

Executive Summary

1. Project Overview

- ☐ This evaluation is an ex-post evaluation of the Vietnam GMS Southern Coastal Corridor Road Project (Phases 1 and 2). The purpose of the evaluation is to conduct an objective and systematic assessment of the project's performance and effectiveness, identify areas for improvement, and derive practical recommendations and policy implications that can be applied to the design of similar future projects.
- ☐ The GMS Southern Coastal Corridor Road Project is a road and bridge construction project covering part of the Vietnamese section of the GMS Southern Coastal Corridor, which connects Thailand, Cambodia, and Vietnam. The project was implemented through co-financing with the Asian Development Bank (ADB).
 - The project aimed to expand road infrastructure in the southern coastal areas of the Mekong Delta, improving access to borders, ports, and major cities, reducing transport costs and travel time, and enhancing logistics and passenger flows to support regional economic growth and improve residents' quality of life.
- ☐ Phase 1 covered the Minh Luong (Kien Giang Province)–Thu Bay section, while Phase 2 covered the Thu Bay–Kenh 14 Bridge–Ca Mau section. Both phases includes new road construction, improvement of existing roads, and bridge construction.
- ☐ The borrower was the Ministry of Finance of Vietnam. The implementing agency was the Ministry of Transport, the executing agency was Cuu Long Infrastructure Investment Development and Project Management Corporation (Cuu Long CIPM), and the operating agency was the Vietnam Road Administration.
 - Following the government organizational restructuring on March 1, 2025, the Ministry of Transport merged with the Ministry of Construction, and Cuu Long CIPM was integrated into the PMU My Thuan under the Ministry of Construction.
- ☐ In terms of implementation period, Phase 1 required 84 months (30 months longer than planned), while Phase 2 required 55 months (10 months longer than planned).
 - For Phase 1, although the original plan anticipated a 54-month period from loan effectiveness to defect liability completion, delays in land acquisition, resettlement, and design change approvals resulted in a 30-month extension.
 - For Phase 2, while the planned implementation period was 45 months, similar delays led to a total duration of 55 months.
- ☐ Total project costs amounted to 95.2% of the planned budget for Phase 1 and 69.6% for Phase 2.
 - For Phase 1, the total project cost, including the Vietnamese government contribution, amounted to USD 60.132 million, which was equivalent to 95.2% of the planned USD 63.132 million. The

EDCF contribution, initially planned at USD 42.162 million (excluding contingency), increased to USD 49.059 million due to inflation-related construction costs and additional procurement, representing 98.7% of the loan ceiling.

- For Phase 2, the total project cost, including government contribution, was USD 65.214 million, which was equivalent to 69.6% of the planned USD 93.684 million. The EDCF contribution was initially planned at USD 70.000 million, while the actual disbursement amounted to USD 54.459 million, corresponding to 77.8% of the loan ceiling.

2. Evaluation Background, Methodology, and Results

☐ Evaluation Background and Purpose

- Transportation infrastructure is one of the core sectors of EDCF, accounting for the largest share of EDCF approvals. Vietnam is EDCF's largest recipient country (as of 2023, 68 approved projects, accounting for 10.7% of total approval amount) and one of Korea's key comprehensive strategic partners.
- The GMS Southern Coastal Corridor Road Project is a 924 km road development project connecting Thailand and Cambodia to Ca Mau City, an industrial hub at the southern tip of Vietnam. It is one of ADB's signature projects aimed at promoting regional connectivity and economic development among Mekong countries.
- Accordingly, this ex-post evaluation aims to analyze the performance, effectiveness, and challenges Phases 1 and 2 as well as to derive lessons learned and feasible recommendations for similar future projects.
- In addition, this evaluation was conducted in conjunction with the 「2025 EDCF Evaluation-linked ODA Evaluation Expert Training Program (Graduate Level)」. Three outstanding students from the course Management and Evaluation in Development Cooperation at Ewha Womans University (Seoul, ROK) participated in the field survey and evaluation process.

☐ Evaluation Methodology

- This evaluation followed the 「EDCF Evaluation Manual (December 2020)」 and its associated Terms of Reference. The project was quantitatively assessed using four evaluation criteria: relevance, efficiency, effectiveness, and sustainability. In addition, impact and cross-cutting issues (environment, vulnerable groups, and gender equality) were included as qualitative evaluation criteria, resulting in a total of six criteria reviewed from a multidimensional perspective.
 - Impact was assessed qualitatively, without numerical scoring, due to the difficulty of quantifying long-term effects at the time of evaluation.
 - Cross-cutting issues were included as qualitative criteria in line with OECD DAC recommendations.
- The evaluation employed a mixed-method approach combining literature and statistical analysis, quantitative and qualitative surveys and interviews, and field surveys that included road cross-section and pavement condition inspections paired with speed and traffic volume measurements. To assess connectivity with the overall GMS corridor and adjacent road networks, secondary quantitative data were also collected and analyzed, including Vietnam-Cambodia trade volumes and cross-border traffic statistics.

□ Evaluation Results (Phase 1)

- The overall evaluation score for Phase 1 of the GMS Southern Coastal Corridor Road Project was 3.35 out of 4.00, indicating that the project was successful.

〈Evaluation Results (Phase 1)〉

Evaluation Criterion	Weight	Score	Rating
Relevance	25%	3.75	Highly Relevant
Efficiency	25%	3.00	Efficient
Effectiveness	25%	4.00	Highly Effective
Sustainability	25%	2.66	Sustainable
Impact	(Qualitative)	–	–
Cross-Cutting Issues	(Qualitative)	–	–
Overall	100%	3.35	Successful



- (Relevance)** The project scored 3.75 out of 4.00, corresponding to a 'Highly Relevant' rating.
 - It aligned with the Vietnamese government 「Socio-Economic Development Plan (SEDP) 2005–2010」 objectives for transport network development and road connectivity as well as EDCF support strategies in terms of priority partner countries, priority sectors for Vietnam, and Korea–Vietnam cooperation at the time.
 - Although some sections had to be adjusted during detailed design, key components were completed as planned. This included the Tac Cau Bypass and two long-span bridges accounting for over 88% of the project budget, which significantly improved north–south connectivity. The bypass also contributed to regional development by facilitating commercial activities. Additionally, strong interest and participation from local governments, People's Committees, and residents were observed.
- (Efficiency)** The efficiency score was 3.00 out of 4.00, corresponding to an 'Efficient' rating.
 - While the implementation period exceeded the plan by 30 months, this extension was not excessive compared to similar projects and the score was adjusted accordingly.
 - The total project cost was approximately USD 60.13 million (USD 4.62 million per km), which was slightly higher than comparable two-lane road projects in Vietnam but still reasonable given the inclusion of bridge construction. In addition, given that the road has remained fully functional for over ten years, transport efficiency was maintained despite partial scope reductions. In addition, since design modifications reduced unnecessary expenditures while prioritizing core facilities, the resulting cost adjustments were assessed as appropriate and justified.

- **(Effectiveness)** The project achieved a perfect score of 4.00 out of 4.00, corresponding to a 'Highly Effective' rating.
 - In Kien Giang Province, the project construction included (1) the Tac Cau Bypass (6.3 km) and two long-span bridges, (2) expansion of the Minh Luong–Tac Cau road section (3.4 km) and eight small bridges, and (3) road shoulders (11.6 km) along the Tac Cau–Thu Bay section. The expansion of the Minh Luong–Tac Cau road section was transferred to the local government budget and excluded from the project scope, while the small bridges were adjusted to three expansions and five reinforcements. All of which were completed in accordance with the revised project plan.
 - Although the implementation period was extended by 30 months (from 54 to 84 months), the impact on road quality was limited. Travel time and the Travel Time Index (TTI) improved across all transport modes, enhancing road connectivity and significantly reducing vehicle operation and travel time costs.
 - Satisfaction surveys indicated that the new road has been frequently used for multiple purposes as the only paved road accessible to nearby communities. This has led to improved access to healthcare, transportation, and income-generating activities. However, maintenance issues were identified, including delays in road damage repair and the need for resurfacing due to settlement at road-bridge interfaces.
- **(Sustainability)** The overall assessment under the sustainability criterion scored 2.66 out of 4.00, corresponding to a 'Sustainable' rating.
 - Following the government organizational restructuring on March 1, 2025, the Ministry of Transport merged with the Ministry of Construction. This led to the integration of Cuu Long Infrastructure Investment Development and Project Management Corporation with PMU My Thuan, with organizational restructuring and data transfers still underway. As the Ministry of Construction was now overseeing the five national transport infrastructure plans of Vietnam, there was a potential risk that road maintenance and management may receive lower priority.
 - Following the administrative boundary restructuring effective July 1, 2025, Kien Giang Province merged with An Giang Province, transferring responsibility for road maintenance and rehabilitation to the An Giang Provincial Department of Construction. As part of the consolidation of 63 provinces and cities into 34, administrative uncertainty and procedural delays were anticipated.
 - Since 2013, approximately 65% of vehicle purchase tax revenues had been allocated to provincial budgets for local road maintenance. However, those funds covered only 40–50% of actual maintenance needs, constraining adequate upkeep. Field surveys identified the need for technical improvements, particularly at bridge approaches, road markings, signage placement, pavement overlays, roadside obstructions in commercial sections, shoulder pavement damage, and areas prone to persistent water accumulation.

- **(Impact)** To assess the medium to long-term outcome indicators of Phase 1, changes in Vietnam–Cambodia trade volumes were analyzed using national export–import statistics from the General Statistics Office of Vietnam. Compared to the baseline, Vietnamese trade volume with Cambodia (as of 2024) increased by approximately 644% between 2009 and 2024, with an average annual growth rate of 14%. However, this figure reflected the combined effects of multiple transport routes, including road transport, as well as rapid economic growth in Cambodia and southern Vietnam during the same period.
 - The road project was considered to have partially contributed to this trade expansion by facilitating trade flows and reducing logistics costs. For future evaluations of similar projects, further analysis of intermediate indicators, such as transport and logistics costs per unit distance, lead time, and freight volumes logged on the project road, is recommended.
 - Travel time along the Ha Tien–Rach Gia–Ca Mau corridor was reduced from an average of 8–9 hours in 2007 to approximately 5 hours in 2025, representing a reduction of 3–4 hours.
 - The project contributed to the establishment of an independent transport and logistics network in the Lower Mekong region, providing a buffering function against China-dependent logistics systems. It was assessed as norms-based, since it applied standards for procurement transparency, environmental and social safeguards, and multilateral appraisal and monitoring mechanisms. Furthermore, it exemplified a multilateral infrastructure development model, as it was jointly financed by Korea and Australia under ADB coordination.
 - Interviews and surveys of local residents and road users indicated increased commercial activity, particularly in pineapple and coconut markets, and population inflows in areas surrounding the new road. At the same time, concerns regarding market overheating and the presence of road safety vulnerabilities were also identified.
- **(Cross-cutting Issues)** During appraisal, the project was classified as having no significant environmental impact in accordance with the EDCF ‘Environmental and Social Impact Assessment Guidelines’. The following cross-cutting impacts were identified during implementation and operation:
 - **(Environment)** In accordance with the MOU with ADB, the Government of Vietnam prepared an Environmental Management Plan (EMP), which was implemented by the PMU and monitored by consultants. Interviews and surveys indicated that local residents perceived the benefits of improved mobility, accessibility, and living convenience as outweighing any negative environmental impacts.
 - **(Vulnerable Groups)** According to the ADB feasibility study, all 952 indigenous residents and vehicle owners expressed support for the project. Interviews and surveys conducted during this ex-post evaluation confirmed positive impacts, including improved access to healthcare and education services as well as increased household incomes.
 - **(Gender Equality)** Resident interviews indicated that women experienced improved mobility and

accessibility, enhanced access to urban centers and markets, and increased opportunities for retail entrepreneurship, contributing to overall improvements in quality of life and household income.

□ Evaluation Results (Phase 2)

- The overall evaluation score for Phase 2 of the GMS Southern Coastal Corridor Road Project was 3.384 out of 4.00, indicating that the project was successful.

〈Evaluation Results (Phase 2)〉

Evaluation Criterion	Weight	Score	Rating
Relevance	25%	3.875	Highly Relevant
Efficiency	25%	3.00	Efficient
Effectiveness	25%	4.00	Highly Effective
Sustainability	25%	2.66	Sustainable
Impact	(Qualitative)	–	–
Cross-Cutting Issues	(Qualitative)	–	–
Overall	100%	3.384	Successful



- (Relevance)** The overall assessment under the relevance criterion scored 3.875 out of 4.00, corresponding to a 'Highly Relevant' rating.
 - The project aligned with the Vietnamese government 「Socio-Economic Development Plan (SEDP) 2005–2010」 objectives for transport network development and improved road connectivity. It also demonstrated strong consistency with the EDCF 「Operational Guidelines for the Economic Development Cooperation Fund」, including the status of Vietnam as a priority partner country, priority sectors for Vietnam, and the Korea–Vietnam cooperative relationship at the time of project appraisal.
 - The Double Bituminous Surface Treatment (DBST) method applied in this project required careful consideration given the characteristics of local roads connecting small cities in southern Vietnam, where frequent heavy-vehicle traffic and excessive axle loads increased the risk of pavement damage. Taking into account local conditions, such as limited budgets, insufficient design standards, and tropical monsoon climates, it was necessary to diagnose potential issues associated with this construction method and to derive appropriate improvement measures.
 - Prior to the project, only unpaved roads were available. This resulted in significant inconvenience for long-distance travel, including access to Rach Gia City. The relevance of the project was further supported by (1) the high level of interest and participation by local governments, People's Committees, and residents; (2) their strong recognition of the functionality and importance of the road; and (3) their commitment to continued maintenance of the road.

- **(Efficiency)** The overall assessment under the efficiency criterion scored 3.00 out of 4.00, corresponding to an 'Efficient' rating.
 - The project duration was extended by more than 10 months compared to the original plan of 45 months due to delays related to land acquisition, resettlement, design change approvals, and final payment settlement. Under the quantitative evaluation framework, this corresponded to a time-related score of 2 points.
 - Meanwhile, the EDCF disbursement rate equated to 77.8% of the planned amount, and the total project cost reached 69.6% of the planned budget (approximately USD 65.214 million, or about USD 2.1 million per km). Both unit costs and expenditure levels were assessed as efficient when compared with similar road projects in Vietnam.
 - The relatively low budget execution rate was attributable to lower-than-expected land acquisition and ancillary costs. Notably, while overall costs were reduced, the core construction scope was not reduced. Rather, facilities were expanded through the additional installation of cross-drainage culverts. In this regard, adjustments to the project budget were assessed as reasonable and rational.
- **(Effectiveness)** The overall assessment under the effectiveness criterion scored 4.00 out of 4.00, corresponding to a 'Highly Effective' rating.
 - The project planned for the construction of a two-lane road and 36 bridges along the Thu Bay-Kenh 14 Bridge section (approximately 31 km). The road length was constructed as planned, while the number of facilities was increased to 39. Although the implementation period was slightly extended due to detailed design adjustments, upon opening the road traffic flow had been smooth and the condition of the facilities remained sound. Overall, the completed outputs were assessed as consistent with the original plan.
 - Analysis of traffic flow improvements showed that travel times were significantly reduced across all transport modes, including passenger cars, freight vehicles, motorcycles, and buses. The improvement rate reached 60–70%, exceeding that of Phase 1. The Travel Time Index (TTI) also improved meaningfully. However, due to relatively low speed limits, actual travel times did not decrease to the extent initially anticipated.
 - Vehicle operating costs and travel time costs along the project corridor declined substantially. Satisfaction surveys indicated that both the new and old roads were used in parallel; however, the new road was primarily used for long-distance travel, including to access Rach Gia City. Improved road accessibility had contributed to increased economic activity and household incomes. At the same time, satisfaction with road and bridge maintenance was the lowest among evaluation items, with strong demand for repairs due to delayed damage restoration and the need for resurfacing caused by settlement at road-bridge interfaces.
 - Overall, most users reported tangible benefits, including reduced travel time, lower fuel and

vehicle maintenance costs, and reduced fatigue. However, satisfaction with maintenance standards, such as pavement condition, drainage, and cleanliness, remained relatively low. Additionally, concerns regarding maintenance and safety were particularly pronounced among motorcycle users.

- **(Sustainability)** The overall assessment under the sustainability criterion scored 2.66 out of 4.00, corresponding to a 'Sustainable' rating.
 - Following the government organizational restructuring on March 1, 2025, the Ministry of Transport merged with the Ministry of Construction. This led to the integration of Cuu Long Infrastructure Investment Development and Project Management Corporation with PMU My Thuan, with organizational restructuring and data transfers still underway. As the Ministry of Construction now oversees the five national transport infrastructure plans of Vietnam, there is a potential risk that road management for small and secondary cities may receive lower priority.
 - Under the administrative boundary restructuring effective July 1, 2025, Kien Giang Province was merged into An Giang Province, and responsibility for road maintenance and rehabilitation was transferred to the An Giang Provincial Department of Construction. During this large-scale consolidation process, reducing 63 provinces and cities to 34, administrative uncertainty and procedural delays were anticipated.
 - Since 2013, approximately 65% of vehicle purchase tax revenues had been allocated to provincial budgets for local road maintenance; however, these allocations cover only 40–50% of actual maintenance needs, limiting the implementation of large-scale rehabilitation works. Field surveys identified the need for technical improvements, including vegetation removal along roadsides to improve visibility; development of asphalt pavement technologies optimized for local climatic conditions; and improved pothole repair techniques.
- **(Impact)** To assess the medium- to long-term outcomes of Phase 2, Vietnam–Cambodia trade trends were analyzed using national export–import statistics. As a result of the project, trade volume increased by approximately 644% between 2009 and 2024. This was based on an average annual growth rate of 14%, expanding from USD 1.36 billion in 2009 to USD 10.1 billion in 2024. Accordingly, the project was assessed as having achieved its long-term quantitative target of more than doubling trade volume.
 - Per capita Gross Regional Product (GRP) in Kien Giang Province and Ca Mau Province had continued to increase since reaching levels close to the national per capita GDP of Vietnam at the time of project completion, although it remained slightly below the national average.
 - The project contributed to the establishment of an independent transport and logistics network in the Lower Mekong region that does not transit through China, providing a buffer against China-dependent logistics systems. Implemented as a multilateral project co-financed by ADB, Korea, and Australia, it was assessed to be a norms-based infrastructure development model for the Mekong region, having applied standards for procurement transparency, environmental

and social safeguards, and multilateral appraisal and monitoring.

- Following road opening, commercial activities along the corridor, including pineapple and coconut sales, cafés, and rental businesses, had expanded, accompanied by population inflows, indicating positive impacts on the local economy. In addition, the diversion of large trucks to the new road had contributed to traffic dispersion and improved road safety to a certain extent.
- **(Cross-cutting Issues)** During appraisal, the project was classified as having no significant environmental impact in accordance with the EDCF “Environmental and Social Impact Assessment Guidelines.” The following cross-cutting impacts were identified during implementation and operation:
 - **(Environment)** In accordance with the MOU with ADB, the Government of Vietnam prepared an Environmental Management Plan (EMP), which was implemented by the PMU and monitored by consultants. Interviews and surveys indicated that local residents placed greater value on the benefits of improved mobility, accessibility, and living convenience than on any negative environmental impacts.
 - **(Vulnerable Groups)** According to the ADB feasibility study, all 952 indigenous residents and vehicle owners expressed support for the project. Interviews and surveys conducted by the ex-post evaluation team confirmed positive impacts, including improved access to healthcare and education services as well as increased household incomes.
 - **(Gender Equality)** Resident interviews indicated that improved mobility and accessibility for women, enhanced access to urban centers and markets, and increased retail entrepreneurship contributed to improvements in household income.

3. Lessons Learned and Recommendations

☐ Lessons Learned

- Key Success Factors

- **(Technical Factors)** By designing the road in close connection with residential areas and local commercial zones, the project enabled the road to function not merely as a transit corridor but as a community-oriented access road after completion. As a result, high utilization rates were observed, generating positive spillover effects, including revitalized commercial activity and improved logistics accessibility.
- **(Procedural and Management Factors)** The project formed part of the GMS Southern Coastal Corridor Road Program led by ADB, with EDCF participating through a co-financing arrangement. Given the scale of the corridor, dividing financial responsibilities among EDCF, Australia, and ADB enabled systematic and phased improvements in regional connectivity, generating development impacts that would have been difficult to achieve through isolated interventions.
- **(Institutional Factors)** At the time of implementation, the Government of Vietnam prioritized transport infrastructure development, with particular emphasis on improving road connectivity in the Mekong Delta region, thereby ensuring strong policy support for the project. In addition, regular Joint Steering Committee meetings involving ADB-EDCF, the Australian Department of Foreign Affairs and Trade (DFAT), and local authorities enabled effective project coordination, grievance handling, and budget approvals, strengthening project transparency and enhancing the management capacity of local implementing agencies.

- Areas for Improvement

- **(Technical Aspects)** While the pavement design and maintenance methods applied in this project were consistent with standards commonly used in the late 2000s, climate change in the southern coastal region had led to more frequent potholes, cracking, and surface spalling. In some sections, non-standard temporary repairs were observed, indicating the need to establish revised design and maintenance standards that account for climatic and environmental changes.
- **(Procedural and Management Aspects)** As the road was used as a shared roadway by automobiles, motorcycles, and bicycles, a decline in traffic safety, lower average travel speeds, and increased accident risks were observed. These findings indicated the need for physical separation by vehicle type and the expansion of traffic safety facilities.
- **(Institutional Aspects)** During the effectiveness assessment, traffic volume and travel speed data were not directly measured, requiring analysis based on estimated values. For future projects, it is recommended to establish a data-driven road operation and management system by installing automated monitoring equipment, such as traffic counters and CCTV, at major intersections and entry/exit points. In addition, field surveys identified insufficient speed limit signage along the project corridor, hindering the ability of drivers to determine appropriate driving

speeds. Early deterioration of road markings also reduced visibility and increased centerline encroachment.

☐ Recommendations

- EDCF

- **(Strengthening Grant-Loan Linkages for Data-Driven Road Management)** Although Loan Agreements (L/A) require the collection and reporting of data on key performance indicators, including traffic volumes, accident rates, travel speeds, and pavement conditions, implementing agencies in recipient countries often lack the measurement equipment, institutional capacity, and data systems to conduct regular monitoring. For future projects, it is recommended to strengthen the linkage between grant and loan assistance to enhance data-driven management through a phased and selective approach that reflects the recipient's policy and financial context. This linkage should be integrated with policy consultancy and capacity-building programs from KOICA or Multilateral Development Banks (MDBs) to improve the consistency and practicality of the overall road management framework.
- **(Sharing Policy Experience in Road Infrastructure Sector via Grant Assistance)** In parallel with infrastructure construction, it is necessary to share Korea's institutional experiences in road operation, maintenance, and safety through grant-linked programs. For regions highly vulnerable to natural disasters such as landslides and floods, policy sharing should focus on Korea's climate-responsive road management cases to ensure that climate resilience is integrated into the operational design from the pre-construction stage. Such institutional knowledge sharing will contribute to the effectiveness and sustainability of EDCF road projects by raising policy awareness and strengthening the management capabilities of recipient countries.
- **(Improving Sustainability through Enhanced Post-Completion Monitoring Mechanisms)** To ensure the long-term sustainability of EDCF road projects, it is essential to introduce mechanisms for accumulating baseline information and providing support for partner-led maintenance. Challenges in systemic data management after project completion often stem from the need to further align internal procedures and maintenance capacity. In accordance with the principle of partner ownership, the operational responsibility of the facilities rests with the recipient country. Therefore, when recipient countries request assistance for maintenance challenges, EDCF should prioritize knowledge-sharing support, such as technical consultancy and training, within the framework of the post-management support system.
- **(Strengthening Support for Field Surveys Reflecting Road Sector Characteristics)** Road projects require more extensive field surveys than other sectors, including full-section maintenance assessments as well as multi-dimensional traffic volume and travel time measurements by time and day. EDCF should therefore establish budgeting and implementation frameworks that adequately reflect these sector-specific requirements, ensuring sufficient time and financial resources for field investigations.

- Recipient Country Implementing Agencies
 - **(Expanding Climate-Responsive Road Design and Technology Adoption)** The Government of Vietnam had expanded road infrastructure primarily through low-cost construction methods; however, the increase of climate-related risks highlighted the need to strengthen infrastructure resilience. For future projects, the incorporation of climate-responsive design elements and technologies is recommended.
 - **(Establishing Enforcement Systems and Awareness Campaigns to Enhance Road Safety)** Field surveys identified frequent speeding and overloading by heavy trucks, while interviews with local residents confirmed that routine enforcement remained insufficient. It is recommended that the An Giang Provincial Department of Construction, in coordination with provincial police authorities, (1) institutionalize regular joint enforcement operations targeting speeding and overloading; (2) establish continuous enforcement systems through fixed and mobile cameras and patrols; and (3) concurrently implement public awareness and driver compliance campaigns to improve road safety.