STUNG CHINIT RIVER BASIN MANAGEMENT COMMITTEE
KAMPONG THOM PROVINCE
KINGDOM OF CAMBODIA

Strategic Action Plan (SAP)
Stung Chinit River Basin
2020-2025

October 2020

USAID FROM THE AMERICAN PEOPLE

SWP SUSTAINABLE WATER PARTNERSHIP

Kingdom of Cambodia
Nation Religion King

No:.5761.../20

Kampong Thom, December..28.., 2020

Your Excellencies,
Ladies and Gentlemen, who are all members of the SC-RBMC

Subject: ***Implementation of the Strategic Action Plan (2020-2025) of the Stung Chinit River Basin Management Committee (SC-RBMC).***

Ref: ***Letter No 093/19 ... issued on 10/04/2019, the Establishment of the Stung Chinit River Basin Management Committee (SC-RBMC) of Kampong Thom Administration.***

As stated in the Subject and Ref above, I would like to inform Excellencies, Ladies and Gentlemen: In the spirit of attention to promote the protection of natural resources, water resources and biodiversity, which is an important part in contributing to the national economy and sustaining the equitable livelihoods of the people in the Stung Chinit River Basin and related areas in a sustainable manner:

The Secretariat of the Stung Chinit River Basin Management Committee (SC-RBMC) in collaboration with RBMC-Task Force from relevant provincial technical line departments, representatives of the four districts (Sandan, Santouk, Baray and Taing Kork) as well as community representatives in the upstream, middle and downstream of the watershed, has successfully developed a Strategic Action Plan (SAP) for the Stung Chinit River Basin Management Committee. This Strategic Action Plan aims to enhance the effective implementation of Water Security Improvement (WSI) process in the Stung Chinit River Basin and continue to strengthen the implementation of the committee's mission to study and research, monitor and evaluate the economic, social and natural resources potential in accordance with its mandate to facilitate the management, conservation and sustainable development of the Stung Chinit River Basin.

Therefore, Excellencies, Ladies and Gentlemen, who are all members of the Stung Chinit River Basin Management Committee, please kindly accept this Strategic Action Plan (SAP) to implement well and effectively.

Please accept, Excellencies, Ladies and Gentlemen, the assurances of my highest consideration.
Please find attached SC Strategic Action Plan (2020-2025).

Sincerely yours,

H. E. Sok Lou
Governor of Kampong Thom Province
and Chairman of the SC-RBMC

Cc:
- Relevant technical line departments
- District Administration, Taing Kork
- District Administration, Baray
- District Administration, Santouk
- District dministration, Sandan

-For collaboration and implementation –
- Archieve

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I. ACKNOWLEDGEMENTS

The Strategic Action Plan (SAP) was written by the USAID Sustainable Water Partnership (SWP) under the guidance of a Task Force of the Stung Chinit River Basin Management Committee (SC-RBMC). Appointed by the SC-RBMC to work with SWP in the development of the SAP, the Task Force was chaired by H. E. Prim Rotha, Vice Chairman of the SC-RBMC on behalf of H. E. Sok Lou, Governor of Kampong Thom Province and Chairman of the SC-RBMC. The Task Force members included: Mr. Yov Sengkun (Chief Cabinet, Director of Kampong Thom Provincial Hall) Mr. Uong Saroeun (Governor of Baray District), Mr. Toch Sokha (Governor of Santouk District), Mr. Long Kisoeung (Governor of Sandan District), Mr. Sea Longthura (Governor of Taing Kork District), Mr. Ong Bunthoeurn (Deputy Director of PDoE), Mr. Nget Sary (Deputy Director of PDOWRAM), Mr. Peou Vanna (Deputy Director of PDISTI), Mrs. Heav Chanry (Deputy Director of PDWA), Mr. Im Bunthan (Director of PDAFF), Mr. Ly Galy (Chief of Office of Economy-Social of Kampong Thom Provincial Hall), Mr. Sreng Naut (Director of PRD), Mrs. Rom Roeurn (FWUC Representative), Mr. Vong Thin (Agricultural Pollution Representative), Mr. Cheng Sokthea (Upstream Community Representative).

The SC-RBMC gratefully acknowledges the hard work and contributions of the Task Force members in developing this SAP and the continued support and commitment of SC-RBMC members representing provincial technical line departments, district and commune councils, as well as communities. The SC-RBMC appreciates and recognizes the generous USAID funds and the technical support of the SWP team that went into developing the SAP.

II. FOREWORD

The Strategic Action Plan (SAP) for the Stung Chinit River Basin is the result of a process of identification, analysis and prioritization of actions to reduce water security risks and promote conservation for the sustainable development in the basin. The main goal of the SAP is to implement actions that promote the sustainable development in the Stung Chinit River Basin with particular emphasis on water security and protection of biodiversity through the implementation of interventions and established mechanisms for institutional coordination, data management, knowledge sharing and inclusive participation of all actors in the basin. The SAP is a tool for planning and implementing interventions to achieve the objectives for water supply and sanitation, water management for agriculture, water for the environment, and climate resilience. The SAP was developed by the Task Force of the Stung Chinit River Basin Committee (hereafter referred to as “the Committee”) with support from the USAID Sustainable Water Partnership (SWP) project. This SAP is linked to a Strategic Framework developed in 2019 which provides a basin-wide framework that identifies priority issues based on an assessment of water security risks in the Stung Chinit River Basin.

III. INSTITUTIONAL FRAMEWORK

In Cambodia, the Ministry of Water Resources and Meteorology (MOWRAM) is the leading institution overseeing management of water resources. In 2007, the Law on Water Resources Management (“Water Law”) was enacted, providing the foundation for national water

governance. The Water Law also encourages the application of Integrated Water Resources Management (IWRM) to encourage a more holistic approach to sustainable management and development of water and related resources in the country. Article 4 of the Water Law states: "Water and water resources shall be managed and developed based on an IWRM approach. The IWRM shall take into account (1) all aspects of water resources, (2) linkages between water resources and other components of the natural environment, and (3) requirements for an effective and sustainable water use for human beings, environment and other sectors. The implementation of the IWRM shall be carried out jointly and within a cooperation framework of all relevant agencies". Subsequent water-related articles and sub-decrees address rapid national development and regulating water use rights (Article 20), groundwater protection and licensing mechanisms (Article 20 and 21), and flood mitigation plans (Article 24). Since its adoption, MOWRAM has also issues two sub-decrees to support the Water Law: (1) farmer user community establishment (2008) and (2) river basin management (2015).[1]

The 2015 Sub-Decree No. 98 on River Basin Management (RBM) established legislation to regulate the management, conservation and development of river basins, in an effective and sustainable manner as stated in the Water Law. It states that: "The goal of this Sub-Decree is to set out the procedures of preparation and implement planning for management, conservation, and development of river basins and sub river basins, watersheds, groundwater and aquifers... This Sub-Decree shall cover all river basins in the Kingdom of Cambodia and international cooperation with neighbor countries in using water resource in every sector". This new regulation also required the establishment of a National River Basin Committee, Sub-National River Basin Committees and corresponding river basin plans.

In accordance with the Water Law, the RBM Sub-Decree, and other water related legislation, and in the spirit of promoting the principles of IWRM, SWP facilitated the establishment a river basin management committee for the Stung Chinit River Basin on April 10, 2019, under the Decision on the Establishment of Stung Chinit River Basin Management Committee signed by the Governor of Kampong Thom Province. Working within the established roles and responsibilities of the National and Provincial RBMC, SWP Cambodia is supporting the operationalization of the Stung Chinit River Basin Management Committee and its development of a Strategic Action Plan (SAP).

IV. OVERVIEW OF THE STUNG CHINIT RIVER BASIN

The Stung Chinit ("stung" means river in Khmer) originates from the Prey Lang Wildlife Sanctuary, one of the largest remaining lowland evergreen forests in Southeast Asia and flows for 240 km before discharging into the Tonle Sap Lake (Figure 1), the world's largest freshwater

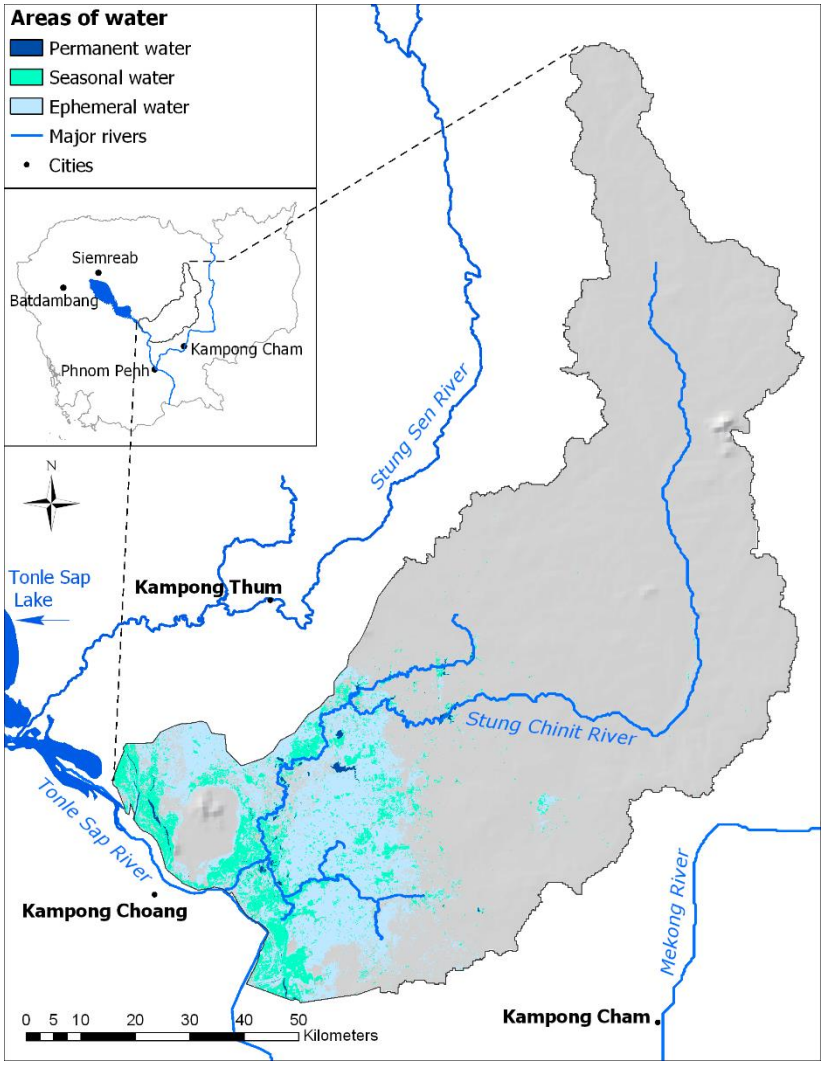
[1] According to the RGC legal system, for a proposed regulation to become a sub-decree it must be adopted by the Prime Minister and countersigned by the interested Minister. When the proposed regulation does not receive the endorsement of the Prime Minister and is only adopted by a Minister, it is called a "prakas". Prakas for water licensing and national drinking water quality standards were issued in July 2015 (ADB, 2017). In total, the Water Law has two sub-decrees, mentioned in the text, and two prakas, mentioned above. The documents are only available in Khmer.

fishery. The Stung Taing Krasang is a tributary of the Stung Chinit before it flows into the Tonle Sap River.

The Stung Chinit River Basin covers an area of 8,236 km^2 across six provinces, with the majority falling within Kampong Thom Province, followed by Preah Vihear, Stung Treng, Kratie, Kampong Cham, and Kampong Chhnang. The highest point in the basin is at 277 meters above sea level and its lowest point is where it merges with the Tonle Sap at around five to six meters above sea level (USAID-SWP, 2020).

The Stung Chinit has a maximum flow 601 m^3/s with a standard deviation of 80. In general, river flow starts to increase from mid-May and then decreases at the end of October when peaks flows reach up to 175 m^3/s (TSA & ADB, 2019). The average annual rainfall in the Stung Chinit River Basin is between 1,590 mm – 1,650 mm.

Figure 1: Map of the Stung Chinit River Basin



The land cover is 56 percent cropland and plantations, 31 percent forest, and the remainder is urban development and surface water (USAID-SWP, 2020). Approximately 80-90 percent of cropland in the Stung Chinit River Basin is rice, with residents cultivating both upland rice and patty rice (occurs closer to the rivers and major canals).

With a population of 562,840 (TSA & ADB, 2019) and growing by 2.2 percent annually, water security is of key importance for the people living in the Stung Chinit River Basin. The main source of income for people in the basin is from agriculture, which includes rice farming, short (e.g. cassava) and long-term cash crops (e.g. rubber and cashew nuts), and fishing and livestock (ADB, 2014).

V. METHODOLOGY

The SAP was facilitated by SWP through the Committee's Task Force and in consultation with members of the Secretariat, which handles the daily and strategic operations of the Committee. Figure 2 shows the SAP development process that resulted in priority actions to be implemented within five years. The Task Force held three workshops during the development of the SAP. The first workshop was held in June 2020 to discuss the objectives and draft priority actions; the second workshop was held in August 2020 to discuss the final outline, objectives and priority actions. The first complete draft of the SAP will be presented to the Task Force during the third workshop in October 2020 for final review and then presented to the Committee Chair for approval.

Figure 2: Methodology for the SAP Development

WATER SECURITY ASSESSMENT

The Water Security Assessment included information collected from a basin-wide household water resources management Knowledge, Attitude, and Practices (KAP) survey, basic water balance study, two water quality surveys (wet and dry season), biodiversity evaluation, irrigation infrastructure and management review, water institutional analysis, and results from SEI's Water Evaluation and Planning (WEAP) model. The Water Security Assessment presented the current and future state of water resources and vulnerabilities to water resources management in the basin.

IDENTIFICATION OF PRIORITY WATER SECURITY RISKS

The Strategic Framework, developed by the Committee, identified seven priority water security risks in the basin: 1) reservoir and water infrastructure operations and maintenance; 2) sustainable agricultural practices, 3) water quality, 4) sanitation, 5) land-use change, 6) fisheries and downstream biodiversity conservation, and 7) droughts and flood forecasting. In addition,

the Framework identified four cross-cutting themes: 1) water governance, 2) knowledge creation, 3) data management, and 4) gender equality and social inclusion (GESI).

PRIORITY WATER SECURITY RISKS

1-Reservoir and water infrastructure operations and maintenance: The Stung Chinit Irrigation System consists of twelve irrigation schemes; five are located in Santouk district and seven are in Baray district. In total, the Stung Chinit Irrigation System has the potential to irrigate a total command area of 20,000 ha; however, a review of irrigation infrastructure found that only the Stung Chinit Choeng irrigation system could be considered a completed irrigation system, with all functioning infrastructure including tertiary canals. Two major reservoirs that supply water to the Stung Chinit Irrigation System: the Stung Chinit Reservoir, which supplies eight of the irrigation schemes, and the Taing Krasaing reservoir, which supplies two. The two reservoirs and the 7 km canal that connects them are managed by the Kampong Thom Provincial Department of Water Resources and Meteorology (PDOWRAM) and the twelve irrigation schemes are managed by Farmer Water User Committees (FWUCs). Ten FWUCs carry out the operations and maintenances of the twelve irrigation schemes that make up the Stung Chinit Irrigation System.

2-Sustainable agricultural practices: Across the Stung Chinit River Basin, rice is the most popular crop. In the Stung Chinit Irrigation System, rice productivity and planting schedules vary scheme to scheme. Five irrigation schemes have only one production cycle per year (wet season rice), four schemes have two production cycles per year (early wet season rice and normal wet season rice), two schemes have two production season (receding rice and dry season rice), and one irrigation scheme has two to three production cycles. Besides rice, cassava and watermelon are the two most popular irrigated crops.

Farmers within the basin have gained increasing access to modern varieties of rice seeds, machinery, fertilizer, and chemical pesticides; however, ineffective crop and pest management strategies have not led to higher yields. Misuse and overuse of agricultural inputs is rampant across the basin and shows a general lack of knowledge by farmers about sustainable approaches to agriculture.

3-Water quality: Both surface and groundwater resources are increasingly vulnerable to agrochemical pollution from intensifying agriculture in the basin. Stakeholders throughout the basin have voiced their concern about agrochemical contaminants (pesticides and fertilizers). Continued deforestation and degradation of upstream forested areas are causing erosion and sedimentation of surface water. Naturally occurring arsenic is present in groundwater across the basin and not regularly monitored. Along with surface water, groundwater remains very susceptible to the widespread practice of unsafe management of human feces. According to the results of water quality testing, microbial water contamination is a serious issue in both groundwater and surface water, suggesting that wastewater management is not being practiced.

4-Sanitation: Well managed sanitation is essential to the wellbeing of all people. While most households have their own latrine, 21 percent of respondents reported that they practice open defecation. Poor sanitation and hygiene behavior as well as unimproved and aging infrastructure increase the population's exposure to enteric pathogens.

5-Land use change: Cambodia has one of the highest deforestation rates in the world, which negatively affects hydrology (i.e. increased erosion, more extreme flooding and drought events, and higher water turbidity) as well as contributing to general loss of wildlife and wildlife habitat (deforestation) including declining fish stocks. Deforestation can have many impacts in the lower part of the basin, including increased risk of floods, increased sediment in reservoirs which can result in lower reservoir capacity, and larger contributions to decreasing the landscape's capacity to sequester carbon. Significant land-use change, like converted forest areas into rubber plantations and other crops purposes, affects water quality and availability in the basin.

6-Fishery and downstream biodiversity conservation: The Royal Government of Cambodia recognizes that Cambodian inland and marine fisheries resources show clear indications of having reached their limits of sustainable use. Downstream of the Stung Chinit River Basin, the Tonle Sap Lake, arguably the world's most productive inland fishery, provides over 75 percent of Cambodia's annual inland fish catch and 60 percent of the nation's protein intake. Weak land use and fisheries management has led to conflicts between stakeholders and institutions, which in turn has led to the depletion in quantity and biodiversity of Tonle Sap fish resources. This has had profound social, economic and ecological impacts on over three million people who depend on the lake for their livelihoods and well-being. Human actions are impacting the environment and ecosystem; the direction actions of over- and destructive fishing practices, loss of stream connectivity, potential hydropower development, degradation of flooded forest-fish habitats and pollution are being exacerbated by the negative impacts of climate change and a steadily increasing population.

7-Drought and floods forecasting: The effects of climate change are already being felt in the Stung Chinit River Basin. Dry season flows of the Stung Chinit and its tributaries are declining, flows during the rainy season are increasing, rising temperatures are corresponding with increases in evapotranspiration, and there are more frequent and intense extreme events, such as the 2015 drought followed by the 2016 floods. Too much or too little water can destroy crops, animals, homes and ecosystems, putting many people's livelihoods and wellbeing at risk when these events occur. To ensure the safety and prosperity of the basin, it is important to address these extreme events and be prepared, should they occur.

CROSS-CUTTING THEMES

1-Water Governance: Continued strengthening of water governance in the transition towards decentralization is crucial. The creation of the new River Basin Management Committee is an important step to improved water governance in the basin. The Committee has the potential to

be a primary mechanism for coordination among water related government agencies and civil society organizations at the provincial district and local levels in the Stung Chinit River Basin.

2-Knowledge Creation: It is important for all water users in the basin – water resources managers, farmers, fishermen alike – to have a good understanding of how their actions and decisions affect the basin. The aim is to build the awareness and understanding on how to mitigate, avoid, and adapt from shocks and stressors as well as to future potential water security risks within their basin.

3-Data Management: There is insufficient water quantity and quality data and monitoring in the Stung Chinit River Basin. There is only one stream flow gauge and no water quality monitoring gauges located in the Stung Chinit. It also lacks a mechanism or platform where existing data collected by various governmental and civil society institutions could be shared. Continuously collecting and sharing data on the state of the basin is essential to understand the impact of various decisions and adjust based on observations of effectiveness. Additionally, the better the basin is understood, the more confident water resources managers can be in their decision making and predicting the impacts of those decisions. Data sharing, evidence-based investigations, and evaluations can contribute into Knowledge Creation as well.

4-Gender Equality and Social Inclusion (GESI): The GESI approach is widely accepted among international, national, and local partners including the government, NGOs, and community natural resources management groups and it seeks to change institutional and structural forms of discrimination in addition to improving the well-being and livelihoods of marginalized groups. Continuation to promote gender mainstreaming in all water and water related planning processes will help to ensure equal participation of women and men in the decision-making processes.

OBJECTIVES

The Committee established the long-term general objective for the SAP: To promote the sustainable development in the Stung Chinit River Basin with particular emphasis on water security and protection of biodiversity through the implementation of interventions and established mechanisms for institutional coordination, data management, knowledge sharing and inclusive participation of all actors in the basin.

The SAP long-term objective is supported by five objectives (see Figure 3) describing outcomes of water for heath and sanitation, water for agriculture, water for the environment, water for climate resilience and basin Committee institutions. These overall objectives are supported by operational objectives for each strategic action developed for this SAP as detailed in the Priority Actions section of this document and Appendices A and B. The objectives of this SAP support the Theory of Change hypothesis that if basin stakeholders adopt and implement actions to reduce water security risks, while the Committee, districts and communes capacity is built, the Stung Chinit River Basin will be more resilient to water security risks and achieve sustainable development.

Figure 3: Strategic Action Plan Objectives

PRIORITY ACTIONS

Given the above objectives, the Committee Task Force and the SWP team collaborated on developing priority actions for the SAP. During the subsequent Task Force meetings, members reviewed existing priority actions and drafted new ones. In between meetings, the SWP team contributed their technical expertise and relevant provincial line department Committee members were consulted. The resulting actions are shown in Table 1 and sub-actions in Table 2 with associated costs.

Table 1: Summary of Cost per Objective and Action

Objectives and Actions	Cost (USD)
1. Water for Health and Sanitation Objective	
1.1 Improve access to WASH and water supply service delivery	608,000
1.2 Improve sanitation and waste management	428,000
Total Objective 1	1,036,000
2. Water for Agriculture Objective	
2.1 Improve Reservoir and Water Infrastructure and Operations and Maintenance for the Stung Chinit Irrigation System	1,960,000
2.2 Promote agricultural best management practices and safe use of agrochemicals	852,000
Total Objective 2	2,812,000
3. Water for Environment Objective	
3.1 Promote Forest Conservation and Restoration in Upstream Areas	168,000
3.2 Promote Downstream Fisheries Development and Conservation	239,000
Total Objective 3	407,000
4. Water for Climate Resilience Objective	
4.1 Strengthen local capacity for disaster risk management (DRM)	670,000
4.2 Strengthen preparedness, response and recovery from droughts and floods	436,000
Total Objective 4	1,106,000
5. Institutional Objective	
5.1 Strengthen the capacity of the SC-RBMC Secretariat and member institutions	456,000
5.2 Improve data collections systems	425,000
5.3 Develop a communications and knowledge management system	172,000
5.4 Promote gender and social inclusion (GESI)	76,000
Total Objective 5	1,129,000
Total SAP	6,490,000

Table 2: Summary of Cost per Objective and Sub-Actions

1. Water for Health and Sanitation Objective		
Actions	**Institutional Focal Point(s)**	**Cost (USD)**
1.1 Improve access to WASH and water supply service delivery		
1.1.1 Strengthen service delivery of private water operators (PWOs)	PDISTI	13,000
1.1.2 Improve WASH in schools	PDoEYS	184,000
1.1.3 Improve WASH in health care facilities (HCFs)	PDoH	193,000
1.1.4 Improve community water supply and service	PDRD	218,000

1. Water for Health and Sanitation Objective		
Actions	**Institutional Focal Point(s)**	**Cost (USD)**
Subtotal		567,000
1.2 Improve sanitation and waste management		
1.2.1 Improve access to sanitation	PDRD	302,000
1.2.2 Improve village solid waste management	PDoE/Commune	126,000
Subtotal		428,000
Total Objective 1		1,036,000

2. Water for Agriculture Objective		
Actions	**Focal Point**	**Cost (USD)**
2.1 Improve Reservoir and Water Infrastructure and Operations and Maintenance for the Stung Chinit Irrigation System		
2.1.1 Improve FWUC Administration	PDWRAM/MOWRAM	41,000
2.1.2 Strengthen FWUC technical and financial sustainability	PDWRAM/MOWRAM	165,000
2.1.3 Enhance irrigation infrastructure	PDWRAM/MOWRAM	1,547,000
2.1.4 Improve water distribution	PDWRAM	207,000
Subtotal		1,960,000
2.2 Promote agricultural best management practices and safe use of agrochemicals		
2.2.1 Improve behaviors towards the use of agrochemicals	PDAFF	387,000
2.2.2 Improve/establish agricultural extensions	PDAFF	65,000
2.2.3 Improve water management practices in agriculture	PDAFF	289,000
2.2.4 Support rain-fed farming dependent population	PDAFF	111,000
Subtotal		852,000
Total Objective 2		2,812,000

3. Water for Environment Objective		
Actions	**Focal Point**	**Cost (USD)**
3.1 Promote Forest Conservation and Restoration in Upstream Areas		
3.1.1 Strengthen Community Forestry (CFs) groups and Community Protected Areas (CPAs)	PDAFF/PDoE	27,000
3.1.2 Promote reforestation for aquifer recharge and riparian protection	PDAFF/PDoE	27,000
3.1.3 Create awareness and establish mechanisms for forest conservation	FA/RECOFTC	54,000
3.1.4 Increase accountability of extractive land use	PDoE/RECOFTC	60,000
Subtotal		168,000
3.2 Promote Downstream Fisheries Development and Conservation		
3.2.1 Strengthen community fisheries (CFis)	PDAFF	75,000
3.2.2 Promote development of community fish refuges (CFRs)	PDAFF	30,000
3.2.3 Improve conservation of downstream flooded forests	TSA/PDAFF	134,000
Subtotal		239,000
Total Objective 3		407,000

4. Water for Climate Resilience Objective		
Actions	**Focal Point**	**Cost (USD)**
4.1 Strengthen local capacity for Disaster Risk Management (DRM)		
4.1.1 Strengthen district/commune capacity to develop DRM plans	PCDM/DCDM	409,000

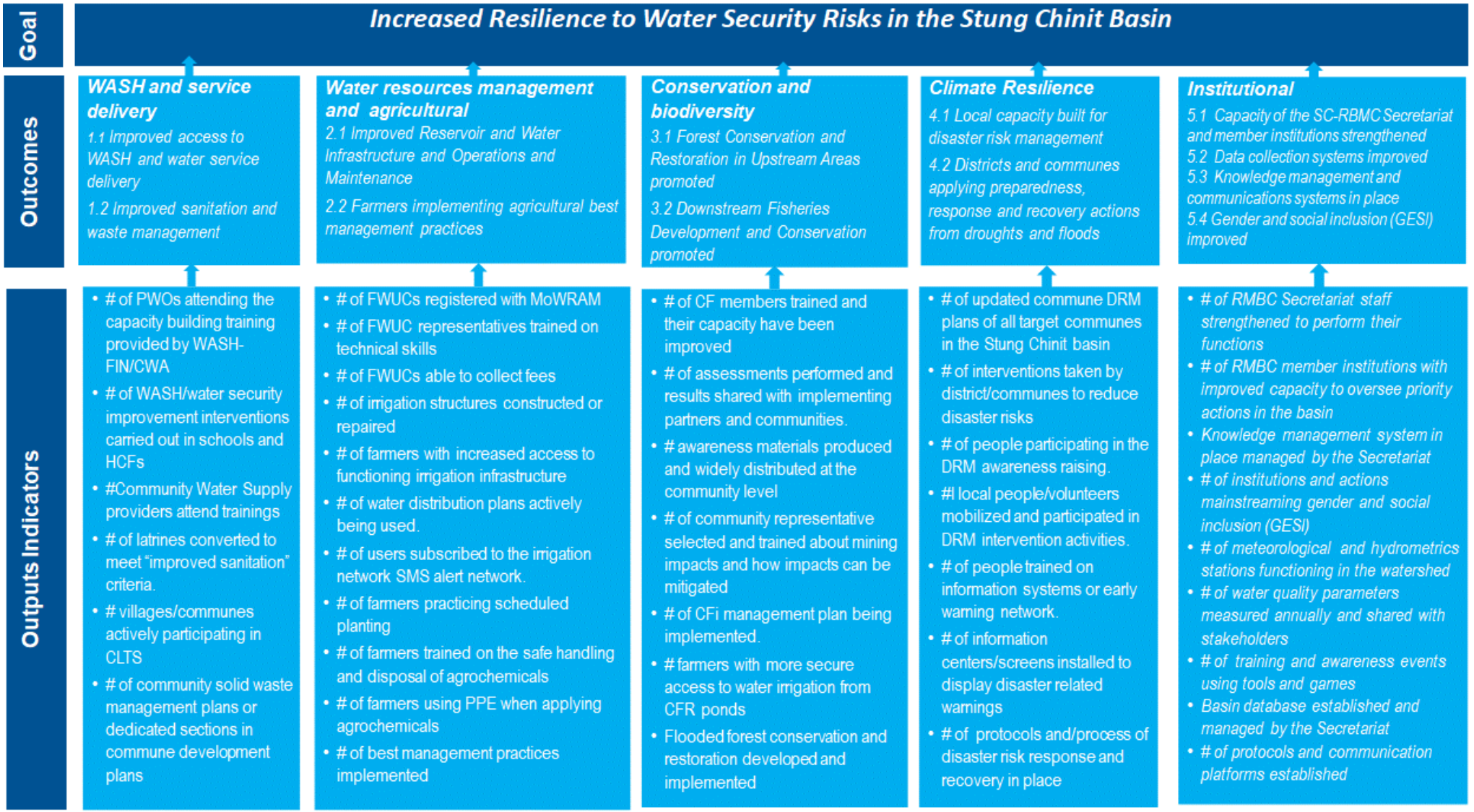
4. Water for Climate Resilience Objective		
Actions	**Focal Point**	**Cost (USD)**
4.1.2 Identify and conduct mitigation actions to reduce disaster risks	PCDM/DCDM	261,000
Subtotal		670,000
4.2 Strengthen preparedness, response and recovery from droughts and floods		
4.2.1 Improve information systems and early warning communications	PCDM/DCDM	251,000
4.2.2 Strengthen disaster response and recovery	PCDM/DCDM	185,000
Subtotal		436,000
Total Objective 4		1,106,000

5. Institutional Objective		
Actions	**Focal Point**	**Cost (USD)**
5.1 Strengthen the capacity of the SC-RBMC Secretariat and member institutions		
5.1.1 Staff and Operationalize the SC-RMBC	SC-RBMC/SWP	214,000
5.1.2 Develop capacity of SC-RMBC member institutions	SC-RBMC/SWP	242,000
Subtotal		456,000
5.2 Improve data collections systems		
5.2.1 Improve meteorological and hydrometric monitoring	MOWRAM	255,000
5.2.2 Develop water quality monitoring program	SWP/MOWRAM	170,000
Subtotal		425,000
5.3 Develop a communications and knowledge management system		
5.3.1 Develop a database for the basin	TSA/PDoE	101,000
5.3.2 Increase communications	SC-RMBC/PDWRAM	71,000
Subtotal		172,000
5.4 Promote gender and social inclusion (GESI)		
5.4.1 Mainstream GESI throughout RMBC institutions	SC-RMBC/PDWA	76,000
Subtotal		76,000
Total Objective 5		1,129,000

VI. MONITORING AND EVALUATION

Monitoring and evaluation (M&E) of SAP actions and activities will be part of the RMBC Secretariat functions. The M&E specialist at the Secretariat should develop a M&E plan for each project/activity with annual indicators to measure progress toward achieving specifics SAP objectives on each activity. Monitoring performance and evaluating progress and impact will enable the Committee to identify and scale up interventions that work, as well as to learn from activities that do not achieve the expected outcome. Main monitoring and evaluation tasks include: 1) baseline measurements, 2) data collection and entry into the RMBC Secretariat's information system, 3) implementation of the data quality assessments, 4) evaluation and data learning to inform project implementation by conducting annual evaluations during the period of the SAP, 5) capacity building on M&E, and 6) dissemination of M&E data and lessons learned to project stakeholders. Figure 4 shows main illustrative indicators under each objective. Detailed actions profiles in Appendix B show the indicators to be considered for each action.

Figure 4: SAP Illustrative Performance Indicators



VII. POTENTIAL FUNDING SOURCES

Potential funding sources for the proposed priority water security actions are numerous. To simplify the diverse funding environment within which the SAP will be implemented, two categories of funding including existing governmental funding and non-governmental/donors funding are described below.

GOVERNMENTAL FUNDING

There are various funding sources available for SAP priority activities at the provincial, district, and commune levels. With the support of its members, the SAP's activities can be submitted to the appropriate district and commune councils and provincial committees, so they are eligible for inclusion in the provincial, district and commune investment plans with funding through the provincial, district and commune investment funds. These provincial, district, and communal development plans are becoming increasingly important to the decentralization of the country, as shown by the Ministry of Interior increasing the annual national budget allocation for each commune to $70,000 in 2020 (excluding administrative costs), $85,000 in 2021, $100,000 in 2022, and $110,000 in 2023. The ultimate goal is to have SAP activities presented/considered at the annual District Integration Workshops.

Another potential source of funding is directly from the provincial line agencies and national ministries, shown in Table 3. Many SAP activities reflect current agency priorities and even more that could benefit from multiagency financing while fostering cross-agency collaboration. Table 3 also identifies numerous intergovernmental committees and agencies that could provide financial support to the Committee and some of the water security actions.

Table 3: Summary of Current Governmental Funding Sources

Current Governmental Funding			
Objectives	**Provincial Line Agencies**	**National Ministries**	**Cross-Ministry Groups**
1.Water for Health and Sanitation	• PDRD • PDISTI • PDoH	• MRD • MISTI • MoH	• National Council for Sustainable Development (NCSD)
2.Water for Agriculture	• PDAFF	• MAFF	
3.Water for the Environment	• PDWRAM • PDoE	• MOWRAM • MoE	• Tonle Sap Authority (TSA)
4.Water for Climate Resilience	• PDWRAM • PDoE	• MOWRAM • MoE	• Department of Climate Change (DCC) of the General Secretariat of the NCSD • Cambodia Climate Change Alliance (CCCA) • Provincial Committee on Disaster Management (PCDM)
5. Institutional	• PDWRAM • PDWA	• MOWRAM • MoWA	• TSA

Current Governmental Funding			
Objectives	**Provincial Line Agencies**	**National Ministries**	**Cross-Ministry Groups**
			• National River Basin Management Committee

DONOR FUNDING

Table 4 breaks down available funding sources (including national and international donors, non-profit foundations, and other contributing institutions with active investments) by their presence in the province, nation, and region. The table also categorizes the funding sources according to the SAP's five objectives.

Table 4: Summary of Current Water Related Funding

Current Donor Funding			
Objectives	**Kampong Thom Province**	**National**	**Regional**
1.Water for Health and Sanitation	• USAID/RFF II • USAID/WASH-Fin • Japan International Cooperation Agency (JICA) • DFAT/Water for Women • Global Sanitation Fund (GSF)/Water Supply and Sanitation Collaborative Council (WSSCC) • Muslim Aid Cambodia (MAC) • United Mission for Relief & Development (URM) • Watering Minds • USAID & Stone Family Foundation/Cambodia Rural Sanitation DIB • OXFAM • GEF	• USAID/WASH-Fin • USAID/RFF II • JICA • GSF/WSSCC • ADB • Cambodia Rural Sanitation DIB • Stone Family Foundation • UNICEF • DFAT • H&M Foundation • Beck Family Foundation • Gates Foundation • AFD & EU	• World Bank • ADB • UNICEF
2.Water for Agriculture	• ChinaAid • USAID/SWP • CARITAS • GIZ • ADB • AFD • ActionAid Cambodia • OXFAM • Climate Investment Fund (CIF)	• USAID • World Bank • AFD • JICA • DFAT • UNDP Cambodia • DanChurchAid • ADB • AFD • CGIAR • ActionAid Cambodia • OXFAM	• ADB • Word Bank

Current Donor Funding			
Objectives	**Kampong Thom Province**	**National**	**Regional**
3.Water for the Environment	• USAID/GPL • USAID/SWP • USAID/Cambodia Green Future • Conservation International • FAO • OXFAM • GIZ	• USAID/RFF II • USAID • JICA • DFAT • OXFAM • UNEP • UNDP • World Bank	• Critical Ecosystem Partnership Fund (CEPF) • UNDP • Global Greengrants Fund
4.Water for Climate Resilience	• USAID/GPL • Cambodian Red Cross • FAO • UNDP • CARITAS • GEF	• USAID • GCF • World Bank • UNDP • GEF • FAO • OXFAM • CARITAS • Cambodian Red Cross • CIF • Swiss Agency for Development and Cooperation (SDC)	• USAID/SERVIR • UNDP • SIDA • World Bank • The Asia Foundation • ADB

VIII. ACRONYMS

ADB	Asia Development Bank
ADRA	Adventist Development and Relief Agency
AFD (local)	Action for Development
AFD	Agence Française de Développement
ANKO	Akphivat Neary Khmer Organization
BCC	Behavior Change Communication
CCDM	Commune Committee for Disaster Management
CF	Community Forestry
CFi	Community Fishery
CFR	Community Fish Refugee
CGF	USAID Cambodia Green Future
CIF	Climate Investment Fund
CIF	Commune Investment Fund
CLTS	Community Led Total Sanitation
COWS	Cambodia Organization Women Support
CPA	Community Protected Area
CSA	Climate Smart Agriculture
CWA	Cambodian Water Association
DCDM	District Committee for Disaster Management
DIB	Development Impact Bond
DIF	District Investment Fund
DRM	Disaster Risk Management
DRR	Disaster Risk Reduction
EIA	Environmental Impact Assessment
EWB	Engineer Without Border
FA	Forestry Administration
FACT	Fisheries Action Coalition Team
FiA	Fishery Administration
FWN	Farmer and Water Net
FWUC	Farmer Water User Committee
GAP	Good Agricultural Practices
GCF	Green Climate Fund
GPL	USAID Greening Prey Lang Project
HCF	Health Care Facility
IPM	Integrated Pest Management
ISC	Irrigation Service Center
ITC	Institute of Technology Cambodia
IWRM	Integrated Water Resources Management
JICA	Japan International Cooperation Agency
M&E	Monitoring and Evaluation
MDAFF	Ministry of Agriculture, Forestry, and Fisheries
MISTI	Ministry of Industry, Science, Technology and Innovation

MoE	Ministry of Environment
MoEYS	Ministry of Education, Youth, and Sport
MoH	Ministry of Health
MoWA	Ministry of Women Affair
MOWRAM	Ministry of Water Resources and Meteorology
MRD	Ministry of Rural Development
NCDM	National Committee for Disaster Management
ODF	Open Defecation Free
PCDM	Provincial Committee for Disaster Management
PDAFF	Provincial Department of Agriculture, Forestry, and Fisheries
PDoE	Provincial Department of Environment
PDoEYS	Provincial Department of Education, Youth, and Sport
PDoH	Provincial Department of Health
PDISTI	Provincial Department of Industry, Science, Technology and Innovation
PDRD	Provincial Department of Rural Development
PDWRAM	Provincial Department of Water Resource and Meteorology
PDWA	Provincial Department of Women Affair
PPE	Personal Protection Equipment
PWO	Private Water Operator
RBMC	River Basin Management Committee
RECOFTC	Regional Community Forestry Training Center
RFF II	USAID Rice Field Fisheries Phase II
SC-RBMC	Stung Chinit River Basin Management Committee
SDC	Swiss Agency for Development and Cooperation
SIDA	Swedish International Development Cooperation
SRP	Sustainable Rice Platform
SWP	USAID Sustainable Water Partnership
TCO	Trailblazer Cambodia Organisation
ToT	Training of Trainer
TSA	Tonle Sap Authority
WASH	Water, Sanitation, and Hygiene
WASH-FIN	USAID Water Sanitation and Hygiene Finance Project
WESTool	Watershed Ecosystem Services Tool
WCS	Wildlife Conservation Society
WVC	World Vision Cambodia
USAID	United States Agency for International Development

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APPENDIX A – SAP DETAILED ACTIVITIES

	1. Water Supply and Sanitation Objective		
Actions	**Duration**	**Relevant Actors**	**Cost (USD)**
1.1 Improve access to WASH and water supply service delivery			
1.1.1 Strengthen service delivery of private water operators (PWOs)			
Conduct needs assessment and train Private Water Operators (PWOs) in the Stung Chinit River Basin to improve their services.*	8 months	SWP, WASH-FIN, and PDISTI	5,000
Establish and operationalize PWO Working Group under the SC-RBMC.**	60 months	SWP, PDISTI, and SC-RBMC	8,000
1.1.2 Improve WASH in schools			
Assess WASH needs in schools across the basin (e.g. sufficient on-site water storage, alternative source of power, on-site latrines, etc.).	6 months	WVC, PDoEYS, and PDRD	8,000
Improve WASH services in critical schools by rehabilitating or constructing WASH infrastructure.	54 months	PDoEYS	138,000
Conduct WASH Behavior Change Communication (BCC) in schools	60 months	PDRD & PDoEYS	5,000
Develop and disseminate COVID-19 handwashing awareness raising materials for display in schools in the basin.	14 months	PDoH & PDoEYS	23,000
Construct 13 latrines per year at the selected target schools in the province.*	60 months	PDoEYS	10,000
1.1.3 Improve WASH in health care facilities (HCFs)			
Assess WASH needs in HCFs across the basin (e.g. sufficient on-site water storage, alternative source of power, on-site latrines, etc.).	3 months	WaterAid & PDoH	9,000
Improve WASH services in critical HCFs by rehabilitating or constructing WASH infrastructure.	57 months	PDoH	158,000
Conduct WASH BCC ToT with health care staff.	60 months	PDoH	4,000
Develop and disseminate COVID-19 handwashing awareness raising materials for display in HCFs in the basin.	14 months	PDoH	22,000
1.1.4 Improve Community Water Supply and Service			
Develop a community water supply provider/water user association sustainability training program to improve community water resources management and hold biannual sessions.	60 months	PDRD & PDISTI	44,000
Conduct baseline study of well functionality in the basin and annual updates.	60 months	PDRD & PDISTI	31,000
Promote rainwater harvesting to increase household water storage capacity and decrease water stress during the dry season.	60 months	AFD, PDWRAM, and PDRD	108,000
Promote MRD's new WASH approach, 3 Behaviors in 1 Hour (3B1H), in target communes.*	12 months	PDRD	35,000
1.2 Improve sanitation and waste management			
1.2.1 Improve access to sanitation			
Implement Community Led Total Sanitation (CLTS) to establish Open Defecation Free (ODF) certified villages/communes.	60 months	WVC, Commune Authorities, Provincial	164,000

	1. Water Supply and Sanitation Objective		
Actions	**Duration**	**Relevant Actors**	**Cost (USD)**
		Technical WASH Working Group, and PDRD	
Subsidize latrines for ID poor 1 and 2 households.**	60 months	PDRD & IDE Cambodia	57,000
Conduct sanitation marketing related activities.**	12 months	IDE Cambodia, ADRA, & PDRD	19,000
Provide subsidized sanitation materials to poor households in selected target communes.**	24 months	ADB & PDRD	22,000
Pilot new latrine technologies in the basin.	12 months	IDE Cambodia & EWB	26,000
Develop and put in place protocols regarding the location of pit latrines to prevent human contamination of groundwater.	12 months	PDRD, IDE Cambodia, and the Provincial Technical WASH Working Group	14,000
1.2.2 Improve village solid waste management			
Research recycling potential for the basin and present findings.	5 months	Communes & PDoE	12,000
Establish a model dump site and a complementary solid waste management plan for the associated commune(s).	10 months	Communes & PDoE	11,000
Community awareness raising and utilizing the established dump site.	50 months	Communes & PDoE	45,000
Establish the solid waste collector at the commune level and support its operation.	54 months	Communes & PDoE	39,000
Organize monthly village clean up events in the selected target villages.	60 months	Communes & Districts	19,000

* implementation of these activities is underway and all funding has been secured.
** implementation of activity has started with partial funding secured.

2. Water for Agriculture Objective			
Actions	**Duration**	**Relevant Actors**	**Cost (USD)**
2.1 Improve Reservoir and Water Infrastructure and Operations and Maintenance for the Stung Chinit Irrigation System			
2.1.1 Improve Farmer Water User Committee (FWUC) Administration			
Develop a checklist for FWUC management and support FWUC registration.*	6 months	SWP, PDWRAM, and ISC	9,000
Compile list of all members for each FWUC and their roles and responsibilities.	8 months	PDWRAM & ISC	7,000
Support democratic FWUC elections.	60 months	PDWRAM & ISC	20,000
MOWRAM building capacity of Tang Krasang FWUC.*	12 months	MOWRAM & ADB	5,000
2.1.2 Strengthening FWUC technical and financial sustainability			
Complete drone mapping for 11 remaining irrigation schemes and farmer paddy registration to make all 12 FWUCs eligible to collect Irrigation Service Contributions (FWUC fees).	60 months	PDWRAM & ISC	63,000
Irrigation scheme maintenance training for elected FWUC officials and technical officers.	24 months	PDWRAM & ISC	53,000

2. *Water for Agriculture Objective*			
Actions	**Duration**	**Relevant Actors**	**Cost (USD)**
FWUC financial management training targeting FWUC finance managers.	60 months	PDWRAM & ISC	49,000
2.1.3 Enhance irrigation infrastructure			
Validate irrigation infrastructure mapping and inventory for all FWUCs and compile into a database of FWUCs.*	3 months	SWP, ADB, and PDWRAM	6,000
Assess and prioritize irrigation infrastructure in need of replacement or repair based on inventory list annually.	60 months	PDWRAM & PDAFF	16,000
Rehabilitate damaged primary, secondary and tertiary canals and supporting infrastructure (e.g., gates).**	60 months	MOWRAM, PDWRAM, & ADB	519,000
Build primary, secondary and tertiary canals and supporting infrastructure (e.g., gates).**	60 months	MOWRAM, PDWRAM, & ADB	1,006,000
2.1.4 Improve water distribution			
Pilot next season water distribution schedule in Hun Sen Baray and Chukk Ksach FWUCs.	8 months	PDWRAM & ISC	12,000
Develop detailed water distribution plan for other FWUC irrigation schemes.	60 months	PDWRAM & ISC	59,000
Create water distribution schedule for the entire Stung Chinit irrigation system.	48 months	PDWRAM, FWN, and ISC	47,000
Pilot scheduled planting in parts of the basin.	60 months	PDWRAM & ISC	39,000
Set up SMS alert for farmers to know when water is being released for their scheme and build usership in the basin.	48 months	PDWRAM	50,000
2.2 Promote agricultural best management practices and safe use of agrochemicals			
2.2.1 Improve behaviors towards the use of agrochemicals			
BCC Training of Trainers (ToT) to promote safe use of fertilizers and pesticides and public awareness radio spot.**	60 months	PDAFF, AFD, & SWP	67,000
Develop a plan for the enforcement of Cambodian pesticide law and implement.	60 months	PDAFF & PDoE	98,000
Improve basin-wide tracking of self-reported pesticide poisonings by training physicians on how to identify and treat pesticide poisoning.	36 months	PDAFF and PDoH	21,000
Establish collection points for expired, empty/finished, and illegal pesticide containers and safely dispose of them.	60 months	PDAFF, PDoE, and AFD	47,000
Strengthen the Personal Protection Equipment (PPE) market to increase sales in the region.	60 months	PDAFF & PDoH	48,000
Promote Integrate Pest Management (IPM).	60 months	PDAFF & AFD	66,000
Perform study on optimum fertilizer application for rice farming during different cycles.	12 months	PDAFF & ITC	40,000
2.2.2 Improve/establish agricultural extensions and strengthen agricultural cooperatives extension services			
Support producer groups of the Agriculture Cooperatives to have a clear business plan that address water security risks.	60 months	PDAFF	65,000
2.2.3 Improve water management practices in agriculture			
Introduce the Sustainable Rice Platform (SRP) in the basin to improve water security and livelihoods.	60 months	GPL, SWP, and PDAFF	58,000
Promote Alternatives to Water-Intensive Rice Cultivation.	60 months	PDAFF	42,000

2. Water for Agriculture Objective			
Actions	**Duration**	**Relevant Actors**	**Cost (USD)**
Train model farmers to disseminate Climate Smart Agriculture knowledge/practices throughout the basin.	60 months	PDAFF	45,000
Construct riparian buffers.	36 months	SWP, GPL, and PDoE	76,000
Promote Good Agriculture Practices (GAP).**	60 months	PDAFF	68,000
2.2.4 Strengthen rain-fed farming dependent population			
Establish and operationalize the Rain-fed Farming Working Group under the SC-RBMC.**	60 months	SWP, PDWRAM, and SC-RBMC	8,000
Introduce water saving technologies to targeted farmers (e.g. micro irrigation to vegetable famers).	60 months	SWP & PDWRAM	45,000
Promote rainwater harvesting for water stressed farmers.	60 months	PDWRAM	58,000

* implementation of these activities is underway and all funding has been secured.
** implementation of activity has started with partial funding secured.

3. Water for Environment Objective			
Actions	**Duration**	**Relevant Actors**	**Cost (USD)**
3.1 Promote Forest Conservation and Restoration in Upstream Areas			
3.1.1 Strengthen community forestry (CFs) groups and Community Protected Areas (CPAs)			
Strengthen capacity of CFs and CPAs in the upstream of the basin.	60 months	FA, PDoE, GPL, and RECROFTC	8,000
Conduct training on importance of water security in basin management using the water security serious game.**	60 months	SWP, FA, and CFs	19,000
3.1.2 Promote reforestation for aquifer recharge and riparian protection			
Assess priority reforestation locations for aquifer recharge.	8 months	FA, PDoE, GPL and ITC	14,000
Replant trees along the riverbank and in priority upstream locations.	52 months	FA, GPL, and CFs	13,000
3.1.3 Create awareness and establish mechanisms for forest conservation			
Awareness raising campaign about ecosystem services and the relationship between forests and water security.	60 months	FA, PDoE, SWP and GPL	23,000
Perform a study on the potential for Payment for Ecosystem Services (PES) in the Stung Chinit River Basin.	12 months	FA, PDoE, SWP, GPL, and RECOFTC	21,000
Support REDD+ program and RECOFTC.	60 months	FA, GPL and RECOFTC	10,000
3.1.4 Increase accountability of extractive land use			
Improve wastewater management at rubber plantations and processing sites.**	12 months	FA, PDoE, and GPL	37,000
Establish an anonymous system to report on illegal mining activity and pollution and promote with upstream communities.	18 months	PDoE & GPL	23,000
3.2 Promote Downstream Fisheries Development and Conservation			
3.2.1 Strengthen community fisheries (CFis)			
Develop a checklist for CFi management (e.g. steps to register, how to develop a roster/list of members, etc.).	6 months	SWP & RFF II	4,000

3. Water for Environment Objective			
Actions	**Duration**	**Relevant Actors**	**Cost (USD)**
Perform an inventory of all CFis and community ponds in the basin.	6 months	SWP, RFF II, and FiA	6,000
Support strengthening CFis including capacity building, legal recognition, planning, implementation, monitoring and networking.	60 months	FiA, Fishery Containment of Kampong Thom, GIZ, RFF II, and WorldFish	29,000
Establish a Stung Chinit River Basin Fishery Working Group to meet twice a year to share experiences and learn latest updates about fishery development in Cambodia.	60 months	SWP, ANKO, and GIZ	36,000
3.2.2 Promote development of community fish refuges (CFRs)			
Assess potential sites for CFRs in the Stung Chinit River Basin and select two centrally located community ponds to be the CFR demonstration sites for the basin, rehabilitate CFRs, and perform capacity building for CFR management committees.*	8 months	SWP & ANKO	30,000
3.2.3 Improve conservation of downstream flooded forests			
Establish criteria and inventory of critical areas.	12 months	GPL & PDoE	7,000
Conserve and restore critical areas.	60 months	PDAFF	127,000

* implementation of these activities is underway and all funding has been secured.
** implementation of activity has started with partial funding secured.

4. Climate Resilience Objective			
Actions	**Duration**	**Relevant Actors**	**Cost (USD)**
4.1 Strengthen local capacity for disaster risk management (DRM)			
4.1.1 Strengthen district/commune capacity to develop DRM plans			
Assess district/commune disaster risks.	6 months	SC-RBMC, PCDM, DCDM and CCDM	39,000
Strengthen provincial, district and commune capacity to develop DRM plans for high risk areas.	24 months	SC-RBMC & PCDM	153,000
Establish province/district/commune disaster risk management system.	24 months	SC-RBMC, PCDM and CCDM	165,000
Develop and conduct disaster preparedness exercises.	60 months	SC-RBMC, PCDM, DCDM and CCDM	42,000
Document experiences and lessons learn from the previous disaster risk experiences.	60 months	SC-RBMC, PCDM, DCDM and CCDM	10,000
4.1.2 Identify and conduct mitigation actions to reduce disaster risks			
Identify priority interventions to reduce disaster risks.	24 months	SC-RBMC, DCDM, and CCDM	79,000
Implement interventions to reduce risks based on DRM plans.	54 months	SC-RBMC, DCDM, and CCDM	182,000

4.2 Strengthen preparedness, response and recovery from droughts and floods			
4.2.1 Improve information systems and early warning communications			
Review and prepare plans to respond to emergencies (logistical readiness, response procedures, evacuation routes, identification of safe areas, disaster exercises)	60 months	SC-RMBC, NCDM, PCDM, DCDM and CCDM	52,000
Install information centers in the high-risk locations for early warning dissemination purposes.	36 months	SC-RBMC, NCDM, PCDM, DCDM and CCDM	175,000
Increase the knowledge and use of mobile SMS 1292 early warning communication for disaster risks at local level.	60 months	SC-RBMC, NCDM, PCDM, DCDM and CCDM	24,000
4.2.2 Strengthen disaster response and recovery			
Develop protocols and establish a process for shock response.	24 months	SC-RBMC, NCDM, PCDM, DCDM and CCDM	25,000
Strengthen and deploy teams as needed for shock response and recovery.	60 months	SC-RBMC, NCDM, PCDM, DCDM and CCDM	160,000

5. Institutional Objective			
Actions	**Duration**	**Relevant Actors**	**Cost (USD)**
5.1 Strengthen the capacity of the SC-RBMC Secretariat and member institutions			
5.1.1 Staff and Operationalize the RMBC			
Secretariat office expenses	60 months	SC-RBMC and SWP	33,000
Support SC-RBMC Secretariat office administration, coordination and operation.	60 months	SC-RBMC and SWP	25,000
SC-RBMC Secretariat Coordinator	60 months	SC-RBMC and SWP	22,000
Communications, M&E and Financial/Administration specialists.	60 months	SC-RBMC and SWP	71,000
Improve secretariat staff capacity through trainings, seminars and exchange of experiences and lessons learned from other RBMCs inside and outside Cambodia.	60 months	SC-RBMC and SWP	63,000
5.1.2 Develop capacity of SC-RMBC member institutions			
Conduct a capacity building needs assessment.	6 months	SC-RBMC and SWP	14,000
Implement capacity building.	54 months	SC-RBMC and SWP	49,000
Train provincial, district, and commune representatives on the importance of water security and how to include water security activities in annual development plans (use the WESTool).**	60 months	SC-RBMC and SWP	144,000
Organize field visit to explore and learn Stung Chinit upstream, midstream and downstream for the SC-RBMC key members to have more understanding about the water security related issues across the basin.	60 months	SC-RBMC and SWP	35,000
5.2 Improve data collections systems			
5.2.1 Improve meteorological and hydrometric monitoring			
Assess gaps in meteorological and hydrometric monitoring systems.	6 months	PDWRAM & MOWRAM	51,000

5. Institutional Objective			
Actions	**Duration**	**Relevant Actors**	**Cost (USD)**
Rehabilitate or install new gauge stations where needed.	54 months	TSA & PDWRAM	129,000
Perform a needs assessment for data collection and management for provincial departments, build capacity based on results, and help establish systems/programs, if needed.	60 months	GPL, TSA & PDWRAM	75,000
5.2.2 Develop water quality monitoring program			
Report on water quality status and trends.	60 months	SC-RBMC and SWP	23,000
Develop a water quality testing program for the basin.**	24 months	SC-RBMC and SWP	84,000
Train local officers to carry out the water quality testing and monitoring program.**	48 months	SC-RBMC and SWP	63,000
5.3 Develop a communications and knowledge management system			
5.3.1 Develop a database for the basin			
Collect existing data from relevant institutions such as PDOE, MOWRAM, and PCDM and update climate change projection analysis for the basin.	60 months	SWP, PDoE, and SC-RBMC	60,000
Establish a database system for SC-RBMC to record and manage all relevant data as well as to share with other stakeholders if needed.	60 months	SC-RBMC, TSA, and PDWRAM	41,000
5.3.2 Increase communications			
Develop protocol or system to increase/simplify cross-agency and department data collection and sharing.	60 months	TSA & PDWRAM	52,000
Establish a platform for sharing reports and regular postings on SC-RBMC updates (e.g., Facebook page).	60 months	SC-RBMC and TSA	19,000
5.4 Promote gender and social inclusion (GESI)			
5.4.1 Mainstream GESI throughout RMBC institutions			
Develop a GESI strategy.**	6 months	SC-RBMC & PDWA	10,000
Promote gender equity among SC-RBMC and implement the GESI strategy.	60 months	SC-RBMC & PDWA	26,000
Connect SC-RBMC with larger gender network to more widely promote GESI throughout the basin.	60 months	SC-RBMC, COWS, and PDWA	40,000

* implementation of these activities is underway and all funding has been secured.
** implementation of activity has started with partial funding secured.

APPENDIX B – WATER SECURITY SUB-ACTION PROFILES BY OBJECTIVE

WATER FOR HEALTH AND SANITATION

Action 1.1	***Improve water supply and services***	
Sub 1.1.1	**Strengthen service delivery of Private Water Operators (PWOs)**	
Description	Identify, assess, train, and coordinate PWOs in the Stung Chinit River Basin.	
Objectives	**General**	**Specific objectives**
	Strengthening the capacity, improve service delivery, and increase the coordination of Piped Water Operators (PWOs) in the Stung Chinit River Basin.	• Conduct capacity need assessment of all PWOs in the Stung Chinit River Basin. • Identify capacity gaps and provide capacity building to PWOs, so that they can improve their services. • Establish a PWO working group under the SC-RBMC.
Implementation Institutions	PDISTI, WASH-FIN, Cambodian Water Association (CWA) and SWP.	
Illustrative Activities	1. Conduct trainings based on comprehensive needs assessment of Stung Chinit River Basin PWOs to improve their water supply provision, customer service, and business management. 2. Establish a PWO Working Group under the SC-RBMC and support its operations, including holding regular meetings and contributing to SC-RBMC business.	
Expected Results	**Outputs**	**Outcomes/Impact**
	• Number of PWO needs assessments completed. • 1 Compiled list of PWO training needs and technical gaps. • Number of PWOs that received tailored capacity building training from WASH-FIN/CWA/SWP. • 1 PWO working group established with a clear scope of work (SOW).	• PWO staff build technical and managerial capacity. • PWOs improve the reliable supply of safe and clean water for all households receiving services in the Stung Chinit River Basin.
Implementation Risks	N/A	
Cost	US$13,000	
Project Duration	12 months	
Potential Funding Sources	WASH-FIN, PDISTI and SWP.	

Action 1.1	***Improve water supply and services***	
Sub 1.1.2	**Improve WASH in schools**	
Description	Assess WASH in all schools in the basin, prioritize schools and their facilities for improvements, develop activities to improve WASH and water security in the priority schools, implement, monitor, and share lessons learned with other schools in the basin.	
Objectives	**General**	**Specific objectives**
	Improve WASH facilities in prioritized schools in the basin.	• Conduct WASH needs assessment for all schools in the basin. • Identify priority schools and their WASH needs. • Develop and carry out activities in priority schools. • Produce lessons learned to share with other schools in the basin.
Implementation institutions	PDRD, PDoEYS, PDoH, Provincial Technical WASH Working Group, WVC, and IDE Cambodia.	
Illustrative Activities	1. Assess WASH needs in schools across the basin (e.g. sufficient on-site water storage, handwashing station, on-site latrines, etc.). 2. Improve WASH services in critical schools by rehabilitating or constructing WASH infrastructure. 3. Conduct WASH Behavior Change Communications (BCC) in schools. 4. Develop and disseminate COVID-19 handwashing awareness raising materials for display in schools in the basin. 5. Construct 13 latrines per year at the selected target schools in the province.	
Expected Results	**Outputs**	**Outcomes/Impact**
	• 1 WASH needs assessment performed for all schools in the Stung Chinit River Basin. • Number of WASH/water security improvement interventions carried out in schools. • Number of COVID-19 handwashing educational posters on display in number of schools. • Number of water storage tanks installed/rehabilitated. • Number of handwashing facilities. constructed/rehabilitated. • Number of participants trained in BCC campaign.	• Increased knowledge of areas for improvement for WASH in schools in the basin. • Increased schools with improved WASH facilities. • Increased input from schools in the WASH Working Group • Increased understanding of the connection between COVID-19 and handwashing by school employees and students.
Implementation Risks	Small-scale construction – EIA not required under Cambodian law.	

Action 1.1	***Improve water supply and services***
Sub 1.1.2	**Improve WASH in schools**
Cost	US$184,000
Project Duration	60 months
Potential Funding Sources	PDoEYS and WorldVision Cambodia.

Action 1.1	***Improve water supply and services***	
Sub 1.1.3	**Improve WASH in health care facilities (HCFs)**	
Description	Assess WASH in all HCFs in the basin (e.g. sufficient on-site water storage, alternative source of power, on-site latrines, etc.), prioritize critical facilities for improvements, develop activities to improve WASH and water security in the priority HCFs, implement, monitor, and share lessons learned with other HCFs in the basin.	
Objectives	**General**	**Specific objectives**
	Improve WASH facilities in prioritized HCFs in the basin.	• Conduct WASH needs assessment for all HCFs in the basin. • Identify priority HCFs and their needs to improve their WASH conditions (e.g. handwashing facility). • Develop and carry out activities in HCFs. • Produce lessons learned to share with other HCFs in the basin.
Implementation Institutions	PDRD, PDoH, Provincial Technical WASH Working Group, WaterAid, HCFs, and SC-RBMC.	
Illustrative Activities	1. Assess WASH needs in HCFs across the basin (e.g. sufficient on-site water storage, alternative source of power, on-site latrines, etc.). 2. Improve WASH services in critical HCFs by rehabilitating or constructing WASH infrastructure. 3. Conduct WASH BCC ToT with doctors and hospital staff. 4. Develop and disseminate COVID-19 handwashing awareness raising materials for display in HCFS in the basin.	
Expected Results	**Outputs**	**Outcomes/Impact**
	• 1 WASH needs assessment covering all HCFs in the Stung Chinit River Basin. • Number of WASH/water security improvement interventions carried	• Identified targeted areas for improvement in WASH in HCFs in the basin. • Increased number of HCFs with improved WASH facilities and water

Action 1.1	***Improve water supply and services***	
Sub 1.1.3	**Improve WASH in health care facilities (HCFs)**	
	out in HCFs. • Number of COVID-19 handwashing educational posters on display in number of HCFs. • Number of health providers and support staff trained on COVID-19 and WASH connection. • Number of water storage tanks installed/rehabilitated. • Number of handwashing facilities. constructed/rehabilitated. • Number of participants trained in BCC campaign.	security. • Increased inputs from HCFs in the WASH Working Group. • Increased understanding of the connection between COVID-19 and handwashing by HCF employees and visitors.
Implementation Risks	Small-scale construction – EIA not required under Cambodian law.	
Cost	US$193,000	
Project Duration	60 months	
Potential Funding Sources	MoH, PDoH, and Commune and District Investment Funds	

Action 1.1	***Improve water supply and services***	
Sub 1.1.4	**Improve Community Water Supply and Service**	
Description	Identify and improve community managed water supplied.	
Objectives	**General**	**Specific objectives**
	Gain a clearer understanding of community water supply in the basin, while improving services and diversifying sources.	• Update community water source maps and data (including infrastructure functionality, maintenance, and water quality). • Analyze maps and data to identify service gaps and areas for improvement. • Provide capacity building and support based on the identified needs.
Implementation Institutions	PDRD, commune councils, IDE Cambodia, Provincial Technical WASH Working Group, and WaterAid.	
Illustrative Activities	1. Develop a community water supply provider/water user association sustainability training program to improve management. 2. Conduct study of well functionality and water quality in the basin.	

Action 1.1	***Improve water supply and services***	
Sub 1.1.4	**Improve Community Water Supply and Service**	
	3. Promote rainwater harvesting and increased household water storage capacity to decrease water stress during the dry season. 4. Promote MRD's 3 Behaviors in 1 Hour (3B1H) approach (new MRD initiative to promote WASH in rural Cambodia) in target communes. The 3 Behaviors include handwashing, clean drinking water and latrine use.	
Expected Results	**Outputs**	**Outcomes/Impact**
	• Number of community water points updated on the map and data collected. • Number of community water supply managers attended training(s).	• Improved access to quality services of Community Water Supply providers for local community. • Improved water security for community water supply, especially during the dry season.
Implementation Risks	Small-scale construction – EIA not required under Cambodian law.	
Cost	$218,000	
Project Duration	60 months	
Potential Funding Sources	PDRD and UNICEF	

Action 1.2	***Improved sanitation and waste management***	
Sub 1.2.1	**Improve access to sanitation**	
Description	Continue to provide incentives for latrine purchase/installation to the bottom of the pyramid (poorest), while building demand for sanitation and hygiene products and services by promoting new technologies and introducing Open Defecation Free (ODF) certification to communes/villages in the basin.	
Objectives	**General**	**Specific objectives**
	Prioritize the adoption of improved sanitation across the Stung Chinit River Basin to protect available water resources.	• Demonstrate new latrine technologies as cost-effective alternatives to regular latrines. • Provide subsidies to latrines for those in need. • Establish ODF certification in the basin.
Implementation institutions	Engineers Without Borders (EWB), IDE Cambodia, PDRD, and Provincial Technical WASH Working Group.	
Illustrative Activities	1. Implement Community Led Total Sanitation (CLTS) to establish ODF certified villages/communes.	

Action 1.2	***Improved sanitation and waste management***	
Sub 1.2.1	**Improve access to sanitation**	
	2. *Subsidize latrines for ID poor 1 and 2 households.* 3. Conduct sanitation marketing related activities. 4. *Provide subsidized sanitation materials to poor households in selected target communes (ADB 2020 - 2022).* 5. Pilot new latrine technologies in the basin. 6. Develop and put protocols in place regarding the zoning/location of newly constructed pit latrines and septic tanks to prevent groundwater contamination.	
Expected Results	**Outputs**	**Outcomes/Impact**
	• Number of improved latrine technologies actively being promoted and used in the basin. • Number of new latrines constructed in the basin. • Number of latrines converted to meet "improved sanitation" criteria. • Number of villages/communes actively participating in CLTS. • Number of villages/communes with ODF certification.	• Improved water quality from less human waste contamination. • Increased sanitation marketing in the basin. • Increased practice of CLTS in the basin.
Implementation Risks	Small-scale construction – depending on size EIA may be required under Cambodian law.	
Cost	US$302,000	
Project Duration	60 months	
Potential Funding Sources	PDRD, EWB, ADB, Gates Foundation, and SWP.	

Action 1.2	***Improved sanitation and waste management***	
Sub 1.2.2	**Improve village solid waste management**	
Description	Improve community solid waste management capacity through the establishment of infrastructure and policy as well as the increase of the population's awareness.	
Objectives	**General**	**Specific objectives**
	Improve solid waste management in the Stung Chinit River Basin.	• Construct a model solid waste dump with a collection protocol. • Community awareness events on better solid waste management.

Action 1.2	***Improved sanitation and waste management***	
Sub 1.2.2	**Improve village solid waste management**	
Implementation Institutions	GPL, SC-RBMC, SWP, communes, and PDoE.	
Illustrative Activities	1. Perform a recycling feasibility study for the higher populated areas within the basin. 2. Establish a model dump site. 3. Establish solid waste collection system at the commune level and support its operation. 4. Conduct community awareness raising about utilizing the established dump site and solid waste collection system. 5. Organize monthly village clean up events in the selected target villages.	
Expected Results	**Outputs**	**Outcomes/Impact**
	• Number of stakeholders actively using officially established dump sites and/or solid waste collection system. • Number of awareness raising events held. • Number of community solid waste management plans or dedicated sections in commune development plans.	• Increased community understanding about the benefits of solid waste management. • Improved water quality through the effective management of solid waste.
Implementation Risks		
Cost	US$126,000	
Project Duration	60 months	
Potential Funding Sources	GPL and Commune Investment Fund (CIF).	

WATER FOR AGRICULTURE

Action 2.1	***Improve Reservoir and Water Infrastructure and Operations and Maintenance***	
Sub 2.1.1	**Improve FWUC Administration**	
Description	Streamline the administrative requirements for FWUCs, from daily operations to achieving organizational milestones (e.g. registration with MOWRAM and approval to collect fees from members) through workshops and a Khmer tool/checklist.	
Objectives	**General**	**Specific objectives**
	Improve administration of 12 FWUCs in the Stung Chinit River Basin and facilitate their increased responsibilities.	• Develop a tool to share with all FWUCs to assist with their improved management and keep them on task for reaching milestones like being able to collect fees. • Compile a database of all FWUC members in the basin. • Establish a Stung Chinit FWUC network. • Collect FWUC election best practices
Implementation Institutions	SWP, ISC, MOWRAM, PDWRAM, FWN, and 12 FWUCs, and local authority.	
Illustrative Activities	1. Develop a checklist for FWUC management and support FWUC registration. 2. Compile list of all members for each FWUC and their roles and responsibilities. 3. FWUC elections. *4. ABD continues building capacity of Tang Krasang FWUC through MOWRAM.* 5. Support the creation of a forum for all 12 current (and any future) FWUCs in the Stung Chinit River Basin.	
Expected Results	**Outputs**	**Outcomes/Impact**
	• 1administrative checklist in Khmer to share with FWUCs • Number of FWUCs registered with MOWRAM • Number of FWUCs with complete member rosters • Number of FWUC elections held • Number of FWUCs with transition of power after the election • 1 Charter of Stung Chinit FWUC Forum • Meetings of Stung Chinit FWUC Forum	• Improved administration and management of Stung Chinit FWUCs. • Improved communication within FWUCs and between FWUCs and PDWRAM (reservoir manager). operations/management communication. • Increased transparency of FWUCs management to members.

Action 2.1	***Improve Reservoir and Water Infrastructure and Operations and Maintenance***
Sub 2.1.1	**Improve FWUC Administration**
Implementation Risks	None
Cost	US$41,000
Project Duration	60 months
Potential Funding Sources	PDWRAM, MOWRAM, SWP, and FWN.

Action 2.1	***Improve Reservoir and Water Infrastructure and Operations and Maintenance***	
Sub 2.1.2	**Strengthening FWUCS technical and financial sustainability**	
Description	Support FWUCS with technical expertise so they can legally qualify and effectively manage the responsibility of irrigation fee collection (Irrigation Service Contribution).	
Objectives	**General**	**Specific objectives**
	Provide technical assistance to all FWUCs in the Stung Chinit River Basin especially on financial matters, to better manage the Stung Chinit Irrigation System and its 10 schemes.	• Perform drone mapping for all FWUCs requiring it to collect Irrigation Service Contributions. • Support Irrigation Service Contributions collection for eligible FWUCs. • Increase technical skills of FWUC members.
Implementation Institutions	SWP, ISC, PDWRAM, FWUCs and District/Commune/Village Authorities.	
Illustrative Activities	1. Complete drone mapping for 11 remaining irrigation schemes and farmer paddy registration to make all 12 FWUCs eligible to collect Irrigation Service Contributions. 2. Irrigation scheme maintenance training for FWUC officials and technical officers. 3. Deliver a comprehensive technical training on Irrigation Service Contribution targeting FWUC finance managers.	
Expected Results	**Outputs**	**Outcomes/Impact**
	• 1 map of all irrigation infrastructure • 12 maps of individual irrigation schemes with plots delineated and registration.	• Improved operations and management of all 12 FWUCs in the Stung Chinit River Basin

Action 2.1	***Improve Reservoir and Water Infrastructure and Operations and Maintenance***	
Sub 2.1.2	**Strengthening FWUCS technical and financial sustainability**	
	• Number of FWUC representatives trained on technical skills. • Number of FWUCs with fee collection plans. • Number of FWUCs able to collect fees.	
Implementation Risks	N/A.	
Cost	US$165,000	
Project Duration	24 months	
Potential Funding Sources	SWP, GPL, MOWRAM/PDWRAM, and AFD (French Organization).	

Action 2.1	***Improve Reservoir and Water Infrastructure and Operations and Maintenance***	
Sub 2.1.3	**Enhance irrigation infrastructure**	
Description	Coordinate and work with irrigation actors e.g. ISC in the Kampong Thom province to improve irrigation infrastructure in the basin.	
Objectives	**General**	**Specific objectives**
	Improve the infrastructure of the Stung Chinit Irrigation System.	• Identify and rehabilitate damaged primary, secondary and tertiary canals. • Build primary, secondary and tertiary canals to support farmers who have their farmland far from the main canals.
Implementation Institutions	PDWRAM, PDAFF, FWN, CARITAS, ADB/MOWRAMand ISC.	
Illustrative Activities	1. Validate irrigation infrastructure mapping and inventory for all FWUCs and compile into a database of FWUCs. 2. Assess and prioritize irrigation infrastructure in need of replacement or repair based on inventory list. 3. Rehabilitate damaged primary, secondary and tertiary canals and supporting infrastructure (e.g., gates). 4. Build primary, secondary and tertiary canals and supporting infrastructure (e.g., gates).	

Action 2.1	*Improve Reservoir and Water Infrastructure and Operations and Maintenance*	
Sub 2.1.3	**Enhance irrigation infrastructure**	
Expected Results	**Outputs**	**Outcomes/Impact**
	• 1 map of the Stung Chinit Irrigation System validated by all members working on irrigation in the basin. • 1 inventory of current state of irrigation infrastructure validated by all members working on irrigation in the basin. • Number of irrigation structures constructed or repaired. • Number of farmers with increased access to functioning irrigation infrastructure.	• Improved access to irrigation infrastructures for farmers in the Stung Chinit River Basin for better use of agricultural water resources. • Improved coordination across actors towards the construction/repair of irrigation infrastructure.
Implementation Risks	Excavation, canal construction, installation of gates, etc. will require an EIA under Cambodian law.	
Cost	US$1,547,000	
Project Duration	60 months	
Potential Funding Sources	PDWRAM/MOWRAM and ADB.	

Action 2.1	*Improve Reservoir and Water Infrastructure and Operations and Maintenance*	
Sub 2.1.4	**Improve water distribution**	
Description	Support and facilitate the development and use of 12 FWUC water distribution plans and one for the entire Stung Chinit Irrigation System. Increase the use of information technology and communication tools, such as SMS, to facilitate water distribution coordination between farmers.	
Objectives	**General**	**Specific objectives**
	• Improve water distribution for all 12 FWUCs in the Stung Chinit River Basin. • Prepare better plan for water distribution. • Reduce water distribution conflict among water users in the schemes.	• Develop detail water distribution plan for all 12 FWUCs. • Establish SMS alerts for releases and major developments for the main irrigation infrastructures. • Train farmers on staggered planting within each scheme.
Implementation	PDWRAM, PDAFF, FWN and ISC.	

Action 2.1	***Improve Reservoir and Water Infrastructure and Operations and Maintenance***	
Sub 2.1.4	**Improve water distribution**	
Institutions		
Illustrative Activities	1. Pilot next season water distribution schedule in Hun Sen Baray and Chukk Ksach FWUCs. 2. Develop detailed water distribution plan for other FWUC irrigation scheme. 3. Create water distribution schedule for the entire Stung Chinit irrigation system. 4. Introduce scheduled planting to basin. 5. Set up SMS alert for farmers to know when water is being released for their scheme.	
Expected Results	**Outputs**	**6. Outcomes/Impact**
	• 12 water distribution plans prepared – one for each FWUCs. • Number of water distribution plans actively being used. • Number of users subscribed to the irrigation network SMS alert network. • Number of farmers practicing scheduled planting.	• Increased coordination between actors in the basin on the management of irrigation infrastructure.
Implementation Risks	Implementation could lead to downstream stakeholders receiving less water or at irregular times.	
Cost	US$207,000	
Project Duration	60 months	
Potential Funding Sources	MOWRAM, ADB, WB and AFD (French Organization)	

Action 2.2	***Incorporate best practices for agriculture sustainable development***	
Sub 2.2.1	**Improve behaviors towards the use of agrochemicals**	
Description	Improve water quality in the basin by decreasing the use of pesticides in the basin, providing farmers with safer alternatives, and improving disposal practices.	
Objectives	**General**	**General**
	Improve water quality in the basin by decreasing the use of pesticides in the basin, providing farmers with safer alternatives, and improving disposal	• Improve water quality in the basin by decreasing the use of pesticides in the basin, providing farmers with safer alternatives, and improving disposal

Action 2.2	***Incorporate best practices for agriculture sustainable development***	
Sub 2.2.1	**Improve behaviors towards the use of agrochemicals**	
	practices.	practices.
Implementation Institutions	Action for Development (AFD), PDAFF, MoE/PDoE, District Office of Agriculture (DoA), Agricultural Cooperatives, and SWP.	
Illustrative Activities	1. Behavior change communications (BCC) Training of Trainers (ToT) to promote safe use of fertilizers and pesticides locally and public awareness radio spot. 2. Develop a plan to assist provincial line department with more stringently enforcement of Cambodian pesticide laws with activities such as: a. Work with MAFF/PDAFF to do market inspections for illegal pesticides. b. Increase number of fines for improper disposal of pesticide containers. c. Ensure that pesticide packaging have clear, concise instructions, using obvious visual symbols for the illiterate and images of the target species. Considering the cross-border movement of chemical pesticides, the addition of basic Khmer instructions would be a low cost and compulsory gesture that would assist in informing users of risks and good practices as well as strengthening products stewardship. 3. Train physicians on how to identify and treat pesticide poisoning/exposure and monitor to get a better idea of self-reported agrochemical poisonings. 4. Create collection points for expired, empty/finished, and illegal pesticide containers and hand out safe storage containers for people to bring in theirs. Then safe disposal of the collected bottles. Work with pesticide dealers – could be a complimentary service. 5. Subsidize or strengthen the Personal Protection Equipment (PPE) market to increase sales of PPE in the region. 6. Promote Integrate Pest Management (IPM) as an alternative or complementary	
Expected Results	**Outputs**	**Outcomes/Impact**
	• Number of farmers trained on the safe handling and disposal of agrochemicals or alternative approaches such as IPM. • Number of BCC materials developed on the topic and shared. • Number of farmers using PPE when applying agrochemicals.	• Local farmers increased understanding of the impact of the use of agrochemical inputs. • Decreased dangerous behavior around agrochemicals and reported poisonings. • Decreased use of illegal pesticides. • Improved agrochemical packaging in the basin. • Farmers changing their practices. • Improved water quality from less overuse of agrochemicals. • Increased implementation of existing agrochemical related policy.

Action 2.2	*Incorporate best practices for agriculture sustainable development*
Sub 2.2.1	**Improve behaviors towards the use of agrochemicals**
Implementation Risks	Possible dissemination of inaccurate information.
Cost	US$387,000
Project Duration	60 months
Potential Funding Sources	SWP, PDAFF, DoA, WorldVeg, and CGIAR.

Action 2.2	*Incorporate best practices for agriculture sustainable development*	
Sub 2.2.2	**Improve/establish agricultural extensions and strengthen agricultural cooperatives extension services**	
Description	Engage Agricultural Cooperatives in the Water Security Improvement (WSI) Process and SC-RBMC and build their capacity to prioritize water security in their business plans.	
Objectives	**General**	**Specific objectives**
	Build the capacity of ACs on water security and help them prioritize sustainable water resources management in their business plans.	• Support 17 Agriculture Cooperatives in the Stung Chinit River Basin to have a clear business plan that address water security risks.
Implementation institutions	Action for Development (AFD), PDAFF, DoA, CARITAS, and SWP.	
Illustrative Activities	1. Conduct study of less water intensive alternatives for AC members – this feasibility study would consider substitute crops and their markets, water saving technologies, and other approaches to more effectively using available water resources and increasing access during the dry season. 2. Engage PDAFF and DoA to jointly support the ACs in developing their business plan for their producer groups. 3. Train ACs on water security agricultural techniques. 4. Along with PDAFF and DoA work with ACs and producer groups to implement their business plan.	
Expected Results	**Outputs**	**Outcomes/Impact**
	• Number of ACs that have business plans that address water security. • Number of AC members trained on water security.	• Improved agriculture yields and livelihoods with decreased negative impact on water resources.
Implementation	N/A.	

Action 2.2	*Incorporate best practices for agriculture sustainable development*
Sub 2.2.2	**Improve/establish agricultural extensions and strengthen agricultural cooperatives extension services**
Risks	
Cost	US$65,000
Project Duration	60 months
Potential Funding Sources	DoA and PDAFF.

Action 2.2	*Incorporate best practices for agriculture sustainable development*	
Sub 2.2.3	**Improve water management practices in agriculture**	
Description	Support the adoption of more sustainable agriculture techniques (Climate Smart Agriculture) and methodologies (Sustainable Rice Platform). For those farmers relying on extractive agriculture for their livelihood (e.g., rubber, cashews, etc.), give them the tools and capacity building needed to decrease seasonal water stress and minimize water resources contamination.	
Objectives	**General**	**Specific objectives**
	Introduce and support the adoption of agricultural related livelihood methodologies that are beneficial to both farmers and the health of the basin.	• Develop an activity to encourage farmers to adopt growing vegetables and animal raising instead of relying on water intensive rice cultivation for their income. • Introduce SRP to the basin and demonstration centers. • Expand the practice of Climate Smart Agriculture in the basin. • Less contamination from family rubber plantation and household processing. • Protect downstream from the soil erosion next to waterway.
Implementation institutions	Action for Development (AFD), PDAFF, DoA, SC-RBMC, SWP and GPL.	
Illustrative Activities	1. Introduce the Sustainable Rice Platform (SRP) in the basin to improve water security and livelihoods. 2. Promote Alternatives to Water-Intensive Rice Cultivation. 3. Establish model farmers to disseminate Climate Smart Agriculture (CSA) knowledge/practices throughout the basin. 4. Construct riparian buffers. 5. Promote Good Agricultural Practices (GAP).	

Action 2.2	***Incorporate best practices for agriculture sustainable development***	
Sub 2.2.3	**Improve water management practices in agriculture**	
Expected Results	**Outputs**	**Outcomes/Impact**
	• Number of farmers practicing SRP. • Number of farmers practicing CSA. • Number of farmers that have adopted alternative crops to rice. • 1 study identifying high impact buffer zone sites completed. • 1 buffer zone reparation plan developed and implemented.	• Decreased stress on water resources and environment. • More environmentally responsible farming. Restored and maintained the buffer zones at the upstream of the Stung Chinit River Basin that help to protect water quality and environment. • Improved water quality in the river.
Implementation Risks	Small Scale Construction required for buffer zones – do not require EIA according to Cambodian law.	
Cost	US$289,000	
Project Duration	60 months	
Potential Funding Sources	MOWRAM, PDWRAM, ADB, and WB.	

Action 2.2	***Incorporate best practices for agriculture sustainable development***	
Sub 2.2.4	**Strengthen rain-fed farming dependent population**	
Description	Provide diverse water security improvement approaches to farmers that are not connected to the Stung Chinit Irrigation System and increase their representation in the basin.	
Objectives	**General**	**Specific objectives**
	Build the capacity of farmers that do not rely on the Stung Chinit Irrigation System with water saving techniques.	• To provide opportunity for a non-irrigation working group to participate in the SC-RBMC. • To improve farming practices and water resources management for this target group.
Implementation Institutions	Action for Development (AFD), PDAFF, DoA, HARVEST II, Amru Rice, Farmers and Water Network (FWN), WCS, SC-RBMC, Cashew Farmer Association, and Agriculture Cooperatives.	
Illustrative Activities	1. Establish non-irrigation working group for SC-RBMC to represent the interests of farmers that rely on rain-fed irrigation. 2. Introduce water saving technologies to targeted farmers (e.g. micro irrigation to vegetable famers). 3. Promote rainwater harvesting for water stressed farmers.	

Action 2.2	***Incorporate best practices for agriculture sustainable development***	
Sub 2.2.4	**Strengthen rain-fed farming dependent population**	
Expected Results	**Outputs**	**Outcomes/Impact**
	• Number of new water-saving technologies being used by farmers outside of the Stung Chinit Irrigation System. • 1 rainfed farmers working group established. • Number of new rainfed farmers trained on water saving management techniques.	• Rainfed farmers have better skills and technology to address their concerns and mitigate water scarcity. • Less water stress and more productive yields for poor farmers. • Decreased conflicts over water resources across seasons.
Implementation Risks	Introduce inappropriate technology that saves water but causes unexpected damage to the environment.	
Cost	US$111,000	
Project Duration	60 months	
Potential Funding Sources	USAID Cambodia, PDAFF, and agricultural private sector actors.	

Action 3.1	***Promote Forest Conservation and Restoration in Upstream Areas***	
Sub 3.1.1	**Strengthen Community Forestry (CFs) groups and Community Protected Areas (CPAs)**	
Description	Build the capacity of CFs to better manage their responsibilities, such as report writing, patrolling plan regularly, and monthly meetings, while improving their understanding, and that of their provincial line department counterparts, of the connection between their work and water security in the basin. Support tree planting activities in the upstream of basin (degraded areas and degraded riverbank). Support CFs to integrate their key activities in to commune development plan.	
Objectives	**General**	**Specific objectives**
	Forestry stakeholders will receive training to better understand basin management and the connection of their work and to water security for the basin.	• Strengthen local people capacity to understand water security issues and impacts. • Local knowledge will be used to protect and conserve upstream basin and improve maintaining basin function. • Strengthen local ownership to manage and protect their own forest resources in a sustainable way.
Implementation Institutions	SWP, GPL, PDAFF, FA, PDWRAM, PDoE, 11 CFs upstream of the basin, and RECOFTC.	
Illustrative Activities	1. Strengthen capacity of CFs and CPAs in the upstream of the basin. Support to improve – update CFs and CPAs management plans. 2. Conduct training on importance of water security in basin management using the water security serious game. 3. Support awareness campaign in close collaboration with MoE/PDoE both at national and sup-national level. 4. Support greater social inclusion and gender equity in all aspects of CF and CPA development in the basin. 5. Support the investment in vocational and business capacities and knowledge platforms to stimulate continuous development of CFs and CPAs and their networks. 6. Build capacities on finance and market-based approaches, with support from other government departments and private sectors. 7. Support exchange of visit to explore and sharing of learned lessons – experiences from other CFs and CPAs in different places.	
Expected Results	**Outputs**	**Outcomes/Impact**
	• Number of improved forest management plans for CF's upstream of the Stung Chinit River Basin.	• Increased local knowledge transfer and sharing among the community. • Increased understanding how impacts on ground and surface water can be

Action 3.1	*Promote Forest Conservation and Restoration in Upstream Areas*	
Sub 3.1.1	**Strengthen Community Forestry (CFs) groups and Community Protected Areas (CPAs)**	
	• Number of CPAs that receive support. • Number of CF members trained, and their capacity have been improved.	mitigated. • Increase understanding the linkages between forest – people - water and water security in the basin and the important of forest to secure water aquifer in the basin. • Increased capacity of CF committees to manage their forest resources in a sustainable way that positively impacts the basin's water resources. • Increased local ownership to conserve and protect their natural resources.
Implementation Risks	N/A	
Cost	US$27,000	
Project Duration	60 months	
Funding sources	MAFF/PDAFF, FAO, RECROFTC, MoE/PDoE, GPL, SWP, and GEF.	

Action 3.1	*Promote Forest Conservation and Restoration in Upstream Areas*	
Sub 3.1.2	**Promote reforestation for aquifer recharge and riparian buffer protection, natural wetland protection**	
Description	Encourage more reforestation related interventions (e.g., REDD+) and implementing partners to work in the Stung Chinit River Basin by having an assessment of priority reforestation locations for aquifer recharge and available resources for reforestation initiatives/projects. Meanwhile, increasing local demand for reforestation by educating communities on the benefits of ecosystem services on water security.	
Objectives	**General**	**Specific objectives**
	To improve forest cover through reforestation projects and protect upstream headwater of the Stung Chinit River Basin.	• Coordinate ongoing and planned reforestation projects. • Target reforestation projects in areas beneficial to water security. • Work with local plant nurseries to have local tree species in stock. • Improve community knowledge of the benefits of reforestation and the connection between water security and the forest.

Action 3.1	***Promote Forest Conservation and Restoration in Upstream Areas***	
Sub 3.1.2	**Promote reforestation for aquifer recharge and riparian buffer protection, natural wetland protection**	
Implementation institutions	GPL, CFs, CPAs, FA, SC-RBMC, SWP, PDoE, and local authority.	
Illustrative Activities	1. Assess priority reforestation locations for aquifer recharge for both CFs and CPAs. 2. Replant trees along the riverbank and in priority upstream locations.	
Expected Results	**Outputs**	**Outcomes/Impact**
	• Assessment performed and results shared with implementing partners and communities. • Number of trees planted in high impact areas.	• High impact reforestation areas identified. • Reduced bank erosion downstream in the basin. • Reduced pollution from human activities that may be impacted to water sources in midstream and downstream of the basin. • Increased forest cover and improved water sources (head water) in the basin. • Increased wildlife resources and increased numbers of NTFP that help to improve local people livelihood and food opportunity.
Implementation Risks	N/A	
Cost	US$27,000	
Project Duration	60 months	
Potential Funding Sources	MAFF/PDAFF, FA, GPL, RECROFTC, and REDD+ Program.	

Action 3.1	***Promote Forest Conservation and Restoration in Upstream Areas***	
Sub 3.1.3	**Create awareness and establish mechanisms for forest conservation**	
Description	Coordinate and work with CFs, FAs, and local authorities to protect forest through community participation and awareness raising.	
Objectives	**General**	**Specific objectives**
	• Increase forest conservation upstream of the Stung Chinit	• Mobilize communities to take part in forest conservation activities.

Action 3.1	***Promote Forest Conservation and Restoration in Upstream Areas***	
Sub 3.1.3	**Create awareness and establish mechanisms for forest conservation**	
	River Basin. • Improve local knowledge and capacity to protect their forest resources in the basin.	• Strengthen local ownership as well as capacity and be able to teach their young generation about success and failure of forest management and protection.
Implementation Institutions	CFs, CPAs, FA, Commune Councils, GPL, PDoE, and RECOFTC.	
Illustrative Activities	1. Awareness raising campaign about ecosystem services and the relationship between forests and water security. 2. Perform a study on the potential for Payment for Ecosystem Services (PES) in the Stung Chinit River Basin. 3. Support REDD+ program and RECOFTC.	
Expected Results	**Outputs**	**Outcomes/Impact**
	• Conducted assessment of potential for PES in the Stung Chinit River Basin. • Number of events organized for forest conservation and protection. • Number of awareness materials produced and widely distributed at the community level.	• Increased active community participation in forest conservation. • Improved CFs and CPAs management plan and implementation more effectively. • Improved upstream forest basin condition and maintained ecological function of the basin. • Increased knowledge and capacity of local community and local authority in the field of forest management and conservation.
Implementation Risks		
Cost	US$54,000	
Project Duration	60 months	
Potential Funding Sources	GPL, SWP, FA, CFs and private agricultural companies.	

Action 3.1	***Promote Forest Conservation and Restoration in Upstream Areas***
Sub 3.1.4	**Increase accountability of extractive land use**
Description	Enable community to monitor and report the illegal mining activities at the upstream of the Stung Chinit River Basin.

Action 3.1	***Promote Forest Conservation and Restoration in Upstream Areas***	
Sub 3.1.4	**Increase accountability of extractive land use**	
Objectives	**General**	**Specific objectives**
	Set up hotline that community can use the report the illegal mining activities to SC-RBMC.	• Train upstream community representatives to monitor and report the illegal mining activities. • Provide guidance and facilities for community to report illegal cases.
Implementation Institutions	GPL, PDoE, and SC-RBMC.	
Illustrative Activities	1. Improve wastewater management at rubber plantations and processing sites. 2. Establish an anonymous system to report on illegal mining activity and pollution and promote with upstream communities.	
Expected Results	**Outputs**	**Outcomes/Impact**
	• Number of community representative selected and trained about mining impacts and how impacts can be mitigated. • Hotline communication set up and used.	• Improved water quality and protected environment through reducing the illegal mining activities at the upstream of the Stung Chinit River Basin. • Restored mining degraded areas by replacing trees or natural maintaining forest resources, • Increased local knowledge on possible impacts caused by mining activities.
Implementation Risks	N/A	
Cost	US$60,000	
Project Duration	60 months	
Funding sources	GPL and SWP	

Action 3.2	**Promote Downstream Fisheries Development and Conservation**	
Sub 3.2.1	**Strengthen community fisheries (CFis)**	
Description	Strengthen the management capacity of all CFis in the Stung Chinit River Basin, so that they are able to effectively manage their communities and freshwater resources.	
Objectives	**General**	**Specific objectives**
	Strengthen CFis capacity to effectively manage and protect fish resources in	• Develop a checklist for CFi management.

Action 3.2	Promote Downstream Fisheries Development and Conservation	
Sub 3.2.1	**Strengthen community fisheries (CFis)**	
	the Stung Chinit River Basin.	• Conduct inventory CFi fishing lots and ponds. • Strengthen CFis leadership and management capacity.
Implementation Institutions	Fishery containment of Kampong Thom, WorldFish, CFis, FiA, Fishery Action Coalition Team (FACT), and Trailblazer Cambodia Organisation (TCO).	
Illustrative Activities	1. Develop a checklist for CFi management (e.g. steps to register, how to develop a roster/list of members, etc.) 2. Perform an inventory of all CFis and community ponds in the basin, including the status of their pond (e.g. Is it being maintained? Does it hold water? etc.) 3. Support strengthening CFis including capacity building, legal recognition, planning, implementation, monitoring and networking. 4. Establish basin Fishery Working Group to learn latest updates about fishery development in Cambodia. Especially, new approaches to manage fishponds more effectively. Establish basin Fishery Working Group to learn latest updates about fishery development in Cambodia. Especially, new approaches to manage fishponds more effectively.	
Expected Results	**Outputs**	**Outcomes/Impact**
	• CFi management checklist • CFi fishing lots and ponds inventory list. • Number of CFi representatives trained. • Number of CFi management plan reviewed/revised. • Number of CFi management plan being implemented.	• Sustain fishery resources and freshwater biodiversity in the basin through improving CFi management. • Increased fish production and improved local livelihood and food security.
Implementation Risks	N/A	
Cost	US$75,000	
Project Duration	2020 - 2025	
Funding sources	PDAFF, FiA, and GIZ	

Action 3.2	Promote Downstream Fisheries Development and Conservation
Sub 3.2.2	**Promote development of community fish refuges (CFRs)**
Description	Convert community ponds, which meet the established WorldFish/RFF II criteria, into a CFRs and provide the required institutional support, including establishing a

Action 3.2	Promote Downstream Fisheries Development and Conservation	
Sub 3.2.2	**Promote development of community fish refuges (CFRs)**	
	pond committee and building its members' management and conservation skills.	
Objectives	**General**	**Specific objectives**
	Covert community ponds into CFRs, establish pond management committees, and train committees on water resources management and aquaculture.	• Establish CFRs to improve livelihoods, preserve aquatic biodiversity in the area, increase water availability during the dry season, help villagers better manage water for irrigation, increase local food security, and create a contingency plan for community drinking water source if needed during the dry season.
Implementation Institutions	WoldFish, SWP, village, communes, districts, PDoE, PDAFF, ANKO and TCO.	
Illustrative Activities	1. Assess potential sites for CFRs in the Stung Chinit River Basin. 2. Construct two CFR demonstration sites for the basin. 3. Perform capacity building for CFRs.	
Expected Results	**Outputs**	**Outcomes/Impact**
	• Number of community ponds converted to CFRs. • Number of community pond management committee established and trained. • Number of farmers with more secure access to water irrigation.	• Increased dry season sanctuary for fish in the Stung Chinit. • Villagers with increased water for irrigation and during dry season. • Increased sustainable fishing in the area. • Increased communes with training • Provided safe drinking water to local residents such as villagers, schools, pagoda etc.
Implementation Risks	EIA required by community, commune and district authority.	
Cost	US$30,000	
Project Duration	8 months	
Potential Funding Sources	TSA, USAID Cambodia, GIZ, and SWP	

Action 3.2	Promote Downstream Fisheries Development and Conservation	
Sub 3.2.3	**Improve conservation of downstream flooded forests**	
Description	Assess current state of the flooded forests and risks to its conservation in the downstream of the Stung Chinit River Basin to develop a plan that coordinates activities to mitigate the identified risks and initiate restoration activities.	
Objectives	**General**	**Specific objectives**

	• To restore flooded forest in the downstream of the Stung Chinit River Basin.
	• To support and maintain fish breeding areas by protecting flooded forest.
	• Number of flooded forest degradation identified (ha).
		• To understand the current state of the flooded forest in the downstream.
		• To engage stakeholders and relevant actors in activities maintain the function of flooded forest, such as:
		  ○ Replanting flooded forest at the most degradation areas.
		  ○ Protecting flooded forest through community patrolling activities.
		• Strengthening CFis capacity to implement their management plan.
		• Maintained flooded forest (number of hectares) downstream of the basin.

Implementation Institutions	Fishery Containment of Kampong Thom, CFis, FiA, FACT, WCS, TSA, and WorldFish.	
Illustrative Activities	1. Establish criteria and inventory of critical areas. 2. Conserve and restore critical areas.	
Expected Results	**Outputs**	**Outcomes/Impact**
	• A baseline inventory of the flooded forests in the Stung Chinit River Basin. • Number of assessments performed. • Causes of degradation identified. • Number of flooded forest conservation and restoration plan developed, or related activities integrated into existing development plans. • Number of activities implemented.	• Shared knowledge about the current condition of flooded forests in the basin. • Activities or a plan developed and implemented to conserve and restore flooded forest in the Stung Chinit River Basin that engage relevant stakeholders and local communities. • Increased area for seasonal fisheries in the basin. • Protection of a biodiverse ecosystem unique to the Tonle Sap River Basin.
Implementation Risks	N/A	
Cost	US$134,000	
Project Duration	60 months	

Action 3.2	Promote Downstream Fisheries Development and Conservation
Sub 3.2.3	**Improve conservation of downstream flooded forests**
Funding sources	FiA, SWP, GPL, TSA, and GIZ.

WATER FOR CLIMATE RESILIENCE

Action 4.1	Strengthen local capacity for disaster risk management (DRM)	
Sub 4.1.1	**Strengthen district/commune capacity to develop DRM plans**	
Description	This activity aims to strengthen local capacity to develop plans to address disaster risks from multiple hazards including floods and droughts. The activity supports provincial, district and communes to improve DRM planning.	
Objectives	**General**	**Specific objectives**
	• Improve Disaster Risk Management at the subnational and local level in the Stung Chinit River Basin. • To strengthen provincial, district, and commune capacity to develop and implement DRM plans.	• Districts and communes able to assess and map hazards. • District/commune develop DRM plans based on the update situation/risks. • Implement and monitor the DRM plan more effectively.
Implementation Institutions	PCDM, DCDM, CCDM, and SWP.	
Illustrative Activities	• Assess district/commune disaster risks. • Strengthen provincial, district and commune capacity to develop DRM plans for high risk areas. • Establish province/district disaster risk management system. • Develop and conducts disaster preparedness exercises. • Document experiences and lessons learn from the previous disaster risk experiences.	
Expected Results	**Outputs**	**Outcomes/Impact**
	• Priority districts/communes identified based on disaster risk assessments. • Updated commune DRM plans of all target communes in the Stung Chinit River Basin. • Implement updated DRM plans more effectively at commune, district and village level.	• Minimized the impact of Disaster risks in the Stung Chinit River Basin. • Improved capacity of provincial, district and commune people to develop and implement proper DRM plans and implement it more effectively.
Implementation Risks	N/A	

Action 4.1	Strengthen local capacity for disaster risk management (DRM)
Sub 4.1.1	**Strengthen district/commune capacity to develop DRM plans**
Cost	US$409,000
Project Duration	60 months
Potential Funding sources	CIF, DIF, NCDM, PCDM, and ADB.

Action 4.1	Strengthen local capacity for disaster risk management (DRM)	
Sub 4.1.2	**Identify and conduct mitigation actions to reduce disaster risks**	
Description	This activity will focus on the identification of actions to be taken by districts and communes to reduce disaster risks.	
Objectives	**General**	**Specific objectives**
	District and communes implement priority actions to reduce vulnerability to disaster risks.	• Improve understanding of communities on related disaster risks and local coping mechanisms. • Local governments and communities engage and participate in implementing priority intervention.
Implementation Institutions	NCDM, PCDM, DCDM, CCDM, and ADB.	
Illustrative Activities	1. Identify priority interventions to reduce disaster risks. 2. Create awareness of vulnerabilities and need to implement interventions to reduce disaster risks. 3. Implement interventions to reduce risks based on DRM plans.	
Expected Results	**Outputs**	**Outcomes/Impact**
	• Number of interventions identified to reduce risks. • Number of interventions taken by district/communes to reduce disaster risks. • Number of people participating in the DRM awareness raising. • Number of local people/volunteers mobilized and participated in DRM intervention activities.	• Reduced disaster risks in the local communities. • Prevented any disaster risks that may be happening in the villages. • Provided on time information to the communities.
Implementation Risks	Implementation of small-scale infrastructure does not comply with environmental compliance and construction or retrofits does not meet engineering standards.	
Cost	US$261,000	

Action 4.1	**Strengthen local capacity for disaster risk management (DRM)**
Sub 4.1.2	**Identify and conduct mitigation actions to reduce disaster risks**
Project Duration	48 months
Potential Funding Sources	CIF, DIF and funding sources from NCDM, PCDM, DCDM, and ADB

Action 4.2	**Strengthen preparedness, response and recovery from droughts and floods**	
Sub 4.2.1	**Improve information systems and early warning communications**	
Description	Coordinate disaster risk reduction initiatives in the basin to better disseminate information better and faster to residents.	
Objectives	**General**	**Specific objectives**
	• Build up local people's capacity to manage disaster related risk in their villages. • Provide timely, relevant, and accurate information for residents to use their disaster risk management skills.	• Better understand how residents responded to disasters in the past so they can better respond in the future. • Establish centrally located information centers/screens to provide disaster risk warnings at the village level and SMS services for individuals. • Improve information sharing mechanisms from local - provincial level.
Implementation Institutions	MOWRAM, PDWRAM, PDAFF, Kampong Thom PCDM, and 11 CFs, CFi, and 12 FWUCs.	
Illustrative Activities	1. Perform a desk review of available materials and disseminate to communities 2. Strengthen the response and rehabilitation: a. Improve DRR information report to local authorities via exiting phone number 1294. b. Responses: resources, materials, and safe areas c. Rehabilitation: seeds, capital to invest on farming, infrastructure repairing or rebuilding. 3. Install information center in the potential locations (warning purposes) 4. Install and promote the use of mobile SMS 1294 early warning communication for flooding at local level based on flow levels warning systems.	
Expected Results	**Outputs**	**Outcomes/Impact**
	• Number of people trained on information systems or early warning network. • Number of information centers/screens installed to display	• Increased access to knowledge on disaster risk management and early warning. • Increased number of local communication tools to inform and

Action 4.2	Strengthen preparedness, response and recovery from droughts and floods	
Sub 4.2.1	**Improve information systems and early warning communications**	
	disaster related warnings	warn the public.
Implementation Risks	Intermittent functionality of communication networks for early warning systems.	
Cost	US$251,000	
Project Duration	60 months	
Potential Funding Sources	CIF, DIF, NCDM, PCDM, and ADB	

Action 4.2	Strengthen preparedness, response and recovery from droughts and floods	
Sub 4.2.2	**Strengthen disaster response and recovery**	
Description	Review existing disaster response and recovery protocols at the commune/district level and strengthen the process.	
Objectives	**General**	**Specific objectives**
	Improve the effectiveness of existing disaster response and recovery processes in the target communes.	• Build on the existing response, strengthen and enhance the processes and/actions
Implementation Institutions	PDORD, districts and communes, and PCDM.	
Illustrative Activities	1. Develop protocols and establish a process for shock response 2. Deploy teams as needed for shock response and recovery	
Expected Results	**Outputs**	**Outcomes/Impact**
	• Continue to prepare disaster response and recovery review report. • Update protocols and/process of disaster risk response and recovery.	• On time response and recovery actions to any disasters and shock • To be ready to prevent any disaster risks in the basin,
Implementation Risks	Protocols and processes not well adopted at the commune level.	
Cost	US$185,000	
Project Duration	48 months	

Action 4.2	**Strengthen preparedness, response and recovery from droughts and floods**
Sub 4.2.2	**Strengthen disaster response and recovery**
Potential Funding Sources	CIF, DIF, NCDM, PCDM, and ADB

INSTITUTIONAL

Action 5.1	**Strengthen the capacity of the SC-RBMC Secretariat and member institutions**	
Sub 5.1.1	**Staff and operationalize the RMBC Secretariat**	
Description	Recruit RMBC Secretariat Staff and support the operationalization of the Secretariat office.	
Objectives	**General**	**Specific objectives**
	Secretariat fully staffed and operating.	• Establish a permanent Secretariat office. • Secretariat fully equipped to perform its functions.
Implementation Institutions	RMBC	
Illustrative Activities	1. Support SC-RBMC Secretariat office administration, coordination and operation. 2. Recruit/assign Secretariat staff. 3. Improve secretariat staff capacity through trainings, seminars and exchange of experiences and lessons learned from other RBMCs inside and outside Cambodia.	
Expected Results	**Outputs**	**Outcomes/Impact**
	• One office established. • Secretariat fully staffed. • Communications, M&E and Financial/Administration specialists hired or assigned under the Secretariat. • Number of trainings performed.	• RMBC Secretariat staff with capacity to perform their functions.
Implementation Risks	Lack of funds and/or qualified staff.	
Cost	US$214,000	
Project Duration	12 months	
Potential Funding Sources	Provincial departments and partial funding from donors.	

Action 5.1	Strengthen the capacity of the SC-RBMC Secretariat and member institutions	
Sub 5.1.2	**Develop capacity of RMBC member institutions**	
Description	Conduct capacity building of member institutions through targeted training and field visits.	
Objectives	**General**	**Specific objectives**
	Strengthen RMBC member institutions to plan, implement and monitor water security interventions.	• Member institutions equipped with decision support tools. • District and communes incorporate water security risk reduction activities in their annual development plans.
Implementation Institutions	SC-RBMC members	
Illustrative Activities	1. Conduct a capacity building needs assessment. 2. Implement capacity building. 3. Train provincial, district, and commune representatives on the importance of water security and how to include water security activities in annual commune/district development plans. 4. Conduct field visit to explore and learn from activities upstream, midstream and downstream for the SC-RBMC key members, as well as visits to other RBMCs within Cambodia.	
Expected Results	**Outputs**	**Outcomes/Impact**
	• Number of RMBC member institutions with improved capacity to oversee priority actions in the basin. • Number of training and awareness events using tools and games.	• Capacity of the SC-RBMC Secretariat and member institutions strengthened.
Implementation Risks	N/A	
Cost	US$242,000	
Project Duration	48 months	
Potential Funding Sources	RMBC and SWP	

Action 5.2	Improve data collections systems
Sub 5.2.1	**Improve meteorological and hydrometric monitoring**
Description	Upgrade the meteorological and hydrometric network at the Stung Chinit River

Action 5.2	Improve data collections systems	
Sub 5.2.1	**Improve meteorological and hydrometric monitoring**	
	Basin for use in decision support systems.	
Objectives	**General**	**Specific objectives**
	Enhanced monitoring of hydrometeorological variables supporting water management.	• Enhanced meteorological and hydrometric network. • Data analytics supporting water management decisions.
Implementation Institutions	RMBC and PDWRAM.	
Illustrative Activities	1. Assess gaps in meteorological and hydrometric monitoring systems. 2. Rehabilitate or install new gauge stations where needed. 3. Perform a needs assessment for data collection and management for provincial departments, build capacity based on results, and help establish systems/programs, if needed.	
Expected Results	**Outputs**	**Outcomes/Impact**
	• Number of meteorological and hydrometrics stations functioning in the basin • Number of water quality parameters measured annually and shared with stakeholders	• Knowledge of the status and trends of water parameters improved and used in decision support systems
Implementation Risks	Operation and maintenance and overall sustainability of hydrometeorological infrastructure.	
Cost	US$255,000	
Project Duration	48 months	
Potential Funding Sources	PDWRAM and international donors.	

Action 5.2	Improve data collections systems	
Sub 5.2.2	**Develop water quality monitoring program**	
Description	Implement a water quality testing in the basin and reporting of status and trends in water quality.	
Objectives	**General**	**Specific objectives**
	Enhanced knowledge of water quality throughout the basin.	• Water quality program in place. • Periodic reporting of water quality status.

Action 5.2	Improve data collections systems	
Sub 5.2.2	**Develop water quality monitoring program**	
Implementation Institutions	PDWRAM and RMBC.	
Illustrative Activities	1. Report on water quality status and trends. 2. Develop a water quality testing program for the basin. 3. Train local officers to carry out the water quality testing and monitoring program.	
Expected Results	**Outputs**	**Outcomes/Impact**
	• Number of PDWRAM staff trained on field water quality collection and analysis. • Number of water quality parameters collected. • Number of water quality reports published and share annually.	• RMBC and relevant member institutions able to conduct water quality testing and analysis.
Implementation Risks	Commitment of the RMBC and member institutions to perform and report water quality tests.	
Cost	US$170,000	
Project Duration	48 months	
Potential Funding Sources	RMBC and SWP	

Action 5.3	Develop a communications and knowledge management system	
Sub 5.3.1	**Develop a database for the basin**	
Description	Compile and develop a data base for the basin.	
Objectives	**General**	**Specific objectives**
	Database created and updated frequently with information from RMBC institutions.	• Database created informs performance indicators of the SAP. • Updated database useful for enhanced water security assessments.
Implementation Institutions	SC-RBMC and PDWRAM.	
Illustrative Activities	1. Collect existing data from relevant institutions such as PDoE (Climate Change), Provincial Committee Disaster Management as well as update analysis on climate change projections for the basin.	

Action 5.3	Develop a communications and knowledge management system	
Sub 5.3.1	**Develop a database for the basin**	
	2. Establish a database system for SC-RBMC to record and manage relevant data as well as to share with other stakeholders if needed.	
Expected Results	**Outputs**	**Outcomes/Impact**
	• Data availability assessment. • Latest land use and demographic data compiled. • Historical hydrometeorological data compiled and reviewed for reliability.	• Basin database established and managed by the Secretariat.
Implementation Risks	Barriers on data sharing and significant gaps on data.	
Cost	US$101,000	
Project Duration	36 months	
Potential Funding Sources	RMBC, PDWRAM, and donors	

Action 5.3	Develop a communications and knowledge management system	
Sub 5.3.2	**5.3.2 Increase communications**	
Description	This sub-action will focus on developing protocols and improving communications on water security issues throughout the basin.	
Objectives	**General**	**Specific objectives**
	Enhance communications throughout the basin.	• Improve cross-agency and department communication protocols for data sharing. • Establish and use different platform for communications including social media.
Implementation Institutions	SC-RMBC	
Illustrative Activities	1. Develop protocol or system to increase/simplify cross-agency and department data collection and sharing. 2. Establish a platform for sharing reports and regular postings on SC-RBMC updates (e.g., Facebook page).	
Expected Results	**Outputs**	**Outcomes/Impact**
	• Number of protocols and	• Provincial departments, districts and

Action 5.3	Develop a communications and knowledge management system	
Sub 5.3.2	**5.3.2 Increase communications**	
	communications platforms used to disseminate information.	communes sharing information. • Basin inhabitants receiving basin related communications through different platforms.
Implementation Risks	Potential barriers on sharing information among departments.	
Cost	US$71,000	
Project Duration	48 months	
Potential Funding Sources	Provincial departments and SC-RMBC	

Action 5.4	Promote gender and social inclusion (GESI)	
Sub 5.4.1	**Mainstream GESI throughout SC-RMBC institutions**	
Description	Improve the integration of GESI into all aspects of the SC-RBMC, especially the SAP.	
Objectives	**General**	**Specific objectives**
	Make GESI a priority issue for the SC-RBMC and its operations.	• Create a strategy to improve the equitability of designing and implementing priority water security actions. • Promote GESI as a cornerstone of water security improvement in the basin.
Implementation Institutions	SC-RBMC, District Consultative Committee on Children and Women (DCCCW), PDWA, and COWS.	
Illustrative Activities	1. Develop a GESI strategy. 2. Promote gender equity among SC-RBMC and implement the GESI strategy. 3. Connect SC-RBMC with larger gender network to more widely promote GESI throughout the basin.	
Expected Results	**Outputs**	**Outcomes/Impact**
	• 1 GESI strategy. • 1 GESI Task Force. • Number of institutions and actions mainstreaming gender and social inclusion (GESI).	• Priority water security actions are implemented according to GESI standards. • GESI improvement in the basin is a measured outcome.

Action 5.4	**Promote gender and social inclusion (GESI)**	
Sub 5.4.1	**Mainstream GESI throughout SC-RMBC institutions**	
	• Number of GESI partners engaged.	
Implementation Risks	GESI does not become a priority issue.	
Cost	US$76,000	
Project Duration	48 months	
Potential Funding Sources	TSA and donors	