

# Summary

## 1. Overview of Project and Loan Support

### Project Overview

- Vietnam Vinh Thinh Bridge Construction Project ( “Project” ) is a bridge construction project across the Red River that connects Vinh Thinh in western Hanoi to Son Tay area.

### Project Objective

- By constructing a bridge crossing the Red River and building connecting road infrastructure, Hanoi-centered looping corridor is created to generate an efficient road network across the Red River Delta area and promote the development of the capital area.

EDCF Loan

<Table 1> Borrower and Project Executing Agency

| Type                     | Organization                       | Roles & Responsibilities   |
|--------------------------|------------------------------------|--|
| Borrower                 | Ministry of Finance, Vietnam       | - Review loan terms, request loan support, sign the loan contract, and repay the loan.   |
| Government Ministry      | Ministry of Transport, Vietnam     | - Approve the project plan, organize the project executing agency, evaluate the bidding process and approve the procurement contract, finance project cost, and monitor operation and maintenance. |
| Project Executing Agency | Thang Long Project Management Unit | - Prepare the Project, carry out the bidding process, and implement and manage the Project<br>- Manage Vietnam's northern road development investment project                                      |

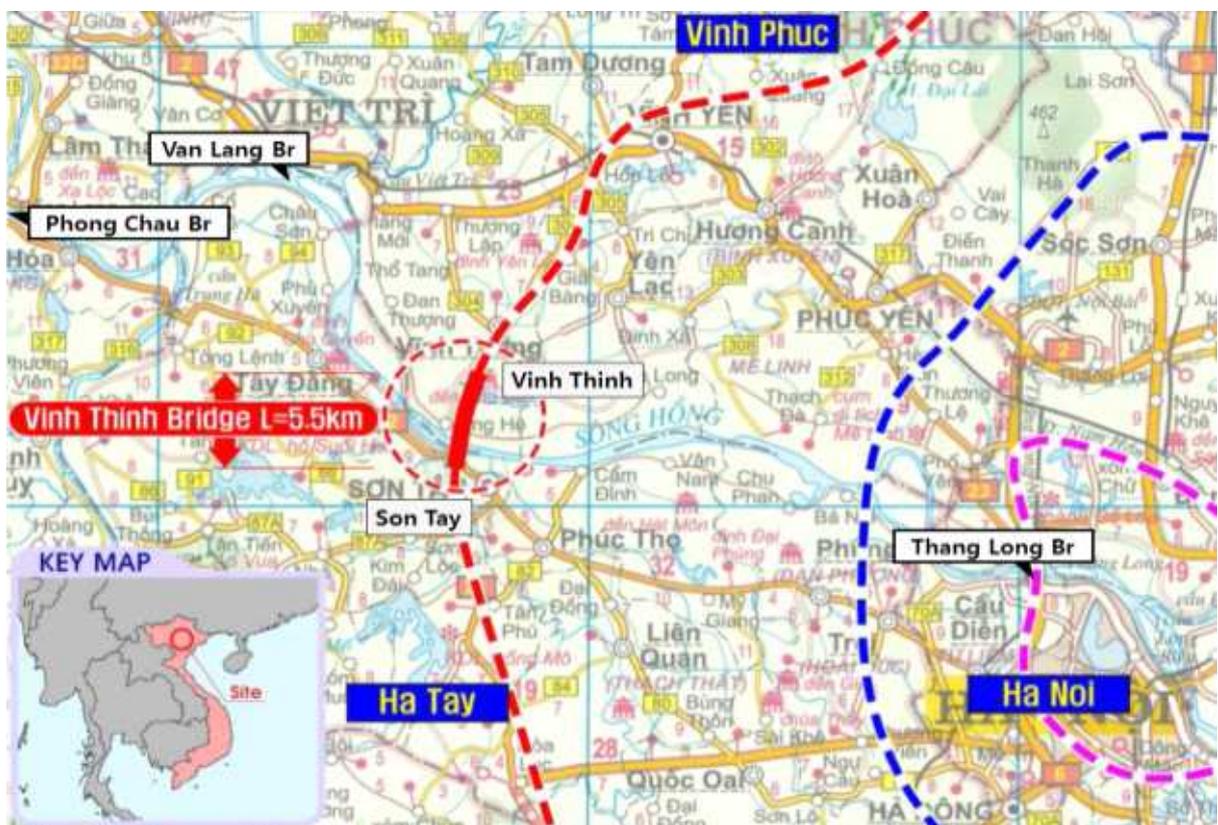
<Table 2> Project Loan Information

| Type of Loan             | Year of Approval | Project Title                          | Approved Amount (KRW 1 mil.) | Project Details  | Support Amount/ Total Project Cost |
|--------------------------|------------------|--|------------------------------|--|------------------------------------|
| Development Project Loan | 2009             | Vinh Thinh Bridge Construction Project | 109,809                      | Construction of main bridge (880m), accessing bridge (3,533m), and approach road (1,007m) connecting Son Tay and Vinh Yen of upstream Red River, Hanoi | USD 100 mil./ USD 137 mil.         |

- The original period of the Project is 54 months from the effective date of the loan contract, which consists 12 months for preparation, consultant employment, and detailed design and approval thereof, 6 months for constructor employment and contract, and 36 months for construction work and supervision.

□ Project Area Map

<Figure 1> Map of Vinh Thinh Bridge Construction Project Area



## 2. Evaluation Overview and Procedures

### Evaluation Objective

- This evaluation was conducted to identify the revitalization of the local economy after construction of the Vinh Thinh Bridge and sustainability in terms of the operation, repair and maintenance of the bridge.
- Also, success factors and matters to be considered for improvement were described to learn lessons and make recommendations which can be applicable to similar projects in the future.

### Evaluation Criteria

- This evaluation adopted five major OECD/DAC evaluation criteria (i.e. relevance, efficiency, effectiveness, influence and sustainability) and other cross-cutting issues under the Integrated Evaluation Guidelines of the Evaluation Subcommittee of the Committee for International Development Cooperation, the EDCF Evaluation Manual and the EDCF Ex-Post Evaluation Report Guidelines.
  - Among the OECD/DAC evaluation criteria, influence is not considered in this ex-post-evaluation since the period upon completion of the Project is not adequate.
- In addition, social benefits were calculated by reflecting the results of local traffic volume surveys as well as the traffic demand analysis conducted in the F/S of the Vinh Thinh Bridge, in accordance with the methodology presented in the “Guidelines of Preliminary Feasibility Study for Road and Railway Projects (KDI, 2008).” This allows a quantitative measurement of traffic flow effectiveness through the Project.

- The afore-said guidelines apply to any preliminary feasibility study which must be conducted by the Ministry of Economy and Finance as to any road or railway projects that the Korean government supports with KRW 50 billion or more.
  - Three relevant social benefits are reduced travel time, reduced operating cost, and reduced environmental cost (e.g. air pollution and noise).
- As a result, total benefits measured for 30 years since its opening in 2014 were estimated to be USD 196,007,666 on the basis of 2018 monetary value, which is approximately twice EDCF's support amount for the Project in USD 100 million.
- As for cross-cutting issues, gender equality and environmental problems were mainly assessed in consideration of the characteristic of the Project to reflect the mobility of the socially disadvantaged groups such as women and the aged.

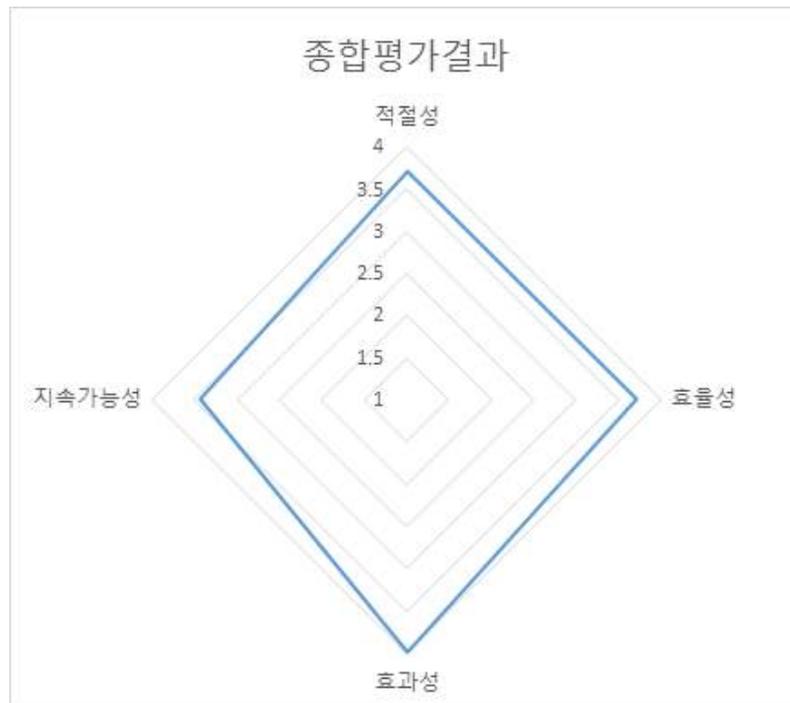
#### Evaluation Result & Overall Rating

- Overall, the Project acquired 3.72 points, which is regarded as “very successful.”
- As for relevance and sustainability, qualitative assessment was conducted based on evaluators' opinions and stakeholders' surveys as it was difficult to carry out quantitative assessment.
  - For each evaluation criterion, literature review, survey, interview and on-site inspection were carried out. Both qualitative and quantitative assessments have been conducted for efficiency, while effectiveness was evaluated quantitatively only.
    - For efficiency, the level of achievement in the period and cost of the Project was converted to points for quantitative assessment, and the statistical analysis of assessment of evaluators and stakeholders was reflected in qualitative

assessment.

- For effectiveness, as qualitative assessment was not available, quantitative assessment was conducted by identifying the degree of achievement in traffic volume increase and travel time reduction compared to the original plan.
- After completion of the Project, the fundamental objectives of the bridge construction project, such as more traffic volume and less travel time, were achieved and its Korean and foreign stakeholders mostly showed satisfaction in qualitative assessment. As such, the Project is deemed to have positively contributed to Vietnam's socio-economic development, including revitalized local economy.

<Figure 2> Evaluation Result Chart



Note. Relevance (North), Efficiency (East), Effectiveness (South) and Sustainability (West)

**<Table 3> Evaluation Result Summary**

| Criteria       | Weighted Value | Survey & Interview   | Method of Evaluation |                   |                   | Total Score |
|----------------|----------------|--|----------------------|-------------------|-------------------|-------------|
|                |                |  | Quantitative (50%)   | Qualitative (50%) |                   |             |
|                |                |  |                      | Evaluator (25%)   | Stakeholder (25%) |             |
| Relevance      | 25%            | Ministry of Finance, Thang Long Project Management Unit, Residents, Drivers, & Small Enterprises | -                    | 50%               | 50%               | 3.71        |
| Efficiency     | 25%            |  | 50%                  | 25%               | 25%               | 3.71        |
| Effectiveness  | 25%            |  | 100%                 | -                 | -                 | 4.00        |
| Sustainability | 25%            |  | -                    | 50%               | 50%               | 3.44        |
| Total          |                |  |                      |                   |                   | 3.72        |

- The total score is 3.72 points: 3.71 in relevance, 3.71 in efficiency, 4.00 in effectiveness, and 3.44 in sustainability.
  
- Each criterion was divided into sub-categories and then they were evaluated both qualitatively and quantitatively. The scores of sub-categories and their corresponding basis for calculation are as follows:
  
- Each score was calculated for each sub-category under the criteria in the above evaluation result summary table. The basis for such calculation was specified.

- However, for relevance and sustainability for which quantitative assessment was not available, evaluator' qualitative assessment and stakeholders' surveys were reflected by 50 percent, respectively, to calculate the corresponding results.
  
- Besides, cross-cutting issues which are difficult to measure in the numerical form were analyze in an objective manner.

**<Table 4> (Detailed) Evaluation Result Summary (Detailed)**

| Criteria             | W    | Evaluation Summary   |      |      | Result |
|----------------------|------|--|------|------|--------|
|                      |      | Criteria   | E    | SH   |        |
| Relevance            | 25%  | Conformity with Vietnam's development policy and EDCF's support strategy   | 3.50 | 4.00 | 3.71   |
|                      |      | Consistency with EDCF's support strategy   | 3.00 | 4.00 |        |
|                      |      | Appropriateness of the purpose and design of the Project   | 3.73 | 4.00 |        |
| Efficiency           | 25%  | Efficiency of management of the Project  | 3.35 | 3.50 | 3.71   |
|                      |      | Efficiency during the period of the Project  | 4.00 |      |        |
|                      |      | Efficiency of disbursement of the Project's costs  | 4.00 |      |        |
| Effective-ness       | 25%  | Degree of achievement of the goal of increasing road traffic   | 4.00 |      | 4.00   |
|                      |      | Degree of achievement of the goal of lowering travel times   | 4.00 |      |        |
| Sustain-ability      | 25%  | Vietnamese government's sense of ownership   | 3.50 | 4.00 | 3.44   |
|                      |      | Technical and institutional sustainability   | 3.12 | 4.00 |        |
|                      |      | Financial sustainability   | 2.00 | 4.00 |        |
| Cross-cutting Issues | -    | <ul style="list-style-type: none"> <li>- Negative impacts such as environmental destruction have been minimized.</li> <li>- The bridge construction reduced the cost of transportation, thereby improving the mobility of women and the socially disadvantaged.</li> <li>- Regional economic revitalization is expected as the ability to move towards other areas at unfavorable conditions such as heavy rain and dawn has increased.</li> </ul> |      |      | -      |
| Total Score          | 100% | -  |      |      | 3.72   |

Note: W: weight or weighted value, E: evaluator, and SH: stakeholders

Whether the Project's Targeted Objectives and Indicators Were Achieved in 2018, upon Completion of the Project

The objectives were set in three aspects for mid- to long-term effects, which were expected to be achieved in three to five years after completion of the Project.

- The Project aimed to achieve the growth rate of 12% to 13% in GRDP in the project area. It was confirmed that the targeted level was reached (12.02%) in 2018.
- The percentage of the poor in the project area has fallen very successfully to 1.16% in 2018 since the Project was carried out.
- The Project planned to increase the number of employees in the project area to 6% or more, but this figure was not achieved as only 0.75% was up.
  - As statistical data on employment growth in Vietnam were not found in the General Statistics Office of Vietnam, the number of employees was calculated based on the number of the economically active population and the employment rates in Vietnam in 2017 and 2018.
- In the process of examining the mid- to long-term effects of the Project, there is a limitation that indicators were available only for the whole area of Vietnam, among the 2018 data furnished by the General Statistics Office of Vietnam.
- It is deemed that if these effects were calculated based on the indicators concerning the project area, their accuracy could increase and the project area's growth rate in the number of employees that was not achieved in 2018 would likely have been reached.
- Given the rapid increase in the number of companies that were relocated to the adjacent areas since the construction of the Vinh Thinh Bridge, the number of employees is expected to grow continuously in the project area.

○ Whether the objective is achieved

- Specific objectives set at appraisal are as shown below and all were achieved.

- Annual average growth rate of traffic volume in the project area: 10% targeted → 16.9% attained
- Reduced travel time in the project area: 20 minutes targeted → 20 minutes attained
- Traffic volume transferred from the national highway line 32 to the project section: 15% targeted → 16.9% attained

○ The construction of the Vinh Thinh Bridge and intersection was successfully accomplished as part of the outputs of the Project.

□ Performance Management Framework

<Table 5> Performance Management Framework of the Project

| Type   | Objective/Index of Project Implementation                                    | Level of Objective                    | Outcome    | Achievement | Source                               |
|--|--|---------------------------------------|------------|-------------|--------------------------------------|
| Mid- to long-term performance <sup>1)</sup><br>(economic growth and poverty reduction)               | Increase in GRDP in the project area   | 11% → 12~13%                          | 12.02%     | Yes         | General Statistics Office of Vietnam |
|  | Decrease in the percentage of the poor in the project area                   | 8.8% → 5%                             | 1.16%      | Yes         |                                      |
|  | Increase in the number of employees in the project area                      | 5% → 6%                               | 0.75%      | No          |                                      |
| Type   | Goal/Index of Project Implementation   | Level of Objective                    | Outcome    | Achievement | Source                               |
| Short-term performance <sup>2)</sup><br>(construction of efficient cross-regional transport systems) | Average annual traffic growth rate in the project area                       | 10%                                   | 16.9%      | Yes         | On-site investigation                |
|  | Reduced travel time in the project area                                      | 76 min. → 20 min.                     | 20 minutes | Yes         |                                      |
|  | Traffic transferred from the national highway line 32 to the project section | (After completion of the Project) 15% | 16.9%      | Yes         |                                      |

|  |   |   |     |     |
|--|---|---|-----|-----|
| Output <sup>3)</sup><br>(Vinh Thinh<br>Bridge)   | Construction of<br>the Vinh Thinh<br>Bridge | Total length: 5.5km<br>PSC Box Girder/Asphalt<br>Pavement | Yes | PEA |
|  | Intersection                                | Form: At grade<br>Number: 3                               | Yes |     |
| <p>Activities</p> <ul style="list-style-type: none"> <li>- Employment of consultants (within three months from the signing date of the loan contract)</li> <li>- Execution of the procurement contract (within three months from the date of employment of consultants)</li> <li>- Migration and land compensation (by the end of 2011)</li> <li>- Procurement contract (within six months after detailed design)</li> <li>- Completion of construction works (three years from the signing date of the procurement contract)</li> <li>- Maintenance (two years from the completion date)</li> </ul> |   |   |     |     |
| <p>Financing Amount</p> <ul style="list-style-type: none"> <li>- EDCF: USD 100 million</li> <li>- Government of Vietnam: USD 37 million</li> </ul>   |   |   |     |     |

Note : 1) Goals that are expected to be achieved in three to five years after completion of a project

2) Physical outputs or services which can be obtained as a result of implementing a project.

3) Goals that are expected to be achieved at the time of completion of a project

### 3. Lessons Learned & Recommendations

#### Obstacles & Countermeasures in Construction Process

- For bridge and road construction, large and small changes in design and project plans had to be made due to the extension of pile length in P14 and P15 and the replacement of waterproof membranes.
  - All changes that occurred during the construction of the Vinh Thinh Bridge did not affect either the overall quality or the progress of the Project. However, more preparations and considerations should be carefully made as to safety and other matters in advance for future projects.
- There were no technical problems, as well as no events that delayed the schedule. But for future projects, it is essential to suggest countermeasures to cope with unexpected circumstances in an efficient manner.
- To look into the impact of the Project on the surrounding environment more closely, it is deemed that precise evaluation should be conducted to accurately compare economic indicators, environment and traffic volume in the project area before and after the bridge construction.

#### Problems Encountered in Negotiations with Locals

- In the surveys and interviews to evaluate the feasibility of the Project, there was a discrepancy between the answers from governmental agencies and residents concerning complaints and requests.
- The expert from the government agency answered that the government responded to such complaints and requests very efficiently, but some residents answered that it did not.

- There were not many complaints about difficulties in communications in the process of implementing the Project, but some disagreements between government agencies and residents imply the need for clear and effective communications and agreements in future projects.

#### Significance of Progress in the Project

- Since a mutual agreement was reached with residents in purchasing land of the project area, there was no significant disturbance or delay in the foundation work of the bridge. As such, the construction period was shortened.
- Because the contractor and supervision team who participated in the Project had a good understanding of the project area based on their abundant experience and broad network, it was possible to design the Project by minimizing any potential disruptive factors to be found in the construction process. This greatly contributed to building high-quality the bridge and roads.
- As the construction period was shortened by six months due to the active cooperation among the client, the contractor and the supervision team, it is anticipated that the Project will become an exemplary model of efficient operation and progress for future transportation infrastructure projects in Vietnam.
- The amicable agreement with locals and the efficient planning and construction work according to local circumstances allowed 18% savings in budget.
- According to survey results, local residents, drivers, self-employed people and businesses adjacent to the Vinh Thinh Bridge answered that the Project has generated significant effects, such as improved

accessibility to large cities, revitalized local economy, and job creation.

- Apart from the environmental and safety issues that aroused concern, the majority of users responded that they did not feel uncomfortable and maintenance of the bridge was being properly carried out.
  - Fortunately, no negative influence such as environmental destruction or safety issues has been found.
  - Instead, opinions regarding appropriate and effective management and maintenance were voiced.
  - However, when survey and interview results are put aside, it is recommended that sustainable development must be manifested for a better outcome and performance.
- The construction of the Vinh Thinh Bridge has enhanced the mobility of the socially disadvantaged groups, broadening the scope of their movement and creating an environment in which they can access the world easily and extensively.
- Along with the improvement in the mobility and accessibility of socially disadvantaged individuals, the scope of their social activities has been broadened. This will presumably lead to very positive effects across society, such as lower unemployment rate, more job creation, and booming tourism industry and local economy.
  - In the future, similar bridge construction projects are expected to help combat social inequalities facing the socially and economically weak, thereby creating a society where socio-economic benefits can be given to themselves.
- Contribution of EDCF Aid to the Development of the Partner Country
- It is deemed that EDCF support primarily contributed to the creation of transportation infrastructure, which helped enhance the mobility of the socially disadvantaged with less travel time, and further generated added value and more production and job creation in related industries.

- EDCF support was appropriately disbursed for the Project without additional expenditure and has contributed to securing the feasibility and legitimacy of the Project by shortening its construction period by 6 months.
  
- With the support from EDCF, the Vinh Thinh Bridge was successfully completed and thus accessibility has improved across the region. This has rendered circumstances favorable for a number of local businesses to open nearby and revitalize the local economy.