

## LESSONS LEARNED

### A. Introduction

1. The Royal Government of Cambodia has requested for a loan from Asian Development Bank (ADB) for the proposed Rural Roads Improvement Project (RRIP) III. The project will rehabilitate about 360 kilometers (km) of rural roads in five provinces (Kampong Cham, Kratie, Prey Veng, Svay Rieng, and Tboung Khmum) to paved condition. The rehabilitated roads will provide poor rural provinces with climate-resilient, safer, and cost-effective rural road network with all-year access to markets, schools, and other social services. The proposed RRIP III will continue to support sustainability of this rural road network through: (i) a rural road maintenance regime in the Ministry of Rural Development (MRD); and (ii) a community-based road safety program. The project will also support an HIV/AIDS and human trafficking awareness and prevention program (HHTPP).

2. The ongoing loan RRIP II<sup>1</sup> designed the proposed RRIP III. All outputs of RRIP II have been designed based on lessons learned from the implementation of RRIP.<sup>2</sup> Similarly, RRIP designed RRIP II.

3. Similar to implementation arrangements for RRIP and RRIP II, the Project Management Unit (PMU) of the Ministry of Rural Development (MRD), the executing agency, will implement the project. Detailed design and implementation supervision (DDIS) consultants will assist PMU in project management.

### B. Specific Lessons Learned in each Project Output of proposed RRIP III with the History of Upstream RRIP and RRIP II

4. **Rural Road Improvements.** The provision of proper drainage facilities along market centers in rural areas has been impossible due to resettlement impact. In RRIP, the alternative approach adopted has been to hand concrete such short sections with labor-intensive community participation methods. Such are considered mutually benefiting all stakeholders. This has been adopted in RRIP II design, as well as in the proposed project's design.

5. RRIP implementation also found that existing pipe culverts have not been strong enough with inadequate functioning to drain the rain water. Therefore, during implementation, many of pipe culverts have also been replaced or widened for road safety purposes. This lesson learned has been incorporated in the RRIP II design, as well as in the proposed project's basic design. Lack of information dissemination for road improvement to villagers and consultation with beneficiaries on their local knowledge during detailed design has also been a lesson learned to capture historical information and minimize inadvertent negative impacts to their residences. This will be remedied during the proposed project's detailed design.

6. Overall, structural design was improved through lessons from RRIP II. This improved structural design of roads was for climate/disaster resilience, and for the increasing traffic demand in the future: (i) the subbase of roads should consist of at least 20 centimeter (cm) thickness of granular subbase course layer in order to reinforce subsoil stability; (ii) the aggregate base course

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<sup>1</sup> ADB. 2014. *Report and Recommendation of the President (RRP) to the Board of Directors: Proposed Loan and Administration of Grant to the Kingdom of Cambodia for Rural Roads Improvement Project II*. Manila (Loan 3151-CAM).

<sup>2</sup> 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).

layer should be at least 20 cm, which is the same standard as the national roads to sustain adequate support for long term road life; and (iii) the surface should be paved by double bituminous surface treatment (DBST), but in flood prone zones or market areas, a 20 cm thickness of reinforced concrete pavement is the solution.

7. **Rural Road Asset Management.** After completion of DBST roads, a routine and periodic maintenance, if not institutionalized appropriately, may become an issue for sustainable maintenance. Therefore, RRIP II has considered a road asset management model developed by an ongoing project for Ministry of Public Works and Transport (MPWT).<sup>3</sup>

8. Therefore, more ownership of road asset management for rural roads should be transferred gradually to the Provincial Development of Rural Roads (PDRD), MRD acquiring the capacity of road asset management through the upstream projects. By completion of the ongoing RRIP II, MRD intends to transfer the responsibility of road asset management to PDRDs. However, appropriate budgetary allocation for paved roads is needed for maintaining them, which MRD assured to allocate. To support rural road asset management, effective axle load control has been found to be a key requirement. In fact, axle load control has been improved during the upstream projects (viz. incidence of overloading violations in the project provinces of RRIP reduced to 50% from 2011 to 2015 against the target of 40%). The proposed RRIP III will further install overhead control gates to restrict passage of overloaded and oversized trucks. Coordination with provincial and district government authorities needs to continue, together with the elimination of illegal garages that modify the trucks; both were initiated under RRIP II.

9. **Rural Road Safety and Community Awareness Program.** RRIP's implementation found that the international expert did not have enough expertise to fully support the community-based road safety program. Therefore, the ADB missions provided extensive technical support to develop a successful program. This was replicated in RRIP II's road safety output which is ongoing satisfactorily. The delay caused by the shortcomings in RRIP indicated that in RRIP II, the road safety awareness campaigns and/or training need to start before road construction works and should dynamically continue at all phases of construction and beyond the completion of paving. The same principles will be adopted in the proposed project.

10. To implement road safety programs by the social and environmental office (SEO), the sustainability of SEO should be further strengthened. RRIP and RRIP II had consulting services to implement the programs of increased awareness and application of road safety for project beneficiaries. These activities were extensively supported by ADB. During these programs, SEO has been strengthening their capacity, thus has become a role model as a government body in addressing cross-cutting issues of social, safeguards, and gender. SEO also demonstrated the good practice of equal participation of women. Implementation of HHTPP and labor and gender action plan (LGAP) has also supported the capacity building of SEO. During implementation of the proposed RRIP III, it is expected that SEO staff will implement, monitor, and report on road safety program and gender elements with no consultant support, except for recruiting facilitators.

11. **Project Management Support.** RRIP had been completed exceeding expectations, with project completion within time and budget. However, this is largely due to the accelerated progress of civil works output, while the other outputs have been relatively delayed but still within the project period, which may be seen as an imbalance in focus, including implementation focus on social aspects. Therefore, it was required from MRD to consider this as a lesson learned during

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<sup>3</sup> ADB. 2009. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Kingdom of Cambodia for the Road Asset Management Project*. Manila (Loan 2406-CAM).

the RRIP II implementation to reduce the imbalance and continue the strengthening of functions of SEO through closer monitoring of staff performance in achieving further improved capacity. ADB review missions have been ensuring this gradually with close monitoring and support to PMU. It was found that this approach has been successful in RRIP II implementation, thus will also continue in the proposed RRIP III.

12. **Connectivity Improvements for Mekong River Islands.** This output has a wide area of lessons learned from the Climate Change Adaptation (CCA) Output of RRIP. We wish to record these although there is no dedicated output of this nature in the proposed RRIP III.

- (i) **Replication:** The approach for replication of the initiatives in the proposed Connectivity Improvements for Mekong River Islands Output stem from two policy areas: one is the poverty and gender aspects. The other is the potential application and/or replication of climate change adaptation in many other similar areas, some in other island clusters in the Mekong River, another in the Tonle Sap watershed where similar communities exist, and even in remote rural areas (though not separated from mainland by a body of water) which are totally disconnected from paved national and/or provincial road network given the extensive rural road network of nearly 45,000 km (in comparison with about 12,000 km of national and provincial road network).
- (ii) Apart from potential replication in Cambodia, there are other geographical locations in Mekong River in Lao Peoples Democratic Republic, or archipelagic locations of Indonesia, the Philippines and the Pacific Islands that may replicate this approach, with certain adjustments, to achieve self-sustainability, poverty reduction through inclusive growth, and climate resilience.
- (iii) The 5-island cluster has a total population of about 30,000, which is quite significant with respect to the benefits that this output may provide, given the economic rate of return for the individual roads and jetties is above 12% threshold, with the entire output, as well as the overall proposed project passing this economic viability criteria.
- (iv) This approach may be extended to any remote community in Cambodia that it may be replicated, with appropriate adjustments to geographical parameters, to achieve self-sustainability, poverty reduction through inclusive growth, and climate resilience.
- (v) **Application of CCA Output's outcomes from RRIP in Cambodia:** This, in fact, has been happening since 2015, even outside MRD, when ADB designed the Increased Climate Resilience Output under Provincial Roads Improvement Project,<sup>4</sup> which is being implemented now by the MPWT. The knowledge from the CCA output has been, and will be applied, with effective coordination with the CCA output. Hazard mapping developed under the CCA output was directly utilized to plan maintenance activities in the project area. Experience from emergency management pilot of the CCA output was used to plan emergency management in this project's area. Green planning initiated in the CCA output was planned in RRIP II, which started with creating jobs for residents from a dedicated nursery to raise seedlings to tree planting over the national and provincial road sections, which MPWT is planning to continue over the entire road network under their jurisdiction, even after this project. This type of output and/or activities is expected to become a standard in newly proposed projects.

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<sup>4</sup> ADB. 2011. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Kingdom of Cambodia for the Provincial Roads Improvement Project*. Manila (Loan 2839-CAM).

- (vi) Climate resilience knowledge from the CCA output has been introduced into projects those have been approved prior to RRIP. One example is the Greater Mekong Subregion: Cambodia Northwest Provincial Roads Improvement Project.<sup>5</sup> The 29-km road section in National Road 56, to be improved under the project, was totally impassable during the 2011 floods, thus on the request of MPWT, ADB approved a contract variation in 2012 to redesign this road section to be climate resilient based on the basic principles of the CCA output.
- (vii) Another example is the Flood Emergency Management Project<sup>6</sup> for three agencies (MPWT, MRD, and the Ministry of Water Resources, Hydrology, and Meteorology), which used the pilot approach from CCA output in this project's design to have national level application of emergency management planning to assist the National Committee for Disaster Management.
- (viii) The Connectivity Improvements for Mekong River Islands Output has been totally designed based on CCA outputs knowledge. Hazard maps were effectively used, with rainfall data and benchmarks applied to study the infrastructure design (roads with drainage and jetties) to provide 365-day access to the islands where more than 10 lives were lost, and unaccounted losses of livestock have been reported annually. Further, emergency management planning knowledge is also applied here to save those lives and livestock.
- (ix) Following RRIP, MRD has included climate resilience as one priority area in 2012 in their policy, which has already been approved by the MRD Minister.
- (x) **Linkage between ongoing CCA Output and Connectivity Improvements for Mekong River Islands.** All policy areas proposed and/or implemented under the CCA output have been moving forward in several other projects already. This is even more prominent in the Connectivity Improvements for Mekong River Islands Output but is not limited to one output.
- (xi) Summarizing the linkage between CCA Output and RRIP II, we observed the following: in the road improvement output, all road designs in flood prone areas have adopted climate resilient road design over the 1,200 km of rural roads. Rural road asset management output of the project incorporates outcomes of the CCA Output in planning road maintenance works, taking into account predicted climate patterns. In the project management support output, there is already an established SEO in the RRIP, which is being further strengthened during the RRIP II implementation to increase the capacity of the environment specialists through continuous engagement on the job, while increasing the resources.
- (xii) In the Connectivity Improvements for Mekong River Islands Output, there are two major sub-outputs. Sub-output 1: Improved climate resilient access to Mekong River Islands; and Sub-output 2: Climate Change Adaptation Framework. While sub-output 1 aims to improve the year-around access to islands through climate resilient design that includes drainage and water management, sub-output 2 aims to develop a climate change adaptation framework and implement the related activities through a multi-sector approach for inclusive growth in the islands in a sustainable manner. This sub-output 2 takes the policy agenda initiated under CCA Output further to a broader application in Cambodia as its first initiative. Therefore, RRIP II is designed to take the policy agenda of RRIP forward in all perspectives of the project.

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<sup>5</sup> ADB. 2009. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Kingdom of Cambodia for the Greater Mekong Subregion: Cambodia Northwest Provincial Road Improvement Project*. Manila (Loan 2539-CAM).

<sup>6</sup> ADB. 2012. *Report and Recommendation of the President to the Board of Directors: Proposed Loan to the Kingdom of Cambodia for the Flood Damage Emergency Rehabilitation Project*. Manila (Loan 2852-CAM).

- (xiii) **Integration of CCA to the Entire Project:** From the discussion points above, we can observe how: (a) RRIP II has integrated CCA activities to the whole project; (b) the important and valuable climate change related knowledge introduced in MRD through the CCA output has expanded in scale and scope; (c) RRIP II has applied a systematic continuation of this CCA output activities further; and (d) the expansion of CCA activities has been taking place over the transport sector in Cambodia. Therefore, important initiatives have progressed into RRIP II's climate change adaptation activities, integrated to the overall project, but not as a stand-alone activity allowing any risk of marginalization.

### C. Cross-cutting Themes

13. **Resettlement and Temporary Impacts.** During RRIP implementation, MRD developed a resettlement framework during its design, although no project roads were expected to be widened, thereby inducing resettlement impacts. This was replicated in RRIP II. The proposed project also adopted a similar approach while none of the project roads will be widened or will have resettlement impacts.

14. **Environment.** RRIP implementation indicated two areas that need close monitoring by all stakeholders that have led to lessons learned which are essential features in the project's environment management plan: (i) organization of sites, provision of facilities for personal safety of all workers; and (ii) safety during construction especially for the road users. While the RRIP had been gradually making random checks by the international environment specialist to ensure that the DDIS consultants issue strict compliance orders to the contractors and sub-contractors (who are usually not knowledgeable of FIDIC requirements), followed by sanctions of work stoppage in case of noncompliance. This approach was strengthened and followed during the RRIP II implementation, as well as in the proposed project implementation.

15. **Gender.** As almost all gender indicators of the design and monitoring framework (DMF), as well as Gender Action Plan (GAP) of RRIP, were unrealistic, the RRIP II design made a careful analysis on gender indicators based on field data. Therefore, RRIP II's DMF and GAP now have realistic indicators with minimal negative impacts on women.

16. It should also be noted that the implementation of GAP must focus more on practical ways of attracting and/or ensuring job opportunities for local women, than meeting the indicator targets. Forcing subcontractors to meet targets only may have negative effects on women, like exploitation, harassment, facing difficult working environment, etc. from the subcontractors. These impacts may not be easily observed while the executing agency or ADB Missions have any practical control to protect women. This approach has been adopted in RRIP III design to realistically modify the gender indicators.

17. Additionally, more women participation should be sought out not only in the project-related works, but also in the society along the developed rural roads. The implementation of LGAP in RRIP and RRIP II have contributed to challenge male domination in the construction works by creating employment for unskilled women. Improved rural roads have also enhanced livelihood opportunities for women. Those impacts should be extended geographically through the proposed RRIP III.

18. **HIV/AIDS and Human Trafficking Prevention.** During RRIP implementation, there were shortcomings in the provision of awareness training to construction workers. Complete and up-to-date lists of construction workers were not available to the service provider to enable them to

assess accurate participation rates, or to enable them to effectively target transient workers in their regular training schedules. As a result, there were significantly lower participation rates among workers who regularly changed construction sites.

19. The outline of the HHTPP in the project administration manual, as well as the draft HHTPP document, includes responsibilities of the civil works contractors and service provider monitoring and evaluation (M&E) officer to address this issue. Accordingly, the civil works contractors and subcontractors will be required to request and encourage all workers to participate in HIV awareness training. Conditions to this effect will be included in the relevant works contracts. Contractors are to maintain up-to-date lists of workers employed by work site and provide this information monthly to the service provider to enable the service provider to monitor participation rates in training and awareness-raising activities. Civil works contractors will also be required to assign an HIV focal person for each work site who will be responsible for passing on relevant information, education, and communication materials to any new worker who commence at a given work site if the HIV awareness training had already been conducted at the site. The service provider M&E officer is to maintain data on the number of workers who participate in the awareness training (including unique individuals rather than just instances), as well as number of workers not participating in the awareness training per site, based on lists of workers provided by the contractor and/or subcontractor, as well as other anecdotal information.

#### **D. Consultant Selection and Procurement**

20. For RRIP, the PMU completed both captioned processes in record time, with delays occurring only due to complaints, but not due to slow processing or numerous errors in submissions. Generally, procurement processes had no significant issues. PMU sustained this good quality and efficient processes in cases but had inconsistencies of mistakes in other cases during RRIP II implementation. This needs to be rectified during the proposed RRIP III implementation since the project is relatively simpler than RRIP II.

#### **E. Future Project Design and ownership**

21. RRIP had been the first project in Cambodia's portfolio which designed the future project (i.e. RRIP II) through loan proceeds. This helped the executing agency in: (i) increasing the PMU capacity by developing a strong candidate-road screening criteria and selecting the shortlist on consensus within the executing agency; (ii) further shortlisting the roads based on available financing; (iii) being inclusive with all stakeholders in the proposed project design with respect to details of outputs; and (iv) achieving a seamless transition between implementation of RRIP and processing and/or approval process of RRIP II. Therefore, RRIP II has included a financing allocation through loan proceeds to design the proposed RRIP III.