

Comprehensive Evaluation of the Transportation Sector

The Export-Import Bank of Korea
(Government Agency for the EDCF)

EDCF Operations Evaluation Team
(Evaluated by Korea Institute for Industrial Economics & Trade)

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I . EDCF Transportation Sector Project Progress

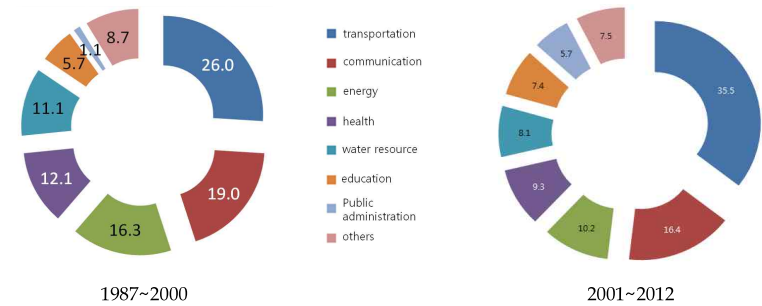
1. Korea's ODA Project Strategy and Status

The scale of the Korean government's annual bilateral assistance increased by 67 times from 17.9 billion in 1987 to 1204.1 billion won in 2012, but the amount of Korea's ODA is about 1.33 billion won, which ranks lowest among DAC member nations. Korea's ODA/GNI ratio is 0.12%, which is also most low, compared to the average level of 0.5% in Europe. Therefore, Korea's ODA projects are expected to be under continued pressure for expansion from the international society, which calls for meticulous preparation. Focus has been laid upon economic infrastructure such as transportation, and since the turn of the millenium, social infrastructure such as education has also been emphasized.

2. EDCF Project Strategy

EDCF's policy directions includes reinforcing strategic project assistance and global collaboration. By sector, assistance for social infrastructure such as health and human resources as well as economic infrastructure including road and transportation run parallel, categorized into "top priority" and "priority." Transportation (transportation system improvement) is labeled as "priority." In this sector, the strategy is to focus support on future-oriented, low carbon

emission modes of transport isuch as light rail and CNG buses, and infrastructure / transportation systems such as ports, roads, railways, and bridges. Also, support for large scale infrastructure projects that have bigger impact in their development has been increasing, and the government has been inducing funds from the private sector in order to effectively assist large scale infrastructure projects.



*Source: 2012 EDCF Annual Report

<Figure 1> EDCF Support by Sector (Ratio of Approval)

3. EDCF Transportation Sector Project Strategy and Status

EDCF's Annual Report (2012) categorized the project sectors into transportation, communication, energy, health, water resources, hygiene, education, public administration, and others. The approval rate for loan in 2012 for each sector was highest for transportation, marking 27.8%. The ratio for communication was 6.9%, 4.3% for energy, and 39.0% for economic infrastructure.

4. EDCF Project Selection and Implementation Procedures

EDCF project selection and procedures are as follows; receive project assistance request from recipient country government - Ministry of Strategy and Finance requests evaluation to Export-Import Bank of

Korea - the Bank submits an evaluation report after conducting a field survey. Once the Ministry of Strategy and Finance approves the project, the Foreign Ministry conveys a notice of project approval to the recipient country. The two governments establish an agreement, and in accordance with the content, the director of the Export-Import Bank of Korea negotiates with the recipient country government and establishes an agreement. When the loan agreement is set, the recipient country proceeds with hiring consultants and making purchases, and the Bank expends funds according to the loan agreement. Follow-up management would include project completion evaluation and ex post evaluation.

II. International Transportation Sector

ODA Project Cases

1. UN's ODA Project Strategy and the Role of Transportation Infrastructure in ODA Projects

UN's ODA project strategy focuses on Capacity Building of developing countries, assistance based on Basic Human Needs (BHN), Sustainable Development, Good Governance, Participation-based Development, Resolving Poverty, and Millenium Development Goals (MDGs).

Transportation infrastructure is necessary for humanity to secure the basic rights that guarantee the freedom of movement. Once movement capacity is improved with the construction of transportation infrastructure, improvements in accessibility to markets, transportation facilities and medical facilities follow. Therefore, transportation infrastructure is closely tied to BHN. Therefore, transportation infrastructure is critical to satisfy BHN, which must be considered in determining the directions for supporting transportation infrastructure.

Capacity development has been focused on transferring and implementing knowledge and technology related to transportation infrastructure, but from now on, focus should be placed on discovering and settling alternative knowledge and technology that suits local conditions by sharing knowledge and technology of sharing parties and considering the local situations and capacities at the

recipient countries. And the directions of support must accommodate such concepts in developing the capacities of transportation infrastructure.

The ratio of transportation in the total energy consumption and carbon emission is about 20%. About 50% is occupied by the industrial sector demands to reduce the ratio of the transportation sector is increasing, as this is closely related to economic activities. Moreover, as the energy consumption and carbon emission rate of developing countries are rated highest, there is a need for a measure to induce sustainable transportation in developing countries. Which, in turn, calls for reinforced support for inducing sustainable transportation systems and grafting green growth, low carbon technologies in developing countries.

Project execution systems such as improving transportation related laws and regulations and soliciting participation from various stakeholder in the planning stage must precede in order to establish an efficient transportation infrastructure support system in terms of good governance and participation.

As for resolving poverty and MDGs, support for transportation infrastructure must also progress towards shared goals of MDGs. There will be a need to set directions for transportation infrastructure support, based on how transportation structure may contribute to MDGs, and what the result and impact of such measures would be.

2. World Bank's Transportation Sector Project Status

WB presents 11 policy issues such as moderating the roles of the public and private sectors, improving the productivity of the public

enterprises, preserving the value of public asset, determining the transportation pricing, promoting the participation of the private sector, stimulating competition and reinforcing regulation, embracing the disadvantaged in the transport sector, improving road safety, preventing the spread of disease (HIV/AIDS), reducing carbon emission from transport measures, investing in transportation projects and preventing corruption in operation, which are selectively applied in consideration of the characteristics of each country. This way, WB is offering support for establishing a Safe, Clean and Affordable transportation system, and support the countries to operate the transportation sector economically, financially, socially and environmentally in a sustainable fashion.

Support for each sector of transportation shows radical increase from 2005 to 2010, from 3.17 billion to 9.37 billion dollars. Air and general transportation in 2010 greatly increased by 6 and 5 times compared to the previous year, and 43% in the railway sector. Road transport still takes up the biggest ratio, marking 50%, but this is a rather decreased rate compared to the previous year's 70%. Support for port and maritime transport were the only sectors that showed decrease.

WB induces self-propelled growth by facilitating environments that suit sustainable development and economic growth in developing countries. In detail, WB's projects focus on resolving poverty, promoting gender equality, improving women's rights, removing disease and ensuring sustainability. The road sector takes up the biggest ratio, but recently, air and railway transport have risen as key sectors due to their importance and need in terms of reducing logistics cost and promoting low carbon green growth. Increase in

railway transport is expected to continue. In addition to mixed-mode infrastructure construction for saving transport cost, projects for improving related regulations such as customs, inspection, security, and tax law will increase in importance in order to save transport cost.

3. Asian Development Bank (ADB)'s Transportation Project Status

ADB proposes three strategies: Inclusive Growth, Environmentally Sustainable Growth, and Regional Integration. Areas for change are selected based on these strategies, including the development of the private sector and vitalization of operation, efficient administration system and infrastructure, equality of gender, knowledge production, and collaborative system. Transportation infrastructure takes up a considerable part of ADB's assistance. Since the establishment of ADB in 1966, this sector occupied 21% of the total support, and 27% between 2005 and 2009. From 2010 to 2012, annual financial support marks 3.4 billion dollars.

Previously, ADB's transportation infrastructure support focused on roads and railways. Since 1990, as the private sector began to actively invest in roads, support in this sector decreased. Urban transport took up 18% of the transport between 2010 and 2012, showing visible increase. Total support amount increased from 2.2 billion in 2004 to 2.3 billion dollars in 2009, from 18 to 22 projects. As the importance of sustainable development has been highlighted, support for the road sector is expected to steadily decrease, in contrast to expected increase in the urban and railway sectors. ADB proposes four project strategies including urban transport, respond to climate change in the

transport sector, international transport and logistics, road safety and social sustainability in order to realize a sustainable transportation system. The focus areas in urban transport can be summarized as public transport, non-motorized transport, integration of transportation and land usage, demand management and traffic flow management. Strategies for responding to climate change in the transportation sector include promoting sustainable modes of transport and improving the efficiency of existing modes of transport. International transport and logistics focuses on building a transportation system that reaches beyond borders, and ADB will focus on international trade in Asia as well as sustainable economic growth. Road safety is a basic faculty for a sustainable society. Therefore, ADB plans to support various programs to this end. Also, ADB is devising a continuous support plan for socially disadvantaged or those with less advantage in the transport sector to ensure social sustainability. Sustainable transportation system plans move on from prioritizing sustainable transport projects, to research and test operations for realizing new sustainable transportation systems. The mid-stage in this process includes comprehensive application of improved transportation policies, and implementing policies for realizing new sustainable transportation systems. In the final stage, all policies for realizing sustainable transportation systems will be categorically applied. In this light, support in the road sector will be reduced to 40%, while support for urban transport and railways will be increased up to 30%.

4. Japan's Transportation Sector ODA Project Status

Japan's ODA has been decreasing since 2000, but support for infrastructure is very strong.

Focus has been laid on road and railway sectors. From 2003 to 2007, the total transportation infrastructure support was 91.3 billion dollars, each 33.24 and 33.02 billion dollars in the road and railway sectors. These two sectors take up over 70% of the support, and unlike WB and ADB, Japan plans to maintain its support for the road sector. The importance of sustainable transportation systems has been increasing, but as the road infrastructures of the benefiting countries is very poor in condition, the importance of supporting road infrastructure has been highlighted.

Japan is establishing mid to long-term plans for the transportation infrastructure sector, and is implementing support under new visions and with new strategies. The vision is "Inclusive and Dynamic Development from which everyone benefits. To this end, Japan has set responding to climate changes, promoting connective transport among countries, importance of repair and maintenance, and the participation of the private sector as key tasks and proposed execution strategies accordingly. Japan emphasizes the need to establish a systematic and comprehensive plan, in particular.

III. Review of Transportation Sector Project Evaluation System

1. EDCF's Evaluation System and Implementation Procedures

Evaluation principles are fairness, independence, reliability, usefulness and partnership, and the criteria are relevance, efficiency, effectiveness, impact and sustainability. A point system from 1 to 4 is applied to the five criteria, and the overall grade is estimated by multiplying the points by weighted value of 20%.

EDCF evaluation consists of 'internal evaluations' conducted by parties from the project execution entity; 'external evaluations' consigned to external organizations or specialized by the project execution entity; evaluation by the benefactor country, and 'collaborative evaluation' in which the recipient country and interested parties participate. By period, evaluations include 'pre-evaluation' conducted in the planning stage; 'mid-term evaluation' during the execution; 'completion evaluation' at the end of the project' and 'expost evaluation' that reviews the effects, impact and sustainability of the project.

2. World Bank(WB)'s Evaluation System

WB's evaluation is carried out by IEG (Independent Evaluation Group). IEG's key roles are first, evaluate whether WB's programs and activities are according to plan, and establishing desirable policy

directions and establishment; and second, disseminating the experience and lessons from the evaluation. IEG evaluates each project and program, analyzes long and short-term impacts, and reflects the lessons learned to future ODAs. IEG is characterized by independence of the organization, independence of activity, protection from external interference, and protection from conflicts among interested parties.

WB's project execution process is as follows: national support strategy → identification → preparation → preliminary evaluation → negotiation and approval of the board → execution and supervision → completion → evaluation.

Once a project elected based on CAS is complete, the project director submits an Implementation Completion Report (ICR).

The impact stage is where various long-term impacts of the project are assessed, and are conducted after 5 to 10 years from completion. The areas that are covered include Technical Impact, Institutional Impact, Economic Impact, Social and Cultural Impact, and Environmental Impact.

Evaluations are conducted for each sector, by areas WB is interested in, or for the determination of the relevance and objectives regarding certain countries or regions.

For annual evaluation, IEG synthesizes the learnings and results from various evaluations and produces an Annual Review of Operations Evaluation (AROE) about the effectiveness of the development project.

3. Asian Development Bank (ADB)'s Evaluation System

Evaluation is conducted by the IED (Independent Evaluation Department). IED comprises two divisions, and the chief and assistant evaluators help the person in charge. ADB guarantee's IED's independence in the evaluation process, and to this end, IED was granted the power to directly report to the board through the Development Effectiveness Committee without any preliminary deliberation.

ADB's evaluation has three categories. First is evaluation of individual projects; the evaluation system for the project's progress is called PPMS (Project Performance Management System). PPMS is applied to all steps of the project, consisting of two steps, based on five (or six) factors. The first is the self-evaluation conducted in the completion stage, and the second is an independent evaluation after completion.

<Table 1> Project Management and Evaluation Structure

Classification	Evaluation Structure	Evaluator
Self-Evaluation	DMF (Design and Monitoring Framework)	ADB
	PPR (Project Performance Report)	Related ministry, political agent
	Recipient country's supervision and evaluation	Executing entity, ADB
	PCR (Project Completion Report)	Recipient country's ADB operation division
	PPER (Project Performance Evaluation Report) : within 12-24 months from completion of project	ADB's OED
Independent Evaluation	Impact evaluation and special evaluation (selective) : within 3 years from completion, every 5 years	ADB's OED

In the self-evaluation process, ADB provides guidelines for PPER, and completed projects are set in four categories such as highly successful, successful, partly successful, or unsuccessful. Key evaluation criteria include relevance, effectiveness, efficiency and sustainability, and points are allotted to each criterion.

The second one concerns support programs for countries or specific fields. This evaluation is about ADB's strategies regarding and support for specific countries or fields. The impact of ADB's support is assessed through a long-term evaluation.

Thirdly, the Annual Review of Evaluation Activities is a brief overview of IED's annual evaluation activities, results and future references, which can be useful for the project division's evaluation in a later stage.

4 . Japan International Cooperation Agency's Evaluation System

JICA categorizes evaluations by object, time period, and evaluator. Object category can be again classified by policy, program, and project levels. Among these, project level evaluation concerns individual projects - the overseas branch in charge of the project conducts the evaluation.

As for period of time, evaluation is classified into preliminary, mid-term, completion, and expost evaluations. Preliminary evaluation checks the development policies of the recipient country, Japan's assistance policy, and whether the support satisfies the recipient country's requests before executing the project, and comprehensively assesses the relevance of project execution. The mid-term evaluation assesses whether the project is still in accordance with the initial

objective. The completion evaluation is conducted 6 months before the project is completed, and comprehensively assesses how close the project has come to accomplishing its goals, efficiency of the project, and future autonomy and progress prospects. The expost evaluation reviews whether the objectives were met, and if the impact will continue in the future 3 years after the completion. of the project.

As for evaluators, categories include evaluations led by JICA(internal evaluation), evaluation by a third party (external evaluation), and collaborative evaluation.

The most notable characteristic of evaluations conducted by JICA is the use of rating method. Relevance, Effectiveness, Efficiency and Sustainability are individually assessed, and the results are synthesized for a comprehensive assessment based on a Rating Flow Chart.

IV. Transportation Sector Comprehensive Evaluation

1. Evaluation Overview

A. Objective

Firstly, to discover key issues and areas for improvement through an evaluation of transportation sector support projects; secondly, conduct an evaluation that reflects OECD's DAC five criteria and performance management (Result Based Management); and thirdly, to suggest strategies, execution systems, and project methods related policies for more effective support through a comprehensive evaluation of transportation sector ODA projects.

B. Execution System

Comprehensive evaluation was conducted by transportation policy and technology specialists. The evaluation team comprised transportation sector ODA specialists and people with experience in conducting project execution. Also, opinions of specialists in each transportation sector sub-field were reflected. In addition, opinions and evaluations of on-site administrators and members of entities participating in the project, as well as ideas of international aid organizations' members were reflected.

C. Criteria

Evaluation on EDCF's transportation sector support project concerns selection process, support process, evaluation system and the direction of the project. Also, contents related to DAC evaluation criteria are assessed by item. Based on these categories, the support status for transportation sectors in each country and year is analyzed, and the relation between cooperating countries' development strategies and plans is determined, in order for the team to propose an overall evaluation of the transportation sector and measures for improvement.

D. Direction

Conduct a comprehensive evaluation focused on performance within a possible range, considering the international evaluation standards and recent domestic criteria. Reflect the trend whereby productivity(performance) is the main focus in evaluation in comparing the indexes before and after the project. Also, reflect the opinions and self-assessment results of the recipient country. Maximize the use of this self-assessment to reinforce a mutual sense of responsibility and the recipient country's owner spirit. Propose tasks and future directions for support in the transportation sector based on the evaluation results.

2. Setting Assessment Standards

A. Principles

Meticulously adhere to the general principles of evaluation - fairness, independence and objectivity, in order to deduce fair results that are

free from any interest. Also, conduct the evaluation based on OECD DAC's five evaluation criteria - relevance, efficiency, electiveness, impact and sustainability, and apply Korea's evaluation guidelines and related manuals.

A special characteristic of this research is that the weighted value regarding OECD DAC's five evaluation criteria are reestimated by applying AHP (Analytical Hierarchy Process). The current guideline applies the same weighted value to the five criteria, but as there is a lack of logical basis, this study applies scientific methods to estimate the weighted value and propose directionality regarding future evaluation guidelines.

B. Criteria and Ratings

The ratings for each evaluation criteria comprise four ratings (4, 3, 2points and 1 point), and the points for each criteria are multiplied by 20% weighted value to estimate the total rating. The results are labeled Highly Successful if 3.7 points or more, Successful if 2.6 points ~ less than 3.7 points, Party Successful if 1.8 points ~ less than 2.6 points, and Unsuccessful if less than 1.8 points.

<Table 2 > EDCF's Transportation Sector ODA Project Evaluation Matrix

Evaluation Criteria	Field	Evaluation Method and Standards
Relevance	<ul style="list-style-type: none"> - Accordance with the recipient country's situation and development policies - Accordance with the support strategies of the Korean government and EDCF - The owner spirit of the interested parties and the leading participation of the recipient country - Relevance of project design and usage of consultancy 	Qualitative Evaluation (Highly proper 4 points, proper 3 points, partly proper 2 points, improper 1 point)
Efficiency	<ul style="list-style-type: none"> - Relation between resource input and performance (efficiency of cost) - Efficiency of project period (whether completed in the planned period) - Collaboration between the supporting and recipient countries - Efficiency of project execution entity selection procedures and process 	Qualitative / quantitative evaluation compared to project execution plan (completed within planned period and cost 4 points, within 120% 3 points, 150% 2 points, and exceeding 150% 1 points)
Effectiveness	<ul style="list-style-type: none"> - Accomplishment of short-term goals and the degree of accomplishment (accessibility, mobility, and safety etc.) - Degree of utilization and operation of project performance 	Qualitative / quantitative evaluation compared to project execution plan (90% or better than plan 4 points, less than 90% 3 points, less than 70% 2 points, less than 50% 1 point)
Impact	<ul style="list-style-type: none"> - Long-term social/economic impact (industry, land price, employment, tourism, poverty, etc.) - Impact on systematic change - Impact on environmental change 	Qualitative / quantitative evaluation compared to project execution plan (90% or better than plan 4 points, less than 90% 3 points, less than 70% 2 points, less than 50% 1 point)
Sustainability	<ul style="list-style-type: none"> - Human resources - Financial - System - Environmental 	Qualitative Evaluation (Highly proper 4 points, proper 3 points, partly proper 2 points, improper 1 point)
Others	<ul style="list-style-type: none"> - Accordance with women's and human rights 	- Qualitative Evaluation

3. Evaluated Projects

Evaluation concerns transportation sector projects supported by EDCF, for which the ex post evaluation has been completed. This includes Vietnam, Cambodia, Myanmar and the Philippines projects, which are covered in this field survey.

<Table 3> Subject Projects of Evaluation in EDCF's Transportation Sector
Unit: 1 million dollars

Country	Project Title	Approved Amount	Completion Year	Remarks
Nigeria	Railway Engine Modernization	15.0	1993	Expost Evaluation
	Railway Car Modernization	10.0	1992	Expost Evaluation
Myanmar	Railway Car Purchase*	20.0	1999	Field Survey
Bangladesh	Railway Engine Purchase	33.1	2000	Expost Evaluation
Vietnam	National Road 18 Renovation*	24.0	1999	Field Survey
Sri Lanka	Balangoda~Bandafawela Section Road Repair	17.6	2008	Expost Evaluation
	Colombo~Galle Section Road Repair	14.5	1996	Expost Evaluation
	Ratnapura~Bandafawela Section Road Repair	30.0	2005	Expost Evaluation
Cambodia	National Road 3 Rehabilitation(Phase II)*	36.9	2011	Field Survey
	Kampot~Trapangropo Section Road Repair	17.1	2007	Expost Evaluation
The Philippines	GSO Road Expansion and Emergency Dredging*	22.3	2012	Field Survey
Total	11	240.5		

Note: * Indicates projects for field survey.

4. Comprehensive Transportation Sector Evaluation Method

Domestic research consisted of literature investigation, statistic analysis, and interviews with related agency members and project executors.

Literature investigation covered ODA project evaluation related documents, including EDCF and recipient countries' project related reports, evaluation manuals and guidelines, transportation sector ODA project related reports, recipient countries' development projects and strategies in the transportation sector, and strategies or support status of overseas aid organizations.

Statistic analysis was based on related domestic and overseas agencies' transportation sector support statistics, DAC's ODA performance and domestic/overseas transportation sector support statistics, overseas aid organizations' (such as WB and ADB) transportation sector statistics, etc.

Based on preliminary analysis with the literature investigation and statistics, the team interviewed EDCF project execution division and project executor members, and determined the tasks and policies regarding EDCF's transportation sector support projects.

Field survey focused on Cambodia, the Philippines, Vietnam and Myanmar among evaluation candidates. The focus was on projects that were completed but were yet to be subject to ex post evaluation, and the four countries were selected based on the scale of the project, importance, and conditions for business trips and visits.

The field survey team visited the site, interviewed and conducted

surveys with the recipient countries' related government division members, and requested project related data. The team also visited branches of overseas aid organizations on site, identified the support status and strategies in the transportation sector, and compared them to domestic transportation sector support projects.

<Table 4> EDCF Transportation Sector ODA Project Field Survey Status

Country	Survey Period	Organizations Visited
Cambodia	Jul. 4 th ~14 th 2013	Korean Embassy in Cambodia, Ministry of Public Transport (MPWT), JICA branch, Ministry of Economy and Finance (MEF), ADB branch
The Philippines	Jul. 10 th ~14 th 2013	Department of Public Works & National Roads, Department of Transportation & Communications, National Economic Development Agency, Project Site, ADB, EDCF's Philippines branch, etc.
Vietnam	Jul. 4 th ~14 th 2013	Ministry of Transportation, Ministry of Planning and Investment, Project Management Unit 2 (PMU2), Quang Ninh State Government, JICA branch, ADB branch
Myanmar	Jul. 7 th ~9 th 2013	Myanmar Ministry of Transportation and the Railway Administration

User survey was conducted at gas stations or rest/service areas nearby the project site. As the users offer candid response unlike the government agency members in the recipient country, the survey has the benefit of enabling user-perspective based evaluation.

EDCF's transportation sector ODA project specialists were invited for advisory conferences, and the team reflected their opinions regarding the tasks and directionalities of transportation sector projects.

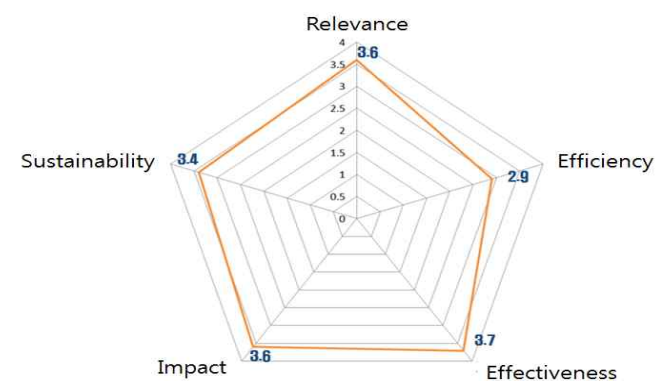
V. Comprehensive Evaluation of the Transportation Sector

1. Overall Evaluation

The comprehensive rating of EDCF's transportation sector ODA projects was 3.5, qualified as "Successful." Effectiveness was rated highest.

<Table 5> EDCF Transportation Sector ODA Project Comprehensive Evaluation Result

Criterion	Weighted Value	Evaluation	Rating
Relevance	20%	Successful	3.6
Efficiency	20%	Successful	2.9
Effectiveness	20%	Highly Successful	3.7
Impact	20%	Successful	3.6
Sustainability	20%	Successful	3.4
Total Rating			3.4



<Figure 2> EDCF Transportation Sector ODA Project Comprehensive Evaluation Result

<Table 6> EDCF's Transportation Sector ODA Project Comprehensive Evaluation Table by Standards

Criterion	Evaluation Result	Content
Relevance	Successful (3.6)	<ul style="list-style-type: none"> - Relevant to the recipient country's development policy and goal, satisfying the recipient country's demands - In accordance with the Korean government's ODA support policy and EDCF's transportation sector support strategy - Generally proper-the project goal, implementation strategy, and project design were determined in collaboration with the recipient country - The recipient country took a leading role - <u>high owner spirit in general</u>
Efficiency	Successful (2.9)	<ul style="list-style-type: none"> - Projects are often not completed within set period due to changes in socio-economic conditions, but successful in general - Positive survey responses regarding project executor selection process or collaborative relationship with EDCF
Effectiveness	Highly Successful (3.7)	<ul style="list-style-type: none"> - Various effects are seen after completion in accordance with the goals, especially with reduction of travel time - Accessibility and mobility highly improved with the transportation sector support projects, but less so with transportation safety
Impact	Successful (3.6)	<ul style="list-style-type: none"> - Various impacts such as industrial and economic development, increase in land price, jobs created, and increase of tourist demands - Impact on systems such as improved transportation project repair and maintenance - Environmental impact exists - responses are negative compared to other impacts
Sustainability	Successful (3.4)	<ul style="list-style-type: none"> - Difficulties expected due to insufficient repair and maintenance funds - Difficulties in technology transference, but sustainability of human resources and technology for general transportation projects is deemed successful - There are differences by country; systematic devices are devised for maintenance operation, but problems remain such as regulating overloaded vehicles
Total Rating		Successful (3.4)

2. Relevance

EDCF reviews whether the project the recipient country selected is relevant to the country's mid to long-term development plan or EDCF's support strategy, and selects projects in consultation with the Ministry of Strategy and Finance. This process will ensure the project's relevance to the recipient country's development policy and conditions. Also, in the survey conducted with the recipient country's government officials and members of the project execution companies, asking whether EDCF's transportation sector support project fits the recipient country's development policy, 88.9% of the responders said "highly successful," and 11.1% responded "successful," showing that relevance remains high.

EDCF's transportation sector support projects also appear to be in accordance with the Korean government's ODA support policy and EDCF's transportation sector support strategy. EDCF's support has been focused heavily on roads, rating over 60%, but WB or ADB's mid to long-term strategies are moving away from roads and emphasizing railways, urban transport and air transport. Therefore, EDCF may have to prepare a mid to long-term support strategy for its support.

EDCF's transportation sector support project design is done in sufficient consultation with the recipient country, and therefore most of the designs appear to be relevant. Also, Most of the recipient countries responded positively regarding their view of the roles EDCF's consultants play. However, the project designs should also be in consideration with the site conditions.

EDCF's transportation sector support projects are credit projects, and

were therefore implemented in sufficient consultation with the recipient countries, and interested parties tend to take up leading roles in the project selection or implementation process.

3. Efficiency

EDCF's transportation sector support projects are mostly completed within the planned period, but some projects entailed increased expense, due to which efficiency was deemed low. Project cost may fluctuate due to changes in the project content, fall in monetary values caused by foreign exchange crises, reduction of project scale or increase of project costs, but mostly, budgets are complied with.

Project period extensions are generally due to the inexperience of the recipient country or systematic problems, and such issues must be taken into consideration upon establishing loan agreements.

<Table 7> EDCF's Transportation Sector ODA Project Cost and Efficiency of Project Period

Country	Project Title	Project Cost	Project Period
Nigeria	Train engine modernization	Conforms to planned cost	Shortened by 4 months
	Train cars modernization	Conforms to planned cost	Completed on schedule
Myanmar	Train car purchase project	Increase in cost	Delayed by a year
Bangladesh	Train engine purchase project	Conforms to planned cost	Delayed by 9 months
Vietnam	National Road no. 18 renovation	Conforms to planned cost	Completed on schedule
Sri Lanka	Balangoda~Bandarawel a road repair project	Slight increase, but within reserve funds	Delayed by 4 months
	Colombo~Galle road repair project	Project scale reduced according to budget	Delayed by 16 months(Complicated procedures)
	Ratnapura~Bandarawel a road repair project	Project scale reduced due to reduction of monetary value caused by foreign exchange crisis	Delayed by 6 months (Errors in road design)
Cambodia	National Road no. 3 renovation and repair (Phase II)	Conforms to planned cost	Shortened by 6 months
	Kampot~Trapangropo road repair project	Conforms to planned cost	Slight delay (delay in selecting executor)
The Philippines	GSO road expansion and emergency dredging project	Conforms to planned cost	Delayed by 18 months

4. Effectiveness

Projects that had undergone ex post evaluation among EDCF's support projects within the transportation sector mostly concern railways and roads. Railway projects, most of which involve purchasing engines or cars, mainly aims to replace old cars in the recipient countries to reinforce railway transport capacity and improve passenger and cargo transport service. According to a previously conducted ex post report, EDCF's purchase supports have had such desirable results, but certain projects fall short to satisfying expected performance. The report finds the causes in difficulties in securing sufficient volume due to incentives and rebates in the private sector.

Most of the road projects are for repairs or expansions. There are no new road projects that have completed ex post evaluation. The key objective of repairs or expansions is to repave the roadbed to reduce travel time and accidents, while contributing to the vitalization of the local economy. According to a previous ex post evaluation report, most of the projects are deemed successful in this regard, with a high rating for effectiveness.

Transport safety did receive a positive evaluation yet the rating remains lower than with other standards. Therefore, there will be a need for efforts made towards improving transport safety.

<Table 8> EDCF's Transportation Sector ODA Project Cost and Efficiency of Project Period

Country	Project Title	Pre-Project Expectations	Post-Project Results and Gains
Nigeria	Train engine modernization	<ul style="list-style-type: none"> - Passenger and cargo transport capacity increase and service improvement - Improvement in repair and maintenance capacity - need to improve transport capacity (only 25 out of 186 engines operate regularly) 	<ul style="list-style-type: none"> - Moderate alleviation of engine shortage - Visible improvement of passenger and cargo transport capacity - Improvement of railway operation and maintenance capacity
	Train cars modernization	<ul style="list-style-type: none"> - Improvement of passenger transport capacity and service quality 	<ul style="list-style-type: none"> - Passenger transport capacity increase by 10% - Improvement of service quality - Contribution to technological capacity
Myanmar	Train car purchase project	<ul style="list-style-type: none"> - Improved passenger comfort - Improvement of railway transport capacity - Respond to tourism demand increases 	<ul style="list-style-type: none"> - Gained effect in comparison to expectation not mentioned
Bangladesh	Train engine purchase project	<ul style="list-style-type: none"> - Resolve cargo congestion within container terminal, reduce logistics cost - Contribute to economic growth 	<ul style="list-style-type: none"> - Cargo volume at Yangon port falls short to expectations - Problem caused by failing to secure proper volume from Myanmar Port Authority (incentives and rebates in the private sector)
Vietnam	National Road no. 18 renovation	<ul style="list-style-type: none"> - Reduce transport cost by reducing travel time - Utilize key pathways for tourists from China - Vitalize local economy 	<ul style="list-style-type: none"> - Visible increase in traffic volume with reduced transport cost and shortened travel time - Positive impact on Quang Ninh's local economy

Sri Lanka	Balangoda~Bandarawela road repair project	<ul style="list-style-type: none"> - Secure stable transport system - Improve farmers' earning level 	<ul style="list-style-type: none"> - Reduced travel time by 1 hour - Road stability secured by expanding road width and paving shoulders - Vitalized local economy by increased GDP increase in the project area
	Colombo~Galle road repair project	<ul style="list-style-type: none"> - Repavement of two-lane road to facilitate traffic flow - Increase accessibility to promote tourist demands 	<ul style="list-style-type: none"> - Increased tourism earnings - Reduction of travel time (by 90 minutes)
	Ratnapura~Bandarawela road repair project	<ul style="list-style-type: none"> - Respond to rapidly increasing traffic volume - Facilitate transport between production site and other regions 	<ul style="list-style-type: none"> - Facilitate operation at cross sections - Maintain proper driving speed in the project section - Secure economic feasibility
Cambodia	National Road no. 3 renovation and repair (2nd)	<ul style="list-style-type: none"> - Save logistics cost by shortening travel time - Promote balanced economic development by facilitating transport and developing tourist resources 	<ul style="list-style-type: none"> - Transport cost saved by reducing travel time by 1.5 hours - Reduced accidents with extended road width and increase of paved sections - Secure proper driving speed
	Kampot~Tra pangropo Road Repair Project	<ul style="list-style-type: none"> - Reduced travel time saves cargo transport cost - Promote balanced economic development by unifying produce transport channels, promote tourist resource development 	<ul style="list-style-type: none"> - Reduced travel time and operation cost - Accidents reduced by securing safety facilities such as expanding road width and increase of paved sections - Maintain fluid traffic flow due to the lack of congestion
The Philippines	GSO Road Expansion and Emergency Dredging Project	<ul style="list-style-type: none"> - Prevent flooding - Respond to increased demand due to population growth in Pampanga province - Promote economic development in the metropolitan area 	<ul style="list-style-type: none"> - Partial flooding during raining season - Reduced travel time, less cost - Economic (activity wise) impact with improved mobility and accessibility

5. Impact

EDCF's transportation sector support projects were found to exert great socio-economic impact on the recipient countries. Transportation projects tend to have positive influence on economic development and industrial progress as they reduce travel time between origins and end points and save logistics costs. Reduced poverty and facilitation of tourism increases tourist demands, contributing to the economic growth of tourist areas. Also, travel time to hospitals, schools and government agencies and commute time are reduced, causing increase in social activity, and the market is also expanded with improved accessibility. Survey results also show similar findings. Responses are positive towards the overall society and economy, such as industrial progress, market expansion, employment, and increased tourist demands.

However, views on the environmental impact of transportation projects may be negative, and new facilities may cause problems such as conflicts with or among local community members. Response measures should be prepared regarding such potential problems.

EDCF's transportation sector support projects are also found to have influence over technologies and systems in the transportation sector. The impact of railway projects were found to be positive, improving the recipient country's technological capacity by transferring techniques for railway operation and maintenance through railway car purchase and modernization. Also, road projects are found to have influence operation management know-how, asphalt production and paving techniques, and heavy equipment operation techniques, while also contributing to the transference of technology in high-tech road

design using computers.

Systematic change was less visible, yet existent. The expost evaluation report does not mention systematic change, but the team was able to confirm that such changes were underway for maintenance purposes during field surveys at Vietnam and Cambodia. Overall, EDCF's transportation sector projects are causing new systems and regulations to be implemented. Desirable standards may be set with such projects, which may be referred to in future endeavors.

6. Sustainability

EDCF's transportation sector support project related maintenance responsibilities lie with the recipient country by principle. Therefore, EDCF is not responsible to maintain the effects of completed projects, but there is a need for efforts aiming to efficiently retain and manage the impact of the projects.

Human resource sustainability received most positive evaluation. In the railway sector, technology transference was run parallel to car purchase and modernization, which facilitated maintenance capacity. In the road sector, maintenance know-how or techniques are widely available, and therefore the sustainability of human resources are deemed fair. There may be problems in cases where there is a need for high level techniques such as ITS, but with the Ulaanbaatar intelligent transportation network project in Mongolia, the technology has been transferred to the center personnel who remain active, sustainability issues have not arisen. Human resource sustainability is therefore deemed fair for the projects EDCF has supported.

VI. Future Tasks and Suggestions

1. EDCF Transportation Sector Project Outcome

EDCF's transportation sector ODA projects were mostly successfully completed, reducing travel time among regions, saving transport cost and contributing to the project area's economic growth. Especially, as transportation projects greatly improve accessibility and mobility in recipient countries struggling with insufficient or poor transport infrastructure, the overall level of satisfaction was deemed very high.

Also, various impacts are created with transportation projects, such as local economy growth, new jobs created, increase in tourist demands and land price, producing positive responses. EDCF's transportation sector support projects are therefore deemed effective for the recipient countries' economic growth.

Certain projects have problems with maintenance after completion, but the overall condition appears to be fair. However, there must be continuous discussion about securing maintenance funding.

EDCF projects are basically implemented through the recipient countries' request and responsive review. The recipient country takes full charge of implementation. This structure may be reviewed as a representative case of participation driven ODA project as recommended by UN. Of course, such participation driven ODA projects may entail negative aspects such as extended project period and increased cost if the recipient country has insufficient execution

capacity. Most of the projects reviewed in this study showed such instances.

However, such problems are more relevant to the supporting country, as they pursue efficiency of obligated funds. There may be delays or increased costs, but the recipient countries are acquiring immaterial experience and reinforcing their capacity by experiencing actual project planning, implementation and execution. The task is to investigate how such experiences may be productive accumulated and grafted to future projects. Such issues may be resolved by transferring Korea's experience in connection to KSP (Knowledge Sharing Program) executed by the Ministry of Strategy and Finance, and providing constant support for reinforcing project execution and management capacities.

2. Suggestions for Establishing EDCF Transportation Sector Project Strategies

The impact of natural disaster has been increasing with the global aggravation of the greenhouse effect. Advanced countries have established response measures, but developing countries still remain vulnerable, and those who are most severely victimized are low-income groups in such countries. Therefore, future infrastructure projects should actively consider and include response measures towards climate change.

EDCF's GSO Road Project in the Philippines simultaneously ran road construction and climate change response capacity reinforcement, reducing road destruction and loss due to climate related disasters and improving climate response capacity in the area. This is an

accomplishment based on EDCF's support, and may be seen as a case of creative economy focused EDCF project that can create new added values.

ODA projects in the transportation sector that can express Korea's unique characteristics must be developed, in consideration of Korea's aid focuses such as developing low cost high efficiency ODA projects, reinforcement of PPP(Public-Private Partnership) connections and soft transportation infrastructure projects.

3. Suggestions for Improving EDCF Transportation Sector Projects

The support strategies of overseas aid organizations comprise mid and long-term strategies, reflecting criteria such as sustainability, capacity development, good governance and participation-driven development. EDCF also proposes an overall strategy outline for its country-specific strategy in the transportation sector, but there will be a need to establish a mid to long-term ODA support strategy, and determine/implement projects with priorities and policies.

In Korea, grant-type aids and credit assistances are respectively the responsibilities of KOICA(Korea International Cooperation Agency) and EDCF. The personnel of these two organizations lack specialization in field and region compared to MDBs like WB or ADB, or donor countries such as JICA. There is a need to maximize the human resources in EDCF and foster specialists, and systematically recruit specialists in the transportation sector in the mid to long-term perspective. Also, EDCF and KOICA should increase human resource and information exchange, maximizing the impact of Korea's support but in grant type aids and credit assistance areas. Such moves will

reinforce the efficiency of ODA support, as well as the reliability of ODA policies, which will in turn strengthen collaboration with recipient countries.

In WB, an IEG (an independent organization within WB) takes charge of ex post evaluation. ADB's IED also has guaranteed independence. The independence of an organization is directly related to the fairness, objectivity and transparency of the evaluation. Therefore there is a need to reinforce the independence of EDCF's evaluation division.

In the case of recipient countries, there is a high demand for the private sector's participation to supplement funds and enhance project implementation efficiency. To encourage the private sector's participation, package-form projects in connection to ODA projects will be effective, which calls for a systematic reorganization. As Korea's ODA scale is smaller than other advanced countries, private capital can be used to enhance project implementation effects, and the private companies will be able to improve efficiency and reduce risk by receiving ODA support.

The performance index should be set from the preliminary evaluation stage. Ex post evaluations are important in that it assesses the progress and results of the project, and improve efficiency by reflecting the lessons learned from the findings. To ensure the effectiveness of the ex post evaluation, the evaluation items and data must be set in consideration of ex post evaluation from the preliminary evaluation stage, and the performance indexes should cover fields such as demand, economy, society, environment, and operation. The ex post evaluation must be based on such indexes, which enables more objective and realistic analysis of the project's implementation impact.

In the case of Korea, the lack of connection between credit and grant type aid projects is one weakness of the ODA projects. If grant type aids such as capacity development or technology transfer could follow the completion of credit assistance projects, the sustainability can be doubled. The evaluation will become more effective if the connection between credit and grant type aids are strengthened, the project impact maximized, and the evaluation system unified.

There should be evaluation guidelines for each sector. ODA projects cover a wide variety of sectors, which all have different objectives, evaluation methods and indexes. Therefore, guidelines should be separate for each sector.

Also, the current evaluation index weighted value is uniform in each sector, which needs improvement. Measures for post-completion management must also be discussed during the support negotiation process. Also, the budget and implementation period must be set in consideration of the recipient country's situation in order to ensure compliance with the original plan.