

31. **MOWRAM has established a PMU for the implementation of Components 1 and 2. MAFF has established one PIU for the implementation of Component 3.** For Component 2, a Project Implementation Team in each PDWRAM has been established to implement Subcomponent 2.3. MOWRAM will also serve as the central PMU and will lead implementation of Component 4. The PSC will be responsible for overall project oversight; the PSC will be established jointly by MOWRAM, MAFF, MISTI, MOE, CNMC, and the Ministry of Economy and Finance (MEF). The PSC will be chaired by MOWRAM's Secretary of State. During project implementation, the PMU and PIU will engage relevant technical departments and will gradually hand over their responsibilities to the line departments of the ministries and relevant government agencies. The responsibilities of the PMU and PIU will be specified in the POM. The implementation arrangements for Component 5 (CERC) will be specified in the CERC Operations Manual.

32. **The project will engage a pool of experts to build capacity and support the Government at all levels of implementation.** To build ownership and capacity to implement the project, the project will capitalize on the Government's institutional structure and provide hands-on implementation support throughout the project implementation period. Given low client capacity, the project will engage expert advisors to support the PIUs with technical, procurement, gender, financial management (FM), and E&S safeguards issues. Each advisor will have a counterpart at the PIU (or team of experts) to work with on day-to-day activities (for example, preparing high-quality terms of references (TORs) and assisting with procurement) to build capacity on the job. This arrangement was piloted in other World Bank operations and has proven to yield cumulative advantages over the hiring of individual consultants for each sub-activity, particularly in terms of commitment, coordination, and leveraging the benefits of building a trusted relationship between the PIUs and their advisers.

CONTACT POINT

**World Bank**

Virak Chan
Senior Water Resources Management Specialist

Mudita Chamroeun
Senior Rural Development Specialist

Marie Krumova Chapuis
Water Resources Management Specialist

Borrower/Client/Recipient**Kingdom of Cambodia****Implementing Agencies****Ministry of Agriculture, Forestry, and Fisheries**

H.E. Tina DITH, Minister, 123@456.com
Mr. Chansothy Yin, Deputy Director General , yinchansothy99@gmail.com
H.E Dr. Vanhan Hean, Secretary of State , heanvanhan@gmail.com

Ministry of Water Resources and Meteorology

H.E. Dr. Chantha Oeung , Under Secretary of State, chanthaposat@yahoo.com
Mr. Kosal Chim , Project Manager, chimkosal@yahoo.com
H.E Chetha Thor, Minister, info@mowram.gov.kh

FOR MORE INFORMATION CONTACT

The World Bank
1818 H Street, NW
Washington, D.C. 20433
Telephone: (202) 473-1000
Web: <http://www.worldbank.org/projects>

APPROVAL

Task Team Leader(s):	Virak Chan, Mudita Chamroeun, Marie Krumova Chapuis
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Approved By

Practice Manager/Manager:	
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The World Bank

Cambodia Water Security Improvement Project (P176615)

Country Director:

Maryam Salim

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