

Cover Page for Project/Program Approval Request

| | | | |
|--|--|--|--|
| 1. Country/Region: | Cambodia/Southeast Asia | 2. CIF Project ID#: | XPCRKH009A |
| 3. Source of Funding: | <input type="checkbox"/> FIP | <input checked="" type="checkbox"/> PPCR | <input type="checkbox"/> SREP |
| 4. Project/Program Title: | Climate resilient rural infrastructure in Kampong Cham province (as part of the Rural Roads Improvement Project (RRIP – II)) | | |
| 5. Type of CIF Investment: | <input checked="" type="checkbox"/> Public | <input type="checkbox"/> Private | <input type="checkbox"/> Mixed |
| 6. Funding Request in million USD equivalent: | <i>Grant:</i> \$9.0 million | | <i>Non-Grant:</i> \$7.0 million |
| 7. Project/Program Origin | <input checked="" type="checkbox"/> Investment Plan | <input type="checkbox"/> Set-Aside | <input type="checkbox"/> DGM (FIP only) |
| 8. Implementing MDB(s): | Asian Development Bank (ADB) | | |
| 9. National Implementing Agency: | Executing Agency: Ministry of Rural Development (MRD) Implementing agencies: Project Management Unit under MRD | | |
| 10. MDB Focal Point and Project/Program Task Team Leader (TTL): | <i>Headquarters- Focal Point:</i> Cinzia Losenno, Senior Climate Change Specialist (Climate Change Adaptation), Sustainable Development and Climate Change Department | | <i>TTL:</i> Shihiru Date, Senior Transport Specialist, Southeast Asia Department, ADB |

11. Project/Program Description (including objectives and expected outcomes):

The PPCR sub-committee endorsed Cambodia's Strategic Program for Climate Resilience (SPCR) in June 2011 and the revised SPCR in February 2014. The proposed project is included in the revised SPCR under Component III as Project 4: Climate resilience of rural infrastructure in Kampong Cham province as part of Rural Roads Improvement Project (RRIP-II). The project has been allocated \$9 million grant and \$7 million in concessional loan.

The revised SPCR confirms that the backbone of any country's sustainable development is physical infrastructure and that improvements in infrastructure will have a positive impact on both economic and social development, including education, health, tourism, and trade, as well as on a nation's integration with the region and the world. However, rural infrastructure, including roads, water supply and sanitation is extremely vulnerable to climate change, which is manifested in the form of floods, droughts, and other extreme events such as tropical cyclones.

In Cambodia, the principal mode of transport is by road. Cambodia's road network of 51,764 km includes (i) about 5,623 km of national roads (primary national highways); (ii) about 6,641 km of provincial roads (secondary national highways); and (iii) about 39,500 km of rural roads. Management of national and provincial roads is the responsibility of the MPWT, whereas management of rural roads is the responsibility of the Ministry of Rural Development (MRD).

Roads are critical for the social and economic development of Cambodia. In particular, improved rural roads are vital for rural progress as they provide basic inputs for all-round socioeconomic development through creating conditions for better access and connectivity of people to markets and services, and of services to the village. Rural roads also stimulate and expand non-farm activities in rural areas by accelerating and enhancing production and consumption linkages that will eventually multiply employment opportunities for the poor. However, rural roads, particularly gravel

roads, deteriorate quickly due to rapidly growing traffic, lack of maintenance financing, overloading of cargo, poor road maintenance standards, inadequate institutional capacity for road maintenance and management. Additionally, prolonged flooding from extreme weather events can cause substantial damage to infrastructure. In Cambodia, the 2009 floods caused an estimated \$25.47 million in damage and loss of national and rural roads alone. Given their vulnerability, the rural laterite roads were particularly hard hit. As a result, access to basic services in areas around the Tonle Sap Basin, where a large proportion of Cambodia's rural poor live, is limited due to poor condition of rural roads. This situation hinders development of cash-crop production due to limited access to markets. In addition, gravel roads are susceptible to flooding in the rainy season. To address the above issues and provide safe, cost-effective reliable all-year road access and connectivity from rural areas to markets, employment centers, and social services, ADB approved the Rural Roads Improvement Project (RRIP) (Loan 2670)¹ in 2010. This project is expected to improve about 505 km of rural roads in remote agricultural areas of seven provinces (Battambang, Kampong Cham, Kampong Chhnang, Kampong Speu, Kampong Thom, Pursat, and Siem Reap) located around the Tonle Sap Basin to paved condition and strengthen the capacity of the Ministry of Rural Development (MRD) to plan, manage and monitor road maintenance operations. Given recent natural disasters in Cambodia, particularly frequent flooding during the wet season, climate change considerations will need to be incorporated in the project design, including green planting for flood and drought management, water capture and storage systems, early warning systems and emergency management systems for rural roads.

Rural Roads Improvement Project (RRIP) II. In view of large scale damage due to intense flooding in 2011 and 2013², MRD sought ADB's support to expand RRIP by rehabilitating additional rural roads, and introduce other climate vulnerability reduction measures. The RRIP II³, approved in 2014, aims to rehabilitate 1,200 kilometers (km) of rural roads in ten provinces, including the seven original project provinces (Banteay Meanchey, Battambang, Kampong Cham, Kampong Chhnang, Kampong Speu, Kampong Thom, Pursat, Siem Reap, Takeo and Tboung Khmum) to paved condition. RRIP II will also include a capacity-building program to improve rural road maintenance and rural road safety and community awareness program. PPCR funds will be used to enhance climate resilience of rural infrastructure in Kampong Cham province, and provide access and reduced flooding risk for inhabitants of the Mekong River Island cluster.^{4 5 6}

¹ ADB, 2010. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Kingdom of Cambodia for Rural Roads Improvement Project*. Manila (Loan 2670-CAM).

² In 2011 and 2013, damage and loss of national and rural roads from flooding amounted to \$351.9 million and \$79.61 million, respectively.

³ ADB, 2014: *Report and Recommendation of the President to the Board of Directors: Proposed Loan and Administration of Loans and Grants, Kingdom of Cambodia: Rural Roads Improvement Project II*. Manila (Project Number 42334).

⁴ The island cluster in the Mekong River consists of five remote islands, (i) Kaoh Mitt, (ii) Kaoh Soutin, (iii) Kaoh Thmei, (iv) Kaoh Samrong, and (v) Kaoh Pir, which are highly vulnerable to flooding; the islands lack year round access to the mainland or within the islands. The lack of access to emergency facilities has resulted in fatalities of about 10 island residents per year. Improving access and connectivity will increase the climate resilience of the 5-island cluster.

⁵ Vulnerability of Kampong Cham province to flooding is generally high. In Kampong Cham, the number of affected families from the 2013 floods reached 51,376, higher than the 33,436 families affected by the 2011 floods.⁵ From 2011 to 2013, vast areas of rice paddies which were close to harvest season were damaged and destroyed from floods, reaching up to 22,000 ha. Infrastructure, dams, water supply systems, schools and hospitals were likewise damaged or destroyed. Around 521km of national/provincial/rural roads and 50 school and hospital buildings were affected and destroyed, including about 39 km in the island cluster. During the rainy season, road access and boat landing have become increasingly hazardous and has placed additional burden and risks on villagers, with high fatality rate of patients being transported to mainland during serious illness or emergency.

⁶ See Climate Resilience Outputs and PPCR Funded Activities (Supplementary Appendix 15 of the RRP) for an assessment of the vulnerability of the project area to climate variability and change.

Project Objectives and Expected Outcomes

The impact of the project will be improved access to markets, jobs, and social services in ten project provinces.

Specific objectives of PPCR support in the project include the following:

- i. To rehabilitate about 240 km of vulnerable rural roads in Kampong Cham province including Tboung Khmum and the five islands in the Mekong River using innovative approaches such as bioengineering.
- ii. To strengthen capacity of MRD and other agencies to mainstream climate change concerns into rural infrastructure planning and development.
- iii. To develop and implement a multisector climate change adaptation framework for the five Mekong River islands.
- iv. To promote effective linkages between climate change adaptation and disaster risk reduction in Kampong Cham province.

The expected outcome of the project is a safe, climate-resilient, and cost effective rural road network in 10 project provinces to provide all-year access to markets, jobs, and social services.

PPCR resources will be utilized to strengthen climate resilience of highly vulnerable rural roads of Kampong Cham and Tboung Khmum provinces and connectivity improvements of Mekong River islands (Output 1 & 5 of the Cambodia: Rural Roads Improvement Project II). In particular, PPCR resource will support the following activities:

1. Strengthened capacity of MRD and other institutions to mainstream climate change adaptation in rural infrastructure planning (\$2 million grant). This activity will improve MRD's capacity in rural transport sector planning and regulation for climate resilience through shared learning and development of tools and guidelines on integrating climate risk management into operational policies and strategies and in the design of infrastructure projects. This activity includes: (i) incorporation of climate risks into MRD policies and operations; (ii) preparation of hazard maps to guide rural road maintenance operations; (iii) preparation of guidance manuals incorporating climate resilience into planning, design, and maintenance of roads developed; (iv) provision of training on climate change adaptation in rural infrastructure to MRD staff and key professionals; (v) organization of at least two adaptation conferences by MRD in collaboration with MOE and MPWT; and (vi) development of knowledge products on lessons on integrating climate resilience into infrastructure development projects and decision-making.

2. Priority adaptation measures implemented for enhanced resilience of rural infrastructure (\$7 million grant and \$7 million loan). This activity supports the following strategic directions identified in MRD's draft Strategic Plan of Rural Development for Climate Change Adaptation in Cambodia (SPRD-CCA): (i) transport mobility and access to critical services during extreme events, particularly floods; (ii) safe access to water during climate extremes, such as drought; and (iii) sustainable and diverse rural livelihoods to reduce vulnerability to climate change. Adaptation interventions include both structural and non-structural measures such as:

- i. **Rehabilitation of roads and jetties.** PPCR funds will be used to (i) improve 193.9 km of highly vulnerable rural roads to climate resilient paved condition in Tboung Khmum province (formerly part of Kampong Cham) and 50km of highly vulnerable rural roads to climate resilient paved condition in the five islands of Kampong Cham province which become

inaccessible during the rainy season; (ii) improve 11 jetties (7 on the islands and 4 connecting jetties on the mainland) using hand laid reinforced concrete; (iii) improve or construct small scale levees or other water management interventions to eliminate the risk from flooding due to heavy rainfall; and (iv) adopt bio (green) engineering solutions to strengthen embankments for road sections that are exposed to higher risk of damage due to flooding.

ii. Multisectoral Climate Change Adaptation Framework for Mekong Island cluster. This activity will support the development of a framework on climate change adaptation and a community-based emergency management system aimed at increasing resilience. Key components include:

- (i) *Improved water access to reduce vulnerability of agriculture to climate change.* This component focuses on physical adaptation measures such as (i) construction of drainage canals in lowland areas to divert and store excess water during the rainy season, and (ii) piloting micro-irrigation systems and solar pumping systems to reduce water consumption during the dry season. Water user groups will be created for managing the overall system and collection of tariffs.
- (ii) *Income generation through renewable energy.* It will focus on reducing the cost of energy for household and agricultural activities through: (i) detailed assessment of renewable energy potential and identifying the most appropriate technologies to support local conditions; (ii) create rent-to-own program, in cooperation with the private sector, for group-buying of small-scale solar home systems or rent-to-own program with technical support, warranties, and replacement parts; (iii) install solar lighting systems for ferry landings to increase the length of operating times and increase safety, as well as for emergency response stakeholders; and (iv) train local youth and current energy suppliers to repair and maintain solar systems.
- (iii) *Improved health and safety during extreme climate events.* This component includes measures to reduce impacts on human health through (i) piloting early warning systems and an awareness program and emergency response plan, including provision of and transport to safe areas for humans and animals; (ii) sanitation training program for reducing health risks during floods and drought, including sanitation with raised latrines and ring-wells in flood prone areas; (iii) provision of water purification tablets to clinics for distribution; water filters distributed for potable water; and (iv) provision for multi-purpose emergency hospital access and emergency response. A fully equipped emergency management center (including a back-up mobile unit) will be established, with early warning systems installed in key locations, and emergency management systems like appropriate communication, emergency and rescue equipment and vehicles, with trained personnel to manage the center (response teams, medical teams, etc.). This measure is expected to improve human health and safety during both flood and drought events.
- (iv) *Diversification of income and livelihood for improving adaptive capacity* through (i) community based tourism; (ii) entrepreneurship and small business development training program, focusing on women and youth; (iii) development of MRD credit and awards program for enhancing resilience of small businesses.

12. Consistency with Investment Criteria:

The project further advances the key objectives of the SPCR by contributing to:

(i) Mainstreaming climate resilience in rural infrastructure planning. The project will contribute to integrating climate risk in rural roads and other infrastructure in Kampong Cham. The project will establish early warning systems and support the development and implementation of a framework on climate change adaptation and its investments, including a community-based emergency management program aimed at strengthening adaptive capacities of communities in Kampong Cham.

(ii) Strengthening capacities at national and provincial levels to integrate climate resilience into rural infrastructure planning and development through shared learning, workshops, and development of tools and guidelines on integrating climate risk management into operational policies and strategies and in the design of infrastructure projects.

(iii) Replication of innovative adaptation measures such as bioengineering for improving resilience of rural infrastructure. Such measures can be scaled-up and replicated in the remaining provinces of the project and other provinces in Cambodia, the Tonle Sap watershed where similar communities exist, and other remote rural areas. Apart from potential replication in Cambodia, there are other locations in Lao Peoples Democratic Republic, or archipelagic locations of Indonesia, the Philippines and Pacific Islands that may benefit from this approach, with certain adjustments, to achieve self-sustainability, poverty reduction through inclusive growth, and most of all, climate resilience.

(iv) Scaling up financing for adaptation. Financing from the PPCR is expected to have a high demonstration effect through improved resilience of rural infrastructure and year-round access and connectivity to markets and other social services, which in turn may lead to increased investments in resilience.

13. Stakeholder engagement:

During project preparation, stakeholder coordination and cooperation was achieved through a series of consultation workshops, joint field visits, and meetings. Institutional stakeholders include (i) government agencies responsible for the design, management, and implementation of the project such as MRD, MPWT, MOE, MOWRAM, MOP, MEF, and NCDM; and (ii) state institutions, community based organizations, and private sector institutions whose mandates share an interest with the outcomes and/or impacts of the project.

Different departments within MRD, MOE, and MEF, provincial governments of project provinces, provincial department of rural development were consulted in separate meetings, midterm and final workshops of the project preparation, as well as during the ADB fact finding mission to finalize the project design. The project will collaborate with MRD and MPWT in developing engineering designs, standards and guidelines, sharing lessons and best practices in integrating climate resilience in road infrastructure planning, and organizing climate resilience-related conferences to strengthen Cambodia's road sector. Cooperation with MOWRAM and NCDM in sharing climate data and commune level disaster data will be enhanced. Coordination with MOP, MOE, and NCCC in monitoring, reporting and evaluation of the project will be improved as well as collaboration with MEF in allocating annual budget for public investments (Section III of the PAM).

A number of consultations with local stakeholders in project areas have taken place during project design. The project design ensures that local communities, including women, are involved in green planting and in maintenance of roadside plants for flood and drought management. The consultations will continue throughout implementation to afford community groups the opportunity to voice their views. The community consultation meetings will include participation of representatives from local government, local communities, including women, NGOs, and the private sector. It will include the participation of representatives from the local government, civil societies, NGOs, and the private sector. The communities will be briefed on all aspects of the subproject including safeguard

issues of environment, resettlement. Women will be particularly encouraged to actively participate in the consultation meetings and voice their opinions and views about the subproject design and implementation arrangements.

14. Gender considerations:

The project will benefit both girls and women. Girls will have a better chance of attending secondary school, markets will be easier to reach, and “buy and sell” job opportunities for women will increase. Gender equality in labor-based rural road construction and maintenance will provide significant social and economic benefits to women. Women's jobs can include repairing potholes, cleaning pavement, clearing ditches and culverts, collecting road maintenance materials, overpass and small bridge repairs and maintenance, road brushing, and maintaining signage. Women can maintain embankments and plant and care for trees and other plants that protect against erosion. Based on this, the project is categorized as Effective Gender Mainstreaming, under ADB's Gender Mainstreaming Project Guidelines.

Measures to effectively mainstream gender considerations in the project include the following: (i) capacity development activities to promote better understanding of the differential gender impact of poor infrastructure and of the social benefits of improving it (related to gender differences in the purpose of travel and travel patterns, and in mobility outside the home and outside the village); (ii) mandatory recruitment procedures or quotas in minor works contracts, preceded by sensitization activities targeting both men (to encourage them to allow female family members to participate) and women (to inform them of opportunities); (iii) a requirement that contractors recruit a new workforce at regular intervals (e.g. every 5km) to maximize job creation and to ensure that women are not discouraged by excessive travel; and (iv) equal pay for equal work for both men and women, with a requirement that contractors submit time sheets that are disaggregated by gender. A gender action plan is provided in the linked document 7 and Section VIII of the PAM.

15. Indicators and Targets (consistent with results framework):

| Core Indicator | Target |
|--|--|
| (a) Core indicator 1: Degree of integration of climate change into national, including sector planning | <ul style="list-style-type: none"> Revised technical guidelines with climate risk integrated into engineering design standards developed |
| (b) Core indicator 2: Evidence of strengthened government capacity and coordination mechanism to mainstream climate resilience | <ul style="list-style-type: none"> A Master plan on rural road construction and maintenance standards incorporating climate risks developed |
| (c) Core Indicator 3: Quality and extent to which climate responsive instruments / investment models are developed and tested | <ul style="list-style-type: none"> About 240 km of rural roads, including 193.9 km in Tboung Khmum and 50 km in the five Mekong River islands, rehabilitated to climate-resilient condition 11 jetties with climate resilient standards rehabilitated or developed At least 15-20 micro-irrigation systems piloted and implemented to reduce water consumption during the dry season. |
| (d) Core indicator 4: Extent to which vulnerable households and communities use improved PPCR supported tools, instruments, strategies and activities to respond to climate variability and climate change | <ul style="list-style-type: none"> One local early warning system and community-based emergency management system piloted in the five islands |

| | | |
|---|--|--------------------------------|
| (e) Core Indicator 5: Number of people supported by the PPCR to cope with climate change and climate variability | <ul style="list-style-type: none"> At least 100,000 people (30,000 households) supported by PPCR to cope with impacts of climate change and with all-year access to markets | |
| <i>Development Indicator(s):</i> | <ul style="list-style-type: none"> Quarterly progress reports and audit reports are submitted on time and in a satisfactory manner. Project implementation is on time and within the budget. | |
| 16. Co-Financing: | | |
| | <i>Amount (in USD million):</i> | <i>Type of contribution:</i> |
| <ul style="list-style-type: none"> Government | 17.79 | Cash and in-kind |
| <ul style="list-style-type: none"> MDB | 54.00 | Loan |
| <ul style="list-style-type: none"> Private Sector (please specify) | Not applicable | |
| <ul style="list-style-type: none"> Bilateral (please specify) <ul style="list-style-type: none"> ➤ AFD (France) ➤ Export-Import Bank of Korea ➤ Government of Australia ➤ Nordic Development Fund | 40.00 41.00 18.52 5.40 | Loan Loan Grant Grant |
| <ul style="list-style-type: none"> Others (please specify) | Not applicable | |
| Co-Financing Total: | 176.71 | |
| 17. Expected Board/MDB Management⁷ approval date: | | |
| Board/MDB Management approval date: October 2015 | | |

⁷ In some cases activities will not require MDB Board approval.